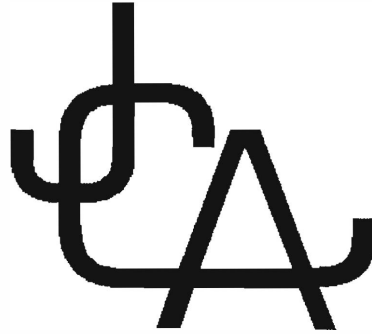




**STRUCTURAL
CALCULATIONS FOR
TURNLOK
SYSTEM CONFIGURATION
CALCULATIONS
TO
BS EN 12810**

CONTRACT NO. B11323	JAMES CROSBIE ASSOCIATES LTD. CONSULTING CIVIL & STRUCTURAL ENGINEERS 37 CHORLEY NEW ROAD, BOLTON. BL1 4QR
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Calculation

Sheet No. SD1 rev.

Contract

TURNLOK

Part of Structure

SYSTEM CONFIGURATIONS

Contract No. 11323

Date

SEP 10

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SYSTEM CONFIGURATIONS

THE CLIENT INTENDS TO UNDERTAKE CALCULATIONS RE. THE FACADE SCAFFOLD SYSTEM FOR A NUMBER OF SYSTEM CONFIGURATIONS BASED ON CLS OF BS EN 12810-1 & TBL 1

SERVICE CLASSES

- (1, 2, 3 & 4.)

DROP TEST

- IGNORE $\therefore$ (N) DESIGNATION

WIDTH CLASS

- (SW12) 1.2 to 1.5m, 1.3m BAY WITH 30mm TOE BOARD.

BAY LENGTHS

- 2.5m & 1.8m (250/180)

HEADROOM

- (H1) $h_3 \geq 1.9m$
 $1.7m \leq h_{16} \leq 1.9m$

CLADDING

- (A) WITHOUT CLADDING.
(WIND LOADS FOR CLAD SYSTEM DERIVED FOR FUTURE USE IF REQUIRED)

ACCESS

- (LA) LADDER ACCESS.

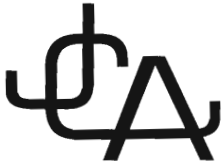
NOTE - CALCULATIONS ARE CARRIED OUT FOR BOTH OMEGA & TUBE TRUSSOM SYSTEMS.

ACTIONS

ALL ACTIONS AS NOTED IN CL 6.2 BS EN 12811-1 AND COMBINATIONS IN CL 6.2.9

WORKING WIND IS DETERMINED TO CL 6.2.7.4.2 BS EN 12811-1

MAX WIND IS DETERMINED FROM FIG 3 & CL 8.3 BS EN 12810-1



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COMBINATIONS

IN SERVICE

- 1) SELF WEIGHT
- 2) LIVE LOAD CASE TO MOST UNFAVOURABLE DECKED LEVEL
- 3) LIVE LOAD CASE AT 50% ON NEXT LEVEL TO 2) ↑
- 4) WORKING WIND LOAD - 0.2 kN/m^2 to down - High
OR
1/3 WORKING ALLOWANCE - 2.5% LIVE OR 0.3 kN/RAY

OUT OF SERVICE

- 1) SELF WEIGHT
- 2) LIVE LOAD CASE TO THE MOST UNFAVOURABLE DECKED LEVEL SUBJECT TO FOLLOWING REDUCTIONS:
CL 1 - 0
CL 2/3 - 25%
CL 4/5/6 - 50

3) MAX WIND TO CL 8.3 BS EN 12810-1

$$F_k = C_s \sum_{i=1}^n (A_i C_{f,i} q_i)$$

$$q_i = 24.5 u_n (f_{fz}) = 1106 \text{ N/m}^2$$

		↓	11el
C_s	UNCLAD	0.75	1.0
	CLAD	1.0	1.0
C_f	UNCLAD	1.3	1.3
	CLAD	1.3	0.1

A_i UNCLAD - AREA OF COMPONENTS
CLAD - 50% OF SURFACE AREA OF CLADDING

AREA CO-EFFICIENTS

UNCLAD	↓	$A = 1.106 \times 1.3 \times 0.75 \times 0.7 = 0.755 A$	(0.137)
	11el	$A = 1.106 \times 1.3 \times 1.0 \times 0.7 = 1.006 A$	(0.182)
CLAD	↓	$A = 1.106 \times 1.3 \times 1.0 \times 0.7 \times 0.5 = 0.503 A$	(0.091)
	11el	$A = 1.106 \times 0.1 \times 1.0 \times 0.7 \times 0.5 = 0.039 A$	(0.007)



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TURBO TRANSOM FRAMES

LOADS || to FACE

END LOADS

UNCLAD

				WIND LOAD (kN)	
				$\frac{W1}{W5}$	$\frac{W1}{W2}$
UNBOARDED	UNBRACED	$A = (0.109 + 0.031)$	$= 0.14m^2$	0.141	0.025
UNBOARDED	BRACED	$A = 0.140 + (0.109/2)$	$= 0.195m^2$	0.196	0.035
BOARDED	UNBRACED	$A = 0.140 + (0.031 \times 2) + (0.065 \times 2.63) - 0.40 = 0.219m^2$	$= 0.219m^2$	0.220	0.059
BOARDED	BRACED	$A = 0.219 + (0.109/2)$	$= 0.273m^2$	0.275	0.069
<u>CLAD</u>		$A = (0.65 \times 2)$	$= 1.3m^2$		

LOADS ⊥ to FACE

FRONT LOADS

UNCLAD 2.5m BAY

				$W4$	$W1$
UNBOARDED	UNBRACED	$A = (0.109 + 0.121)$	$= 0.23m^2$	0.174	0.024
UNBOARDED	BRACED	$A = 0.23 + (0.077)$	$= 0.307m^2$	0.232	0.042
BOARDED	UNBRACED	$A = 0.23 + (0.121 \times 2) + (0.263 \times 2.5) - 0.4 = 1.130m^2$	$= 1.130m^2$	0.853	0.202
BOARDED	BRACED	$A = 1.130 + (0.077)$	$= 1.207m^2$	0.959	0.212



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Calculation

Sheet No. SD4 rev.

Contract	<u>TURNLOK</u>
Part of Structure	<u>SYSTEM CONFIGURATIONS</u>

Contract No.	<u>11323</u>
Date	<u>SEP 10</u>
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Member						
<u>UNCLAD 1.8 m RAY</u>					<u>OUT</u> W4	<u>IN</u> W1
UNBOARDED UNBRACED $A = (0.109 + 0.087)$				0.196 m^2	0.148	0.027
UNBOARDED BRACED $A = 0.196 + (0.065)$				0.261 m^2	0.197	0.036
BOARDED UNBRACED $A = 0.196 + (0.087 \times 2) + (0.263 \times 1.8) / 0.40$				0.843 m^2 1.09 m^2	0.636	0.149
BOARDED BRACED $A = 0.843 + (0.065) / 1.09$				0.908 m^2 1.155 m^2	0.686	0.158
<u>CLAD</u>						
2.5 m				$A = 2 \times 2.5 = 5 \text{ m}^2 \times 0.503$		
1.8 m				$A = 2 \times 1.8 = 3.6 \text{ m}^2 \times 0.503$		

<u>LIVE LOADING</u>			<u>LC1</u> 0.75	<u>LC2</u> 1.5	<u>LC3</u> 2.0	<u>LC4</u> 3.0 (kN/m ²)
2.5 m	$A = 2.5 \times 0.225 \times 5/2 = 0.703 \text{ m}^2$	IN	0.527	1.055	1.406	2.109
		50%	0.263	0.528	0.703	1.055
		OUT	0	0.264	0.352	1.055
1.8 m	$A = 1.8 \times 0.225 \times 5/2 = 0.5063 \text{ m}^2$	IN	0.380	0.759	1.013	0.519
		50%	0.190	0.380	0.506	0.759
		OUT	0	0.190	0.253	0.759

PC ANALYSIS WIND REF'S

W1		UNCLAD	IN ← (in service)
W2	END	UNCLAD	IN
W3			
W4		UNCLAD	OUT
W5	END	UNCLAD	OUT
W6			
W7			
W8			



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Contract TURNLOK

Part of Structure
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Contract No. 11323

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OMEGA TRANSOM FRAMES

LOADS || to FACE

UNCLAD

				WIND LOAD (kN)	
				WS A1	W2 W
UNBOARDED UNBRACED	$A = (0.109) + (0.078/2)$	=	$0.148 m^2$	0.149	0.077
UNBOARDED BRACED	$A = 0.148 + (0.109/2)$	=	$0.203 m^2$	0.205	0.037
BOARDED UNBRACED	$A = 0.148 + (0.031 \times 2) + (0.065 \times 0.233)$	=	$0.225 m^2$ $0.236 m^2$ $0.280 m^2$ $0.291 m^2$	0.227	0.043
BOARDED BRACED	$A = 0.225 + (0.109/2)$	=		0.282	0.053
CLAD	$A = 0.65 \times 2$		1.3	0.051	0.009

LOADS ⊥ to FACE

UNCLAD 2.5 BAY

				W4	W1
UNBOARDED UNBRACED	$A = (0.109 + 0.121)$		$0.230 m^2$	0.174	0.032
UNBOARDED BRACED	$A = 0.230 + (0.077)$		$0.307 m^2$	0.132	0.042
BOARDED UNBRACED	$A = 0.230 + (0.121 \times 2) + (0.233 \times 2.5)$	=	$1.055 m^2$ $1.472 m^2$ $1.132 m^2$ $1.549 m^2$	0.717	0.102
BOARDED BRACED	$A = 1.055 + (0.077)$	=		0.855	0.212

UNCLAD 1.8 BAY

				W4	W1
UNBOARDED UNBRACED	$A = (0.109 + 0.087)$		$0.196 m^2$	0.148	0.017
UNBOARDED BRACED	$A = 0.196 + (0.065)$		$0.261 m^2$	0.197	0.036
BOARDED UNBRACED	$A = 0.196 + (0.087 \times 2) + (0.233 \times 1.8)$	=	$0.789 m^2$ $1.09 m^2$ $0.867 m^2$ $1.168 m^2$	0.596	0.149
BOARDED BRACED	$A = 0.789 + 0.078$	=		0.655	0.160



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TURNLOK

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LIVE LOADING

2.5m

$$A = 2.5 \times 0.225 \times \frac{\sqrt{2}}{2} = 1.406 \text{ m}^2$$

	LC1	LC2	LC3	LC4
	0.75	1.5	2.0	3.0
IN	1.055	2.109	2.812	4.218
SD%	0.527	1.055	1.406	2.109
WT	0	0.528	0.703	2.109

1.8m

$$A = 1.8 \times 0.225 \times \frac{\sqrt{2}}{2} = 1.013 \text{ m}^2$$

	LC1	LC2	LC3	LC4
	0.75	1.5	2.0	3.0
IN	0.760	1.519	2.025	3.038
SD%	0.380	0.759	1.013	1.519
WT	0	0.380	0.506	1.519



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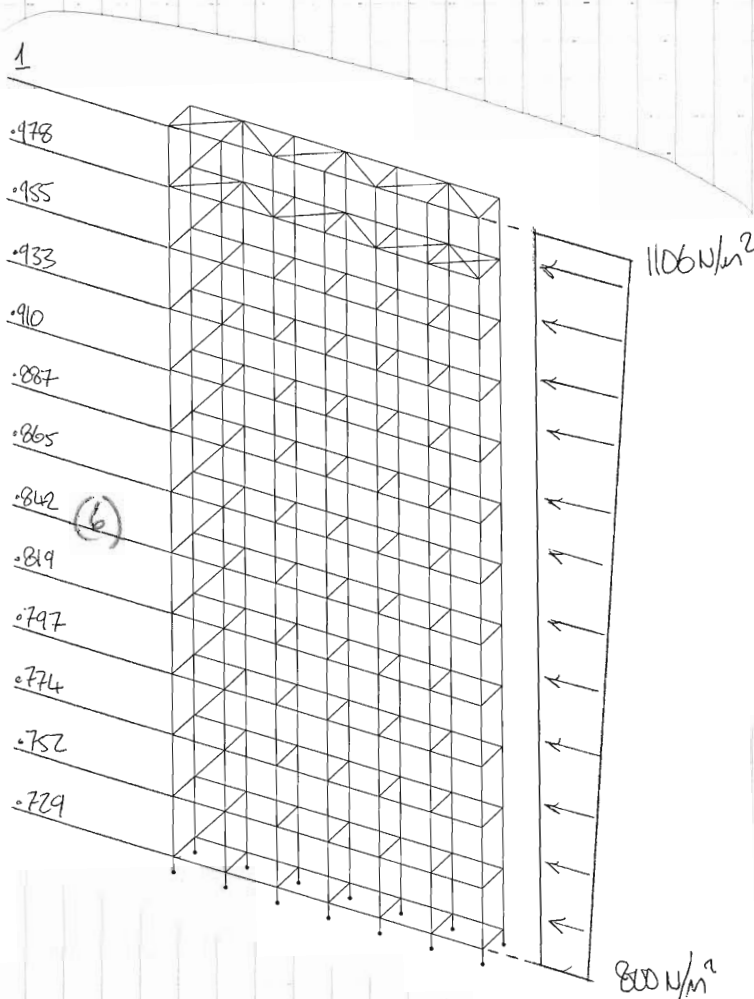
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APPLICATION OF WIND LOADS

AS STATED, FROM BS EN 12810-1 Fig 3 wind = 1106 N/m^2 AT 24.5 m ABOVE GROUND LEVEL. THIS VARIES LINEARLY TO 800 N/m^2 AT GROUND LEVEL.

THEREFORE, ALL CALCULATED LOADS WERE FACTORED BY THE VALUE AS SHOWN ON THE SKETCH BELOW BEFORE INPUTTING INTO THE PC MODEL. THIS $\therefore$ ACCOUNTS FOR THE ACTUAL HEIGHT ABOVE GROUND.



Example At level 6

$$\left(\frac{1106 - 800}{24.5} \right) \times 10.5$$

$$+ 800 = 931 \text{ N/m}^2$$

$$931 / 1106 = 0.842$$

ie 84.2 % OF CALCULATED WIND LOADING INPUT INTO ANALYSIS MODEL.

WIND DISTRIBUTION



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TURNLOK

Part of Structure

COMPONENT CAPACITIES

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TUBES

Cold Rolled CHS in S275 STEEL

<u>PROPERTIES</u>	ϕ	48.3	mm
	t	3.2	mm
	mass	3.56	kg/m
	A	453	mm ²
	I	116000	mm ⁴
	r	16	mm
	W _{el}	4800	mm ³
	W _{pl}	6520	mm ³

SECTION CLASS : $\frac{d}{t} = \frac{48.3}{3.2} = 15.09 < 50\epsilon^2 \Rightarrow$ CLASS 1

AXIAL CAPACITY : FROM SLINGER STRUCTURES REPORT SL178
FOR THE PATTERN B :

FOR TUBE TRANSOMS	: 14.0
FOR OMEGA TRANSOMS	: 15.6

MOMENT CAPACITY :

$$M_{c,RO} = M_{p,RO} = \frac{W_{pl,y}}{\gamma_{m0}} = \frac{6520 \times 275}{1.0} = 2.315 \text{ kN.m}$$

$$\text{SAFE MOMENT CAPACITY} = \frac{2.315}{1.1 \times 1.5} = 1.405 \text{ kN.m}$$



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COMPONENT CAPACITIES

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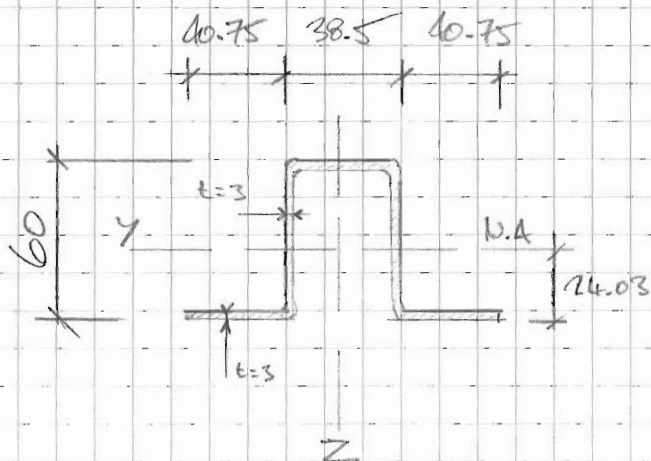
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OMEGA TRANSOM



SECTION PROPERTIES = $A = 702 \text{ mm}^2$

$I_{yy} = 361098 \text{ mm}^4$

$I_{zz} = 539953 \text{ mm}^4$

$Z_{top} = 10039 \text{ mm}^3$

$Z_{bottom} = 15076 \text{ mm}^3$

$\left(\frac{I_{yy}}{A} \right)^{0.5} = 22.68 \text{ mm}$

INPUT INTO
MASTERFRAME
ANALYSIS

Office: 1070

Location: Omega Transom Properties

Properties of any plane section

The section is defined by coordinates of corner points taken in anti-clockwise order round the section. The cross section is kept to the left of the edge running from a previous point to the next point. The section is closed when the original point is specified again.

Coordinates of points in order:

Point 1	: X-coordinate	x(1)=0 mm
	Y-coordinate	y(1)=0 mm
Point 2	: X-coordinate	x(2)=43.75 mm
	Y-coordinate	y(2)=0 mm
Point 3	: X-coordinate	x(3)=43.75 mm
	Y-coordinate	y(3)=57 mm
Point 4	: X-coordinate	x(4)=76.25 mm
	Y-coordinate	y(4)=57 mm
Point 5	: X-coordinate	x(5)=76.25 mm
	Y-coordinate	y(5)=0 mm
Point 6	: X-coordinate	x(6)=120 mm
	Y-coordinate	y(6)=0 mm
Point 7	: X-coordinate	x(7)=120 mm
	Y-coordinate	y(7)=3 mm
Point 8	: X-coordinate	x(8)=79.25 mm
	Y-coordinate	y(8)=3 mm
Point 9	: X-coordinate	x(9)=79.25 mm
	Y-coordinate	y(9)=60 mm
Point 10	: X-coordinate	x(10)=40.75 mm
	Y-coordinate	y(10)=60 mm
Point 11	: X-coordinate	x(11)=40.75 mm
	Y-coordinate	y(11)=3 mm
Point 12	: X-coordinate	x(12)=0 mm
	Y-coordinate	y(12)=3 mm
Point 13	: X-coordinate	x(13)=0 mm
	Y-coordinate	y(13)=0 mm

Sectional properties

Cross-sectional area	702 mm ²
Second moments of area (inertias)	Ixx=361043 mm ⁴ Iyy=540008 mm ⁴
Product of inertia $\int dA.xy$	Ixy=0.11642E-9 mm ⁴
Distance of centroid from origin	X=60 mm Y=24.032 mm

X and Y are principal axes.

Angle of rotation of section thetaD=1 degrees

Second moments of area (inertia) about redefined axes:

$$\begin{aligned} Ix' &= Ixx * (\cos(\theta_{\text{thetaR}}))^2 + Iyy * (\sin(\theta_{\text{thetaR}}))^2 - Ixy * \sin(2 * \theta_{\text{thetaR}}) \\ &= 361043 * (\cos(0.017453))^2 + 540008 * (\sin(0.017453))^2 - 0.11642E-9 \\ &\quad * \sin(2 * 0.017453) \end{aligned}$$



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TURNLOK

Part of Structure

SYSTEM CONFIGURATIONS

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TURE TRANSOM FRAMES OUTPUT

SHEETS

BS EN 12810 1N SW12/250 H1 A LA

SD13 - SD42

BS EN 12810 2N SW12/250 H1 A LA

SD43 - SD70

BS EN 12810 3N SW12/250 H1 A LA

SD71 - SD98

BS EN 12810 4N SW12/250 H1 A LA

SD99 - SD126

BS EN 12810 1N SW12/180 H1 A LA

SD127 - SD156

BS EN 12810 2N SW12/180 H1 A LA

SD157 - SD184

BS EN 12810 3N SW12/180 H1 A LA

SD185 - SD212

BS EN 12810 4N SW12/180 H1 A LA

SD213 - SD240

SD241

SUMMARY OUTPUT SHEET

first
frame
only

• frame geometry Pic w/ node NPS & supports

• δ shape envelope All cases x20, NO node NPS

• Print Data

All
not

• Max. u/wave δ

• Member forces to 72 vts only (vts)

• Support Reaction



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OMEGA TRANSOM FRAMES OUTRIG

SHEETS

BS EN 12810	1N	SW12/250	H1	A	LA	SD 242 - SD271
BS EN 12810	2N	SW12/250	H1	A	LA	SD 272 - SD299
BS EN 12810	3N	SW12/250	H1	A	LA	SD 300 - SD 327
BS EN 12810	4N	SW12/250	H1	A	LA	SD 328 - SD 365
BS EN 12810	1N	SW12/180	H1	A	LA	SD 366 - SD 395
BS EN 12810	2N	SW12/180	H1	A	LA	SD 396 - SD 423
BS EN 12810	3N	SW12/180	H1	A	LA	SD 424 - SD 450
BS EN 12810	4N	SW12/180	H1	A	LA	SD 451 - SD 478

SUMMARY OUTRIG SHEET - SD 479

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Job Ref : B11323

Sheet : SD / 013

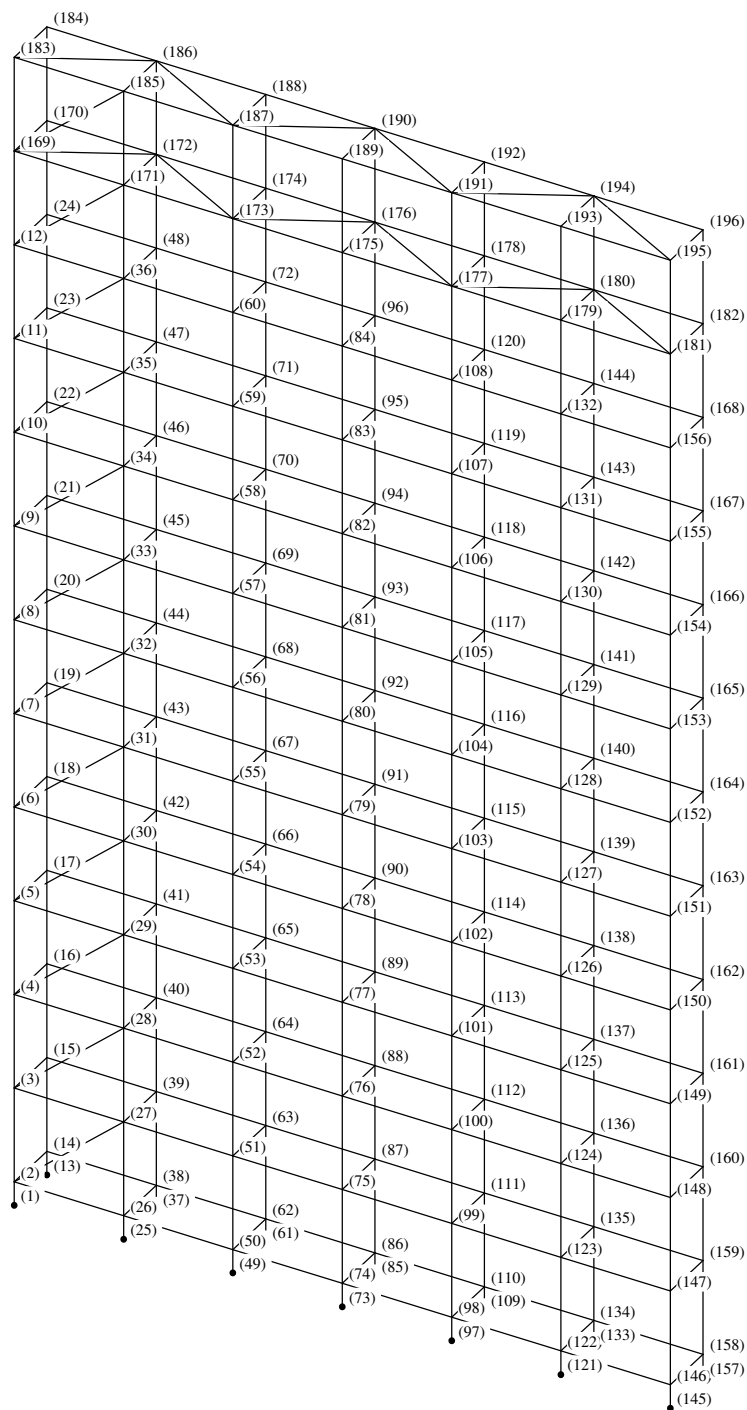
Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

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Section Size

48.3x3.2 CHS 3....

Frame Geometry - (Last Zoom) - 3D Front View

Not to Scale

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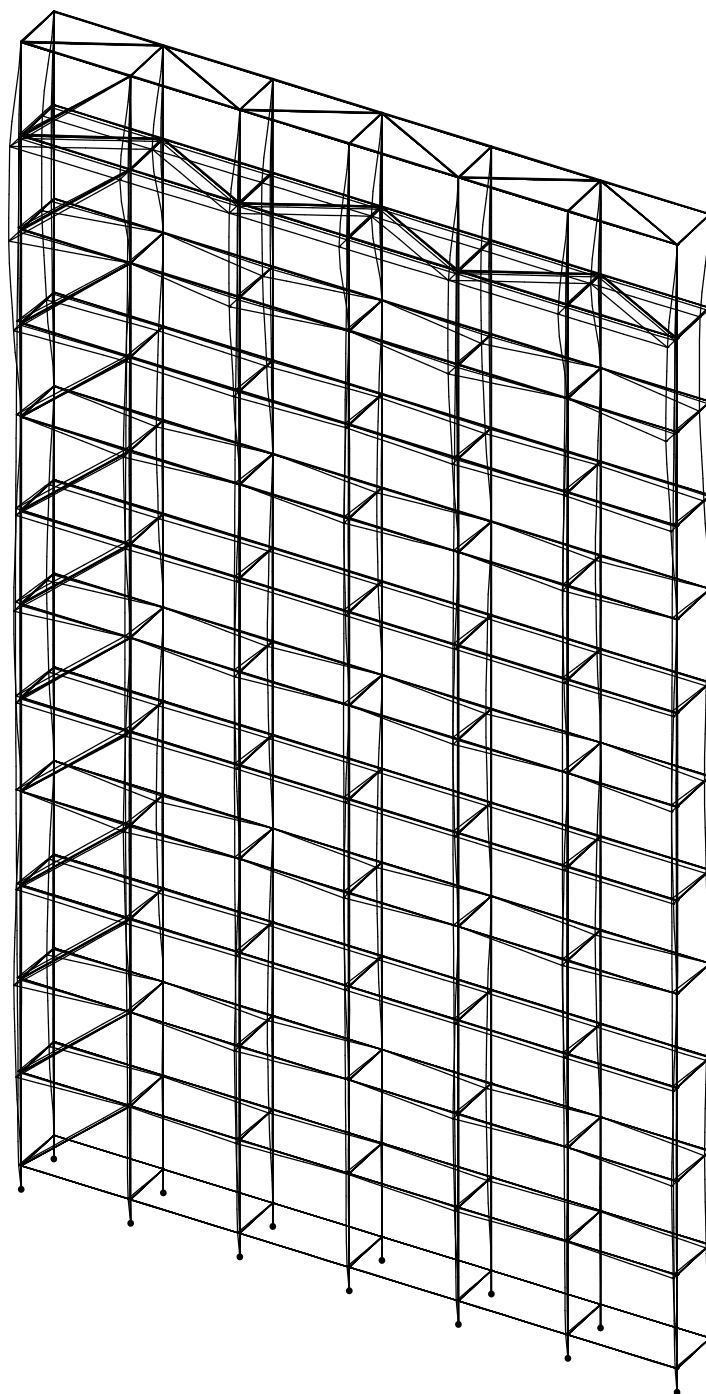
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Section Size
48.3x3.2 CHS 3...

Envelope (All Cases)
Deflected Shape - (Last Zoom) - 3D Front View

Not to Scale

20 Magnification

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L5	Live Load
Load Group L6	Live Load
Load Group L7	Live Load
Load Group L8	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L5 + 0.25 L6 + 0.50 L7 + 0.25 L8
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L5 + 0.25 L6 + 0.50 L7 + 0.25 L8 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L5 + 0.25 L6 + 0.50 L7 + 0.25 L8
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.089	2	2.500	0.089
3	4.500	0.089	4	6.500	0.089	5	8.500	0.089
6	10.500	0.089	7	12.500	0.089	8	14.500	0.089
9	16.500	0.089	10	18.500	0.089	11	20.500	0.089
12	22.500	0.440	13	24.500	0.526			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.005	3	0.005	4	0.005
5	0.005	6	0.005	7	0.005	8	0.005
9	0.005	10	0.005	11	0.005	12	0.005
13	0.000	14	0.004	15	0.004	16	0.004
17	0.004	18	0.004	19	0.004	20	0.004
21	0.004	22	0.004	23	0.004	24	0.004
25	0.000	26	0.009	27	0.009	28	0.009
29	0.009	30	0.009	31	0.009	32	0.009
33	0.009	34	0.009	35	0.009	36	0.009
37	0.000	38	0.007	39	0.007	40	0.007
41	0.007	42	0.007	43	0.007	44	0.007
45	0.007	46	0.007	47	0.007	48	0.007
49	0.000	50	0.007	51	0.007	52	0.007
53	0.007	54	0.007	55	0.007	56	0.007
57	0.007	58	0.007	59	0.007	60	0.007
61	0.000	62	0.007	63	0.007	64	0.007
65	0.007	66	0.007	67	0.007	68	0.007
69	0.007	70	0.007	71	0.007	72	0.007
73	0.000	74	0.007	75	0.007	76	0.007
77	0.007	78	0.007	79	0.007	80	0.007
81	0.007	82	0.007	83	0.007	84	0.007
85	0.000	86	0.007	87	0.007	88	0.007
89	0.007	90	0.007	91	0.007	92	0.007
93	0.007	94	0.007	95	0.007	96	0.007
97	0.000	98	0.007	99	0.007	100	0.007
101	0.007	102	0.007	103	0.007	104	0.007
105	0.007	106	0.007	107	0.007	108	0.007
109	0.000	110	0.007	111	0.007	112	0.007
113	0.007	114	0.007	115	0.007	116	0.007
117	0.007	118	0.007	119	0.007	120	0.007
121	0.000	122	0.007	123	0.007	124	0.007

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 016

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

125	0.007	126	0.007	127	0.007	128	0.007
129	0.007	130	0.007	131	0.007	132	0.007
133	0.000	134	0.007	135	0.007	136	0.007
137	0.007	138	0.007	139	0.007	140	0.007
141	0.007	142	0.007	143	0.007	144	0.007
145	0.000	146	0.004	147	0.004	148	0.004
149	0.004	150	0.004	151	0.004	152	0.004
153	0.004	154	0.004	155	0.004	156	0.004
157	0.000	158	0.004	159	0.004	160	0.004
161	0.004	162	0.004	163	0.004	164	0.004
165	0.004	166	0.004	167	0.004	168	0.004
169	0.020	170	0.015	171	0.042	172	0.027
173	0.047	174	0.027	175	0.047	176	0.027
177	0.047	178	0.027	179	0.047	180	0.027
181	0.025	182	0.015	183	0.027	184	0.021
185	0.049	186	0.040	187	0.047	188	0.040
189	0.044	190	0.038	191	0.047	192	0.040
193	0.047	194	0.040	195	0.025	196	0.021

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 0.50 L5 + 0.25 L6 + 0.50 L7 + 0.25 L8 + 1.00 N1

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.50 L5 + 0.25 L6 + 0.50 L7 + 0.25 L8 + 1.00 W2

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W5

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	2.500	0.000	0.000	26	2.500	0.500	0.000
27	2.500	2.500	0.000	28	2.500	4.500	0.000
29	2.500	6.500	0.000	30	2.500	8.500	0.000
31	2.500	10.500	0.000	32	2.500	12.500	0.000
33	2.500	14.500	0.000	34	2.500	16.500	0.000
35	2.500	18.500	0.000	36	2.500	20.500	0.000
37	2.500	0.000	1.300	38	2.500	0.500	1.300
39	2.500	2.500	1.300	40	2.500	4.500	1.300
41	2.500	6.500	1.300	42	2.500	8.500	1.300
43	2.500	10.500	1.300	44	2.500	12.500	1.300
45	2.500	14.500	1.300	46	2.500	16.500	1.300
47	2.500	18.500	1.300	48	2.500	20.500	1.300
49	5.000	0.000	0.000	50	5.000	0.500	0.000
51	5.000	2.500	0.000	52	5.000	4.500	0.000
53	5.000	6.500	0.000	54	5.000	8.500	0.000
55	5.000	10.500	0.000	56	5.000	12.500	0.000
57	5.000	14.500	0.000	58	5.000	16.500	0.000
59	5.000	18.500	0.000	60	5.000	20.500	0.000
61	5.000	0.000	1.300	62	5.000	0.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 017****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	5.000	2.500	1.300	64	5.000	4.500	1.300
65	5.000	6.500	1.300	66	5.000	8.500	1.300
67	5.000	10.500	1.300	68	5.000	12.500	1.300
69	5.000	14.500	1.300	70	5.000	16.500	1.300
71	5.000	18.500	1.300	72	5.000	20.500	1.300
73	7.500	0.000	0.000	74	7.500	0.500	0.000
75	7.500	2.500	0.000	76	7.500	4.500	0.000
77	7.500	6.500	0.000	78	7.500	8.500	0.000
79	7.500	10.500	0.000	80	7.500	12.500	0.000
81	7.500	14.500	0.000	82	7.500	16.500	0.000
83	7.500	18.500	0.000	84	7.500	20.500	0.000
85	7.500	0.000	1.300	86	7.500	0.500	1.300
87	7.500	2.500	1.300	88	7.500	4.500	1.300
89	7.500	6.500	1.300	90	7.500	8.500	1.300
91	7.500	10.500	1.300	92	7.500	12.500	1.300
93	7.500	14.500	1.300	94	7.500	16.500	1.300
95	7.500	18.500	1.300	96	7.500	20.500	1.300
97	10.000	0.000	0.000	98	10.000	0.500	0.000
99	10.000	2.500	0.000	100	10.000	4.500	0.000
101	10.000	6.500	0.000	102	10.000	8.500	0.000
103	10.000	10.500	0.000	104	10.000	12.500	0.000
105	10.000	14.500	0.000	106	10.000	16.500	0.000
107	10.000	18.500	0.000	108	10.000	20.500	0.000
109	10.000	0.000	1.300	110	10.000	0.500	1.300
111	10.000	2.500	1.300	112	10.000	4.500	1.300
113	10.000	6.500	1.300	114	10.000	8.500	1.300
115	10.000	10.500	1.300	116	10.000	12.500	1.300
117	10.000	14.500	1.300	118	10.000	16.500	1.300
119	10.000	18.500	1.300	120	10.000	20.500	1.300
121	12.500	0.000	0.000	122	12.500	0.500	0.000
123	12.500	2.500	0.000	124	12.500	4.500	0.000
125	12.500	6.500	0.000	126	12.500	8.500	0.000
127	12.500	10.500	0.000	128	12.500	12.500	0.000
129	12.500	14.500	0.000	130	12.500	16.500	0.000
131	12.500	18.500	0.000	132	12.500	20.500	0.000
133	12.500	0.000	1.300	134	12.500	0.500	1.300
135	12.500	2.500	1.300	136	12.500	4.500	1.300
137	12.500	6.500	1.300	138	12.500	8.500	1.300
139	12.500	10.500	1.300	140	12.500	12.500	1.300
141	12.500	14.500	1.300	142	12.500	16.500	1.300
143	12.500	18.500	1.300	144	12.500	20.500	1.300
145	15.000	0.000	0.000	146	15.000	0.500	0.000
147	15.000	2.500	0.000	148	15.000	4.500	0.000
149	15.000	6.500	0.000	150	15.000	8.500	0.000
151	15.000	10.500	0.000	152	15.000	12.500	0.000
153	15.000	14.500	0.000	154	15.000	16.500	0.000
155	15.000	18.500	0.000	156	15.000	20.500	0.000
157	15.000	0.000	1.300	158	15.000	0.500	1.300
159	15.000	2.500	1.300	160	15.000	4.500	1.300
161	15.000	6.500	1.300	162	15.000	8.500	1.300
163	15.000	10.500	1.300	164	15.000	12.500	1.300
165	15.000	14.500	1.300	166	15.000	16.500	1.300
167	15.000	18.500	1.300	168	15.000	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	2.500	22.500	0.000	172	2.500	22.500	1.300
173	5.000	22.500	0.000	174	5.000	22.500	1.300
175	7.500	22.500	0.000	176	7.500	22.500	1.300
177	10.000	22.500	0.000	178	10.000	22.500	1.300
179	12.500	22.500	0.000	180	12.500	22.500	1.300
181	15.000	22.500	0.000	182	15.000	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	2.500	24.500	0.000	186	2.500	24.500	1.300
187	5.000	24.500	0.000	188	5.000	24.500	1.300
189	7.500	24.500	0.000	190	7.500	24.500	1.300
191	10.000	24.500	0.000	192	10.000	24.500	1.300
193	12.500	24.500	0.000	194	12.500	24.500	1.300
195	15.000	24.500	0.000	196	15.000	24.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 018****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties****Members 1-453**

M 48.3x3.2 CHS 3.56 [S 355]
 A 4.53E-4 Ix 11.59E-8 Iy 11.59E-8 J 23.17E-8
 E 205.0E6 G 78.85E6

Member Loading**Members 2 and 17**

W1 PZ -000.015 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.085 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.013 0.000 (kN,m)
 W5 PX -000.071 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 3 and 18

W1 PZ -000.032 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.174 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.026 0.000 (kN,m)
 W5 PX -000.147 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 4 and 19

W1 PZ -000.033 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.180 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.027 0.000 (kN,m)
 W5 PX -000.152 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 5 and 20

W1 PZ -000.033 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.185 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.028 0.000 (kN,m)
 W5 PX -000.156 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 7 and 22

W1 PZ -000.015 0.000 (kN,m)
 W4 PZ -000.085 0.000 (kN,m)

Members 8 and 23

W1 PZ -000.032 0.000 (kN,m)
 W4 PZ -000.174 0.000 (kN,m)

Members 9 and 24

W1 PZ -000.033 0.000 (kN,m)
 W4 PZ -000.180 0.000 (kN,m)

Members 10 and 25

W1 PZ -000.033 0.000 (kN,m)
 W4 PZ -000.185 0.000 (kN,m)

Members 11 and 26

D1 PY -000.026 1.275 (kN,m)
 D1 PY -000.026 0.025 (kN,m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 019****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 12-15, 27-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347 and 396

D1 PY -000.026 0.025 (kN, m)
D1 PY -000.026 1.275 (kN, m)

Members 32, 47, 92, 121 and 136

W1 PZ -000.009 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.063 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.009 0.000 (kN, m)
W5 PX -000.051 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 33, 48, 93, 122 and 137

W1 PZ -000.018 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.131 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.106 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 34, 49, 94, 123 and 138

W1 PZ -000.019 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.135 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.109 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 35, 50, 95, 124 and 139

W1 PZ -000.019 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.139 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.020 0.000 (kN, m)
W5 PX -000.112 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 37, 52, 97, 126 and 141

W1 PZ -000.009 0.000 (kN, m)
W4 PZ -000.063 0.000 (kN, m)

Members 38, 53, 98, 127 and 142

W1 PZ -000.018 0.000 (kN, m)
W4 PZ -000.131 0.000 (kN, m)

Members 39, 54, 99, 128 and 143

W1 PZ -000.019 0.000 (kN, m)
W4 PZ -000.135 0.000 (kN, m)

Members 40, 55, 100, 129 and 144

W1 PZ -000.019 0.000 (kN, m)
W4 PZ -000.139 0.000 (kN, m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY -000.186 0.025 (kN, m)
D1 PY -000.186 2.475 (kN, m)

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359 and 361-371

D1 PY -000.130 0.025 (kN, m)
D1 PY -000.130 2.475 (kN, m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 020****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 170 and 182**

W1 PZ	-000.034	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.190	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.161	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 171 and 183

W1 PZ	-000.035	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.195	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.165	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 172 and 184

W1 PZ	-000.036	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.201	0.000	(kN,m)
W6 PZ	-002.000	0.000	(kN,m)
W2 PX	-000.030	0.000	(kN,m)
W5 PX	-000.170	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 173 and 185

W1 PZ	-000.037	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.206	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.031	0.000	(kN,m)
W5 PX	-000.174	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 174 and 186

W1 PZ	-000.034	0.000	(kN,m)
W4 PZ	-000.190	0.000	(kN,m)

Members 175 and 187

W1 PZ	-000.035	0.000	(kN,m)
W4 PZ	-000.195	0.000	(kN,m)

Members 176 and 188

W1 PZ	-000.036	0.000	(kN,m)
W4 PZ	-000.201	0.000	(kN,m)

Members 177 and 189

W1 PZ	-000.037	0.000	(kN,m)
W4 PZ	-000.206	0.000	(kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ	-000.020	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.143	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 195, 207, 219, 231 and 243

W1 PZ	-000.020	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 021****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ	-000.147	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.021	0.000	(kN, m)
W5 PX	-000.119	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.021	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.151	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.122	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.021	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.154	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.125	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.020	0.000	(kN, m)
W4 PZ	-000.143	0.000	(kN, m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.020	0.000	(kN, m)
W4 PZ	-000.147	0.000	(kN, m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.021	0.000	(kN, m)
W4 PZ	-000.151	0.000	(kN, m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.021	0.000	(kN, m)
W4 PZ	-000.154	0.000	(kN, m)

Members 306 and 312

W1 PZ	-000.038	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.211	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.032	0.000	(kN, m)
W5 PX	-000.178	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 307 and 313

W1 PZ	-000.039	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.216	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.033	0.000	(kN, m)
W5 PX	-000.183	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 308 and 314

W1 PZ	-000.038	0.000	(kN, m)
W4 PZ	-000.211	0.000	(kN, m)

Members 309 and 315

W1 PZ	-000.039	0.000	(kN, m)
W4 PZ	-000.216	0.000	(kN, m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 022****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 318, 324, 330, 336 and 342**

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.159	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.128	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.162	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.159	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.162	0.000	(kN,m)

Members 374-380, 393-395 and 397-399

D1 PY	-000.145	0.025	(kN,m)
D1 PY	-000.110	1.275	(kN,m)

Member 381

D1 PY	-000.399	0.025	(kN,m)
D1 PY	-000.399	2.475	(kN,m)
L2 PY	-001.406	0.025	(kN,m)
L2 PY	-001.406	2.475	(kN,m)
L6 PY	-001.055	0.025	(kN,m)
L6 PY	-001.055	2.475	(kN,m)
G2 PY	-002.109	0.025	(kN,m)
G2 PY	-002.109	2.475	(kN,m)

Members 382-386

D1 PY	-000.343	0.025	(kN,m)
D1 PY	-000.343	2.475	(kN,m)
L2 PY	-001.406	0.025	(kN,m)
L2 PY	-001.406	2.475	(kN,m)
L5 PY	-001.055	0.025	(kN,m)
L5 PY	-001.055	2.475	(kN,m)
G2 PY	-002.109	0.025	(kN,m)
G2 PY	-002.109	2.475	(kN,m)

Members 387-392

D1 PY	-000.220	0.025	(kN,m)
D1 PY	-000.220	2.475	(kN,m)
L4 PY	-001.406	0.025	(kN,m)
L4 PY	-001.406	2.475	(kN,m)
L8 PY	-001.055	0.025	(kN,m)
L8 PY	-001.055	2.475	(kN,m)
G4 PY	-002.109	0.025	(kN,m)
G4 PY	-002.109	2.475	(kN,m)

Member 400

D1 PY	-000.399	0.025	(kN,m)
D1 PY	-000.399	2.475	(kN,m)
L1 PY	-001.406	0.025	(kN,m)
L1 PY	-001.406	2.475	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-001.055	0.025	(kN,m)
L5 PY	-001.055	2.475	(kN,m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 023****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Members 401-404

D1 PY -000.343 0.025 (kN,m)
 D1 PY -000.343 2.475 (kN,m)
 L1 PY -001.406 0.025 (kN,m)
 L1 PY -001.406 2.475 (kN,m)
 N1 PZ -000.300 0.025 (kN,m)
 L5 PY -001.055 0.025 (kN,m)
 L5 PY -001.055 2.475 (kN,m)
 G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Member 405

D1 PY -000.343 0.025 (kN,m)
 D1 PY -000.343 2.475 (kN,m)
 L1 PY -001.406 0.025 (kN,m)
 L1 PY -001.406 2.475 (kN,m)
 N1 PZ -000.300 0.025 (kN,m)
 N1 PZ -000.300 2.475 (kN,m)
 L5 PY -001.055 0.025 (kN,m)
 L5 PY -001.055 2.475 (kN,m)
 G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Members 406-411

D1 PY -000.220 0.025 (kN,m)
 D1 PY -000.220 2.475 (kN,m)
 L3 PY -001.406 0.025 (kN,m)
 L3 PY -001.406 2.475 (kN,m)
 L7 PY -001.055 0.025 (kN,m)
 L7 PY -001.055 2.475 (kN,m)
 G3 PY -002.109 0.025 (kN,m)
 G3 PY -002.109 2.475 (kN,m)

Members 412 and 416

W1 PZ -000.040 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.222 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.033 0.000 (kN,m)
 W5 PX -000.187 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 413 and 417

W1 PZ -000.207 0.000 (kN,m)
 W1 PZ -000.212 2.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.938 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W3 PZ -000.000 2.000 (kN,m)
 W4 PZ -000.959 2.000 (kN,m)
 W6 PZ -000.000 2.000 (kN,m)
 W2 PX -000.067 0.000 (kN,m)
 W2 PX -000.069 2.000 (kN,m)
 W5 PX -000.268 0.000 (kN,m)
 W5 PX -000.275 2.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W7 PX -000.000 2.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 2.000 (kN,m)

Members 414 and 418

W1 PZ -000.040 0.000 (kN,m)
 W4 PZ -000.222 0.000 (kN,m)

Members 415 and 419

W1 PZ -000.207 0.000 (kN,m)
 W1 PZ -000.212 2.000 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 024****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ -000.938 0.000 (kN,m)
W4 PZ -000.959 2.000 (kN,m)

Members 420, 424, 428, 432 and 436

W1 PZ -000.023 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.166 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.024 0.000 (kN,m)
W5 PX -000.135 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ -000.198 0.000 (kN,m)
W1 PZ -000.202 2.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.834 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W3 PZ -000.000 2.000 (kN,m)
W4 PZ -000.853 2.000 (kN,m)
W6 PZ -000.000 2.000 (kN,m)
W2 PX -000.067 0.000 (kN,m)
W2 PX -000.069 2.000 (kN,m)
W5 PX -000.215 0.000 (kN,m)
W5 PX -000.220 2.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W7 PX -000.000 2.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)
W8 PX -000.000 2.000 (kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ -000.023 0.000 (kN,m)
W4 PZ -000.166 0.000 (kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ -000.198 0.000 (kN,m)
W1 PZ -000.202 2.000 (kN,m)
W4 PZ -000.834 0.000 (kN,m)
W4 PZ -000.853 2.000 (kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Relased	® Fixed			
11	ROO ROO	12	ROO ROO	13	ROO ROO	14	ROO ROO
15	ROO ROO	26	ROO ROO	27	ROO ROO	28	ROO ROO
29	ROO ROO	30	ROO ROO	41	ROO ROO	42	ROO ROO
43	ROO ROO	44	ROO ROO	45	ROO ROO	56	ROO ROO
57	ROO ROO	58	ROO ROO	59	ROO ROO	60	ROO ROO
61	ROO ROO	62	ROO ROO	63	ROO ROO	64	ROO ROO
65	ROO ROO	66	ROO ROO	67	ROO ROO	68	ROO ROO
69	ROO ROO	70	ROO ROO	71	ROO ROO	72	ROO ROO
73	ROO ROO	74	ROO ROO	75	ROO ROO	76	ROO ROO
77	ROO ROO	78	ROO ROO	79	ROO ROO	80	ROO ROO
81	ROO ROO	82	ROO ROO	83	ROO ROO	84	ROO ROO
85	ROO ROO	86	ROO ROO	87	ROO ROO	88	ROO ROO
89	ROO ROO	90	ROO ROO	101	ROO ROO	102	ROO ROO
103	ROO ROO	104	ROO ROO	105	ROO ROO	106	ROO ROO
107	ROO ROO	108	ROO ROO	109	ROO ROO	110	ROO ROO
111	ROO ROO	112	ROO ROO	113	ROO ROO	114	ROO ROO
115	ROO ROO	116	ROO ROO	117	ROO ROO	118	ROO ROO
119	ROO ROO	130	ROO ROO	131	ROO ROO	132	ROO ROO
133	ROO ROO	134	ROO ROO	145	ROO ROO	146	ROO ROO
147	ROO ROO	148	ROO ROO	149	ROO ROO	150	ROO ROO
151	ROO ROO	152	ROO ROO	153	ROO ROO	154	ROO ROO
155	ROO ROO	156	ROO ROO	157	ROO ROO	158	ROO ROO
159	ROO ROO	160	ROO ROO	161	ROO ROO	162	ROO ROO
163	ROO ROO	164	ROO ROO	165	ROO ROO	166	ROO ROO
167	ROO ROO	168	ROO ROO	169	ROO ROO	178	ROO ROO
179	ROO ROO	180	ROO ROO	181	ROO ROO	190	ROO ROO
191	ROO ROO	192	ROO ROO	193	ROO ROO	202	ROO ROO

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 025****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

203	ROO	ROO	204	ROO	ROO	205	ROO	ROO	214	ROO	ROO
215	ROO	ROO	216	ROO	ROO	217	ROO	ROO	226	ROO	ROO
227	ROO	ROO	228	ROO	ROO	229	ROO	ROO	238	ROO	ROO
239	ROO	ROO	240	ROO	ROO	241	ROO	ROO	250	ROO	ROO
251	ROO	ROO	252	ROO	ROO	253	ROO	ROO	254	ROO	ROO
255	ROO	ROO	256	ROO	ROO	257	ROO	ROO	258	ROO	ROO
259	ROO	ROO	260	ROO	ROO	261	ROO	ROO	262	ROO	ROO
263	ROO	ROO	264	ROO	ROO	265	ROO	ROO	266	ROO	ROO
267	ROO	ROO	268	ROO	ROO	269	ROO	ROO	270	ROO	ROO
271	ROO	ROO	272	ROO	ROO	273	ROO	ROO	274	ROO	ROO
275	ROO	ROO	276	ROO	ROO	277	ROO	ROO	278	ROO	ROO
279	ROO	ROO	280	ROO	ROO	281	ROO	ROO	282	ROO	ROO
283	ROO	ROO	284	ROO	ROO	285	ROO	ROO	286	ROO	ROO
287	ROO	ROO	288	ROO	ROO	289	ROO	ROO	290	ROO	ROO
291	ROO	ROO	292	ROO	ROO	293	ROO	ROO	294	ROO	ROO
295	ROO	ROO	296	ROO	ROO	297	ROO	ROO	298	ROO	ROO
299	ROO	ROO	300	ROO	ROO	301	ROO	ROO	302	ROO	ROO
303	ROO	ROO	304	ROO	ROO	305	ROO	ROO	310	ROO	ROO
311	ROO	ROO	316	ROO	ROO	317	ROO	ROO	322	ROO	ROO
323	ROO	ROO	328	ROO	ROO	329	ROO	ROO	334	ROO	ROO
335	ROO	ROO	340	ROO	ROO	341	ROO	ROO	346	ROO	ROO
347	ROO	ROO	348	ROO	ROO	349	ROO	ROO	350	ROO	ROO
351	ROO	ROO	352	ROO	ROO	353	ROO	ROO	354	ROO	ROO
355	ROO	ROO	356	ROO	ROO	357	ROO	ROO	358	ROO	ROO
359	ROO	ROO	360	ROO	ROO	361	ROO	ROO	362	ROO	ROO
363	ROO	ROO	364	ROO	ROO	365	ROO	ROO	366	ROO	ROO
367	ROO	ROO	368	ROO	ROO	369	ROO	ROO	370	ROO	ROO
371	ROO	ROO	372	ROO	ROO	373	ROO	ROO	374	ROO	ROO
375	ROO	ROO	376	ROO	ROO	377	ROO	ROO	378	ROO	ROO
379	ROO	ROO	380	ROO	ROO	381	ROO	ROO	382	ROO	ROO
383	ROO	ROO	384	ROO	ROO	385	ROO	ROO	386	ROO	ROO
387	ROO	ROO	388	ROO	ROO	389	ROO	ROO	390	ROO	ROO
391	ROO	ROO	392	ROO	ROO	393	ROO	ROO	394	ROO	ROO
395	ROO	ROO	396	ROO	ROO	397	ROO	ROO	398	ROO	ROO
399	ROO	ROO	400	ROO	ROO	401	ROO	ROO	402	ROO	ROO
403	ROO	ROO	404	ROO	ROO	405	ROO	ROO	406	ROO	ROO
407	ROO	ROO	408	ROO	ROO	409	ROO	ROO	410	ROO	ROO
411	ROO	ROO	440	ROO	ROO	441	ROO	ROO	442	ROO	ROO
443	ROO	ROO	444	ROO	ROO	445	ROO	ROO	446	ROO	ROO
447	ROO	ROO	448	ROO	ROO	449	ROO	ROO	450	ROO	ROO
451	ROO	ROO	452	ROO	ROO	453	ROO	ROO			

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0104.050 0000.000 0104.050

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 026

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
2	-2.94	-0.10	0.01	2.94	-0.07	0.00	0.14	0.16
3	-3.64	-0.30	-10.25	10.88	-0.09	0.00	0.00	0.09
4	-4.43	-0.41	-14.26	14.94	0.00	-0.02	0.01	0.03
5	-5.20	-0.45	-9.78	11.09	0.09	-0.02	0.01	0.09
6	-5.84	-0.50	0.03	5.86	0.00	0.00	0.01	0.01
7	-6.25	-0.58	-10.23	12.00	-0.09	0.00	0.00	0.09
8	-6.36	-0.68	-14.73	16.06	0.00	-0.02	0.00	0.02
9	-6.13	-0.77	-10.06	11.81	0.09	-0.02	-0.01	0.09
10	-5.54	-0.84	0.02	5.61	-0.03	0.01	-0.01	0.04
11	-4.59	-0.93	-15.23	15.94	-0.15	0.01	-0.02	0.15
12	-3.31	-1.00	-24.57	24.81	-0.05	0.01	-0.02	0.06
13	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
14	0.00	-0.02	0.00	0.02	-0.04	0.00	0.01	0.04
15	0.09	-0.12	-10.25	10.25	-0.09	0.00	0.00	0.09
16	0.08	-0.19	-14.26	14.26	0.00	0.00	0.00	0.00
17	0.09	-0.25	-9.78	9.79	0.09	0.00	0.00	0.09
18	0.00	-0.35	0.00	0.35	0.00	0.00	0.00	0.01
19	0.09	-0.44	-10.23	10.24	-0.10	0.00	0.00	0.10
20	0.09	-0.50	-14.73	14.74	0.00	0.00	0.00	0.01
21	0.09	-0.55	-10.06	10.07	0.09	0.01	0.00	0.09
22	0.00	-0.63	0.00	0.63	-0.03	0.01	0.00	0.03
23	0.11	-0.77	-15.23	15.25	-0.15	0.01	0.00	0.15
24	0.24	-0.85	-24.57	24.59	-0.05	0.01	0.01	0.05
25	0.00	0.00	0.19	0.19	-0.02	0.00	0.42	0.43
26	-2.79	-0.03	0.01	2.79	-0.02	0.00	0.11	0.11
27	-3.49	0.15	-2.33	4.20	0.00	-0.02	0.00	0.02
28	-4.31	-0.25	0.01	4.32	-0.04	-0.01	0.01	0.05
29	-5.10	-0.35	-10.18	11.39	-0.08	-0.01	0.01	0.08
30	-5.76	-0.44	-14.05	15.20	0.00	0.00	0.01	0.01
31	-6.20	-0.52	-9.83	11.63	0.09	-0.02	0.00	0.09
32	-6.34	-0.60	0.03	6.37	0.00	-0.03	0.00	0.03
33	-6.13	-0.69	-10.07	11.81	-0.08	-0.01	-0.01	0.08
34	-5.57	-0.80	-14.05	15.13	0.01	-0.01	-0.01	0.02
35	-4.64	-1.02	-9.34	10.48	0.09	-0.04	-0.01	0.10
36	-3.39	-1.21	-0.02	3.60	-0.08	-0.05	-0.02	0.10
37	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
38	0.00	-0.03	0.00	0.03	-0.01	0.00	0.00	0.01
39	0.09	-0.15	-2.33	2.34	0.00	0.00	0.00	0.01
40	0.00	-0.26	0.00	0.26	-0.04	0.01	0.00	0.04
41	0.09	-0.37	-10.18	10.19	-0.08	0.01	0.00	0.08
42	0.00	-0.47	-14.05	14.06	0.00	0.02	0.00	0.02
43	0.09	-0.56	-9.83	9.84	0.09	0.02	0.00	0.09
44	0.00	-0.65	0.00	0.65	0.00	0.02	0.00	0.02
45	0.09	-0.74	-10.07	10.10	-0.08	0.03	0.00	0.09
46	0.00	-0.82	-14.05	14.07	0.00	0.03	0.00	0.03
47	0.11	-0.89	-9.34	9.38	0.09	0.03	0.00	0.10
48	0.00	-0.95	0.00	0.95	-0.08	0.04	0.01	0.09
49	0.00	0.00	0.48	0.48	-0.06	0.00	0.41	0.41
50	-2.67	-0.04	0.01	2.67	-0.06	0.00	0.11	0.12
51	-3.52	-0.18	-7.63	8.40	-0.06	0.00	0.00	0.06
52	-4.32	-0.31	-10.51	11.37	0.00	0.00	0.01	0.01
53	-5.12	-0.44	-7.28	8.91	0.06	0.00	0.01	0.06
54	-5.78	-0.56	0.03	5.81	0.00	0.00	0.00	0.00
55	-6.21	-0.67	-7.54	9.80	-0.06	0.00	0.00	0.06
56	-6.35	-0.78	-10.71	12.47	0.00	0.00	0.00	0.00
57	-6.15	-0.89	-7.33	9.61	0.07	0.00	0.00	0.07
58	-5.59	-0.98	0.02	5.67	-0.03	0.00	-0.01	0.03
59	-4.66	-1.07	-12.17	13.08	-0.12	0.00	-0.01	0.12

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Job Ref : B11323

Sheet : SD / 027

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
60	-3.41	-1.16	-20.17	20.49	-0.06	0.00	-0.01	0.06
61	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
62	0.00	-0.03	0.00	0.03	-0.03	0.00	0.00	0.03
63	0.09	-0.16	-7.63	7.63	-0.06	0.00	0.00	0.06
64	0.00	-0.27	-10.51	10.52	0.00	0.00	0.00	0.00
65	0.09	-0.38	-7.28	7.29	0.06	0.01	0.00	0.06
66	0.00	-0.49	0.00	0.49	0.00	0.01	0.00	0.01
67	0.09	-0.59	-7.54	7.57	-0.06	0.01	0.00	0.06
68	0.00	-0.68	-10.71	10.73	0.00	0.01	0.00	0.01
69	0.09	-0.76	-7.33	7.37	0.07	0.01	0.00	0.07
70	0.00	-0.84	0.00	0.84	-0.03	0.01	0.00	0.03
71	0.11	-0.92	-12.17	12.21	-0.12	0.02	0.00	0.12
72	0.00	-0.99	-20.17	20.20	-0.06	0.02	0.01	0.06
73	0.00	0.00	0.15	0.15	-0.02	0.00	0.39	0.39
74	-2.58	-0.04	0.01	2.58	-0.02	0.00	0.10	0.11
75	-3.53	-0.17	-1.76	3.95	0.00	0.00	0.00	0.00
76	-4.33	-0.31	0.01	4.35	-0.03	-0.01	0.01	0.04
77	-5.13	-0.43	-7.79	9.34	-0.06	-0.01	0.01	0.06
78	-5.79	-0.55	-10.83	12.29	0.00	-0.01	0.01	0.01
79	-6.23	-0.66	-7.54	9.80	0.07	-0.01	0.00	0.07
80	-6.36	-0.77	0.03	6.41	0.00	-0.01	0.00	0.01
81	-6.16	-0.87	-7.52	9.76	-0.06	-0.02	0.00	0.07
82	-5.60	-0.97	-10.49	11.93	0.00	-0.02	-0.01	0.02
83	-4.67	-1.06	-6.71	8.25	0.07	-0.02	-0.01	0.07
84	-3.42	-1.14	-0.01	3.61	-0.09	-0.02	-0.01	0.09
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	-0.03	0.00	0.03	-0.01	0.00	0.00	0.01
87	0.09	-0.15	-1.76	1.77	0.00	0.00	0.00	0.00
88	0.00	-0.27	0.00	0.27	-0.03	0.01	0.00	0.03
89	0.09	-0.38	-7.79	7.80	-0.06	0.01	0.00	0.06
90	0.00	-0.48	-10.83	10.84	0.00	0.01	0.00	0.01
91	0.09	-0.58	-7.54	7.56	0.07	0.02	0.00	0.07
92	0.00	-0.67	0.00	0.67	0.00	0.02	0.00	0.02
93	0.09	-0.75	-7.52	7.56	-0.06	0.02	0.00	0.07
94	0.00	-0.83	-10.48	10.52	0.00	0.03	0.00	0.03
95	0.11	-0.90	-6.71	6.78	0.07	0.03	0.00	0.07
96	0.00	-0.96	0.00	0.96	-0.09	0.03	0.01	0.10
97	0.00	0.00	0.48	0.48	-0.05	0.00	0.38	0.38
98	-2.51	-0.04	0.00	2.51	-0.05	0.00	0.10	0.12
99	-3.54	-0.18	-7.63	8.42	-0.06	0.00	0.00	0.06
100	-4.34	-0.31	-10.52	11.39	0.00	0.00	0.01	0.01
101	-5.14	-0.44	-7.28	8.92	0.06	0.00	0.01	0.06
102	-5.80	-0.56	0.03	5.83	0.00	0.00	0.01	0.01
103	-6.24	-0.68	-7.56	9.83	-0.06	0.00	0.00	0.06
104	-6.37	-0.79	-10.75	12.52	0.00	0.00	0.00	0.00
105	-6.17	-0.89	-7.37	9.65	0.07	0.01	0.00	0.07
106	-5.61	-0.99	0.02	5.69	-0.02	0.01	-0.01	0.03
107	-4.68	-1.08	-11.87	12.80	-0.11	0.01	-0.01	0.12
108	-3.43	-1.17	-19.52	19.85	-0.05	0.01	-0.01	0.05
109	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
110	0.00	-0.03	0.00	0.03	-0.03	0.00	0.00	0.03
111	0.09	-0.16	-7.63	7.63	-0.06	0.00	0.00	0.06
112	0.00	-0.27	-10.52	10.53	0.00	0.00	0.00	0.00
113	0.09	-0.38	-7.28	7.29	0.06	0.00	0.00	0.06
114	0.00	-0.49	0.00	0.49	0.00	0.01	0.00	0.01
115	0.09	-0.59	-7.56	7.59	-0.07	0.01	0.00	0.07
116	0.00	-0.68	-10.75	10.77	0.00	0.01	0.00	0.01
117	0.09	-0.76	-7.37	7.41	0.07	0.01	0.00	0.07

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Sheet : SD / 028

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Date : 29 September 2010 / Ver. 2010.06

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Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
118	0.00	-0.84	0.00	0.84	-0.02	0.01	0.00	0.03
119	0.11	-0.92	-11.87	11.90	-0.11	0.01	0.00	0.12
120	0.00	-0.99	-19.52	19.54	-0.05	0.01	0.01	0.06
121	0.00	0.00	0.15	0.15	-0.02	0.00	0.37	0.37
122	-2.47	-0.04	0.00	2.47	-0.02	0.00	0.10	0.10
123	-3.55	-0.17	-1.76	3.97	0.00	0.00	0.00	0.01
124	-4.35	-0.31	0.01	4.36	-0.03	-0.01	0.01	0.04
125	-5.15	-0.43	-7.80	9.36	-0.06	-0.01	0.01	0.06
126	-5.81	-0.55	-10.84	12.31	0.00	-0.01	0.01	0.02
127	-6.24	-0.67	-7.55	9.82	0.07	-0.02	0.00	0.07
128	-6.38	-0.78	0.03	6.43	0.00	-0.02	0.00	0.02
129	-6.18	-0.88	-7.55	9.80	-0.06	-0.02	0.00	0.07
130	-5.61	-0.98	-10.55	11.99	0.00	-0.02	-0.01	0.03
131	-4.69	-1.07	-6.80	8.33	0.07	-0.03	-0.01	0.07
132	-3.44	-1.16	-0.01	3.63	-0.09	-0.03	-0.01	0.09
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.03	0.00	0.03	-0.01	0.00	0.00	0.01
135	0.09	-0.15	-1.76	1.77	0.00	0.00	0.00	0.00
136	0.00	-0.27	0.00	0.27	-0.03	0.01	0.00	0.03
137	0.09	-0.38	-7.80	7.81	-0.06	0.01	0.00	0.06
138	0.00	-0.48	-10.84	10.85	0.00	0.01	0.00	0.01
139	0.09	-0.58	-7.55	7.57	0.07	0.01	0.00	0.07
140	0.00	-0.67	0.00	0.67	0.00	0.02	0.00	0.02
141	0.09	-0.76	-7.55	7.59	-0.06	0.02	0.00	0.07
142	0.00	-0.83	-10.55	10.58	0.00	0.02	0.00	0.02
143	0.11	-0.91	-6.80	6.86	0.07	0.03	0.00	0.07
144	0.00	-0.97	0.00	0.97	-0.09	0.03	0.01	0.09
145	0.00	0.00	0.48	0.48	-0.06	0.00	0.36	0.37
146	-2.45	-0.03	0.00	2.45	-0.06	0.00	0.12	0.13
147	-3.56	-0.10	-7.60	8.39	-0.06	0.00	0.00	0.06
148	-4.35	-0.17	-10.57	11.43	0.00	0.00	0.01	0.01
149	-5.15	-0.24	-7.26	8.90	0.07	0.00	0.01	0.07
150	-5.81	-0.31	0.03	5.82	0.00	0.00	0.01	0.01
151	-6.24	-0.37	-7.62	9.85	-0.07	0.00	0.01	0.07
152	-6.38	-0.43	-10.93	12.66	0.00	0.00	0.00	0.00
153	-6.18	-0.49	-7.41	9.66	0.07	0.00	0.00	0.07
154	-5.62	-0.54	0.02	5.64	-0.03	0.01	-0.01	0.03
155	-4.69	-0.59	-12.30	13.18	-0.12	0.01	-0.01	0.12
156	-3.44	-0.64	-20.28	20.58	-0.05	0.01	-0.02	0.05
157	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
158	0.00	-0.02	0.00	0.02	-0.03	0.00	0.01	0.03
159	0.09	-0.09	-7.60	7.60	-0.07	0.00	0.00	0.07
160	-0.04	-0.15	-10.57	10.57	0.00	0.00	0.00	0.00
161	0.09	-0.21	-7.26	7.26	0.07	0.01	0.00	0.07
162	0.00	-0.27	0.00	0.27	0.00	0.01	0.00	0.01
163	0.09	-0.34	-7.62	7.62	-0.07	0.01	0.00	0.07
164	-0.05	-0.39	-10.93	10.93	0.00	0.01	0.00	0.01
165	0.09	-0.43	-7.41	7.42	0.07	0.01	0.00	0.07
166	0.00	-0.48	0.00	0.48	-0.03	0.01	0.00	0.03
167	0.11	-0.59	-12.30	12.31	-0.12	0.01	0.00	0.12
168	-0.16	-0.65	-20.28	20.29	-0.05	0.02	0.02	0.05
169	-1.76	-1.03	-22.27	22.36	0.15	-0.01	-0.03	0.15
170	-1.77	-0.89	-22.27	22.36	0.15	0.01	0.00	0.15
171	-1.86	-1.37	-21.31	21.43	-0.01	-0.04	-0.02	0.05
172	-1.78	-1.14	-21.31	21.42	-0.01	0.04	0.00	0.04
173	-1.87	-1.24	-20.59	20.71	0.12	0.00	-0.02	0.12
174	-1.78	-1.05	-20.59	20.70	0.12	0.02	0.00	0.12
175	-1.88	-1.22	-19.92	20.05	0.00	-0.02	-0.02	0.03

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Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
176	-1.78	-1.03	-19.93	20.03	0.00	0.03	0.00	0.03
177	-1.88	-1.25	-19.57	19.70	0.11	0.01	-0.02	0.12
178	-1.78	-1.05	-19.58	19.69	0.12	0.02	0.00	0.12
179	-1.89	-1.24	-19.25	19.38	0.00	-0.03	-0.02	0.03
180	-1.78	-1.04	-19.25	19.36	0.00	0.03	0.00	0.03
181	-1.89	-0.68	-19.16	19.27	0.12	0.01	-0.02	0.13
182	-1.78	-0.68	-19.17	19.26	0.13	0.02	0.00	0.13
183	-0.13	-1.26	-0.04	1.27	0.16	-0.01	-0.03	0.16
184	0.00	-1.16	0.00	1.16	0.16	0.01	-0.02	0.16
185	-0.16	-1.45	-0.41	1.52	0.17	-0.04	-0.02	0.17
186	-0.04	-1.39	-0.38	1.44	0.16	0.04	-0.01	0.17
187	-0.08	-1.28	-0.07	1.29	0.15	0.00	-0.01	0.15
188	0.00	-1.18	0.00	1.18	0.15	0.02	-0.01	0.15
189	-0.06	-1.27	-0.33	1.31	0.15	-0.02	-0.01	0.16
190	-0.02	-1.21	-0.31	1.25	0.15	0.04	-0.01	0.16
191	-0.03	-1.29	-0.07	1.29	0.14	0.01	-0.01	0.15
192	0.00	-1.15	0.00	1.15	0.14	0.02	-0.01	0.14
193	0.07	-1.29	-0.36	1.34	0.15	-0.03	-0.01	0.15
194	0.03	-1.20	-0.34	1.25	0.15	0.03	-0.01	0.15
195	0.12	-0.78	-0.03	0.79	0.14	0.01	-0.01	0.14
196	0.00	-0.88	0.00	0.88	0.14	0.02	-0.01	0.14

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	14.82C	0.00	-1.00	0.00	0.00	0.00		0.00	0.34
	2	14.82C	0.00	-1.00	0.00	-0.50	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	9.45C	0.00	-0.01	0.35	-0.09	-0.27	0.00	0.00	0.75
	3	9.45C	0.00	0.06	0.27	0.03	0.26	@ 0.000	@ 0.000	@ 0.424
3	3	5.73C	0.00	-0.17	0.26	0.02	-0.07	0.00	0.00	0.53
	4	5.73C	0.00	-0.02	0.09	-0.02	0.11	@ 0.000	@ 0.000	@ 1.414
4	4	5.18C	0.00	-0.16	0.08	0.01	0.12	0.00	0.00	0.57
	5	5.18C	0.00	-0.01	-0.10	-0.01	-0.09	@ 0.000	@ 0.000	@ 0.566
5	5	4.94C	0.00	-0.17	-0.11	0.01	0.28	0.00	0.00	1.08
	6	4.94C	0.00	-0.01	-0.30	-0.01	-0.31	@ 0.000	@ 0.000	@ 1.515
6	13	3.51C	0.00	0.03	-0.22	0.00	0.00	0.00	0.00	0.07
	14	3.51C	0.00	0.03	-0.22	0.01	-0.11	@ 0.000	@ 0.000	@ 0.290
7	14	3.36C	0.00	0.00	0.37	0.00	-0.29	0.00	0.00	0.90
	15	3.36C	0.00	0.00	0.28	0.00	0.27	@ 0.000	@ 0.000	@ 0.465
8	15	3.25C	0.00	0.00	0.26	0.00	-0.07	0.00	0.00	0.54
	16	3.25C	0.00	0.00	0.09	0.00	0.11	@ 0.000	@ 0.000	@ 1.394
9	16	3.08C	0.00	0.00	0.08	0.00	0.12	0.00	0.00	0.57
	17	3.08C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
10	17	2.86C	0.00	0.00	-0.11	0.00	0.28	0.00	0.00	1.09
	18	2.86C	0.00	0.00	-0.30	0.00	-0.32	@ 0.000	@ 0.000	@ 1.515

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 030

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)										
Member No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	5.80T	0.00	-1.04	0.00	0.00	0.00		0.00	0.35
	26	5.80T	0.00	-1.04	0.00	-0.52	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	6.13T	0.00	-0.03	0.16	-0.07	-0.07	0.00	0.00	0.52
	27	6.13T	0.00	0.05	0.07	0.02	0.07	@ 0.000	@ 0.000	@ 0.727
18	27	4.92C	0.00	-0.17	0.06	0.02	0.10	0.00	0.00	0.43
	28	4.92C	0.00	-0.02	-0.11	-0.02	-0.12	@ 0.000	@ 0.000	@ 1.495
19	28	4.54C	0.00	-0.17	0.46	0.02	-0.29	0.00	0.00	0.88
	29	4.54C	0.00	-0.02	0.28	-0.02	0.28	@ 0.000	@ 0.000	@ 0.444
20	29	5.28C	0.00	-0.17	0.27	0.01	-0.07	0.00	0.00	0.52
	30	5.28C	0.00	-0.01	0.09	-0.01	0.11	@ 0.000	@ 0.000	@ 1.414
21	37	5.75C	0.00	0.02	-0.06	0.00	0.00	0.00	0.00	0.02
	38	5.75C	0.00	0.02	-0.06	0.01	-0.03	@ 0.000	@ 0.000	@ 0.290
22	38	5.47C	0.00	0.00	0.16	0.00	-0.07	0.00	0.00	0.24
	39	5.47C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.535
23	39	5.19C	0.00	0.00	0.06	0.00	0.10	0.00	0.00	0.43
	40	5.19C	0.00	0.00	-0.11	0.00	-0.12	@ 0.000	@ 0.000	@ 1.495
24	40	4.93C	0.00	0.00	0.46	0.00	-0.29	0.00	0.00	0.88
	41	4.93C	0.00	0.00	0.28	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
25	41	4.70C	0.00	0.00	0.27	0.00	-0.07	0.00	0.00	0.52
	42	4.70C	0.00	0.00	0.09	0.00	0.11	@ 0.000	@ 0.000	@ 1.414
31	49	6.75C	0.00	-0.99	0.00	0.00	0.00		0.00	0.33
	50	6.75C	0.00	-0.99	0.00	-0.50	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	6.47C	0.00	-0.01	0.26	-0.06	-0.20	0.00	0.00	0.56
	51	6.47C	0.00	0.04	0.20	0.02	0.20	@ 0.000	@ 0.000	@ 0.424
33	51	6.18C	0.00	-0.13	0.20	0.03	-0.05	0.00	0.00	0.38
	52	6.18C	0.00	-0.02	0.06	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
34	52	5.90C	0.00	-0.13	0.06	0.02	0.09	0.00	0.00	0.41
	53	5.90C	0.00	-0.02	-0.08	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.566
35	53	5.63C	0.00	-0.13	-0.08	0.02	0.21	0.00	0.00	0.79
	54	5.63C	0.00	-0.02	-0.22	-0.02	-0.23	@ 0.000	@ 0.000	@ 1.515
36	61	5.96C	0.00	0.02	-0.16	0.00	0.00	0.00	0.00	0.05
	62	5.96C	0.00	0.02	-0.16	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
37	62	5.69C	0.00	0.00	0.27	0.00	-0.22	0.00	0.00	0.67
	63	5.69C	0.00	0.00	0.21	0.00	0.20	@ 0.000	@ 0.000	@ 0.444
38	63	5.43C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.39
	64	5.43C	0.00	0.00	0.06	0.00	0.08	@ 0.000	@ 0.000	@ 1.394
39	64	5.14C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.41
	65	5.14C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 031

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	4.83C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.79
	66	4.83C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.515
46	73	6.68C	0.00	-0.95	0.00	0.00	0.00		0.00	0.32
	74	6.68C	0.00	-0.95	0.00	-0.48	0.00	@ 0.000	@ 0.000	@ 0.290
47	74	6.39C	0.00	-0.02	0.12	-0.05	-0.05	0.00	0.00	0.47
	75	6.39C	0.00	0.03	0.05	0.01	0.06	@ 0.000	@ 0.000	@ 0.788
48	75	6.11C	0.00	-0.13	0.05	0.02	0.08	0.00	0.00	0.33
	76	6.11C	0.00	-0.02	-0.08	-0.02	-0.09	@ 0.000	@ 0.000	@ 1.495
49	76	5.83C	0.00	-0.13	0.35	0.02	-0.22	0.00	0.00	0.67
	77	5.83C	0.00	-0.02	0.22	-0.02	0.21	@ 0.000	@ 0.000	@ 0.444
50	77	5.55C	0.00	-0.13	0.21	0.01	-0.06	0.00	0.00	0.40
	78	5.55C	0.00	-0.01	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
51	85	5.89C	0.00	0.02	-0.05	0.00	0.00	0.00	0.00	0.02
	86	5.89C	0.00	0.02	-0.05	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
52	86	5.61C	0.00	0.00	0.12	0.00	-0.06	0.00	0.00	0.18
	87	5.61C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
53	87	5.32C	0.00	0.00	0.05	0.00	0.08	0.00	0.00	0.33
	88	5.32C	0.00	0.00	-0.08	0.00	-0.09	@ 0.000	@ 0.000	@ 1.495
54	88	5.04C	0.00	0.00	0.35	0.00	-0.22	0.00	0.00	0.68
	89	5.04C	0.00	0.00	0.22	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
55	89	4.78C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.40
	90	4.78C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
91	97	6.79C	0.00	-0.92	0.00	0.00	0.00		0.00	0.31
	98	6.79C	0.00	-0.92	0.00	-0.46	0.00	@ 0.000	@ 0.000	@ 0.290
92	98	6.50C	0.00	-0.02	0.26	-0.05	-0.20	0.00	0.00	0.56
	99	6.50C	0.00	0.03	0.20	0.01	0.20	@ 0.000	@ 0.000	@ 0.424
93	99	6.22C	0.00	-0.13	0.20	0.02	-0.05	0.00	0.00	0.38
	100	6.22C	0.00	-0.02	0.06	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
94	100	5.93C	0.00	-0.13	0.06	0.02	0.09	0.00	0.00	0.41
	101	5.93C	0.00	-0.02	-0.08	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.566
95	101	5.65C	0.00	-0.13	-0.08	0.01	0.21	0.00	0.00	0.80
	102	5.65C	0.00	-0.01	-0.22	-0.02	-0.23	@ 0.000	@ 0.000	@ 1.515
96	109	5.97C	0.00	0.02	-0.16	0.00	0.00	0.00	0.00	0.05
	110	5.97C	0.00	0.02	-0.16	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
97	110	5.70C	0.00	0.00	0.27	0.00	-0.22	0.00	0.00	0.67
	111	5.70C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
98	111	5.44C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.39
	112	5.44C	0.00	0.00	0.06	0.00	0.08	@ 0.000	@ 0.000	@ 1.394

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Job Ref : B11323

Sheet : SD / 032

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	5.15C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.41
	113	5.15C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
100	113	4.83C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.80
	114	4.83C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.515
120	121	6.73C	0.00	-0.91	0.00	0.00	0.00		0.00	0.31
	122	6.73C	0.00	-0.91	0.00	-0.46	0.00		@ 0.000	@ 0.290
121	122	6.44C	0.00	-0.03	0.12	-0.05	-0.05	0.00	0.00	0.44
	123	6.44C	0.00	0.03	0.05	0.01	0.06	@ 0.000	@ 0.000	@ 0.808
122	123	6.16C	0.00	-0.13	0.05	0.02	0.08	0.00	0.00	0.33
	124	6.16C	0.00	-0.02	-0.08	-0.02	-0.09	@ 0.000	@ 0.000	@ 1.495
123	124	5.88C	0.00	-0.13	0.35	0.02	-0.22	0.00	0.00	0.68
	125	5.88C	0.00	-0.02	0.22	-0.02	0.21	@ 0.000	@ 0.000	@ 0.444
124	125	5.60C	0.00	-0.13	0.21	0.01	-0.06	0.00	0.00	0.40
	126	5.60C	0.00	-0.01	0.07	-0.01	0.08	@ 0.000	@ 0.000	@ 1.414
125	133	5.92C	0.00	0.02	-0.05	0.00	0.00	0.00	0.00	0.02
	134	5.92C	0.00	0.02	-0.05	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
126	134	5.64C	0.00	0.00	0.12	0.00	-0.06	0.00	0.00	0.18
	135	5.64C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
127	135	5.35C	0.00	0.00	0.05	0.00	0.08	0.00	0.00	0.33
	136	5.35C	0.00	0.00	-0.08	0.00	-0.09	@ 0.000	@ 0.000	@ 1.495
128	136	5.08C	0.00	0.00	0.35	0.00	-0.22	0.00	0.00	0.68
	137	5.08C	0.00	0.00	0.22	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
129	137	4.81C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.40
	138	4.81C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
135	145	3.73C	0.00	-0.81	0.00	0.00	0.00		0.00	0.27
	146	3.73C	0.00	-0.81	0.00	-0.41	0.00		@ 0.000	@ 0.290
136	146	3.58C	0.00	-0.02	0.26	-0.06	-0.20	0.00	0.00	0.55
	147	3.58C	0.00	0.04	0.20	0.01	0.19	@ 0.000	@ 0.000	@ 0.424
137	147	3.43C	0.00	-0.12	0.20	0.02	-0.05	0.00	0.00	0.40
	148	3.43C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
138	148	3.27C	0.00	-0.12	0.06	0.01	0.09	0.00	0.00	0.42
	149	3.27C	0.00	-0.01	-0.08	-0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
139	149	3.12C	0.00	-0.12	-0.08	0.01	0.20	0.00	0.00	0.80
	150	3.12C	0.00	-0.01	-0.22	-0.01	-0.23	@ 0.000	@ 0.000	@ 1.515
140	157	3.29C	0.00	0.03	-0.16	0.00	0.00	0.00	0.00	0.05
	158	3.29C	0.00	0.03	-0.16	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
141	158	3.15C	0.00	0.00	0.27	0.00	-0.22	0.00	0.00	0.67
	159	3.15C	0.00	0.00	0.21	0.00	0.20	@ 0.000	@ 0.000	@ 0.465

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Job Ref : B11323

Sheet : SD / 033

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	3.02C	0.00	0.00	0.20	0.00	-0.05	0.00	0.00	0.40
	160	3.02C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.394
143	160	2.86C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.42
	161	2.86C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
144	161	2.67C	0.00	0.00	-0.08	0.00	0.20	0.00	0.00	0.80
	162	2.67C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.515
170	6	4.67C	0.00	-0.17	0.49	0.01	-0.32	0.00	0.00	1.10
	7	4.67C	0.00	-0.01	0.30	-0.01	0.29	@ 0.000	@ 0.000	@ 0.485
171	7	5.13T	0.00	-0.17	0.30	0.00	-0.08	0.00	0.00	0.58
	8	5.13T	0.00	0.00	0.10	0.00	0.12	@ 0.000	@ 0.000	@ 1.414
172	8	5.97T	0.00	-0.17	0.09	0.00	0.13	0.00	0.00	0.61
	9	5.97T	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
173	9	6.08T	0.00	-0.17	-0.11	-0.01	0.29	0.00	0.00	1.24
	10	6.08T	0.00	0.01	-0.32	0.01	-0.34	@ 0.000	@ 0.000	@ 1.495
174	18	2.68C	0.00	0.00	0.49	0.00	-0.32	0.00	0.00	1.09
	19	2.68C	0.00	0.00	0.30	0.00	0.28	@ 0.000	@ 0.000	@ 0.485
175	19	2.55C	0.00	-0.01	0.30	0.01	-0.08	0.00	0.00	0.58
	20	2.55C	0.00	-0.01	0.10	-0.01	0.12	@ 0.000	@ 0.000	@ 1.414
176	20	2.37C	0.00	0.00	0.09	0.00	0.13	0.00	0.00	0.60
	21	2.37C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
177	21	2.13C	0.00	-0.01	-0.11	0.01	0.29	0.00	0.00	1.25
	22	2.13C	0.00	-0.01	-0.32	-0.01	-0.35	@ 0.000	@ 0.000	@ 1.495
182	30	7.64C	0.00	-0.17	0.09	0.01	0.11	0.00	0.00	0.53
	31	7.64C	0.00	-0.01	-0.10	-0.01	-0.08	@ 0.000	@ 0.000	@ 0.566
183	31	9.31C	0.00	-0.17	-0.10	0.00	0.28	0.00	0.00	1.07
	32	9.31C	0.00	0.00	-0.30	0.00	-0.32	@ 0.000	@ 0.000	@ 1.515
184	32	10.31C	0.00	-0.17	0.51	0.00	-0.32	0.00	0.00	1.07
	33	10.31C	0.00	0.00	0.31	0.00	0.29	@ 0.000	@ 0.000	@ 0.485
185	33	10.60C	0.00	-0.16	0.30	-0.01	-0.08	0.00	0.00	0.55
	34	10.60C	0.00	0.01	0.09	0.01	0.11	@ 0.000	@ 0.000	@ 1.414
186	42	4.42C	0.00	0.00	0.09	0.00	0.11	0.00	0.00	0.53
	43	4.42C	0.00	0.00	-0.10	0.00	-0.08	@ 0.000	@ 0.000	@ 0.586
187	43	4.09C	0.00	0.00	-0.10	0.00	0.28	0.00	0.00	1.07
	44	4.09C	0.00	0.00	-0.30	0.00	-0.32	@ 0.000	@ 0.000	@ 1.515
188	44	3.82C	0.00	0.00	0.51	0.00	-0.32	0.00	0.00	1.08
	45	3.82C	0.00	0.00	0.31	0.00	0.29	@ 0.000	@ 0.000	@ 0.485
189	45	3.59C	0.00	0.00	0.30	0.00	-0.07	0.00	0.00	0.54
	46	3.59C	0.00	0.00	0.09	0.00	0.11	@ 0.000	@ 0.000	@ 1.414

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 034

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	5.35C	0.00	-0.13	0.37	0.01	-0.24	0.00	0.00	0.81
	55	5.35C	0.00	-0.01	0.23	-0.01	0.21	@ 0.000	@ 0.000	@ 0.485
195	55	5.08C	0.00	-0.12	0.22	0.00	-0.06	0.00	0.00	0.41
	56	5.08C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
196	56	4.81C	0.00	-0.12	0.07	0.00	0.09	0.00	0.00	0.42
	57	4.81C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
197	57	4.53C	0.00	-0.11	-0.08	-0.01	0.22	0.00	0.00	0.92
	58	4.53C	0.00	0.01	-0.24	0.01	-0.26	@ 0.000	@ 0.000	@ 1.495
198	66	4.53C	0.00	0.00	0.37	0.00	-0.24	0.00	0.00	0.81
	67	4.53C	0.00	0.00	0.23	0.00	0.21	@ 0.000	@ 0.000	@ 0.485
199	67	4.27C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.41
	68	4.27C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
200	68	3.97C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.42
	69	3.97C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
201	69	3.65C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.93
	70	3.65C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
206	78	5.27C	0.00	-0.12	0.07	0.01	0.09	0.00	0.00	0.41
	79	5.27C	0.00	-0.01	-0.08	-0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
207	79	4.99C	0.00	-0.12	-0.08	0.01	0.21	0.00	0.00	0.81
	80	4.99C	0.00	-0.01	-0.23	-0.01	-0.24	@ 0.000	@ 0.000	@ 1.515
208	80	4.71C	0.00	-0.12	0.38	-0.01	-0.24	0.00	0.00	0.81
	81	4.71C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
209	81	4.44C	0.00	-0.11	0.22	-0.01	-0.05	0.00	0.00	0.41
	82	4.44C	0.00	0.01	0.07	0.01	0.08	@ 0.000	@ 0.000	@ 1.414
210	90	4.49C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.41
	91	4.49C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
211	91	4.16C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.82
	92	4.16C	0.00	0.00	-0.23	0.00	-0.24	@ 0.000	@ 0.000	@ 1.515
212	92	3.87C	0.00	0.00	0.38	0.00	-0.24	0.00	0.00	0.81
	93	3.87C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
213	93	3.59C	0.00	0.00	0.22	0.00	-0.05	0.00	0.00	0.41
	94	3.59C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
218	102	5.37C	0.00	-0.12	0.37	0.01	-0.24	0.00	0.00	0.81
	103	5.37C	0.00	-0.01	0.23	-0.01	0.21	@ 0.000	@ 0.000	@ 0.485
219	103	5.10C	0.00	-0.12	0.22	0.01	-0.06	0.00	0.00	0.42
	104	5.10C	0.00	-0.01	0.07	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
220	104	4.82C	0.00	-0.12	0.07	-0.01	0.09	0.00	0.00	0.43
	105	4.82C	0.00	0.01	-0.08	0.01	-0.06	@ 0.000	@ 0.000	@ 0.566

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 035

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	4.55C	0.00	-0.11	-0.08	-0.01	0.22	0.00	0.00	0.92
	106	4.55C	0.00	0.01	-0.24	0.01	-0.25	@ 0.000	@ 0.000	@ 1.495
222	114	4.54C	0.00	0.00	0.37	0.00	-0.24	0.00	0.00	0.81
	115	4.54C	0.00	0.00	0.23	0.00	0.21	@ 0.000	@ 0.000	@ 0.485
223	115	4.27C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.42
	116	4.27C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
224	116	3.97C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.43
	117	3.97C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
225	117	3.65C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.92
	118	3.65C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
230	126	5.32C	0.00	-0.12	0.07	0.01	0.09	0.00	0.00	0.41
	127	5.32C	0.00	-0.01	-0.08	-0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
231	127	5.05C	0.00	-0.12	-0.08	0.01	0.21	0.00	0.00	0.82
	128	5.05C	0.00	-0.01	-0.23	-0.01	-0.24	@ 0.000	@ 0.000	@ 1.515
232	128	4.78C	0.00	-0.12	0.38	-0.01	-0.24	0.00	0.00	0.81
	129	4.78C	0.00	0.01	0.23	0.01	0.22	@ 0.000	@ 0.000	@ 0.485
233	129	4.51C	0.00	-0.11	0.22	-0.01	-0.06	0.00	0.00	0.41
	130	4.51C	0.00	0.01	0.07	0.01	0.08	@ 0.000	@ 0.000	@ 1.414
234	138	4.52C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.41
	139	4.52C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
235	139	4.21C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.82
	140	4.21C	0.00	0.00	-0.23	0.00	-0.24	@ 0.000	@ 0.000	@ 1.515
236	140	3.91C	0.00	0.00	0.38	0.00	-0.24	0.00	0.00	0.81
	141	3.91C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
237	141	3.65C	0.00	0.00	0.22	0.00	-0.05	0.00	0.00	0.41
	142	3.65C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
242	150	2.96C	0.00	-0.12	0.37	-0.01	-0.24	0.00	0.00	0.82
	151	2.96C	0.00	0.01	0.23	0.01	0.21	@ 0.000	@ 0.000	@ 0.485
243	151	2.81C	0.00	-0.12	0.22	0.01	-0.06	0.00	0.00	0.44
	152	2.81C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
244	152	2.65C	0.00	-0.12	0.07	-0.01	0.09	0.00	0.00	0.45
	153	2.65C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.566
245	153	2.50C	0.00	-0.11	-0.08	-0.01	0.22	0.00	0.00	0.94
	154	2.50C	0.00	0.01	-0.24	0.01	-0.26	@ 0.000	@ 0.000	@ 1.495
246	162	2.51C	0.00	0.01	0.37	-0.01	-0.24	0.00	0.00	0.82
	163	2.51C	0.00	0.01	0.23	0.01	0.21	@ 0.000	@ 0.000	@ 0.485
247	163	2.38C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.44
	164	2.38C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.414

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Job Ref : B11323

Sheet : SD / 036

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	2.21C	0.00	0.01	0.07	-0.01	0.09	0.00	0.00	0.45
	165	2.21C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.586
249	165	2.02C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.95
	166	2.02C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
306	10	5.45T	0.00	-0.17	0.64	-0.01	-0.45	0.00	0.00	1.53
	11	5.45T	0.00	0.01	0.43	0.01	0.40	@ 0.000	@ 0.000	@ 0.485
307	11	4.05T	0.00	-0.17	0.42	-0.02	-0.19	0.00	0.00	0.89
	12	4.05T	0.00	0.02	0.21	0.02	0.23	@ 0.000	@ 0.000	@ 1.475
308	22	1.97C	0.00	0.00	0.64	0.00	-0.45	0.00	0.00	1.53
	23	1.97C	0.00	0.00	0.43	0.00	0.40	@ 0.000	@ 0.000	@ 0.485
309	23	1.87C	0.00	0.01	0.42	0.01	-0.19	0.00	0.00	0.88
	24	1.87C	0.00	0.01	0.21	0.01	0.23	@ 0.000	@ 0.000	@ 1.475
312	34	10.19C	0.00	-0.16	0.10	-0.02	0.13	0.00	0.00	0.57
	35	10.19C	0.00	0.02	-0.11	0.02	-0.09	@ 0.000	@ 0.000	@ 0.566
313	35	9.03C	0.00	-0.16	-0.11	-0.03	0.29	0.00	0.00	1.43
	36	9.03C	0.00	0.02	-0.33	0.02	-0.36	@ 0.000	@ 0.000	@ 1.475
314	46	3.31C	0.00	0.00	0.10	0.00	0.13	0.00	0.00	0.58
	47	3.31C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
315	47	2.98C	0.00	0.00	-0.11	0.00	0.29	0.00	0.00	1.43
	48	2.98C	0.00	0.00	-0.33	-0.01	-0.36	@ 0.000	@ 0.000	@ 1.475
318	58	4.27C	0.00	-0.11	0.50	-0.02	-0.36	0.00	0.00	1.20
	59	4.27C	0.00	0.02	0.34	0.02	0.33	@ 0.000	@ 0.000	@ 0.485
319	59	4.00C	0.00	-0.10	0.34	-0.03	-0.16	0.00	0.00	0.67
	60	4.00C	0.00	0.03	0.18	0.03	0.19	@ 0.000	@ 0.000	@ 1.515
320	70	3.37C	0.00	0.00	0.50	0.00	-0.36	0.00	0.00	1.20
	71	3.37C	0.00	0.00	0.34	0.00	0.33	@ 0.000	@ 0.000	@ 0.485
321	71	3.15C	0.00	0.00	0.34	0.00	-0.16	0.00	0.00	0.66
	72	3.15C	0.00	0.00	0.18	0.01	0.19	@ 0.000	@ 0.000	@ 1.515
324	82	4.16C	0.00	-0.11	0.07	-0.02	0.10	0.00	0.00	0.45
	83	4.16C	0.00	0.02	-0.09	0.02	-0.08	@ 0.000	@ 0.000	@ 0.545
325	83	3.89C	0.00	-0.10	-0.09	-0.03	0.22	0.00	0.00	1.19
	84	3.89C	0.00	0.03	-0.25	0.03	-0.29	@ 0.000	@ 0.000	@ 1.455
326	94	3.29C	0.00	0.00	0.07	0.00	0.10	0.00	0.00	0.45
	95	3.29C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.545
327	95	2.96C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	1.19
	96	2.96C	0.00	0.00	-0.25	0.00	-0.29	@ 0.000	@ 0.000	@ 1.455
330	106	4.27C	0.00	-0.11	0.50	-0.02	-0.35	0.00	0.00	1.18
	107	4.27C	0.00	0.02	0.34	0.02	0.32	@ 0.000	@ 0.000	@ 0.485

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Job Ref : B11323

Sheet : SD / 037

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	4.00C	0.00	-0.10	0.33	-0.03	-0.16	0.00	0.00	0.65
	108	4.00C	0.00	0.03	0.17	0.03	0.18	@ 0.000	@ 0.000	@ 1.515
332	118	3.37C	0.00	0.00	0.50	0.00	-0.35	0.00	0.00	1.18
	119	3.37C	0.00	0.00	0.34	0.00	0.32	@ 0.000	@ 0.000	@ 0.485
333	119	3.15C	0.00	0.00	0.33	0.00	-0.16	0.00	0.00	0.65
	120	3.15C	0.00	0.00	0.17	0.00	0.18	@ 0.000	@ 0.000	@ 1.515
336	130	4.25C	0.00	-0.11	0.07	-0.02	0.10	0.00	0.00	0.45
	131	4.25C	0.00	0.02	-0.09	0.02	-0.08	@ 0.000	@ 0.000	@ 0.545
337	131	3.98C	0.00	-0.10	-0.09	-0.03	0.22	0.00	0.00	1.17
	132	3.98C	0.00	0.03	-0.25	0.03	-0.28	@ 0.000	@ 0.000	@ 1.475
338	142	3.35C	0.00	0.00	0.07	0.00	0.10	0.00	0.00	0.45
	143	3.35C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.545
339	143	3.03C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	1.17
	144	3.03C	0.00	0.00	-0.25	0.01	-0.29	@ 0.000	@ 0.000	@ 1.475
342	154	2.34C	0.00	-0.11	0.50	-0.02	-0.36	0.00	0.00	1.22
	155	2.34C	0.00	0.02	0.34	0.02	0.32	@ 0.000	@ 0.000	@ 0.485
343	155	2.18C	0.00	-0.10	0.34	-0.03	-0.16	0.00	0.00	0.73
	156	2.18C	0.00	0.03	0.18	-0.03	0.20	@ 0.000	@ 0.000	@ 1.495
344	166	1.87C	0.00	0.01	0.50	-0.01	-0.36	0.00	0.00	1.22
	167	1.87C	0.00	0.01	0.34	0.01	0.32	@ 0.000	@ 0.000	@ 0.485
345	167	1.78C	0.00	0.01	0.34	0.00	-0.16	0.00	0.00	0.73
	168	1.78C	0.00	0.01	0.18	0.01	0.20	@ 0.000	@ 0.000	@ 1.495
412	12	2.38C	0.00	-0.17	0.20	-0.02	0.06	0.00	0.01	0.86
	169	2.38C	0.00	0.02	-0.02	0.02	0.02	@ 0.000	@ 0.000	@ 0.909
413	169	1.06C	0.00	-0.25	0.34	-0.02	0.60	0.00	0.00	1.66
	183	1.06C	0.00	0.30	-1.56	0.02	-0.60	@ 0.000	@ 0.000	@ 0.429
414	24	1.72C	0.00	-0.06	0.20	0.06	0.06	0.00	0.01	0.87
	170	1.72C	0.00	-0.06	-0.02	-0.06	0.02	@ 0.000	@ 0.000	@ 0.929
415	170	0.99C	0.00	0.05	0.33	-0.05	0.61	0.00	0.00	1.66
	184	0.99C	0.00	0.05	-1.56	0.04	-0.60	@ 0.000	@ 0.000	@ 0.429
416	36	7.12C	0.00	-0.16	0.93	-0.03	-0.69	0.00	0.00	2.15
	171	7.12C	0.00	0.03	0.71	0.03	0.72	@ 0.000	@ 0.000	@ 1.555
417	171	3.88C	0.00	-0.23	0.30	-0.04	0.68	0.00	0.00	2.24
	185	3.88C	0.00	0.31	-1.60	0.04	-0.61	@ 0.000	@ 0.000	@ 0.469
418	48	2.77C	0.00	-0.06	0.93	0.06	-0.69	0.00	0.00	2.18
	172	2.77C	0.00	-0.06	0.71	-0.06	0.73	@ 0.000	@ 0.000	@ 1.555
419	172	1.70C	0.00	0.05	0.30	-0.05	0.67	0.00	0.00	2.22
	186	1.70C	0.00	0.05	-1.60	0.05	-0.61	@ 0.000	@ 0.000	@ 0.469

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Job Ref : B11323

Sheet : SD / 038

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	3.73C	0.00	-0.10	0.22	-0.04	-0.02	0.00	0.00	0.80
	173	3.73C	0.00	0.04	0.05	0.04	0.09	@ 0.000	@ 0.000	@ 1.212
421	173	1.87C	0.00	-0.17	0.27	-0.05	0.57	0.00	0.00	1.63
	187	1.87C	0.00	0.27	-1.42	0.05	-0.56	@ 0.000	@ 0.000	@ 0.429
422	72	2.89C	0.00	-0.06	0.22	0.05	-0.02	0.00	0.00	0.82
	174	2.89C	0.00	-0.06	0.05	-0.06	0.09	@ 0.000	@ 0.000	@ 1.212
423	174	1.72C	0.00	0.06	0.27	-0.06	0.57	0.00	0.00	1.61
	188	1.72C	0.00	0.06	-1.42	0.05	-0.56	@ 0.000	@ 0.000	@ 0.429
424	84	3.62C	0.00	-0.10	0.82	-0.03	-0.63	0.00	0.00	2.03
	175	3.62C	0.00	0.03	0.65	0.03	0.67	@ 0.000	@ 0.000	@ 1.555
425	175	1.75C	0.00	-0.17	0.23	-0.04	0.64	0.00	0.00	2.10
	189	1.75C	0.00	0.26	-1.46	0.05	-0.57	@ 0.000	@ 0.000	@ 0.469
426	96	2.74C	0.00	-0.06	0.82	0.05	-0.64	0.00	0.00	2.05
	176	2.74C	0.00	-0.06	0.66	-0.06	0.67	@ 0.000	@ 0.000	@ 1.555
427	176	1.64C	0.00	0.05	0.23	-0.06	0.63	0.00	0.00	2.08
	190	1.64C	0.00	0.05	-1.46	0.05	-0.57	@ 0.000	@ 0.000	@ 0.469
428	108	3.74C	0.00	-0.10	0.21	-0.03	-0.01	0.00	0.00	0.75
	177	3.74C	0.00	0.03	0.04	0.03	0.07	@ 0.000	@ 0.000	@ 1.172
429	177	1.87C	0.00	-0.17	0.30	-0.04	0.54	0.00	0.00	1.54
	191	1.87C	0.00	0.27	-1.39	0.05	-0.53	@ 0.000	@ 0.000	@ 0.429
430	120	2.89C	0.00	-0.06	0.21	0.05	-0.01	0.00	0.00	0.77
	178	2.89C	0.00	-0.06	0.04	-0.06	0.08	@ 0.000	@ 0.000	@ 1.172
431	178	1.72C	0.00	0.05	0.30	-0.06	0.54	0.00	0.00	1.52
	192	1.72C	0.00	0.05	-1.39	0.05	-0.53	@ 0.000	@ 0.000	@ 0.429
432	132	3.72C	0.00	-0.10	0.80	-0.04	-0.61	0.00	0.00	1.96
	179	3.72C	0.00	0.04	0.63	0.03	0.65	@ 0.000	@ 0.000	@ 1.555
433	179	1.86C	0.00	-0.17	0.25	-0.05	0.61	0.00	0.00	2.03
	193	1.86C	0.00	0.27	-1.43	0.05	-0.55	@ 0.000	@ 0.000	@ 0.469
434	144	2.81C	0.00	-0.06	0.80	0.05	-0.62	0.00	0.00	1.98
	180	2.81C	0.00	-0.06	0.63	-0.06	0.65	@ 0.000	@ 0.000	@ 1.555
435	180	1.72C	0.00	0.06	0.25	-0.06	0.61	0.00	0.00	2.01
	194	1.72C	0.00	0.06	-1.43	0.05	-0.55	@ 0.000	@ 0.000	@ 0.469
436	156	2.02C	0.00	-0.10	0.17	-0.03	0.03		0.00	0.74
	181	2.02C	0.00	0.03	0.02	0.03	0.04	@ 0.000	@ 0.000	@ 1.030
437	181	1.01C	0.00	-0.17	0.32	-0.04	0.52		0.00	1.45
	195	1.01C	0.00	0.27	-1.37	0.05	-0.51	@ 0.000	@ 0.000	@ 0.429
438	168	1.65C	0.00	-0.05	0.18	0.05	0.03	0.00	0.00	0.75
	182	1.65C	0.00	-0.05	0.02	-0.06	0.05	@ 0.000	@ 0.000	@ 1.050

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 039

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	0.97C	0.00	0.06	0.32	-0.06	0.52	0.00	0.00	1.44
	196	0.97C	0.00	0.06	-1.37	0.05	-0.52	@ 0.000	@ 0.000	@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.909	14.825	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.135	0.000	-0.248
3	0.000	0.000	0.000	0.157	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	-0.024
5	0.000	0.000	0.000	-0.161	0.000	-0.020
6	0.000	0.000	0.000	0.000	0.000	-0.014
7	0.000	0.000	0.000	0.170	0.000	0.000
9	0.000	0.000	0.000	-0.168	0.000	0.015
10	0.000	0.000	0.000	0.054	0.000	0.026
11	0.000	0.000	0.000	0.277	0.000	0.038
12	0.000	0.000	0.000	0.089	0.000	0.045
13	-0.025	3.508	-0.216	0.000	0.000	0.000
14	0.024	0.000	0.898	0.079	0.000	0.000
15	0.000	0.000	0.000	0.164	0.000	0.000
17	0.000	0.000	0.000	-0.162	0.000	0.000
18	-2.934	0.000	1.544	0.000	0.000	0.000
19	0.000	0.000	0.000	0.173	0.000	0.000
21	0.000	0.000	0.000	-0.170	0.000	0.000
22	-2.934	0.000	1.895	0.057	0.000	0.000
23	0.000	0.000	0.000	0.278	0.000	0.000
24	0.000	0.000	0.000	0.090	0.000	-0.021
25	1.073	-5.797	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.040	0.000	-0.201
28	0.000	0.000	0.000	0.079	0.000	-0.019
29	0.000	0.000	0.000	0.147	0.000	-0.016
30	0.000	0.000	0.000	0.000	0.000	-0.012
31	0.000	0.000	0.000	-0.155	0.000	0.000
33	0.000	0.000	0.000	0.151	0.000	0.010
34	0.000	0.000	0.000	-0.010	0.000	0.019
35	0.000	0.000	0.000	-0.162	0.000	0.027
36	0.000	0.000	0.000	0.150	0.000	0.032
37	-0.019	5.752	-0.059	0.000	0.000	0.000
38	0.018	0.000	0.367	0.022	0.000	0.000
40	-1.632	0.000	1.115	0.079	0.000	0.000
41	0.000	0.000	0.000	0.149	0.000	0.000
43	0.000	0.000	0.000	-0.156	0.000	0.000
44	-1.695	0.000	1.570	0.000	0.000	0.000
45	0.000	0.000	0.000	0.153	0.000	0.000
47	0.000	0.000	0.000	-0.164	0.000	0.000
48	-5.989	0.000	2.532	0.152	0.000	-0.018
49	0.965	6.749	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.100	0.000	-0.195
51	0.000	0.000	0.000	0.113	0.000	0.000
52	0.000	0.000	0.000	0.000	0.000	-0.014
53	0.000	0.000	0.000	-0.115	0.000	-0.011
55	0.000	0.000	0.000	0.116	0.000	0.000
57	0.000	0.000	0.000	-0.120	0.000	0.000
58	0.000	0.000	0.000	0.048	0.000	0.013

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Job Ref : B11323

Sheet : SD / 040

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Date : 29 September 2010 / Ver. 2010.06

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
59	0.000	0.000	0.000	0.213	0.000	0.019
60	0.000	0.000	0.000	0.103	0.000	0.023
61	-0.019	5.961	-0.159	0.000	0.000	0.000
62	0.018	0.000	0.664	0.058	0.000	0.000
63	0.000	0.000	0.000	0.117	0.000	0.000
65	0.000	0.000	0.000	-0.115	0.000	0.000
66	1.192	0.000	1.160	0.000	0.000	0.000
67	0.000	0.000	0.000	0.117	0.000	0.000
69	0.000	0.000	0.000	-0.120	0.000	0.000
70	1.296	0.000	1.463	0.049	0.000	0.000
71	0.000	0.000	0.000	0.214	0.000	0.000
72	0.000	0.000	0.000	0.104	0.000	-0.021
73	0.929	6.679	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.031	0.000	-0.190
76	0.000	0.000	0.000	0.061	0.000	-0.017
77	0.000	0.000	0.000	0.115	0.000	-0.015
78	0.000	0.000	0.000	0.000	0.000	-0.011
79	0.000	0.000	0.000	-0.119	0.000	0.000
81	0.000	0.000	0.000	0.115	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.015
83	0.000	0.000	0.000	-0.122	0.000	0.022
84	0.000	0.000	0.000	0.165	0.000	0.027
85	-0.018	5.887	-0.045	0.000	0.000	0.000
86	0.017	0.000	0.274	0.017	0.000	0.000
88	-0.027	0.000	0.851	0.061	0.000	0.000
89	0.000	0.000	0.000	0.115	0.000	0.000
91	0.000	0.000	0.000	-0.118	0.000	0.000
92	-0.027	0.000	1.191	0.000	0.000	0.000
93	0.000	0.000	0.000	0.116	0.000	0.000
95	0.000	0.000	0.000	-0.122	0.000	0.000
96	0.413	0.000	2.207	0.166	0.000	-0.021
97	0.901	6.786	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.100	0.000	-0.186
99	0.000	0.000	0.000	0.113	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	-0.017
101	0.000	0.000	0.000	-0.116	0.000	-0.014
102	0.000	0.000	0.000	0.000	0.000	-0.011
103	0.000	0.000	0.000	0.118	0.000	0.000
105	0.000	0.000	0.000	-0.121	0.000	0.000
106	0.000	0.000	0.000	0.045	0.000	0.015
107	0.000	0.000	0.000	0.208	0.000	0.022
108	0.000	0.000	0.000	0.095	0.000	0.027
109	-0.018	5.967	-0.159	0.000	0.000	0.000
110	0.017	0.000	0.664	0.058	0.000	0.000
111	0.000	0.000	0.000	0.117	0.000	0.000
113	0.000	0.000	0.000	-0.115	0.000	0.000
114	-0.027	0.000	1.151	0.000	0.000	0.000
115	0.000	0.000	0.000	0.118	0.000	0.000
117	0.000	0.000	0.000	-0.121	0.000	0.000
118	-0.027	0.000	1.437	0.045	0.000	0.000
119	0.000	0.000	0.000	0.208	0.000	0.000
120	0.000	0.000	0.000	0.096	0.000	-0.020
121	0.888	6.725	0.000	0.000	0.000	0.000
122	0.000	0.000	0.000	0.031	0.000	-0.181
124	0.000	0.000	0.000	0.061	0.000	-0.017
125	0.000	0.000	0.000	0.115	0.000	-0.015
126	0.000	0.000	0.000	0.000	0.000	-0.012
127	0.000	0.000	0.000	-0.119	0.000	0.000

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
129	0.000	0.000	0.000	0.116	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.013
131	0.000	0.000	0.000	-0.122	0.000	0.020
132	0.000	0.000	0.000	0.155	0.000	0.025
133	-0.017	5.918	-0.045	0.000	0.000	0.000
134	0.016	0.000	0.274	0.017	0.000	0.000
136	1.642	0.000	0.844	0.061	0.000	0.000
137	0.000	0.000	0.000	0.115	0.000	0.000
139	0.000	0.000	0.000	-0.118	0.000	0.000
140	1.712	0.000	1.185	0.000	0.000	0.000
141	0.000	0.000	0.000	0.116	0.000	0.000
143	0.000	0.000	0.000	-0.122	0.000	0.000
144	5.677	0.000	2.112	0.157	0.000	-0.022
145	0.800	3.733	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.101	0.000	-0.213
147	0.000	0.000	0.000	0.116	0.000	0.000
148	0.000	0.000	0.000	0.000	0.000	-0.022
149	0.000	0.000	0.000	-0.122	0.000	-0.019
150	0.000	0.000	0.000	0.000	0.000	-0.015
151	0.000	0.000	0.000	0.125	0.000	0.000
153	0.000	0.000	0.000	-0.130	0.000	0.000
154	0.000	0.000	0.000	0.049	0.000	0.014
155	0.000	0.000	0.000	0.224	0.000	0.023
156	0.000	0.000	0.000	0.082	0.000	0.028
157	-0.026	3.291	-0.160	0.000	0.000	0.000
158	0.024	0.000	0.674	0.058	0.000	0.000
159	0.000	0.000	0.000	0.121	0.000	0.000
161	0.000	0.000	0.000	-0.122	0.000	0.000
162	1.744	0.000	1.157	0.000	0.000	0.000
163	0.000	0.000	0.000	0.125	0.000	0.000
165	0.000	0.000	0.000	-0.130	0.000	0.000
166	1.651	0.000	1.463	0.049	0.000	0.000
167	0.000	0.000	0.000	0.224	0.000	0.000
168	0.000	0.000	0.000	0.083	0.000	-0.028
169	0.000	0.000	0.000	-0.266	0.000	0.055
170	0.000	0.000	0.000	-0.270	0.000	0.000
171	0.000	0.000	0.000	0.015	0.000	0.039
172	0.000	0.000	0.000	0.017	0.000	0.000
173	0.000	0.000	0.000	-0.212	0.000	0.029
174	0.000	0.000	0.000	-0.220	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.035
177	0.000	0.000	0.000	-0.205	0.000	0.035
178	0.000	0.000	0.000	-0.213	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.033
181	0.000	0.000	0.000	-0.224	0.000	0.036
182	0.000	0.000	0.000	-0.227	0.000	0.000
183	0.000	0.000	0.000	-0.290	0.000	0.049
184	1.608	0.000	4.240	-0.287	0.000	0.039
185	0.000	0.000	0.000	-0.303	0.000	0.028
186	0.000	0.000	0.000	-0.298	0.000	0.026
187	0.000	0.000	0.000	-0.277	0.000	0.015
188	2.532	0.000	6.372	-0.273	0.000	0.024
189	0.000	0.000	0.000	-0.279	0.000	0.023
190	0.000	0.000	0.000	-0.277	0.000	0.024
191	0.000	0.000	0.000	-0.263	0.000	0.023
192	1.470	0.000	6.109	-0.259	0.000	0.025
193	0.000	0.000	0.000	-0.270	0.000	0.020
194	0.000	0.000	0.000	-0.266	0.000	0.022

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
195	0.000	0.000	0.000	-0.257	0.000	0.022
196	-0.959	0.000	3.654	-0.254	0.000	0.026
Total	13.027	78.287	48.219	-0.627	0.000	-0.734

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L5	Live Load
Load Group L6	Live Load
Load Group L7	Live Load
Load Group L8	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.089	2	2.500	0.089
3	4.500	0.089	4	6.500	0.089	5	8.500	0.089
6	10.500	0.089	7	12.500	0.089	8	14.500	0.089
9	16.500	0.089	10	18.500	0.089	11	20.500	0.089
12	22.500	0.666	13	24.500	0.849			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.005	3	0.005	4	0.005
5	0.005	6	0.005	7	0.005	8	0.005
9	0.005	10	0.005	11	0.005	12	0.005
13	0.000	14	0.004	15	0.004	16	0.004
17	0.004	18	0.004	19	0.004	20	0.004
21	0.004	22	0.004	23	0.004	24	0.004
25	0.000	26	0.009	27	0.009	28	0.009
29	0.009	30	0.009	31	0.009	32	0.009
33	0.009	34	0.009	35	0.009	36	0.009
37	0.000	38	0.007	39	0.007	40	0.007
41	0.007	42	0.007	43	0.007	44	0.007
45	0.007	46	0.007	47	0.007	48	0.007
49	0.000	50	0.007	51	0.007	52	0.007
53	0.007	54	0.007	55	0.007	56	0.007
57	0.007	58	0.007	59	0.007	60	0.007
61	0.000	62	0.007	63	0.007	64	0.007
65	0.007	66	0.007	67	0.007	68	0.007
69	0.007	70	0.007	71	0.007	72	0.007
73	0.000	74	0.007	75	0.007	76	0.007
77	0.007	78	0.007	79	0.007	80	0.007
81	0.007	82	0.007	83	0.007	84	0.007
85	0.000	86	0.007	87	0.007	88	0.007
89	0.007	90	0.007	91	0.007	92	0.007
93	0.007	94	0.007	95	0.007	96	0.007
97	0.000	98	0.007	99	0.007	100	0.007
101	0.007	102	0.007	103	0.007	104	0.007
105	0.007	106	0.007	107	0.007	108	0.007
109	0.000	110	0.007	111	0.007	112	0.007
113	0.007	114	0.007	115	0.007	116	0.007
117	0.007	118	0.007	119	0.007	120	0.007
121	0.000	122	0.007	123	0.007	124	0.007

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 044****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

125	0.007	126	0.007	127	0.007	128	0.007
129	0.007	130	0.007	131	0.007	132	0.007
133	0.000	134	0.007	135	0.007	136	0.007
137	0.007	138	0.007	139	0.007	140	0.007
141	0.007	142	0.007	143	0.007	144	0.007
145	0.000	146	0.004	147	0.004	148	0.004
149	0.004	150	0.004	151	0.004	152	0.004
153	0.004	154	0.004	155	0.004	156	0.004
157	0.000	158	0.004	159	0.004	160	0.004
161	0.004	162	0.004	163	0.004	164	0.004
165	0.004	166	0.004	167	0.004	168	0.004
169	0.027	170	0.021	171	0.062	172	0.040
173	0.074	174	0.040	175	0.074	176	0.040
177	0.074	178	0.040	179	0.074	180	0.040
181	0.039	182	0.021	183	0.040	184	0.035
185	0.075	186	0.067	187	0.074	188	0.067
189	0.071	190	0.064	191	0.074	192	0.067
193	0.074	194	0.067	195	0.039	196	0.035

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 N1

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L5 + 0.25 L7 + 1.00 W4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 W2

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L5 + 0.25 L7 + 1.00 W5

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	2.500	0.000	0.000	26	2.500	0.500	0.000
27	2.500	2.500	0.000	28	2.500	4.500	0.000
29	2.500	6.500	0.000	30	2.500	8.500	0.000
31	2.500	10.500	0.000	32	2.500	12.500	0.000
33	2.500	14.500	0.000	34	2.500	16.500	0.000
35	2.500	18.500	0.000	36	2.500	20.500	0.000
37	2.500	0.000	1.300	38	2.500	0.500	1.300
39	2.500	2.500	1.300	40	2.500	4.500	1.300
41	2.500	6.500	1.300	42	2.500	8.500	1.300
43	2.500	10.500	1.300	44	2.500	12.500	1.300
45	2.500	14.500	1.300	46	2.500	16.500	1.300
47	2.500	18.500	1.300	48	2.500	20.500	1.300
49	5.000	0.000	0.000	50	5.000	0.500	0.000
51	5.000	2.500	0.000	52	5.000	4.500	0.000
53	5.000	6.500	0.000	54	5.000	8.500	0.000
55	5.000	10.500	0.000	56	5.000	12.500	0.000
57	5.000	14.500	0.000	58	5.000	16.500	0.000
59	5.000	18.500	0.000	60	5.000	20.500	0.000
61	5.000	0.000	1.300	62	5.000	0.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 045****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	5.000	2.500	1.300	64	5.000	4.500	1.300
65	5.000	6.500	1.300	66	5.000	8.500	1.300
67	5.000	10.500	1.300	68	5.000	12.500	1.300
69	5.000	14.500	1.300	70	5.000	16.500	1.300
71	5.000	18.500	1.300	72	5.000	20.500	1.300
73	7.500	0.000	0.000	74	7.500	0.500	0.000
75	7.500	2.500	0.000	76	7.500	4.500	0.000
77	7.500	6.500	0.000	78	7.500	8.500	0.000
79	7.500	10.500	0.000	80	7.500	12.500	0.000
81	7.500	14.500	0.000	82	7.500	16.500	0.000
83	7.500	18.500	0.000	84	7.500	20.500	0.000
85	7.500	0.000	1.300	86	7.500	0.500	1.300
87	7.500	2.500	1.300	88	7.500	4.500	1.300
89	7.500	6.500	1.300	90	7.500	8.500	1.300
91	7.500	10.500	1.300	92	7.500	12.500	1.300
93	7.500	14.500	1.300	94	7.500	16.500	1.300
95	7.500	18.500	1.300	96	7.500	20.500	1.300
97	10.000	0.000	0.000	98	10.000	0.500	0.000
99	10.000	2.500	0.000	100	10.000	4.500	0.000
101	10.000	6.500	0.000	102	10.000	8.500	0.000
103	10.000	10.500	0.000	104	10.000	12.500	0.000
105	10.000	14.500	0.000	106	10.000	16.500	0.000
107	10.000	18.500	0.000	108	10.000	20.500	0.000
109	10.000	0.000	1.300	110	10.000	0.500	1.300
111	10.000	2.500	1.300	112	10.000	4.500	1.300
113	10.000	6.500	1.300	114	10.000	8.500	1.300
115	10.000	10.500	1.300	116	10.000	12.500	1.300
117	10.000	14.500	1.300	118	10.000	16.500	1.300
119	10.000	18.500	1.300	120	10.000	20.500	1.300
121	12.500	0.000	0.000	122	12.500	0.500	0.000
123	12.500	2.500	0.000	124	12.500	4.500	0.000
125	12.500	6.500	0.000	126	12.500	8.500	0.000
127	12.500	10.500	0.000	128	12.500	12.500	0.000
129	12.500	14.500	0.000	130	12.500	16.500	0.000
131	12.500	18.500	0.000	132	12.500	20.500	0.000
133	12.500	0.000	1.300	134	12.500	0.500	1.300
135	12.500	2.500	1.300	136	12.500	4.500	1.300
137	12.500	6.500	1.300	138	12.500	8.500	1.300
139	12.500	10.500	1.300	140	12.500	12.500	1.300
141	12.500	14.500	1.300	142	12.500	16.500	1.300
143	12.500	18.500	1.300	144	12.500	20.500	1.300
145	15.000	0.000	0.000	146	15.000	0.500	0.000
147	15.000	2.500	0.000	148	15.000	4.500	0.000
149	15.000	6.500	0.000	150	15.000	8.500	0.000
151	15.000	10.500	0.000	152	15.000	12.500	0.000
153	15.000	14.500	0.000	154	15.000	16.500	0.000
155	15.000	18.500	0.000	156	15.000	20.500	0.000
157	15.000	0.000	1.300	158	15.000	0.500	1.300
159	15.000	2.500	1.300	160	15.000	4.500	1.300
161	15.000	6.500	1.300	162	15.000	8.500	1.300
163	15.000	10.500	1.300	164	15.000	12.500	1.300
165	15.000	14.500	1.300	166	15.000	16.500	1.300
167	15.000	18.500	1.300	168	15.000	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	2.500	22.500	0.000	172	2.500	22.500	1.300
173	5.000	22.500	0.000	174	5.000	22.500	1.300
175	7.500	22.500	0.000	176	7.500	22.500	1.300
177	10.000	22.500	0.000	178	10.000	22.500	1.300
179	12.500	22.500	0.000	180	12.500	22.500	1.300
181	15.000	22.500	0.000	182	15.000	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	2.500	24.500	0.000	186	2.500	24.500	1.300
187	5.000	24.500	0.000	188	5.000	24.500	1.300
189	7.500	24.500	0.000	190	7.500	24.500	1.300
191	10.000	24.500	0.000	192	10.000	24.500	1.300
193	12.500	24.500	0.000	194	12.500	24.500	1.300
195	15.000	24.500	0.000	196	15.000	24.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 046****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties****Members 1-453**

M 48.3x3.2 CHS 3.56 [S 355]
 A 4.53E-4 Ix 11.59E-8 Iy 11.59E-8 J 23.17E-8
 E 205.0E6 G 78.85E6

Member Loading**Members 2 and 17**

W1 PZ -000.015 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.085 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.013 0.000 (kN,m)
 W5 PX -000.071 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 3 and 18

W1 PZ -000.032 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.174 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.026 0.000 (kN,m)
 W5 PX -000.147 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 4 and 19

W1 PZ -000.033 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.180 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.027 0.000 (kN,m)
 W5 PX -000.152 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 5 and 20

W1 PZ -000.033 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.185 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.028 0.000 (kN,m)
 W5 PX -000.156 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 7 and 22

W1 PZ -000.015 0.000 (kN,m)
 W4 PZ -000.085 0.000 (kN,m)

Members 8 and 23

W1 PZ -000.032 0.000 (kN,m)
 W4 PZ -000.174 0.000 (kN,m)

Members 9 and 24

W1 PZ -000.033 0.000 (kN,m)
 W4 PZ -000.180 0.000 (kN,m)

Members 10 and 25

W1 PZ -000.033 0.000 (kN,m)
 W4 PZ -000.185 0.000 (kN,m)

Members 11 and 26

D1 PY -000.026 1.275 (kN,m)
 D1 PY -000.026 0.025 (kN,m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 047****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 12-15, 27-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347 and 396

D1 PY -000.026 0.025 (kN, m)
D1 PY -000.026 1.275 (kN, m)

Members 32, 47, 92, 121 and 136

W1 PZ -000.009 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.063 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.009 0.000 (kN, m)
W5 PX -000.051 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 33, 48, 93, 122 and 137

W1 PZ -000.018 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.131 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.106 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 34, 49, 94, 123 and 138

W1 PZ -000.019 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.135 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.109 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 35, 50, 95, 124 and 139

W1 PZ -000.019 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.139 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.020 0.000 (kN, m)
W5 PX -000.112 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 37, 52, 97, 126 and 141

W1 PZ -000.009 0.000 (kN, m)
W4 PZ -000.063 0.000 (kN, m)

Members 38, 53, 98, 127 and 142

W1 PZ -000.018 0.000 (kN, m)
W4 PZ -000.131 0.000 (kN, m)

Members 39, 54, 99, 128 and 143

W1 PZ -000.019 0.000 (kN, m)
W4 PZ -000.135 0.000 (kN, m)

Members 40, 55, 100, 129 and 144

W1 PZ -000.019 0.000 (kN, m)
W4 PZ -000.139 0.000 (kN, m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY -000.186 0.025 (kN, m)
D1 PY -000.186 2.475 (kN, m)

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359 and 361-371

D1 PY -000.130 0.025 (kN, m)
D1 PY -000.130 2.475 (kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 048****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 170 and 182**

W1 PZ	-000.034	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.190	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.161	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 171 and 183

W1 PZ	-000.035	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.195	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.165	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 172 and 184

W1 PZ	-000.036	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.201	0.000	(kN,m)
W6 PZ	-002.000	0.000	(kN,m)
W2 PX	-000.030	0.000	(kN,m)
W5 PX	-000.170	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 173 and 185

W1 PZ	-000.037	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.206	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.031	0.000	(kN,m)
W5 PX	-000.174	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 174 and 186

W1 PZ	-000.034	0.000	(kN,m)
W4 PZ	-000.190	0.000	(kN,m)

Members 175 and 187

W1 PZ	-000.035	0.000	(kN,m)
W4 PZ	-000.195	0.000	(kN,m)

Members 176 and 188

W1 PZ	-000.036	0.000	(kN,m)
W4 PZ	-000.201	0.000	(kN,m)

Members 177 and 189

W1 PZ	-000.037	0.000	(kN,m)
W4 PZ	-000.206	0.000	(kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ	-000.020	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.143	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 195, 207, 219, 231 and 243

W1 PZ	-000.020	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 049****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ	-000.147	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.021	0.000	(kN, m)
W5 PX	-000.119	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.021	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.151	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.122	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.021	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.154	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.125	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.020	0.000	(kN, m)
W4 PZ	-000.143	0.000	(kN, m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.020	0.000	(kN, m)
W4 PZ	-000.147	0.000	(kN, m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.021	0.000	(kN, m)
W4 PZ	-000.151	0.000	(kN, m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.021	0.000	(kN, m)
W4 PZ	-000.154	0.000	(kN, m)

Members 306 and 312

W1 PZ	-000.038	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.211	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.032	0.000	(kN, m)
W5 PX	-000.178	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 307 and 313

W1 PZ	-000.039	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.216	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.033	0.000	(kN, m)
W5 PX	-000.183	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 308 and 314

W1 PZ	-000.038	0.000	(kN, m)
W4 PZ	-000.211	0.000	(kN, m)

Members 309 and 315

W1 PZ	-000.039	0.000	(kN, m)
W4 PZ	-000.216	0.000	(kN, m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 050****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 318, 324, 330, 336 and 342**

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.159	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.128	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.162	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.159	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.162	0.000	(kN,m)

Members 374-380, 393-395 and 397-399

D1 PY	-000.145	0.025	(kN,m)
D1 PY	-000.110	1.275	(kN,m)

Member 381

D1 PY	-000.399	0.025	(kN,m)
D1 PY	-000.399	2.475	(kN,m)
L2 PY	-001.406	0.025	(kN,m)
L2 PY	-001.406	2.475	(kN,m)
L6 PY	-001.055	0.025	(kN,m)
L6 PY	-001.055	2.475	(kN,m)
G2 PY	-002.109	0.025	(kN,m)
G2 PY	-002.109	2.475	(kN,m)

Members 382-386

D1 PY	-000.343	0.025	(kN,m)
D1 PY	-000.343	2.475	(kN,m)
L2 PY	-001.406	0.025	(kN,m)
L2 PY	-001.406	2.475	(kN,m)
L5 PY	-001.055	0.025	(kN,m)
L5 PY	-001.055	2.475	(kN,m)
G2 PY	-002.109	0.025	(kN,m)
G2 PY	-002.109	2.475	(kN,m)

Members 387-392

D1 PY	-000.220	0.025	(kN,m)
D1 PY	-000.220	2.475	(kN,m)
L4 PY	-001.406	0.025	(kN,m)
L4 PY	-001.406	2.475	(kN,m)
L8 PY	-001.055	0.025	(kN,m)
L8 PY	-001.055	2.475	(kN,m)
G4 PY	-002.109	0.025	(kN,m)
G4 PY	-002.109	2.475	(kN,m)

Member 400

D1 PY	-000.399	0.025	(kN,m)
D1 PY	-000.399	2.475	(kN,m)
L1 PY	-001.406	0.025	(kN,m)
L1 PY	-001.406	2.475	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-001.055	0.025	(kN,m)
L5 PY	-001.055	2.475	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 051****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Members 401-404

D1 PY -000.343 0.025 (kN,m)
 D1 PY -000.343 2.475 (kN,m)
 L1 PY -001.406 0.025 (kN,m)
 L1 PY -001.406 2.475 (kN,m)
 N1 PZ -000.300 0.025 (kN,m)
 L5 PY -001.055 0.025 (kN,m)
 L5 PY -001.055 2.475 (kN,m)
 G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Member 405

D1 PY -000.343 0.025 (kN,m)
 D1 PY -000.343 2.475 (kN,m)
 L1 PY -001.406 0.025 (kN,m)
 L1 PY -001.406 2.475 (kN,m)
 N1 PZ -000.300 0.025 (kN,m)
 N1 PZ -000.300 2.475 (kN,m)
 L5 PY -001.055 0.025 (kN,m)
 L5 PY -001.055 2.475 (kN,m)
 G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Members 406-411

D1 PY -000.220 0.025 (kN,m)
 D1 PY -000.220 2.475 (kN,m)
 L3 PY -001.406 0.025 (kN,m)
 L3 PY -001.406 2.475 (kN,m)
 L7 PY -001.055 0.025 (kN,m)
 L7 PY -001.055 2.475 (kN,m)
 G3 PY -002.109 0.025 (kN,m)
 G3 PY -002.109 2.475 (kN,m)

Members 412 and 416

W1 PZ -000.040 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.222 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.033 0.000 (kN,m)
 W5 PX -000.187 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 413 and 417

W1 PZ -000.207 0.000 (kN,m)
 W1 PZ -000.212 2.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.938 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W3 PZ -000.000 2.000 (kN,m)
 W4 PZ -000.959 2.000 (kN,m)
 W6 PZ -000.000 2.000 (kN,m)
 W2 PX -000.067 0.000 (kN,m)
 W2 PX -000.069 2.000 (kN,m)
 W5 PX -000.268 0.000 (kN,m)
 W5 PX -000.275 2.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W7 PX -000.000 2.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 2.000 (kN,m)

Members 414 and 418

W1 PZ -000.040 0.000 (kN,m)
 W4 PZ -000.222 0.000 (kN,m)

Members 415 and 419

W1 PZ -000.207 0.000 (kN,m)
 W1 PZ -000.212 2.000 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 052****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ -000.938 0.000 (kN,m)
W4 PZ -000.959 2.000 (kN,m)

Members 420, 424, 428, 432 and 436

W1 PZ -000.023 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.166 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.024 0.000 (kN,m)
W5 PX -000.135 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ -000.198 0.000 (kN,m)
W1 PZ -000.202 2.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.834 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W3 PZ -000.000 2.000 (kN,m)
W4 PZ -000.853 2.000 (kN,m)
W6 PZ -000.000 2.000 (kN,m)
W2 PX -000.067 0.000 (kN,m)
W2 PX -000.069 2.000 (kN,m)
W5 PX -000.215 0.000 (kN,m)
W5 PX -000.220 2.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W7 PX -000.000 2.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)
W8 PX -000.000 2.000 (kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ -000.023 0.000 (kN,m)
W4 PZ -000.166 0.000 (kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ -000.198 0.000 (kN,m)
W1 PZ -000.202 2.000 (kN,m)
W4 PZ -000.834 0.000 (kN,m)
W4 PZ -000.853 2.000 (kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Relased	® Fixed			
11	ROO ROO	12	ROO ROO	13	ROO ROO	14	ROO ROO
15	ROO ROO	26	ROO ROO	27	ROO ROO	28	ROO ROO
29	ROO ROO	30	ROO ROO	41	ROO ROO	42	ROO ROO
43	ROO ROO	44	ROO ROO	45	ROO ROO	56	ROO ROO
57	ROO ROO	58	ROO ROO	59	ROO ROO	60	ROO ROO
61	ROO ROO	62	ROO ROO	63	ROO ROO	64	ROO ROO
65	ROO ROO	66	ROO ROO	67	ROO ROO	68	ROO ROO
69	ROO ROO	70	ROO ROO	71	ROO ROO	72	ROO ROO
73	ROO ROO	74	ROO ROO	75	ROO ROO	76	ROO ROO
77	ROO ROO	78	ROO ROO	79	ROO ROO	80	ROO ROO
81	ROO ROO	82	ROO ROO	83	ROO ROO	84	ROO ROO
85	ROO ROO	86	ROO ROO	87	ROO ROO	88	ROO ROO
89	ROO ROO	90	ROO ROO	101	ROO ROO	102	ROO ROO
103	ROO ROO	104	ROO ROO	105	ROO ROO	106	ROO ROO
107	ROO ROO	108	ROO ROO	109	ROO ROO	110	ROO ROO
111	ROO ROO	112	ROO ROO	113	ROO ROO	114	ROO ROO
115	ROO ROO	116	ROO ROO	117	ROO ROO	118	ROO ROO
119	ROO ROO	130	ROO ROO	131	ROO ROO	132	ROO ROO
133	ROO ROO	134	ROO ROO	145	ROO ROO	146	ROO ROO
147	ROO ROO	148	ROO ROO	149	ROO ROO	150	ROO ROO
151	ROO ROO	152	ROO ROO	153	ROO ROO	154	ROO ROO
155	ROO ROO	156	ROO ROO	157	ROO ROO	158	ROO ROO
159	ROO ROO	160	ROO ROO	161	ROO ROO	162	ROO ROO
163	ROO ROO	164	ROO ROO	165	ROO ROO	166	ROO ROO
167	ROO ROO	168	ROO ROO	169	ROO ROO	178	ROO ROO
179	ROO ROO	180	ROO ROO	181	ROO ROO	190	ROO ROO
191	ROO ROO	192	ROO ROO	193	ROO ROO	202	ROO ROO

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 053****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

203	ROO	ROO	204	ROO	ROO	205	ROO	ROO	214	ROO	ROO
215	ROO	ROO	216	ROO	ROO	217	ROO	ROO	226	ROO	ROO
227	ROO	ROO	228	ROO	ROO	229	ROO	ROO	238	ROO	ROO
239	ROO	ROO	240	ROO	ROO	241	ROO	ROO	250	ROO	ROO
251	ROO	ROO	252	ROO	ROO	253	ROO	ROO	254	ROO	ROO
255	ROO	ROO	256	ROO	ROO	257	ROO	ROO	258	ROO	ROO
259	ROO	ROO	260	ROO	ROO	261	ROO	ROO	262	ROO	ROO
263	ROO	ROO	264	ROO	ROO	265	ROO	ROO	266	ROO	ROO
267	ROO	ROO	268	ROO	ROO	269	ROO	ROO	270	ROO	ROO
271	ROO	ROO	272	ROO	ROO	273	ROO	ROO	274	ROO	ROO
275	ROO	ROO	276	ROO	ROO	277	ROO	ROO	278	ROO	ROO
279	ROO	ROO	280	ROO	ROO	281	ROO	ROO	282	ROO	ROO
283	ROO	ROO	284	ROO	ROO	285	ROO	ROO	286	ROO	ROO
287	ROO	ROO	288	ROO	ROO	289	ROO	ROO	290	ROO	ROO
291	ROO	ROO	292	ROO	ROO	293	ROO	ROO	294	ROO	ROO
295	ROO	ROO	296	ROO	ROO	297	ROO	ROO	298	ROO	ROO
299	ROO	ROO	300	ROO	ROO	301	ROO	ROO	302	ROO	ROO
303	ROO	ROO	304	ROO	ROO	305	ROO	ROO	310	ROO	ROO
311	ROO	ROO	316	ROO	ROO	317	ROO	ROO	322	ROO	ROO
323	ROO	ROO	328	ROO	ROO	329	ROO	ROO	334	ROO	ROO
335	ROO	ROO	340	ROO	ROO	341	ROO	ROO	346	ROO	ROO
347	ROO	ROO	348	ROO	ROO	349	ROO	ROO	350	ROO	ROO
351	ROO	ROO	352	ROO	ROO	353	ROO	ROO	354	ROO	ROO
355	ROO	ROO	356	ROO	ROO	357	ROO	ROO	358	ROO	ROO
359	ROO	ROO	360	ROO	ROO	361	ROO	ROO	362	ROO	ROO
363	ROO	ROO	364	ROO	ROO	365	ROO	ROO	366	ROO	ROO
367	ROO	ROO	368	ROO	ROO	369	ROO	ROO	370	ROO	ROO
371	ROO	ROO	372	ROO	ROO	373	ROO	ROO	374	ROO	ROO
375	ROO	ROO	376	ROO	ROO	377	ROO	ROO	378	ROO	ROO
379	ROO	ROO	380	ROO	ROO	381	ROO	ROO	382	ROO	ROO
383	ROO	ROO	384	ROO	ROO	385	ROO	ROO	386	ROO	ROO
387	ROO	ROO	388	ROO	ROO	389	ROO	ROO	390	ROO	ROO
391	ROO	ROO	392	ROO	ROO	393	ROO	ROO	394	ROO	ROO
395	ROO	ROO	396	ROO	ROO	397	ROO	ROO	398	ROO	ROO
399	ROO	ROO	400	ROO	ROO	401	ROO	ROO	402	ROO	ROO
403	ROO	ROO	404	ROO	ROO	405	ROO	ROO	406	ROO	ROO
407	ROO	ROO	408	ROO	ROO	409	ROO	ROO	410	ROO	ROO
411	ROO	ROO	440	ROO	ROO	441	ROO	ROO	442	ROO	ROO
443	ROO	ROO	444	ROO	ROO	445	ROO	ROO	446	ROO	ROO
447	ROO	ROO	448	ROO	ROO	449	ROO	ROO	450	ROO	ROO
451	ROO	ROO	452	ROO	ROO	453	ROO	ROO			

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0104.050 0000.000 0104.050

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 054

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.65	0.65	-0.08	0.00	0.44	0.45
2	-2.97	-0.10	0.01	2.97	-0.08	0.00	0.14	0.16
3	-3.67	-0.32	-10.33	10.97	-0.09	0.00	0.00	0.09
4	-4.46	-0.44	-14.37	15.06	0.00	-0.02	0.01	0.03
5	-5.24	-0.52	-9.85	11.17	0.09	-0.02	0.01	0.09
6	-5.88	-0.63	0.03	5.92	0.00	0.00	0.01	0.01
7	-6.30	-0.74	-10.30	12.09	-0.09	0.00	0.00	0.09
8	-6.42	-0.87	-14.82	16.17	0.00	-0.02	0.00	0.02
9	-6.19	-0.98	-10.11	11.90	0.09	-0.02	-0.01	0.09
10	-5.60	-1.08	0.02	5.70	-0.03	0.01	-0.01	0.04
11	-4.64	-1.18	-15.34	16.07	-0.15	0.01	-0.02	0.16
12	-3.35	-1.26	-24.75	25.00	-0.05	0.01	-0.03	0.06
13	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
14	0.00	-0.02	0.00	0.02	-0.04	0.00	0.01	0.04
15	0.09	-0.13	-10.33	10.33	-0.09	0.00	0.00	0.09
16	0.08	-0.21	-14.37	14.38	0.00	0.00	0.00	0.00
17	0.09	-0.29	-9.85	9.86	0.09	0.00	0.00	0.09
18	0.00	-0.38	0.00	0.38	0.00	0.00	0.00	0.01
19	0.09	-0.48	-10.30	10.31	-0.10	0.00	0.00	0.10
20	0.09	-0.54	-14.82	14.83	0.00	0.00	0.00	0.01
21	0.09	-0.60	-10.11	10.13	0.09	0.00	0.00	0.09
22	0.00	-0.69	0.00	0.69	-0.03	0.01	0.00	0.03
23	0.11	-0.84	-15.34	15.36	-0.15	0.01	0.00	0.15
24	0.24	-0.92	-24.75	24.76	-0.05	0.01	0.01	0.05
25	0.00	0.00	0.19	0.19	-0.02	0.00	0.43	0.43
26	-2.82	-0.04	0.01	2.82	-0.02	0.00	0.11	0.11
27	-3.52	-0.17	-2.35	4.24	0.00	-0.02	0.00	0.02
28	-4.34	-0.30	0.01	4.35	-0.04	-0.01	0.01	0.05
29	-5.14	-0.43	-10.26	11.49	-0.08	-0.01	0.01	0.08
30	-5.81	-0.54	-14.17	15.33	0.00	-0.01	0.01	0.01
31	-6.25	-0.66	-9.91	11.73	0.09	-0.02	0.00	0.09
32	-6.39	-0.76	0.03	6.43	0.00	-0.03	0.00	0.03
33	-6.19	-0.87	-10.15	11.92	-0.08	-0.01	-0.01	0.08
34	-5.62	-1.02	-14.17	15.28	0.01	-0.01	-0.01	0.02
35	-4.69	-1.16	-9.41	10.58	0.09	-0.04	-0.02	0.10
36	-3.43	-1.33	-0.02	3.68	-0.08	-0.05	-0.02	0.10
37	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
38	0.00	-0.04	0.00	0.04	-0.01	0.00	0.00	0.01
39	0.09	-0.19	-2.35	2.36	0.00	0.00	0.00	0.01
40	0.00	-0.33	0.00	0.33	-0.04	0.01	0.00	0.04
41	0.09	-0.48	-10.26	10.27	-0.08	0.01	0.00	0.08
42	0.00	-0.61	-14.17	14.19	0.00	0.02	0.00	0.02
43	0.09	-0.74	-9.91	9.94	0.09	0.02	0.00	0.09
44	0.00	-0.86	0.00	0.86	0.00	0.02	0.00	0.02
45	0.09	-0.98	-10.15	10.20	-0.09	0.03	0.00	0.09
46	0.00	-1.09	-14.17	14.21	0.00	0.03	0.00	0.03
47	0.11	-1.19	-9.41	9.49	0.09	0.04	0.00	0.10
48	0.00	-1.29	0.00	1.29	-0.08	0.04	0.01	0.09
49	0.00	0.00	0.48	0.48	-0.06	0.00	0.41	0.41
50	-2.70	-0.05	0.01	2.70	-0.06	0.00	0.11	0.12
51	-3.55	-0.23	-7.73	8.51	-0.06	0.00	0.00	0.06
52	-4.36	-0.41	-10.66	11.52	0.00	0.00	0.01	0.01
53	-5.16	-0.58	-7.37	9.02	0.06	0.00	0.01	0.06
54	-5.82	-0.74	0.03	5.87	0.00	0.00	0.00	0.00
55	-6.26	-0.90	-7.63	9.91	-0.07	0.00	0.00	0.07
56	-6.40	-1.06	-10.84	12.64	0.00	0.00	0.00	0.00
57	-6.20	-1.20	-7.42	9.74	0.07	0.00	0.00	0.07
58	-5.64	-1.34	0.02	5.80	-0.03	0.00	-0.01	0.03

James Crosbie Associates Ltd.

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Job Ref : B11323

Sheet : SD / 055

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-4.71	-1.48	-12.28	13.24	-0.12	0.00	-0.01	0.12
60	-3.44	-1.61	-20.36	20.71	-0.06	0.00	-0.01	0.06
61	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
62	0.00	-0.04	0.00	0.04	-0.03	0.00	0.00	0.03
63	0.09	-0.20	-7.73	7.73	-0.07	0.00	0.00	0.07
64	0.00	-0.35	-10.66	10.66	0.00	0.00	0.00	0.00
65	0.09	-0.50	-7.37	7.39	0.06	0.01	0.00	0.06
66	0.00	-0.64	0.00	0.64	0.00	0.01	0.00	0.01
67	0.09	-0.77	-7.63	7.67	-0.07	0.01	0.00	0.07
68	0.00	-0.90	-10.84	10.88	0.00	0.01	0.00	0.01
69	0.09	-1.02	-7.42	7.49	0.07	0.01	0.00	0.07
70	0.00	-1.13	0.00	1.13	-0.03	0.01	0.00	0.03
71	0.11	-1.24	-12.28	12.35	-0.12	0.02	0.00	0.12
72	0.00	-1.35	-20.36	20.40	-0.06	0.02	0.01	0.06
73	0.00	0.00	0.15	0.15	-0.02	0.00	0.40	0.40
74	-2.61	-0.05	0.01	2.61	-0.02	0.00	0.11	0.11
75	-3.56	-0.23	-1.77	3.99	0.00	0.00	0.00	0.00
76	-4.37	-0.40	0.01	4.39	-0.03	-0.01	0.01	0.04
77	-5.17	-0.57	-7.90	9.46	-0.06	-0.01	0.01	0.07
78	-5.83	-0.74	-10.97	12.45	0.00	-0.01	0.01	0.01
79	-6.27	-0.90	-7.63	9.92	0.07	-0.01	0.00	0.07
80	-6.42	-1.05	0.03	6.50	0.00	-0.02	0.00	0.02
81	-6.22	-1.19	-7.61	9.90	-0.07	-0.02	0.00	0.07
82	-5.65	-1.33	-10.61	12.10	0.00	-0.02	-0.01	0.02
83	-4.72	-1.47	-6.78	8.40	0.07	-0.02	-0.01	0.07
84	-3.46	-1.60	-0.01	3.81	-0.09	-0.02	-0.01	0.10
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	-0.04	0.00	0.04	-0.01	0.00	0.00	0.01
87	0.09	-0.20	-1.77	1.78	0.00	0.00	0.00	0.00
88	0.00	-0.35	0.00	0.35	-0.03	0.01	0.00	0.04
89	0.09	-0.49	-7.90	7.91	-0.06	0.01	0.00	0.07
90	0.00	-0.63	-10.97	10.99	0.00	0.01	0.00	0.01
91	0.09	-0.76	-7.63	7.67	0.07	0.02	0.00	0.07
92	0.00	-0.89	0.00	0.89	0.00	0.02	0.00	0.02
93	0.09	-1.01	-7.61	7.67	-0.07	0.02	0.00	0.07
94	0.00	-1.12	-10.61	10.67	0.00	0.03	0.00	0.03
95	0.11	-1.22	-6.78	6.89	0.07	0.03	0.00	0.07
96	0.00	-1.32	0.00	1.32	-0.09	0.03	0.01	0.10
97	0.00	0.00	0.48	0.48	-0.06	0.00	0.39	0.39
98	-2.54	-0.05	0.00	2.54	-0.06	0.00	0.10	0.12
99	-3.58	-0.23	-7.74	8.52	-0.06	0.00	0.00	0.06
100	-4.38	-0.41	-10.67	11.54	0.00	0.00	0.01	0.01
101	-5.18	-0.58	-7.38	9.03	0.06	0.00	0.01	0.06
102	-5.84	-0.75	0.03	5.89	0.00	0.00	0.01	0.01
103	-6.28	-0.91	-7.66	9.95	-0.07	0.00	0.00	0.07
104	-6.43	-1.06	-10.89	12.69	0.00	0.00	0.00	0.01
105	-6.23	-1.21	-7.46	9.79	0.07	0.01	0.00	0.07
106	-5.66	-1.35	0.02	5.82	-0.03	0.01	-0.01	0.03
107	-4.73	-1.49	-11.98	12.96	-0.12	0.01	-0.01	0.12
108	-3.47	-1.62	-19.70	20.07	-0.05	0.01	-0.02	0.06
109	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
110	0.00	-0.04	0.00	0.04	-0.03	0.00	0.00	0.03
111	0.09	-0.20	-7.74	7.74	-0.07	0.00	0.00	0.07
112	0.00	-0.35	-10.67	10.67	0.00	0.00	0.00	0.00
113	0.09	-0.50	-7.38	7.39	0.06	0.00	0.00	0.06
114	0.00	-0.64	0.00	0.64	0.00	0.01	0.00	0.01
115	0.09	-0.77	-7.66	7.70	-0.07	0.01	0.00	0.07
116	0.00	-0.90	-10.89	10.92	0.00	0.01	0.00	0.01

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Job Ref : B11323

Sheet : SD / 056

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.09	-1.02	-7.46	7.53	0.07	0.01	0.00	0.07
118	0.00	-1.13	0.00	1.13	-0.03	0.01	0.00	0.03
119	0.11	-1.24	-11.98	12.04	-0.12	0.01	0.00	0.12
120	0.00	-1.35	-19.70	19.75	-0.05	0.01	0.01	0.06
121	0.00	0.00	0.15	0.15	-0.02	0.00	0.38	0.38
122	-2.50	-0.05	0.00	2.50	-0.02	0.00	0.10	0.10
123	-3.58	-0.23	-1.77	4.00	0.00	0.00	0.00	0.01
124	-4.38	-0.41	0.01	4.40	-0.03	-0.01	0.01	0.04
125	-5.18	-0.58	-7.90	9.47	-0.06	-0.01	0.01	0.07
126	-5.85	-0.74	-10.98	12.46	0.00	-0.01	0.01	0.02
127	-6.29	-0.90	-7.64	9.94	0.07	-0.02	0.00	0.07
128	-6.43	-1.05	0.03	6.52	0.00	-0.02	0.00	0.02
129	-6.23	-1.20	-7.64	9.93	-0.07	-0.02	0.00	0.07
130	-5.67	-1.34	-10.67	12.16	0.00	-0.03	-0.01	0.03
131	-4.74	-1.48	-6.87	8.47	0.07	-0.03	-0.01	0.07
132	-3.48	-1.61	-0.01	3.83	-0.09	-0.03	-0.01	0.09
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.04	0.00	0.04	-0.01	0.00	0.00	0.01
135	0.09	-0.20	-1.77	1.79	0.00	0.00	0.00	0.00
136	0.00	-0.35	0.00	0.35	-0.03	0.01	0.00	0.04
137	0.09	-0.49	-7.90	7.92	-0.06	0.01	0.00	0.07
138	0.00	-0.63	-10.98	11.00	0.00	0.01	0.00	0.01
139	0.09	-0.76	-7.64	7.68	0.07	0.02	0.00	0.07
140	0.00	-0.89	0.00	0.89	0.00	0.02	0.00	0.02
141	0.09	-1.01	-7.64	7.71	-0.07	0.02	0.00	0.07
142	0.00	-1.12	-10.67	10.73	0.00	0.02	0.00	0.02
143	0.11	-1.23	-6.87	6.98	0.07	0.03	0.00	0.07
144	0.00	-1.33	0.00	1.33	-0.09	0.03	0.01	0.09
145	0.00	0.00	0.49	0.49	-0.06	0.00	0.37	0.37
146	-2.48	-0.03	0.00	2.48	-0.06	0.00	0.12	0.13
147	-3.59	-0.13	-7.66	8.46	-0.06	0.00	0.00	0.06
148	-4.38	-0.22	-10.65	11.52	0.00	0.00	0.01	0.01
149	-5.19	-0.31	-7.31	8.97	0.07	0.00	0.01	0.07
150	-5.85	-0.40	0.03	5.87	0.00	0.00	0.01	0.01
151	-6.29	-0.49	-7.66	9.93	-0.07	0.00	0.01	0.07
152	-6.44	-0.57	-11.00	12.76	0.00	0.01	0.00	0.01
153	-6.24	-0.65	-7.45	9.74	0.07	0.01	0.00	0.07
154	-5.67	-0.73	0.02	5.72	-0.03	0.01	-0.01	0.03
155	-4.74	-0.80	-12.40	13.30	-0.12	0.01	-0.01	0.13
156	-3.48	-0.87	-20.46	20.77	-0.05	0.01	-0.02	0.05
157	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
158	0.00	-0.02	0.00	0.02	-0.03	0.00	0.01	0.03
159	0.09	-0.11	-7.66	7.66	-0.07	0.00	0.00	0.07
160	-0.05	-0.19	-10.65	10.65	0.00	0.00	0.00	0.00
161	0.09	-0.27	-7.31	7.31	0.07	0.01	0.00	0.07
162	0.00	-0.35	0.00	0.35	0.00	0.01	0.00	0.01
163	0.09	-0.42	-7.66	7.67	-0.07	0.01	0.00	0.07
164	-0.05	-0.49	-11.00	11.01	0.00	0.01	0.00	0.01
165	0.09	-0.56	-7.45	7.47	0.07	0.01	0.00	0.07
166	0.00	-0.62	0.00	0.62	-0.03	0.01	0.00	0.03
167	0.11	-0.68	-12.40	12.42	-0.13	0.02	0.00	0.13
168	-0.17	-0.74	-20.46	20.47	-0.05	0.02	0.02	0.05
169	-1.78	-1.33	-22.43	22.54	0.15	-0.01	-0.03	0.15
170	-1.79	-0.97	-22.44	22.53	0.15	0.01	-0.01	0.15
171	-1.88	-1.50	-21.48	21.61	-0.01	-0.04	-0.02	0.05
172	-1.80	-1.40	-21.48	21.60	-0.01	0.04	0.00	0.04
173	-1.88	-1.74	-20.77	20.92	0.12	0.00	-0.02	0.12
174	-1.80	-1.44	-20.77	20.90	0.12	0.02	0.00	0.12

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Job Ref : B11323

Sheet : SD / 057

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Date : 29 September 2010 / Ver. 2010.06

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-1.90	-1.72	-20.10	20.26	0.00	-0.02	-0.02	0.03
176	-1.80	-1.43	-20.10	20.24	-0.01	0.04	0.00	0.04
177	-1.90	-1.75	-19.75	19.92	0.11	0.01	-0.02	0.11
178	-1.80	-1.45	-19.75	19.89	0.12	0.02	0.00	0.12
179	-1.91	-1.73	-19.42	19.59	0.00	-0.03	-0.02	0.04
180	-1.80	-1.43	-19.43	19.57	-0.01	0.03	0.00	0.03
181	-1.91	-0.94	-19.34	19.45	0.12	0.01	-0.02	0.13
182	-1.80	-0.79	-19.34	19.44	0.13	0.02	0.01	0.13
183	-0.13	-1.39	-0.04	1.39	0.16	-0.01	-0.03	0.16
184	0.00	-1.24	0.00	1.24	0.16	0.01	-0.02	0.16
185	-0.16	-1.60	-0.41	1.66	0.17	-0.04	-0.02	0.17
186	-0.04	-1.54	-0.38	1.58	0.17	0.04	-0.01	0.17
187	-0.08	-1.80	-0.07	1.80	0.15	0.00	-0.01	0.15
188	0.00	-1.52	0.00	1.52	0.15	0.02	-0.01	0.15
189	-0.06	-1.79	-0.33	1.82	0.15	-0.02	-0.01	0.16
190	-0.02	-1.50	-0.31	1.53	0.15	0.04	-0.01	0.16
191	-0.03	-1.81	-0.07	1.81	0.14	0.01	-0.01	0.15
192	0.00	-1.52	0.00	1.52	0.14	0.02	-0.01	0.14
193	0.07	-1.80	-0.36	1.84	0.15	-0.03	-0.01	0.15
194	0.03	-1.50	-0.34	1.54	0.15	0.03	-0.01	0.15
195	0.12	-0.97	-0.03	0.98	0.14	0.01	0.02	0.14
196	0.00	-0.96	0.00	0.96	0.14	0.02	0.02	0.14

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	15.48C	0.00	-1.01	0.00	0.00	0.00	0.00	0.00	0.34
	2	15.48C	0.00	-1.01	0.00	-0.50	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	10.07C	0.00	-0.01	0.35	-0.09	-0.27	0.00	0.00	0.76
	3	10.07C	0.00	0.06	0.27	0.03	0.26	@ 0.000	@ 0.000	@ 0.424
3	3	7.21C	0.00	-0.17	0.26	0.02	-0.07	0.00	0.00	0.53
	4	7.21C	0.00	-0.02	0.09	-0.02	0.11	@ 0.000	@ 0.000	@ 1.414
4	4	6.58C	0.00	-0.16	0.07	0.01	0.12	0.00	0.00	0.58
	5	6.58C	0.00	-0.01	-0.11	-0.01	-0.09	@ 0.000	@ 0.000	@ 0.566
5	5	6.29C	0.00	-0.17	-0.11	0.01	0.28	0.00	0.00	1.09
	6	6.29C	0.00	-0.01	-0.30	-0.01	-0.32	@ 0.000	@ 0.000	@ 1.515
6	13	4.39C	0.00	0.03	-0.22	0.00	0.00	0.00	0.00	0.07
	14	4.39C	0.00	0.03	-0.22	0.01	-0.11	@ 0.000	@ 0.000	@ 0.290
7	14	4.24C	0.00	0.00	0.37	0.00	-0.29	0.00	0.00	0.91
	15	4.24C	0.00	0.00	0.28	0.00	0.27	@ 0.000	@ 0.000	@ 0.465
8	15	4.12C	0.00	0.00	0.26	0.00	-0.07	0.00	0.00	0.54
	16	4.12C	0.00	0.00	0.09	0.00	0.11	@ 0.000	@ 0.000	@ 1.394
9	16	3.95C	0.00	0.00	0.08	0.00	0.12	0.00	0.00	0.57
	17	3.95C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
10	17	3.73C	0.00	-0.01	-0.11	0.00	0.28	0.00	0.00	1.09
	18	3.73C	0.00	-0.01	-0.30	-0.01	-0.32	@ 0.000	@ 0.000	@ 1.515

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Job Ref : B11323

Sheet : SD / 058

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Approved :

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	6.73C	0.00	-1.05	0.00	0.00	0.00		0.00	0.36
	26	6.73C	0.00	-1.05	0.00	-0.53	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	6.39C	0.00	-0.03	0.16	-0.07	-0.07	0.00	0.00	0.53
	27	6.39C	0.00	0.05	0.07	0.02	0.08	@ 0.000	@ 0.000	@ 0.727
18	27	6.04C	0.00	-0.17	0.06	0.02	0.10	0.00	0.00	0.44
	28	6.04C	0.00	-0.02	-0.11	-0.02	-0.12	@ 0.000	@ 0.000	@ 1.495
19	28	5.72C	0.00	-0.17	0.47	0.02	-0.30	0.00	0.00	0.89
	29	5.72C	0.00	-0.02	0.29	-0.02	0.28	@ 0.000	@ 0.000	@ 0.444
20	29	5.90C	0.00	-0.17	0.28	0.01	-0.07	0.00	0.00	0.53
	30	5.90C	0.00	-0.01	0.09	-0.01	0.11	@ 0.000	@ 0.000	@ 1.414
21	37	7.27C	0.00	0.02	-0.06	0.00	0.00	0.00	0.00	0.02
	38	7.27C	0.00	0.02	-0.06	0.01	-0.03	@ 0.000	@ 0.000	@ 0.290
22	38	6.99C	0.00	0.00	0.16	0.00	-0.07	0.00	0.00	0.24
	39	6.99C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.535
23	39	6.71C	0.00	0.00	0.06	0.00	0.10	0.00	0.00	0.44
	40	6.71C	0.00	0.00	-0.11	0.00	-0.12	@ 0.000	@ 0.000	@ 1.495
24	40	6.45C	0.00	0.00	0.47	0.00	-0.30	0.00	0.00	0.89
	41	6.45C	0.00	0.00	0.29	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
25	41	6.23C	0.00	0.00	0.27	0.00	-0.07	0.00	0.00	0.52
	42	6.23C	0.00	0.00	0.09	0.00	0.11	@ 0.000	@ 0.000	@ 1.414
31	49	8.77C	0.00	-1.00	0.00	0.00	0.00		0.00	0.34
	50	8.77C	0.00	-1.00	0.00	-0.50	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	8.49C	0.00	-0.01	0.26	-0.06	-0.20	0.00	0.00	0.56
	51	8.49C	0.00	0.04	0.20	0.02	0.20	@ 0.000	@ 0.000	@ 0.424
33	51	8.21C	0.00	-0.13	0.20	0.03	-0.05	0.00	0.00	0.39
	52	8.21C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
34	52	7.93C	0.00	-0.13	0.06	0.02	0.09	0.00	0.00	0.42
	53	7.93C	0.00	-0.02	-0.08	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.566
35	53	7.66C	0.00	-0.13	-0.08	0.02	0.21	0.00	0.00	0.80
	54	7.66C	0.00	-0.02	-0.22	-0.02	-0.24	@ 0.000	@ 0.000	@ 1.515
36	61	7.61C	0.00	0.02	-0.16	0.00	0.00	0.00	0.00	0.05
	62	7.61C	0.00	0.02	-0.16	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
37	62	7.34C	0.00	0.00	0.28	0.00	-0.22	0.00	0.00	0.68
	63	7.34C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
38	63	7.08C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.39
	64	7.08C	0.00	0.00	0.06	0.00	0.08	@ 0.000	@ 0.000	@ 1.394
39	64	6.78C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.42
	65	6.78C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 059

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	6.47C	0.00	0.00	-0.09	0.00	0.21	0.00	0.00	0.81
	66	6.47C	0.00	0.00	-0.22	0.00	-0.24	@ 0.000	@ 0.000	@ 1.515
46	73	8.73C	0.00	-0.96	0.00	0.00	0.00		0.00	0.33
	74	8.73C	0.00	-0.96	0.00	-0.48	0.00	@ 0.000	@ 0.000	@ 0.290
47	74	8.44C	0.00	-0.02	0.12	-0.05	-0.05	0.00	0.00	0.48
	75	8.44C	0.00	0.03	0.05	0.01	0.06	@ 0.000	@ 0.000	@ 0.768
48	75	8.16C	0.00	-0.13	0.05	0.02	0.08	0.00	0.00	0.34
	76	8.16C	0.00	-0.02	-0.08	-0.02	-0.09	@ 0.000	@ 0.000	@ 1.495
49	76	7.88C	0.00	-0.13	0.35	0.02	-0.23	0.00	0.00	0.68
	77	7.88C	0.00	-0.02	0.22	-0.02	0.21	@ 0.000	@ 0.000	@ 0.444
50	77	7.60C	0.00	-0.13	0.21	0.01	-0.06	0.00	0.00	0.40
	78	7.60C	0.00	-0.01	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
51	85	7.53C	0.00	0.02	-0.05	0.00	0.00	0.00	0.00	0.02
	86	7.53C	0.00	0.02	-0.05	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
52	86	7.25C	0.00	0.00	0.12	0.00	-0.06	0.00	0.00	0.18
	87	7.25C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
53	87	6.96C	0.00	0.00	0.05	0.00	0.08	0.00	0.00	0.34
	88	6.96C	0.00	0.00	-0.08	0.00	-0.09	@ 0.000	@ 0.000	@ 1.495
54	88	6.69C	0.00	0.00	0.35	0.00	-0.23	0.00	0.00	0.68
	89	6.69C	0.00	0.00	0.22	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
55	89	6.42C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.40
	90	6.42C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
91	97	8.83C	0.00	-0.94	0.00	0.00	0.00		0.00	0.32
	98	8.83C	0.00	-0.94	0.00	-0.47	0.00	@ 0.000	@ 0.000	@ 0.290
92	98	8.55C	0.00	-0.02	0.26	-0.05	-0.20	0.00	0.00	0.57
	99	8.55C	0.00	0.03	0.20	0.01	0.20	@ 0.000	@ 0.000	@ 0.424
93	99	8.27C	0.00	-0.13	0.20	0.02	-0.05	0.00	0.00	0.39
	100	8.27C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
94	100	7.99C	0.00	-0.13	0.06	0.02	0.09	0.00	0.00	0.42
	101	7.99C	0.00	-0.02	-0.08	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.566
95	101	7.71C	0.00	-0.13	-0.08	0.01	0.21	0.00	0.00	0.81
	102	7.71C	0.00	-0.02	-0.22	-0.02	-0.24	@ 0.000	@ 0.000	@ 1.515
96	109	7.61C	0.00	0.02	-0.16	0.00	0.00	0.00	0.00	0.05
	110	7.61C	0.00	0.02	-0.16	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
97	110	7.35C	0.00	0.00	0.28	0.00	-0.22	0.00	0.00	0.68
	111	7.35C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
98	111	7.08C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.39
	112	7.08C	0.00	0.00	0.06	0.00	0.08	@ 0.000	@ 0.000	@ 1.394

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Job Ref : B11323

Sheet : SD / 060

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	6.79C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.42
	113	6.79C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
100	113	6.47C	0.00	0.00	-0.09	0.00	0.21	0.00	0.00	0.81
	114	6.47C	0.00	0.00	-0.22	0.00	-0.24	@ 0.000	@ 0.000	@ 1.515
120	121	8.75C	0.00	-0.92	0.00	0.00	0.00		0.00	0.31
	122	8.75C	0.00	-0.92	0.00	-0.46	0.00		@ 0.000	@ 0.290
121	122	8.46C	0.00	-0.02	0.12	-0.05	-0.05	0.00	0.00	0.44
	123	8.46C	0.00	0.03	0.05	0.01	0.06	@ 0.000	@ 0.000	@ 0.808
122	123	8.18C	0.00	-0.13	0.05	0.02	0.08	0.00	0.00	0.34
	124	8.18C	0.00	-0.02	-0.08	-0.02	-0.09	@ 0.000	@ 0.000	@ 1.495
123	124	7.90C	0.00	-0.13	0.36	0.02	-0.23	0.00	0.00	0.68
	125	7.90C	0.00	-0.02	0.22	-0.02	0.21	@ 0.000	@ 0.000	@ 0.444
124	125	7.63C	0.00	-0.13	0.21	0.01	-0.06	0.00	0.00	0.41
	126	7.63C	0.00	-0.01	0.07	-0.01	0.08	@ 0.000	@ 0.000	@ 1.414
125	133	7.55C	0.00	0.02	-0.05	0.00	0.00	0.00	0.00	0.02
	134	7.55C	0.00	0.02	-0.05	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
126	134	7.26C	0.00	0.00	0.12	0.00	-0.06	0.00	0.00	0.18
	135	7.26C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
127	135	6.98C	0.00	0.00	0.05	0.00	0.08	0.00	0.00	0.34
	136	6.98C	0.00	0.00	-0.08	0.00	-0.09	@ 0.000	@ 0.000	@ 1.495
128	136	6.70C	0.00	0.00	0.36	0.00	-0.23	0.00	0.00	0.68
	137	6.70C	0.00	0.00	0.22	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
129	137	6.44C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.40
	138	6.44C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
135	145	4.78C	0.00	-0.82	0.00	0.00	0.00		0.00	0.28
	146	4.78C	0.00	-0.82	0.00	-0.41	0.00		@ 0.000	@ 0.290
136	146	4.63C	0.00	-0.01	0.26	-0.06	-0.20	0.00	0.00	0.56
	147	4.63C	0.00	0.04	0.20	0.01	0.20	@ 0.000	@ 0.000	@ 0.424
137	147	4.47C	0.00	-0.12	0.20	0.02	-0.05	0.00	0.00	0.40
	148	4.47C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
138	148	4.32C	0.00	-0.12	0.06	0.01	0.09	0.00	0.00	0.42
	149	4.32C	0.00	-0.01	-0.08	-0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
139	149	4.16C	0.00	-0.12	-0.08	0.01	0.21	0.00	0.00	0.81
	150	4.16C	0.00	-0.01	-0.22	-0.01	-0.23	@ 0.000	@ 0.000	@ 1.515
140	157	4.13C	0.00	0.03	-0.16	0.00	0.00	0.00	0.00	0.05
	158	4.13C	0.00	0.03	-0.16	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
141	158	3.99C	0.00	0.00	0.27	0.00	-0.22	0.00	0.00	0.67
	159	4.00C	0.00	0.00	0.21	0.00	0.20	@ 0.000	@ 0.000	@ 0.465

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Job Ref : B11323

Sheet : SD / 061

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	3.86C	0.00	0.00	0.20	0.00	-0.05	0.00	0.00	0.41
	160	3.86C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.394
143	160	3.70C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.42
	161	3.70C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
144	161	3.51C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.81
	162	3.51C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.515
170	6	5.97C	0.00	-0.17	0.50	0.01	-0.32	0.00	0.00	1.10
	7	5.97C	0.00	-0.01	0.31	-0.01	0.29	@ 0.000	@ 0.000	@ 0.485
171	7	5.62C	0.00	-0.17	0.30	0.00	-0.08	0.00	0.00	0.58
	8	5.62C	0.00	0.00	0.10	0.00	0.12	@ 0.000	@ 0.000	@ 1.414
172	8	5.55T	0.00	-0.17	0.09	0.00	0.13	0.00	0.00	0.61
	9	5.55T	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
173	9	5.69T	0.00	-0.17	-0.12	-0.01	0.30	0.00	0.00	1.25
	10	5.69T	0.00	0.01	-0.32	0.01	-0.35	@ 0.000	@ 0.000	@ 1.495
174	18	3.55C	0.00	0.00	0.49	0.00	-0.32	0.00	0.00	1.10
	19	3.55C	0.00	0.00	0.30	0.00	0.29	@ 0.000	@ 0.000	@ 0.485
175	19	3.41C	0.00	-0.01	0.30	0.01	-0.08	0.00	0.00	0.59
	20	3.41C	0.00	-0.01	0.10	-0.01	0.12	@ 0.000	@ 0.000	@ 1.414
176	20	3.22C	0.00	0.00	0.09	0.00	0.13	0.00	0.00	0.61
	21	3.22C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
177	21	2.97C	0.00	-0.01	-0.12	0.01	0.30	0.00	0.00	1.26
	22	2.97C	0.00	-0.01	-0.32	-0.01	-0.35	@ 0.000	@ 0.000	@ 1.495
182	30	8.16C	0.00	-0.17	0.09	0.01	0.11	0.00	0.00	0.53
	31	8.16C	0.00	-0.01	-0.10	-0.01	-0.08	@ 0.000	@ 0.000	@ 0.566
183	31	9.87C	0.00	-0.17	-0.11	0.00	0.28	0.00	0.00	1.08
	32	9.87C	0.00	0.00	-0.30	-0.01	-0.32	@ 0.000	@ 0.000	@ 1.515
184	32	10.89C	0.00	-0.17	0.51	0.00	-0.33	0.00	0.00	1.08
	33	10.89C	0.00	0.00	0.31	0.00	0.29	@ 0.000	@ 0.000	@ 0.485
185	33	11.22C	0.00	-0.16	0.30	-0.01	-0.08	0.00	0.00	0.55
	34	11.22C	0.00	0.01	0.09	0.01	0.11	@ 0.000	@ 0.000	@ 1.414
186	42	5.95C	0.00	0.00	0.09	0.00	0.11	0.00	0.00	0.54
	43	5.95C	0.00	0.00	-0.10	0.00	-0.08	@ 0.000	@ 0.000	@ 0.586
187	43	5.63C	0.00	0.00	-0.10	0.00	0.28	0.00	0.00	1.07
	44	5.63C	0.00	0.00	-0.30	0.00	-0.32	@ 0.000	@ 0.000	@ 1.515
188	44	5.36C	0.00	0.00	0.51	0.00	-0.33	0.00	0.00	1.09
	45	5.36C	0.00	0.00	0.31	0.00	0.29	@ 0.000	@ 0.000	@ 0.485
189	45	5.14C	0.00	-0.01	0.30	0.01	-0.07	0.00	0.00	0.55
	46	5.14C	0.00	-0.01	0.09	-0.01	0.11	@ 0.000	@ 0.000	@ 1.414

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Job Ref : B11323

Sheet : SD / 062

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	7.39C	0.00	-0.13	0.37	0.01	-0.24	0.00	0.00	0.81
	55	7.39C	0.00	-0.01	0.23	-0.01	0.22	@ 0.000	@ 0.000	@ 0.485
195	55	7.12C	0.00	-0.12	0.22	0.01	-0.06	0.00	0.00	0.42
	56	7.12C	0.00	-0.01	0.07	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
196	56	6.86C	0.00	-0.12	0.07	0.00	0.09	0.00	0.00	0.43
	57	6.86C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
197	57	6.59C	0.00	-0.11	-0.09	-0.01	0.22	0.00	0.00	0.94
	58	6.59C	0.00	0.01	-0.24	0.01	-0.26	@ 0.000	@ 0.000	@ 1.495
198	66	6.17C	0.00	0.00	0.37	0.00	-0.24	0.00	0.00	0.81
	67	6.17C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
199	67	5.90C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.42
	68	5.90C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
200	68	5.60C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.43
	69	5.60C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
201	69	5.27C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.94
	70	5.27C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
206	78	7.32C	0.00	-0.12	0.07	0.01	0.09	0.00	0.00	0.42
	79	7.32C	0.00	-0.01	-0.08	-0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
207	79	7.05C	0.00	-0.12	-0.08	0.01	0.22	0.00	0.00	0.83
	80	7.05C	0.00	-0.01	-0.23	-0.01	-0.25	@ 0.000	@ 0.000	@ 1.515
208	80	6.78C	0.00	-0.12	0.38	-0.01	-0.24	0.00	0.00	0.82
	81	6.78C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
209	81	6.51C	0.00	-0.11	0.22	-0.01	-0.05	0.00	0.00	0.41
	82	6.51C	0.00	0.01	0.07	0.01	0.08	@ 0.000	@ 0.000	@ 1.414
210	90	6.12C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.42
	91	6.12C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
211	91	5.80C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.83
	92	5.80C	0.00	0.00	-0.23	0.00	-0.25	@ 0.000	@ 0.000	@ 1.515
212	92	5.50C	0.00	0.00	0.38	0.00	-0.24	0.00	0.00	0.82
	93	5.50C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
213	93	5.22C	0.00	0.00	0.22	0.00	-0.05	0.00	0.00	0.41
	94	5.22C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
218	102	7.43C	0.00	-0.12	0.37	0.01	-0.24	0.00	0.00	0.82
	103	7.43C	0.00	-0.01	0.23	-0.01	0.22	@ 0.000	@ 0.000	@ 0.485
219	103	7.16C	0.00	-0.12	0.22	0.01	-0.06	0.00	0.00	0.42
	104	7.16C	0.00	-0.01	0.07	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
220	104	6.89C	0.00	-0.12	0.07	-0.01	0.09	0.00	0.00	0.43
	105	6.89C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.566

James Crosbie Associates Ltd.

25252

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Job Ref : B11323

Sheet : SD / 063

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	6.62C	0.00	-0.11	-0.09	-0.01	0.22	0.00	0.00	0.93
	106	6.62C	0.00	0.01	-0.24	0.01	-0.26	@ 0.000	@ 0.000	@ 1.495
222	114	6.18C	0.00	0.00	0.37	0.00	-0.24	0.00	0.00	0.82
	115	6.18C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
223	115	5.91C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.42
	116	5.91C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
224	116	5.60C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.43
	117	5.60C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
225	117	5.27C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.94
	118	5.27C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
230	126	7.36C	0.00	-0.12	0.07	0.01	0.09	0.00	0.00	0.42
	127	7.36C	0.00	-0.01	-0.08	-0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
231	127	7.09C	0.00	-0.12	-0.08	0.01	0.22	0.00	0.00	0.83
	128	7.09C	0.00	-0.01	-0.23	-0.01	-0.25	@ 0.000	@ 0.000	@ 1.515
232	128	6.83C	0.00	-0.12	0.38	-0.01	-0.24	0.00	0.00	0.82
	129	6.83C	0.00	0.01	0.23	0.01	0.22	@ 0.000	@ 0.000	@ 0.485
233	129	6.57C	0.00	-0.11	0.22	-0.01	-0.05	0.00	0.00	0.41
	130	6.57C	0.00	0.01	0.07	0.01	0.08	@ 0.000	@ 0.000	@ 1.414
234	138	6.15C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.42
	139	6.15C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
235	139	5.83C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.83
	140	5.83C	0.00	0.00	-0.23	0.00	-0.25	@ 0.000	@ 0.000	@ 1.515
236	140	5.53C	0.00	0.01	0.38	-0.01	-0.24	0.00	0.00	0.82
	141	5.53C	0.00	0.01	0.23	0.01	0.22	@ 0.000	@ 0.000	@ 0.485
237	141	5.26C	0.00	0.00	0.22	0.00	-0.05	0.00	0.00	0.41
	142	5.26C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
242	150	4.01C	0.00	-0.12	0.37	-0.01	-0.24	0.00	0.00	0.82
	151	4.01C	0.00	0.01	0.23	0.01	0.21	@ 0.000	@ 0.000	@ 0.485
243	151	3.86C	0.00	-0.12	0.22	0.01	-0.06	0.00	0.00	0.44
	152	3.86C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
244	152	3.70C	0.00	-0.12	0.07	-0.01	0.10	0.00	0.00	0.45
	153	3.70C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.566
245	153	3.55C	0.00	-0.11	-0.08	-0.01	0.22	0.00	0.00	0.95
	154	3.55C	0.00	0.01	-0.24	0.01	-0.26	@ 0.000	@ 0.000	@ 1.495
246	162	3.35C	0.00	0.01	0.37	-0.01	-0.24	0.00	0.00	0.82
	163	3.35C	0.00	0.01	0.23	0.01	0.21	@ 0.000	@ 0.000	@ 0.485
247	163	3.21C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.44
	164	3.21C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.414

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Job Ref : B11323

Sheet : SD / 064

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	3.04C	0.00	0.01	0.07	-0.01	0.10	0.00	0.00	0.45
	165	3.04C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.566
249	165	2.84C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.95
	166	2.84C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
306	10	5.09T	0.00	-0.17	0.64	-0.01	-0.46	0.00	0.00	1.54
	11	5.09T	0.00	0.01	0.43	0.01	0.41	@ 0.000	@ 0.000	@ 0.485
307	11	3.90C	0.00	-0.17	0.42	-0.02	-0.19	0.00	0.00	0.89
	12	3.90C	0.00	0.02	0.21	0.02	0.23	@ 0.000	@ 0.000	@ 1.475
308	22	2.80C	0.00	0.00	0.64	0.00	-0.46	0.00	0.00	1.53
	23	2.80C	0.00	0.00	0.43	0.00	0.40	@ 0.000	@ 0.000	@ 0.485
309	23	2.69C	0.00	0.01	0.42	0.01	-0.19	0.00	0.00	0.89
	24	2.69C	0.00	0.01	0.21	0.01	0.23	@ 0.000	@ 0.000	@ 1.475
312	34	10.84C	0.00	-0.16	0.10	-0.02	0.13	0.00	0.00	0.57
	35	10.84C	0.00	0.02	-0.11	0.02	-0.09	@ 0.000	@ 0.000	@ 0.566
313	35	9.72C	0.00	-0.16	-0.11	-0.03	0.30	0.00	0.00	1.44
	36	9.72C	0.00	0.02	-0.33	0.02	-0.37	@ 0.000	@ 0.000	@ 1.475
314	46	4.87C	0.00	0.00	0.10	0.00	0.13	0.00	0.00	0.58
	47	4.87C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
315	47	4.55C	0.00	-0.01	-0.12	0.01	0.29	0.00	0.00	1.45
	48	4.55C	0.00	-0.01	-0.33	-0.01	-0.37	@ 0.000	@ 0.000	@ 1.475
318	58	6.33C	0.00	-0.11	0.50	-0.02	-0.36	0.00	0.00	1.21
	59	6.33C	0.00	0.02	0.35	0.02	0.33	@ 0.000	@ 0.000	@ 0.485
319	59	6.08C	0.00	-0.10	0.34	-0.03	-0.16	0.00	0.00	0.67
	60	6.08C	0.00	0.03	0.18	0.03	0.19	@ 0.000	@ 0.000	@ 1.515
320	70	4.99C	0.00	0.00	0.50	0.00	-0.36	0.00	0.00	1.21
	71	4.99C	0.00	0.00	0.35	0.00	0.33	@ 0.000	@ 0.000	@ 0.485
321	71	4.76C	0.00	0.00	0.34	0.00	-0.16	0.00	0.00	0.66
	72	4.76C	0.00	0.00	0.18	0.01	0.19	@ 0.000	@ 0.000	@ 1.515
324	82	6.24C	0.00	-0.11	0.07	-0.02	0.11	0.00	0.00	0.46
	83	6.24C	0.00	0.02	-0.09	0.02	-0.08	@ 0.000	@ 0.000	@ 0.545
325	83	5.98C	0.00	-0.10	-0.10	-0.03	0.22	0.00	0.00	1.20
	84	5.98C	0.00	0.03	-0.26	0.03	-0.29	@ 0.000	@ 0.000	@ 1.454
326	94	4.91C	0.00	0.00	0.07	0.00	0.11	0.00	0.00	0.46
	95	4.91C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.545
327	95	4.57C	0.00	0.00	-0.10	0.00	0.22	0.00	0.00	1.21
	96	4.57C	0.00	0.00	-0.26	0.00	-0.29	@ 0.000	@ 0.000	@ 1.455
330	106	6.35C	0.00	-0.11	0.50	-0.02	-0.36	0.00	0.00	1.19
	107	6.35C	0.00	0.02	0.34	0.02	0.32	@ 0.000	@ 0.000	@ 0.485

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	6.09C	0.00	-0.10	0.33	-0.03	-0.16	0.00	0.00	0.65
	108	6.09C	0.00	0.03	0.17	0.03	0.18	@ 0.000	@ 0.000	@ 1.515
332	118	4.99C	0.00	0.00	0.50	0.00	-0.36	0.00	0.00	1.19
	119	4.99C	0.00	0.00	0.34	0.00	0.32	@ 0.000	@ 0.000	@ 0.485
333	119	4.76C	0.00	0.00	0.33	0.00	-0.16	0.00	0.00	0.65
	120	4.76C	0.00	0.00	0.17	0.00	0.18	@ 0.000	@ 0.000	@ 1.515
336	130	6.31C	0.00	-0.11	0.07	-0.02	0.11	0.00	0.00	0.46
	131	6.31C	0.00	0.02	-0.09	0.02	-0.08	@ 0.000	@ 0.000	@ 0.545
337	131	6.06C	0.00	-0.10	-0.10	-0.03	0.23	0.00	0.00	1.19
	132	6.06C	0.00	0.03	-0.26	0.03	-0.29	@ 0.000	@ 0.000	@ 1.475
338	142	4.96C	0.00	0.01	0.07	-0.01	0.11	0.00	0.00	0.46
	143	4.96C	0.00	0.01	-0.09	0.01	-0.08	@ 0.000	@ 0.000	@ 0.545
339	143	4.63C	0.00	0.00	-0.10	0.00	0.23	0.00	0.00	1.19
	144	4.63C	0.00	0.00	-0.26	0.01	-0.29	@ 0.000	@ 0.000	@ 1.475
342	154	3.39C	0.00	-0.11	0.51	-0.02	-0.37	0.00	0.00	1.23
	155	3.39C	0.00	0.02	0.35	0.02	0.33	@ 0.000	@ 0.000	@ 0.485
343	155	3.23C	0.00	-0.10	0.34	-0.03	-0.16	0.00	0.00	0.74
	156	3.23C	0.00	0.03	0.18	-0.03	0.20	@ 0.000	@ 0.000	@ 1.495
344	166	2.69C	0.00	0.01	0.51	-0.01	-0.37	0.00	0.00	1.23
	167	2.69C	0.00	0.01	0.35	0.01	0.33	@ 0.000	@ 0.000	@ 0.485
345	167	2.59C	0.00	0.01	0.34	0.00	-0.16	0.00	0.00	0.73
	168	2.59C	0.00	0.01	0.18	0.01	0.20	@ 0.000	@ 0.000	@ 1.495
412	12	3.38C	0.00	-0.17	0.20	-0.02	0.06	0.00	0.01	0.86
	169	3.38C	0.00	0.02	-0.02	0.02	0.02	@ 0.000	@ 0.000	@ 0.909
413	169	1.58C	0.00	-0.25	0.33	-0.02	0.61	0.00	0.00	1.68
	183	1.58C	0.00	0.30	-1.57	0.02	-0.60	@ 0.000	@ 0.000	@ 0.429
414	24	2.53C	0.00	-0.06	0.20	0.06	0.06	0.00	0.00	0.88
	170	2.53C	0.00	-0.06	-0.02	-0.06	0.02	@ 0.000	@ 0.000	@ 0.909
415	170	1.53C	0.00	0.05	0.33	-0.05	0.61	0.00	0.00	1.67
	184	1.53C	0.00	0.05	-1.57	0.04	-0.61	@ 0.000	@ 0.000	@ 0.429
416	36	7.84C	0.00	-0.16	0.93	-0.03	-0.70	0.00	0.00	2.17
	171	7.84C	0.00	0.03	0.71	0.03	0.73	@ 0.000	@ 0.000	@ 1.555
417	171	4.37C	0.00	-0.23	0.29	-0.03	0.68	0.00	0.00	2.26
	185	4.37C	0.00	0.31	-1.61	0.04	-0.61	@ 0.000	@ 0.000	@ 0.469
418	48	4.34C	0.00	-0.06	0.94	0.06	-0.70	0.00	0.00	2.19
	172	4.34C	0.00	-0.06	0.72	-0.06	0.73	@ 0.000	@ 0.000	@ 1.555
419	172	2.76C	0.00	0.05	0.29	-0.05	0.68	0.00	0.00	2.24
	186	2.75C	0.00	0.05	-1.61	0.05	-0.61	@ 0.000	@ 0.000	@ 0.469

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	5.82C	0.00	-0.10	0.22	-0.04	-0.01	0.00	0.00	0.80
	173	5.82C	0.00	0.04	0.05	0.04	0.09	@ 0.000	@ 0.000	@ 1.212
421	173	2.91C	0.00	-0.17	0.26	-0.05	0.58	0.00	0.00	1.64
	187	2.91C	0.00	0.27	-1.42	0.05	-0.56	@ 0.000	@ 0.000	@ 0.429
422	72	4.50C	0.00	-0.06	0.22	0.05	-0.02	0.00	0.00	0.83
	174	4.50C	0.00	-0.06	0.05	-0.06	0.09	@ 0.000	@ 0.000	@ 1.212
423	174	2.79C	0.00	0.06	0.26	-0.06	0.58	0.00	0.00	1.63
	188	2.78C	0.00	0.06	-1.42	0.05	-0.57	@ 0.000	@ 0.000	@ 0.429
424	84	5.71C	0.00	-0.10	0.82	-0.04	-0.64	0.00	0.00	2.04
	175	5.71C	0.00	0.03	0.66	0.03	0.68	@ 0.000	@ 0.000	@ 1.555
425	175	2.80C	0.00	-0.17	0.22	-0.04	0.64	0.00	0.00	2.12
	189	2.80C	0.00	0.27	-1.46	0.05	-0.58	@ 0.000	@ 0.000	@ 0.469
426	96	4.34C	0.00	-0.06	0.83	0.05	-0.64	0.00		2.06
	176	4.34C	0.00	-0.06	0.66	-0.06	0.68	@ 0.000		@ 1.555
427	176	2.71C	0.00	0.05	0.22	-0.06	0.64	0.00	0.00	2.11
	190	2.70C	0.00	0.05	-1.46	0.05	-0.58	@ 0.000	@ 0.000	@ 0.469
428	108	5.83C	0.00	-0.10	0.20	-0.04	0.00	0.00	0.00	0.75
	177	5.83C	0.00	0.03	0.04	0.03	0.07	@ 0.000	@ 0.000	@ 1.172
429	177	2.92C	0.00	-0.17	0.29	-0.05	0.55	0.00	0.00	1.55
	191	2.92C	0.00	0.27	-1.39	0.05	-0.54	@ 0.000	@ 0.000	@ 0.429
430	120	4.49C	0.00	-0.06	0.21	0.05	-0.01	0.00	0.00	0.77
	178	4.49C	0.00	-0.06	0.04	-0.06	0.08	@ 0.000	@ 0.000	@ 1.172
431	178	2.78C	0.00	0.05	0.29	-0.06	0.55	0.00		1.54
	192	2.78C	0.00	0.05	-1.40	0.05	-0.54	@ 0.000		@ 0.429
432	132	5.81C	0.00	-0.10	0.80	-0.04	-0.62	0.00	0.00	1.97
	179	5.81C	0.00	0.04	0.64	0.04	0.65	@ 0.000	@ 0.000	@ 1.555
433	179	2.91C	0.00	-0.17	0.25	-0.05	0.62	0.00	0.00	2.05
	193	2.91C	0.00	0.27	-1.44	0.05	-0.56	@ 0.000	@ 0.000	@ 0.469
434	144	4.40C	0.00	-0.06	0.80	0.05	-0.62	0.00	0.00	1.99
	180	4.40C	0.00	-0.06	0.64	-0.06	0.66	@ 0.000	@ 0.000	@ 1.555
435	180	2.78C	0.00	0.06	0.25	-0.06	0.62	0.00		2.03
	194	2.78C	0.00	0.06	-1.44	0.05	-0.56	@ 0.000		@ 0.469
436	156	3.08C	0.00	-0.10	0.17	-0.04	0.03		0.00	0.74
	181	3.08C	0.00	0.03	0.02	0.03	0.04		@ 0.000	@ 1.030
437	181	1.54C	0.00	-0.17	0.31	-0.05	0.53		0.00	1.47
	195	1.54C	0.00	0.27	-1.38	0.05	-0.52		@ 0.000	@ 0.429
438	168	2.46C	0.00	-0.05	0.17	0.05	0.03	0.00	0.00	0.75
	182	2.46C	0.00	-0.05	0.01	-0.06	0.04	@ 0.000	@ 0.000	@ 1.050

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 067

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	1.50C	0.00	0.06	0.31	-0.06	0.53		0.00	1.46
	196	1.50C	0.00	0.06	-1.38	0.05	-0.52	@	0.000	@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.915	15.490	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.136	0.000	-0.251
3	0.000	0.000	0.000	0.158	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	-0.024
5	0.000	0.000	0.000	-0.161	0.000	-0.020
6	0.000	0.000	0.000	0.000	0.000	-0.015
7	0.000	0.000	0.000	0.172	0.000	0.000
9	0.000	0.000	0.000	-0.168	0.000	0.015
10	0.000	0.000	0.000	0.056	0.000	0.027
11	0.000	0.000	0.000	0.280	0.000	0.038
12	0.000	0.000	0.000	0.090	0.000	0.046
13	-0.026	4.388	-0.218	0.000	0.000	0.000
14	0.024	0.000	0.899	0.079	0.000	0.000
15	0.000	0.000	0.000	0.165	0.000	0.000
17	0.000	0.000	0.000	-0.163	0.000	0.000
18	-2.984	0.000	1.543	0.000	0.000	0.000
19	0.000	0.000	0.000	0.174	0.000	0.000
21	0.000	0.000	0.000	-0.170	0.000	0.000
22	-2.985	0.000	1.896	0.059	0.000	0.000
23	0.000	0.000	0.000	0.281	0.000	0.000
24	0.000	0.000	0.000	0.092	0.000	-0.021
25	1.083	6.731	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.040	0.000	-0.203
28	0.000	0.000	0.000	0.080	0.000	-0.019
29	0.000	0.000	0.000	0.148	0.000	-0.016
30	0.000	0.000	0.000	0.000	0.000	-0.011
31	0.000	0.000	0.000	-0.156	0.000	0.000
33	0.000	0.000	0.000	0.152	0.000	0.011
34	0.000	0.000	0.000	-0.010	0.000	0.019
35	0.000	0.000	0.000	-0.163	0.000	0.027
36	0.000	0.000	0.000	0.152	0.000	0.033
37	-0.019	7.273	-0.060	0.000	0.000	0.000
38	0.018	0.000	0.367	0.022	0.000	0.000
40	-1.674	0.000	1.115	0.079	0.000	0.000
41	0.000	0.000	0.000	0.150	0.000	0.000
43	0.000	0.000	0.000	-0.158	0.000	0.000
44	-1.736	0.000	1.569	0.000	0.000	0.000
45	0.000	0.000	0.000	0.155	0.000	0.000
47	0.000	0.000	0.000	-0.165	0.000	0.000
48	-6.098	0.000	2.531	0.153	0.000	-0.018
49	0.971	8.774	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.101	0.000	-0.197
51	0.000	0.000	0.000	0.114	0.000	0.000
52	0.000	0.000	0.000	0.000	0.000	-0.014
53	0.000	0.000	0.000	-0.116	0.000	-0.011
55	0.000	0.000	0.000	0.119	0.000	0.000
57	0.000	0.000	0.000	-0.120	0.000	0.000
58	0.000	0.000	0.000	0.050	0.000	0.014

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Job Ref : B11323

Sheet : SD / 068

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Date : 29 September 2010 / Ver. 2010.06

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
59	0.000	0.000	0.000	0.217	0.000	0.020
60	0.000	0.000	0.000	0.106	0.000	0.024
61	-0.019	7.605	-0.162	0.000	0.000	0.000
62	0.018	0.000	0.665	0.059	0.000	0.000
63	0.000	0.000	0.000	0.119	0.000	0.000
65	0.000	0.000	0.000	-0.116	0.000	0.000
66	1.196	0.000	1.159	0.000	0.000	0.000
67	0.000	0.000	0.000	0.119	0.000	0.000
69	0.000	0.000	0.000	-0.120	0.000	0.000
70	1.308	0.000	1.459	0.051	0.000	0.000
71	0.000	0.000	0.000	0.218	0.000	0.000
72	0.000	0.000	0.000	0.107	0.000	-0.021
73	0.934	8.727	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.031	0.000	-0.192
76	0.000	0.000	0.000	0.062	0.000	-0.017
77	0.000	0.000	0.000	0.117	0.000	-0.015
78	0.000	0.000	0.000	0.000	0.000	-0.011
79	0.000	0.000	0.000	-0.119	0.000	0.000
81	0.000	0.000	0.000	0.118	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.015
83	0.000	0.000	0.000	-0.122	0.000	0.022
84	0.000	0.000	0.000	0.168	0.000	0.027
85	-0.018	7.535	-0.046	0.000	0.000	0.000
86	0.017	0.000	0.273	0.017	0.000	0.000
88	-0.027	0.000	0.850	0.063	0.000	0.000
89	0.000	0.000	0.000	0.118	0.000	0.000
91	0.000	0.000	0.000	-0.119	0.000	0.000
92	-0.027	0.000	1.190	0.000	0.000	0.000
93	0.000	0.000	0.000	0.119	0.000	0.000
95	0.000	0.000	0.000	-0.122	0.000	0.000
96	0.418	0.000	2.204	0.170	0.000	-0.021
97	0.907	8.834	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.101	0.000	-0.188
99	0.000	0.000	0.000	0.115	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	-0.017
101	0.000	0.000	0.000	-0.117	0.000	-0.015
102	0.000	0.000	0.000	0.000	0.000	-0.011
103	0.000	0.000	0.000	0.120	0.000	0.000
105	0.000	0.000	0.000	-0.121	0.000	0.000
106	0.000	0.000	0.000	0.047	0.000	0.015
107	0.000	0.000	0.000	0.212	0.000	0.022
108	0.000	0.000	0.000	0.098	0.000	0.027
109	-0.018	7.615	-0.162	0.000	0.000	0.000
110	0.017	0.000	0.665	0.059	0.000	0.000
111	0.000	0.000	0.000	0.119	0.000	0.000
113	0.000	0.000	0.000	-0.116	0.000	0.000
114	-0.027	0.000	1.150	0.000	0.000	0.000
115	0.000	0.000	0.000	0.121	0.000	0.000
117	0.000	0.000	0.000	-0.121	0.000	0.000
118	-0.026	0.000	1.434	0.047	0.000	0.000
119	0.000	0.000	0.000	0.212	0.000	0.000
120	0.000	0.000	0.000	0.099	0.000	-0.021
121	0.894	8.747	0.000	0.000	0.000	0.000
122	0.000	0.000	0.000	0.031	0.000	-0.183
124	0.000	0.000	0.000	0.062	0.000	-0.017
125	0.000	0.000	0.000	0.117	0.000	-0.016
126	0.000	0.000	0.000	0.000	0.000	-0.012
127	0.000	0.000	0.000	-0.119	0.000	0.000

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 069

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Date : 29 September 2010 / Ver. 2010.06

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
129	0.000	0.000	0.000	0.119	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.012
131	0.000	0.000	0.000	-0.122	0.000	0.019
132	0.000	0.000	0.000	0.159	0.000	0.024
133	-0.017	7.545	-0.046	0.000	0.000	0.000
134	0.016	0.000	0.273	0.017	0.000	0.000
136	1.687	0.000	0.843	0.063	0.000	0.000
137	0.000	0.000	0.000	0.118	0.000	0.000
139	0.000	0.000	0.000	-0.119	0.000	0.000
140	1.755	0.000	1.183	0.000	0.000	0.000
141	0.000	0.000	0.000	0.119	0.000	0.000
143	0.000	0.000	0.000	-0.121	0.000	0.000
144	5.785	0.000	2.109	0.160	0.000	-0.023
145	0.807	4.779	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.102	0.000	-0.215
147	0.000	0.000	0.000	0.117	0.000	0.000
148	0.000	0.000	0.000	0.000	0.000	-0.022
149	0.000	0.000	0.000	-0.123	0.000	-0.020
150	0.000	0.000	0.000	0.000	0.000	-0.016
151	0.000	0.000	0.000	0.126	0.000	-0.010
153	0.000	0.000	0.000	-0.130	0.000	0.000
154	0.000	0.000	0.000	0.051	0.000	0.014
155	0.000	0.000	0.000	0.227	0.000	0.022
156	0.000	0.000	0.000	0.084	0.000	0.028
157	-0.027	4.133	-0.161	0.000	0.000	0.000
158	0.024	0.000	0.674	0.059	0.000	0.000
159	0.000	0.000	0.000	0.122	0.000	0.000
161	0.000	0.000	0.000	-0.122	0.000	0.000
162	1.791	0.000	1.156	0.000	0.000	0.000
163	0.000	0.000	0.000	0.127	0.000	0.000
165	0.000	0.000	0.000	-0.130	0.000	0.000
166	1.691	0.000	1.463	0.051	0.000	0.000
167	0.000	0.000	0.000	0.227	0.000	0.000
168	0.000	0.000	0.000	0.085	0.000	-0.029
169	0.000	0.000	0.000	-0.267	0.000	0.055
170	0.000	0.000	0.000	-0.271	0.000	0.011
171	0.000	0.000	0.000	0.016	0.000	0.043
172	0.000	0.000	0.000	0.018	0.000	0.000
173	0.000	0.000	0.000	-0.212	0.000	0.030
174	0.000	0.000	0.000	-0.220	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.035
177	0.000	0.000	0.000	-0.205	0.000	0.035
178	0.000	0.000	0.000	-0.212	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.032
181	0.000	0.000	0.000	-0.225	0.000	0.034
182	0.000	0.000	0.000	-0.228	0.000	-0.012
183	0.000	0.000	0.000	-0.291	0.000	0.053
184	1.591	0.000	4.253	-0.288	0.000	0.044
185	0.000	0.000	0.000	-0.306	0.000	0.029
186	0.000	0.000	0.000	-0.300	0.000	0.027
187	0.000	0.000	0.000	-0.276	0.000	0.016
188	2.510	0.000	6.372	-0.273	0.000	0.024
189	0.000	0.000	0.000	-0.278	0.000	0.023
190	0.000	0.000	0.000	-0.277	0.000	0.025
191	0.000	0.000	0.000	-0.262	0.000	0.023
192	1.462	0.000	6.113	-0.258	0.000	0.025
193	0.000	0.000	0.000	-0.270	0.000	0.019
194	0.000	0.000	0.000	-0.265	0.000	0.022

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Job Ref : B11323

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
195	0.000	0.000	0.000	-0.258	0.000	-0.029
196	-0.958	0.000	3.661	-0.254	0.000	-0.027
Total	13.028	99.914	48.219	-0.494	0.000	-0.754

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Job Ref : B11323

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L1	Live Load
Load Group L2	Live Load
Load Group L3	Live Load
Load Group L4	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.089	2	2.500	0.089
3	4.500	0.089	4	6.500	0.089	5	8.500	0.089
6	10.500	0.089	7	12.500	0.089	8	14.500	0.089
9	16.500	0.089	10	18.500	0.089	11	20.500	0.089
12	22.500	0.639	13	24.500	1.053			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.005	3	0.005	4	0.005
5	0.005	6	0.005	7	0.005	8	0.005
9	0.005	10	0.005	11	0.005	12	0.005
13	0.000	14	0.004	15	0.004	16	0.004
17	0.004	18	0.004	19	0.004	20	0.004
21	0.004	22	0.004	23	0.004	24	0.004
25	0.000	26	0.009	27	0.009	28	0.009
29	0.009	30	0.009	31	0.009	32	0.009
33	0.009	34	0.009	35	0.009	36	0.009
37	0.000	38	0.007	39	0.007	40	0.007
41	0.007	42	0.007	43	0.007	44	0.007
45	0.007	46	0.007	47	0.007	48	0.007
49	0.000	50	0.007	51	0.007	52	0.007
53	0.007	54	0.007	55	0.007	56	0.007
57	0.007	58	0.007	59	0.007	60	0.007
61	0.000	62	0.007	63	0.007	64	0.007
65	0.007	66	0.007	67	0.007	68	0.007
69	0.007	70	0.007	71	0.007	72	0.007
73	0.000	74	0.007	75	0.007	76	0.007
77	0.007	78	0.007	79	0.007	80	0.007
81	0.007	82	0.007	83	0.007	84	0.007
85	0.000	86	0.007	87	0.007	88	0.007
89	0.007	90	0.007	91	0.007	92	0.007
93	0.007	94	0.007	95	0.007	96	0.007
97	0.000	98	0.007	99	0.007	100	0.007
101	0.007	102	0.007	103	0.007	104	0.007
105	0.007	106	0.007	107	0.007	108	0.007
109	0.000	110	0.007	111	0.007	112	0.007
113	0.007	114	0.007	115	0.007	116	0.007
117	0.007	118	0.007	119	0.007	120	0.007
121	0.000	122	0.007	123	0.007	124	0.007

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125	0.007	126	0.007	127	0.007	128	0.007
129	0.007	130	0.007	131	0.007	132	0.007
133	0.000	134	0.007	135	0.007	136	0.007
137	0.007	138	0.007	139	0.007	140	0.007
141	0.007	142	0.007	143	0.007	144	0.007
145	0.000	146	0.004	147	0.004	148	0.004
149	0.004	150	0.004	151	0.004	152	0.004
153	0.004	154	0.004	155	0.004	156	0.004
157	0.000	158	0.004	159	0.004	160	0.004
161	0.004	162	0.004	163	0.004	164	0.004
165	0.004	166	0.004	167	0.004	168	0.004
169	0.031	170	0.026	171	0.057	172	0.049
173	0.056	174	0.049	175	0.056	176	0.049
177	0.056	178	0.049	179	0.056	180	0.049
181	0.030	182	0.026	183	0.049	184	0.043
185	0.092	186	0.084	187	0.091	188	0.084
189	0.088	190	0.082	191	0.091	192	0.084
193	0.091	194	0.084	195	0.047	196	0.043

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 N1

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L1 + 0.25 L3 + 1.00 W4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 W2

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L1 + 0.25 L3 + 1.00 W5

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	2.500	0.000	0.000	26	2.500	0.500	0.000
27	2.500	2.500	0.000	28	2.500	4.500	0.000
29	2.500	6.500	0.000	30	2.500	8.500	0.000
31	2.500	10.500	0.000	32	2.500	12.500	0.000
33	2.500	14.500	0.000	34	2.500	16.500	0.000
35	2.500	18.500	0.000	36	2.500	20.500	0.000
37	2.500	0.000	1.300	38	2.500	0.500	1.300
39	2.500	2.500	1.300	40	2.500	4.500	1.300
41	2.500	6.500	1.300	42	2.500	8.500	1.300
43	2.500	10.500	1.300	44	2.500	12.500	1.300
45	2.500	14.500	1.300	46	2.500	16.500	1.300
47	2.500	18.500	1.300	48	2.500	20.500	1.300
49	5.000	0.000	0.000	50	5.000	0.500	0.000
51	5.000	2.500	0.000	52	5.000	4.500	0.000
53	5.000	6.500	0.000	54	5.000	8.500	0.000
55	5.000	10.500	0.000	56	5.000	12.500	0.000
57	5.000	14.500	0.000	58	5.000	16.500	0.000
59	5.000	18.500	0.000	60	5.000	20.500	0.000
61	5.000	0.000	1.300	62	5.000	0.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 073****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	5.000	2.500	1.300	64	5.000	4.500	1.300
65	5.000	6.500	1.300	66	5.000	8.500	1.300
67	5.000	10.500	1.300	68	5.000	12.500	1.300
69	5.000	14.500	1.300	70	5.000	16.500	1.300
71	5.000	18.500	1.300	72	5.000	20.500	1.300
73	7.500	0.000	0.000	74	7.500	0.500	0.000
75	7.500	2.500	0.000	76	7.500	4.500	0.000
77	7.500	6.500	0.000	78	7.500	8.500	0.000
79	7.500	10.500	0.000	80	7.500	12.500	0.000
81	7.500	14.500	0.000	82	7.500	16.500	0.000
83	7.500	18.500	0.000	84	7.500	20.500	0.000
85	7.500	0.000	1.300	86	7.500	0.500	1.300
87	7.500	2.500	1.300	88	7.500	4.500	1.300
89	7.500	6.500	1.300	90	7.500	8.500	1.300
91	7.500	10.500	1.300	92	7.500	12.500	1.300
93	7.500	14.500	1.300	94	7.500	16.500	1.300
95	7.500	18.500	1.300	96	7.500	20.500	1.300
97	10.000	0.000	0.000	98	10.000	0.500	0.000
99	10.000	2.500	0.000	100	10.000	4.500	0.000
101	10.000	6.500	0.000	102	10.000	8.500	0.000
103	10.000	10.500	0.000	104	10.000	12.500	0.000
105	10.000	14.500	0.000	106	10.000	16.500	0.000
107	10.000	18.500	0.000	108	10.000	20.500	0.000
109	10.000	0.000	1.300	110	10.000	0.500	1.300
111	10.000	2.500	1.300	112	10.000	4.500	1.300
113	10.000	6.500	1.300	114	10.000	8.500	1.300
115	10.000	10.500	1.300	116	10.000	12.500	1.300
117	10.000	14.500	1.300	118	10.000	16.500	1.300
119	10.000	18.500	1.300	120	10.000	20.500	1.300
121	12.500	0.000	0.000	122	12.500	0.500	0.000
123	12.500	2.500	0.000	124	12.500	4.500	0.000
125	12.500	6.500	0.000	126	12.500	8.500	0.000
127	12.500	10.500	0.000	128	12.500	12.500	0.000
129	12.500	14.500	0.000	130	12.500	16.500	0.000
131	12.500	18.500	0.000	132	12.500	20.500	0.000
133	12.500	0.000	1.300	134	12.500	0.500	1.300
135	12.500	2.500	1.300	136	12.500	4.500	1.300
137	12.500	6.500	1.300	138	12.500	8.500	1.300
139	12.500	10.500	1.300	140	12.500	12.500	1.300
141	12.500	14.500	1.300	142	12.500	16.500	1.300
143	12.500	18.500	1.300	144	12.500	20.500	1.300
145	15.000	0.000	0.000	146	15.000	0.500	0.000
147	15.000	2.500	0.000	148	15.000	4.500	0.000
149	15.000	6.500	0.000	150	15.000	8.500	0.000
151	15.000	10.500	0.000	152	15.000	12.500	0.000
153	15.000	14.500	0.000	154	15.000	16.500	0.000
155	15.000	18.500	0.000	156	15.000	20.500	0.000
157	15.000	0.000	1.300	158	15.000	0.500	1.300
159	15.000	2.500	1.300	160	15.000	4.500	1.300
161	15.000	6.500	1.300	162	15.000	8.500	1.300
163	15.000	10.500	1.300	164	15.000	12.500	1.300
165	15.000	14.500	1.300	166	15.000	16.500	1.300
167	15.000	18.500	1.300	168	15.000	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	2.500	22.500	0.000	172	2.500	22.500	1.300
173	5.000	22.500	0.000	174	5.000	22.500	1.300
175	7.500	22.500	0.000	176	7.500	22.500	1.300
177	10.000	22.500	0.000	178	10.000	22.500	1.300
179	12.500	22.500	0.000	180	12.500	22.500	1.300
181	15.000	22.500	0.000	182	15.000	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	2.500	24.500	0.000	186	2.500	24.500	1.300
187	5.000	24.500	0.000	188	5.000	24.500	1.300
189	7.500	24.500	0.000	190	7.500	24.500	1.300
191	10.000	24.500	0.000	192	10.000	24.500	1.300
193	12.500	24.500	0.000	194	12.500	24.500	1.300
195	15.000	24.500	0.000	196	15.000	24.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 074****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties****Members 1-453**

M 48.3x3.2 CHS 3.56 [S 355]
 A 4.53E-4 Ix 11.59E-8 Iy 11.59E-8 J 23.17E-8
 E 205.0E6 G 78.85E6

Member Loading**Members 2 and 17**

W1 PZ -000.015 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.085 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.013 0.000 (kN,m)
 W5 PX -000.071 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 3 and 18

W1 PZ -000.032 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.174 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.026 0.000 (kN,m)
 W5 PX -000.147 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 4 and 19

W1 PZ -000.033 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.180 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.027 0.000 (kN,m)
 W5 PX -000.152 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 5 and 20

W1 PZ -000.033 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.185 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.028 0.000 (kN,m)
 W5 PX -000.156 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 7 and 22

W1 PZ -000.015 0.000 (kN,m)
 W4 PZ -000.085 0.000 (kN,m)

Members 8 and 23

W1 PZ -000.032 0.000 (kN,m)
 W4 PZ -000.174 0.000 (kN,m)

Members 9 and 24

W1 PZ -000.033 0.000 (kN,m)
 W4 PZ -000.180 0.000 (kN,m)

Members 10 and 25

W1 PZ -000.033 0.000 (kN,m)
 W4 PZ -000.185 0.000 (kN,m)

Members 11 and 26

D1 PY -000.026 1.275 (kN,m)
 D1 PY -000.026 0.025 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 075****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 12-15, 27-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347 and 396

D1 PY -000.026 0.025 (kN, m)
D1 PY -000.026 1.275 (kN, m)

Members 32, 47, 92, 121 and 136

W1 PZ -000.009 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.063 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.009 0.000 (kN, m)
W5 PX -000.051 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 33, 48, 93, 122 and 137

W1 PZ -000.018 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.131 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.106 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 34, 49, 94, 123 and 138

W1 PZ -000.019 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.135 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.109 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 35, 50, 95, 124 and 139

W1 PZ -000.019 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.139 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.020 0.000 (kN, m)
W5 PX -000.112 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 37, 52, 97, 126 and 141

W1 PZ -000.009 0.000 (kN, m)
W4 PZ -000.063 0.000 (kN, m)

Members 38, 53, 98, 127 and 142

W1 PZ -000.018 0.000 (kN, m)
W4 PZ -000.131 0.000 (kN, m)

Members 39, 54, 99, 128 and 143

W1 PZ -000.019 0.000 (kN, m)
W4 PZ -000.135 0.000 (kN, m)

Members 40, 55, 100, 129 and 144

W1 PZ -000.019 0.000 (kN, m)
W4 PZ -000.139 0.000 (kN, m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY -000.186 0.025 (kN, m)
D1 PY -000.186 2.475 (kN, m)

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359 and 361-371

D1 PY -000.130 0.025 (kN, m)
D1 PY -000.130 2.475 (kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 076****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 170 and 182**

W1 PZ	-000.034	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.190	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.161	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 171 and 183

W1 PZ	-000.035	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.195	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.165	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 172 and 184

W1 PZ	-000.036	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.201	0.000	(kN,m)
W6 PZ	-002.000	0.000	(kN,m)
W2 PX	-000.030	0.000	(kN,m)
W5 PX	-000.170	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 173 and 185

W1 PZ	-000.037	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.206	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.031	0.000	(kN,m)
W5 PX	-000.174	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 174 and 186

W1 PZ	-000.034	0.000	(kN,m)
W4 PZ	-000.190	0.000	(kN,m)

Members 175 and 187

W1 PZ	-000.035	0.000	(kN,m)
W4 PZ	-000.195	0.000	(kN,m)

Members 176 and 188

W1 PZ	-000.036	0.000	(kN,m)
W4 PZ	-000.201	0.000	(kN,m)

Members 177 and 189

W1 PZ	-000.037	0.000	(kN,m)
W4 PZ	-000.206	0.000	(kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ	-000.020	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.143	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 195, 207, 219, 231 and 243

W1 PZ	-000.020	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 077****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ	-000.147	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.021	0.000	(kN, m)
W5 PX	-000.119	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.021	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.151	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.122	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.021	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.154	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.125	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.020	0.000	(kN, m)
W4 PZ	-000.143	0.000	(kN, m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.020	0.000	(kN, m)
W4 PZ	-000.147	0.000	(kN, m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.021	0.000	(kN, m)
W4 PZ	-000.151	0.000	(kN, m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.021	0.000	(kN, m)
W4 PZ	-000.154	0.000	(kN, m)

Members 306 and 312

W1 PZ	-000.038	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.211	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.032	0.000	(kN, m)
W5 PX	-000.178	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 307 and 313

W1 PZ	-000.039	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.216	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.033	0.000	(kN, m)
W5 PX	-000.183	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 308 and 314

W1 PZ	-000.038	0.000	(kN, m)
W4 PZ	-000.211	0.000	(kN, m)

Members 309 and 315

W1 PZ	-000.039	0.000	(kN, m)
W4 PZ	-000.216	0.000	(kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 078****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 318, 324, 330, 336 and 342**

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.159	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.128	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.162	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.159	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.162	0.000	(kN,m)

Members 374-380, 393-395 and 397-399

D1 PY	-000.145	0.025	(kN,m)
D1 PY	-000.110	1.275	(kN,m)

Member 381

D1 PY	-000.399	0.025	(kN,m)
D1 PY	-000.399	2.475	(kN,m)
L2 PY	-001.406	0.025	(kN,m)
L2 PY	-001.406	2.475	(kN,m)
L6 PY	-001.055	0.025	(kN,m)
L6 PY	-001.055	2.475	(kN,m)
G2 PY	-002.109	0.025	(kN,m)
G2 PY	-002.109	2.475	(kN,m)

Members 382-386

D1 PY	-000.343	0.025	(kN,m)
D1 PY	-000.343	2.475	(kN,m)
L2 PY	-001.406	0.025	(kN,m)
L2 PY	-001.406	2.475	(kN,m)
L5 PY	-001.055	0.025	(kN,m)
L5 PY	-001.055	2.475	(kN,m)
G2 PY	-002.109	0.025	(kN,m)
G2 PY	-002.109	2.475	(kN,m)

Members 387-392

D1 PY	-000.220	0.025	(kN,m)
D1 PY	-000.220	2.475	(kN,m)
L4 PY	-001.406	0.025	(kN,m)
L4 PY	-001.406	2.475	(kN,m)
L8 PY	-001.055	0.025	(kN,m)
L8 PY	-001.055	2.475	(kN,m)
G4 PY	-002.109	0.025	(kN,m)
G4 PY	-002.109	2.475	(kN,m)

Member 400

D1 PY	-000.399	0.025	(kN,m)
D1 PY	-000.399	2.475	(kN,m)
L1 PY	-001.406	0.025	(kN,m)
L1 PY	-001.406	2.475	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-001.055	0.025	(kN,m)
L5 PY	-001.055	2.475	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 079****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Members 401-404

D1 PY -000.343 0.025 (kN,m)
 D1 PY -000.343 2.475 (kN,m)
 L1 PY -001.406 0.025 (kN,m)
 L1 PY -001.406 2.475 (kN,m)
 N1 PZ -000.300 0.025 (kN,m)
 L5 PY -001.055 0.025 (kN,m)
 L5 PY -001.055 2.475 (kN,m)
 G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Member 405

D1 PY -000.343 0.025 (kN,m)
 D1 PY -000.343 2.475 (kN,m)
 L1 PY -001.406 0.025 (kN,m)
 L1 PY -001.406 2.475 (kN,m)
 N1 PZ -000.300 0.025 (kN,m)
 N1 PZ -000.300 2.475 (kN,m)
 L5 PY -001.055 0.025 (kN,m)
 L5 PY -001.055 2.475 (kN,m)
 G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Members 406-411

D1 PY -000.220 0.025 (kN,m)
 D1 PY -000.220 2.475 (kN,m)
 L3 PY -001.406 0.025 (kN,m)
 L3 PY -001.406 2.475 (kN,m)
 L7 PY -001.055 0.025 (kN,m)
 L7 PY -001.055 2.475 (kN,m)
 G3 PY -002.109 0.025 (kN,m)
 G3 PY -002.109 2.475 (kN,m)

Members 412 and 416

W1 PZ -000.040 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.222 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.033 0.000 (kN,m)
 W5 PX -000.187 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 413 and 417

W1 PZ -000.207 0.000 (kN,m)
 W1 PZ -000.212 2.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.938 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W3 PZ -000.000 2.000 (kN,m)
 W4 PZ -000.959 2.000 (kN,m)
 W6 PZ -000.000 2.000 (kN,m)
 W2 PX -000.067 0.000 (kN,m)
 W2 PX -000.069 2.000 (kN,m)
 W5 PX -000.268 0.000 (kN,m)
 W5 PX -000.275 2.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W7 PX -000.000 2.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 2.000 (kN,m)

Members 414 and 418

W1 PZ -000.040 0.000 (kN,m)
 W4 PZ -000.222 0.000 (kN,m)

Members 415 and 419

W1 PZ -000.207 0.000 (kN,m)
 W1 PZ -000.212 2.000 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 080****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ -000.938 0.000 (kN,m)
W4 PZ -000.959 2.000 (kN,m)

Members 420, 424, 428, 432 and 436

W1 PZ -000.023 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.166 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.024 0.000 (kN,m)
W5 PX -000.135 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ -000.198 0.000 (kN,m)
W1 PZ -000.202 2.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.834 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W3 PZ -000.000 2.000 (kN,m)
W4 PZ -000.853 2.000 (kN,m)
W6 PZ -000.000 2.000 (kN,m)
W2 PX -000.067 0.000 (kN,m)
W2 PX -000.069 2.000 (kN,m)
W5 PX -000.215 0.000 (kN,m)
W5 PX -000.220 2.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W7 PX -000.000 2.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)
W8 PX -000.000 2.000 (kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ -000.023 0.000 (kN,m)
W4 PZ -000.166 0.000 (kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ -000.198 0.000 (kN,m)
W1 PZ -000.202 2.000 (kN,m)
W4 PZ -000.834 0.000 (kN,m)
W4 PZ -000.853 2.000 (kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Relased	® Fixed			
11	ROO ROO	12	ROO ROO	13	ROO ROO	14	ROO ROO
15	ROO ROO	26	ROO ROO	27	ROO ROO	28	ROO ROO
29	ROO ROO	30	ROO ROO	41	ROO ROO	42	ROO ROO
43	ROO ROO	44	ROO ROO	45	ROO ROO	56	ROO ROO
57	ROO ROO	58	ROO ROO	59	ROO ROO	60	ROO ROO
61	ROO ROO	62	ROO ROO	63	ROO ROO	64	ROO ROO
65	ROO ROO	66	ROO ROO	67	ROO ROO	68	ROO ROO
69	ROO ROO	70	ROO ROO	71	ROO ROO	72	ROO ROO
73	ROO ROO	74	ROO ROO	75	ROO ROO	76	ROO ROO
77	ROO ROO	78	ROO ROO	79	ROO ROO	80	ROO ROO
81	ROO ROO	82	ROO ROO	83	ROO ROO	84	ROO ROO
85	ROO ROO	86	ROO ROO	87	ROO ROO	88	ROO ROO
89	ROO ROO	90	ROO ROO	101	ROO ROO	102	ROO ROO
103	ROO ROO	104	ROO ROO	105	ROO ROO	106	ROO ROO
107	ROO ROO	108	ROO ROO	109	ROO ROO	110	ROO ROO
111	ROO ROO	112	ROO ROO	113	ROO ROO	114	ROO ROO
115	ROO ROO	116	ROO ROO	117	ROO ROO	118	ROO ROO
119	ROO ROO	130	ROO ROO	131	ROO ROO	132	ROO ROO
133	ROO ROO	134	ROO ROO	145	ROO ROO	146	ROO ROO
147	ROO ROO	148	ROO ROO	149	ROO ROO	150	ROO ROO
151	ROO ROO	152	ROO ROO	153	ROO ROO	154	ROO ROO
155	ROO ROO	156	ROO ROO	157	ROO ROO	158	ROO ROO
159	ROO ROO	160	ROO ROO	161	ROO ROO	162	ROO ROO
163	ROO ROO	164	ROO ROO	165	ROO ROO	166	ROO ROO
167	ROO ROO	168	ROO ROO	169	ROO ROO	178	ROO ROO
179	ROO ROO	180	ROO ROO	181	ROO ROO	190	ROO ROO
191	ROO ROO	192	ROO ROO	193	ROO ROO	202	ROO ROO

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 081****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

203	ROO	ROO	204	ROO	ROO	205	ROO	ROO	214	ROO	ROO
215	ROO	ROO	216	ROO	ROO	217	ROO	ROO	226	ROO	ROO
227	ROO	ROO	228	ROO	ROO	229	ROO	ROO	238	ROO	ROO
239	ROO	ROO	240	ROO	ROO	241	ROO	ROO	250	ROO	ROO
251	ROO	ROO	252	ROO	ROO	253	ROO	ROO	254	ROO	ROO
255	ROO	ROO	256	ROO	ROO	257	ROO	ROO	258	ROO	ROO
259	ROO	ROO	260	ROO	ROO	261	ROO	ROO	262	ROO	ROO
263	ROO	ROO	264	ROO	ROO	265	ROO	ROO	266	ROO	ROO
267	ROO	ROO	268	ROO	ROO	269	ROO	ROO	270	ROO	ROO
271	ROO	ROO	272	ROO	ROO	273	ROO	ROO	274	ROO	ROO
275	ROO	ROO	276	ROO	ROO	277	ROO	ROO	278	ROO	ROO
279	ROO	ROO	280	ROO	ROO	281	ROO	ROO	282	ROO	ROO
283	ROO	ROO	284	ROO	ROO	285	ROO	ROO	286	ROO	ROO
287	ROO	ROO	288	ROO	ROO	289	ROO	ROO	290	ROO	ROO
291	ROO	ROO	292	ROO	ROO	293	ROO	ROO	294	ROO	ROO
295	ROO	ROO	296	ROO	ROO	297	ROO	ROO	298	ROO	ROO
299	ROO	ROO	300	ROO	ROO	301	ROO	ROO	302	ROO	ROO
303	ROO	ROO	304	ROO	ROO	305	ROO	ROO	310	ROO	ROO
311	ROO	ROO	316	ROO	ROO	317	ROO	ROO	322	ROO	ROO
323	ROO	ROO	328	ROO	ROO	329	ROO	ROO	334	ROO	ROO
335	ROO	ROO	340	ROO	ROO	341	ROO	ROO	346	ROO	ROO
347	ROO	ROO	348	ROO	ROO	349	ROO	ROO	350	ROO	ROO
351	ROO	ROO	352	ROO	ROO	353	ROO	ROO	354	ROO	ROO
355	ROO	ROO	356	ROO	ROO	357	ROO	ROO	358	ROO	ROO
359	ROO	ROO	360	ROO	ROO	361	ROO	ROO	362	ROO	ROO
363	ROO	ROO	364	ROO	ROO	365	ROO	ROO	366	ROO	ROO
367	ROO	ROO	368	ROO	ROO	369	ROO	ROO	370	ROO	ROO
371	ROO	ROO	372	ROO	ROO	373	ROO	ROO	374	ROO	ROO
375	ROO	ROO	376	ROO	ROO	377	ROO	ROO	378	ROO	ROO
379	ROO	ROO	380	ROO	ROO	381	ROO	ROO	382	ROO	ROO
383	ROO	ROO	384	ROO	ROO	385	ROO	ROO	386	ROO	ROO
387	ROO	ROO	388	ROO	ROO	389	ROO	ROO	390	ROO	ROO
391	ROO	ROO	392	ROO	ROO	393	ROO	ROO	394	ROO	ROO
395	ROO	ROO	396	ROO	ROO	397	ROO	ROO	398	ROO	ROO
399	ROO	ROO	400	ROO	ROO	401	ROO	ROO	402	ROO	ROO
403	ROO	ROO	404	ROO	ROO	405	ROO	ROO	406	ROO	ROO
407	ROO	ROO	408	ROO	ROO	409	ROO	ROO	410	ROO	ROO
411	ROO	ROO	440	ROO	ROO	441	ROO	ROO	442	ROO	ROO
443	ROO	ROO	444	ROO	ROO	445	ROO	ROO	446	ROO	ROO
447	ROO	ROO	448	ROO	ROO	449	ROO	ROO	450	ROO	ROO
451	ROO	ROO	452	ROO	ROO	453	ROO	ROO			

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0104.050 0000.000 0104.050

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 082

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.65	0.65	-0.08	0.00	0.44	0.45
2	-2.96	-0.10	0.01	2.96	-0.08	0.00	0.14	0.16
3	-3.66	-0.32	-10.34	10.97	-0.09	0.00	0.00	0.09
4	-4.45	-0.44	-14.39	15.07	0.00	-0.02	0.01	0.03
5	-5.22	-0.56	-9.86	11.18	0.09	-0.02	0.01	0.09
6	-5.87	-0.69	0.03	5.91	0.00	0.00	0.01	0.01
7	-6.28	-0.81	-10.31	12.10	-0.09	0.00	0.00	0.09
8	-6.40	-0.95	-14.84	16.19	0.00	-0.02	0.00	0.02
9	-6.17	-1.07	-10.12	11.90	0.09	-0.02	-0.01	0.09
10	-5.58	-1.19	0.02	5.71	-0.03	0.01	-0.01	0.04
11	-4.63	-1.29	-15.36	16.09	-0.15	0.01	-0.02	0.16
12	-3.34	-1.39	-24.79	25.05	-0.05	0.01	-0.02	0.06
13	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
14	0.00	-0.03	0.00	0.03	-0.04	0.00	0.01	0.04
15	0.09	-0.13	-10.34	10.34	-0.09	0.00	0.00	0.09
16	0.08	-0.23	-14.39	14.39	0.00	0.00	0.00	0.00
17	0.09	-0.33	-9.86	9.87	0.09	0.00	0.00	0.09
18	0.00	-0.42	0.00	0.42	0.00	0.00	0.00	0.01
19	0.09	-0.51	-10.31	10.32	-0.10	0.00	0.00	0.10
20	0.09	-0.60	-14.84	14.85	0.00	0.00	0.00	0.01
21	0.09	-0.68	-10.12	10.15	0.09	0.00	0.00	0.09
22	0.00	-0.76	0.00	0.76	-0.03	0.00	0.00	0.03
23	0.11	-0.86	-15.36	15.39	-0.15	0.01	0.00	0.16
24	0.24	-0.94	-24.79	24.81	-0.05	0.01	0.01	0.05
25	0.00	0.00	0.19	0.19	-0.02	0.00	0.43	0.43
26	-2.82	-0.04	0.01	2.82	-0.02	0.00	0.11	0.11
27	-3.51	-0.19	-2.35	4.23	0.00	-0.02	0.00	0.02
28	-4.33	-0.33	0.01	4.34	-0.04	-0.01	0.01	0.05
29	-5.13	-0.46	-10.28	11.50	-0.08	-0.01	0.01	0.08
30	-5.79	-0.59	-14.20	15.34	0.01	-0.01	0.01	0.01
31	-6.23	-0.71	-9.93	11.74	0.09	-0.02	0.00	0.09
32	-6.37	-0.83	0.03	6.42	0.00	-0.03	0.00	0.03
33	-6.17	-0.95	-10.17	11.93	-0.08	-0.01	-0.01	0.08
34	-5.60	-1.11	-14.19	15.30	0.01	-0.01	-0.01	0.02
35	-4.68	-1.26	-9.42	10.59	0.09	-0.04	-0.01	0.10
36	-3.42	-1.41	-0.02	3.70	-0.08	-0.05	-0.02	0.10
37	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
38	0.00	-0.04	0.00	0.04	-0.01	0.00	0.00	0.01
39	0.09	-0.22	-2.35	2.36	0.00	0.00	0.00	0.01
40	0.00	-0.38	0.00	0.38	-0.04	0.01	0.00	0.04
41	0.09	-0.54	-10.28	10.30	-0.08	0.01	0.00	0.08
42	0.00	-0.70	-14.20	14.21	0.00	0.02	0.00	0.02
43	0.09	-0.85	-9.93	9.96	0.09	0.02	0.00	0.09
44	0.00	-0.99	0.00	0.99	0.00	0.02	0.00	0.02
45	0.09	-1.13	-10.17	10.23	-0.08	0.03	0.00	0.09
46	0.00	-1.26	-14.19	14.24	0.00	0.03	0.00	0.03
47	0.11	-1.39	-9.42	9.52	0.09	0.04	0.00	0.10
48	0.00	-1.51	0.00	1.51	-0.08	0.04	0.01	0.09
49	0.00	0.00	0.48	0.48	-0.06	0.00	0.41	0.41
50	-2.70	-0.05	0.01	2.70	-0.06	0.00	0.11	0.12
51	-3.54	-0.23	-7.72	8.50	-0.06	0.00	0.00	0.06
52	-4.34	-0.41	-10.65	11.51	0.00	0.00	0.01	0.01
53	-5.14	-0.59	-7.37	9.01	0.06	0.00	0.01	0.06
54	-5.81	-0.75	0.03	5.85	0.00	0.00	0.00	0.00
55	-6.24	-0.92	-7.63	9.90	-0.06	0.00	0.00	0.06
56	-6.39	-1.07	-10.84	12.62	0.00	0.00	0.00	0.00
57	-6.19	-1.22	-7.41	9.73	0.07	0.00	0.00	0.07
58	-5.62	-1.37	0.02	5.78	-0.03	0.00	-0.01	0.03

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 083

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-4.69	-1.50	-12.29	13.24	-0.12	0.00	-0.01	0.12
60	-3.43	-1.64	-20.38	20.73	-0.06	0.00	-0.01	0.06
61	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
62	0.00	-0.05	0.00	0.05	-0.03	0.00	0.00	0.03
63	0.09	-0.22	-7.72	7.73	-0.07	0.00	0.00	0.07
64	0.00	-0.40	-10.65	10.66	0.00	0.00	0.00	0.00
65	0.09	-0.56	-7.37	7.39	0.06	0.01	0.00	0.06
66	0.00	-0.72	0.00	0.72	0.00	0.01	0.00	0.01
67	0.09	-0.88	-7.63	7.68	-0.07	0.01	0.00	0.07
68	0.00	-1.02	-10.84	10.89	0.00	0.01	0.00	0.01
69	0.09	-1.17	-7.41	7.50	0.07	0.01	0.00	0.07
70	0.00	-1.30	0.00	1.30	-0.03	0.01	0.00	0.03
71	0.11	-1.43	-12.29	12.37	-0.12	0.02	0.00	0.12
72	0.00	-1.56	-20.38	20.44	-0.06	0.02	0.01	0.06
73	0.00	0.00	0.15	0.15	-0.02	0.00	0.39	0.40
74	-2.60	-0.05	0.01	2.60	-0.02	0.00	0.11	0.11
75	-3.55	-0.23	-1.77	3.98	0.00	0.00	0.00	0.00
76	-4.36	-0.41	0.01	4.37	-0.03	-0.01	0.01	0.04
77	-5.15	-0.58	-7.89	9.44	-0.06	-0.01	0.01	0.07
78	-5.82	-0.75	-10.96	12.44	0.00	-0.01	0.01	0.01
79	-6.26	-0.91	-7.63	9.91	0.07	-0.01	0.00	0.07
80	-6.40	-1.06	0.03	6.49	0.00	-0.02	0.00	0.02
81	-6.20	-1.21	-7.60	9.88	-0.06	-0.02	0.00	0.07
82	-5.63	-1.35	-10.60	12.08	0.00	-0.02	-0.01	0.02
83	-4.71	-1.49	-6.78	8.39	0.07	-0.02	-0.01	0.07
84	-3.45	-1.62	-0.01	3.81	-0.09	-0.02	-0.01	0.10
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	-0.05	0.00	0.05	-0.01	0.00	0.00	0.01
87	0.09	-0.22	-1.77	1.79	0.00	0.00	0.00	0.00
88	0.00	-0.39	0.00	0.39	-0.03	0.01	0.00	0.04
89	0.09	-0.56	-7.89	7.91	-0.06	0.01	0.00	0.07
90	0.00	-0.71	-10.96	10.99	0.00	0.01	0.00	0.01
91	0.09	-0.87	-7.63	7.68	0.07	0.02	0.00	0.07
92	0.00	-1.01	0.00	1.01	0.00	0.02	0.00	0.02
93	0.09	-1.15	-7.60	7.69	-0.06	0.02	0.00	0.07
94	0.00	-1.29	-10.60	10.68	0.00	0.03	0.00	0.03
95	0.11	-1.41	-6.78	6.92	0.07	0.03	0.00	0.07
96	0.00	-1.53	0.00	1.53	-0.09	0.03	0.01	0.10
97	0.00	0.00	0.48	0.48	-0.06	0.00	0.38	0.39
98	-2.53	-0.05	0.00	2.54	-0.06	0.00	0.10	0.12
99	-3.57	-0.24	-7.73	8.52	-0.06	0.00	0.00	0.06
100	-4.36	-0.42	-10.66	11.53	0.00	0.00	0.01	0.01
101	-5.16	-0.59	-7.37	9.02	0.06	0.00	0.01	0.07
102	-5.83	-0.76	0.03	5.88	0.00	0.00	0.01	0.01
103	-6.27	-0.92	-7.65	9.93	-0.07	0.00	0.00	0.07
104	-6.41	-1.08	-10.88	12.67	0.00	0.00	0.00	0.00
105	-6.21	-1.23	-7.45	9.78	0.07	0.01	0.00	0.07
106	-5.64	-1.37	0.02	5.81	-0.02	0.01	-0.01	0.03
107	-4.72	-1.51	-11.98	12.97	-0.12	0.01	-0.01	0.12
108	-3.46	-1.64	-19.72	20.09	-0.05	0.01	-0.01	0.06
109	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
110	0.00	-0.05	0.00	0.05	-0.03	0.00	0.00	0.03
111	0.09	-0.22	-7.73	7.73	-0.07	0.00	0.00	0.07
112	0.00	-0.40	-10.66	10.67	0.00	0.00	0.00	0.00
113	0.09	-0.56	-7.37	7.39	0.06	0.00	0.00	0.06
114	0.00	-0.72	0.00	0.72	0.00	0.01	0.00	0.01
115	0.09	-0.88	-7.65	7.70	-0.07	0.01	0.00	0.07
116	0.00	-1.03	-10.88	10.93	0.00	0.01	0.00	0.01

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Job Ref : B11323

Sheet : SD / 084

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.09	-1.17	-7.45	7.54	0.07	0.01	0.00	0.07
118	0.00	-1.30	0.00	1.30	-0.03	0.01	0.00	0.03
119	0.11	-1.43	-11.98	12.07	-0.12	0.01	0.00	0.12
120	0.00	-1.56	-19.72	19.78	-0.05	0.01	0.01	0.06
121	0.00	0.00	0.15	0.15	-0.02	0.00	0.38	0.38
122	-2.49	-0.05	0.00	2.49	-0.02	0.00	0.10	0.10
123	-3.57	-0.23	-1.77	4.00	0.00	0.00	0.00	0.01
124	-4.37	-0.41	0.01	4.39	-0.03	-0.01	0.01	0.04
125	-5.17	-0.58	-7.90	9.46	-0.06	-0.01	0.01	0.07
126	-5.83	-0.75	-10.97	12.45	0.00	-0.01	0.01	0.02
127	-6.27	-0.91	-7.64	9.92	0.07	-0.02	0.00	0.07
128	-6.41	-1.07	0.03	6.50	0.00	-0.02	0.00	0.02
129	-6.21	-1.22	-7.63	9.92	-0.06	-0.02	0.00	0.07
130	-5.65	-1.36	-10.67	12.15	0.00	-0.03	-0.01	0.03
131	-4.72	-1.50	-6.86	8.46	0.07	-0.03	-0.01	0.07
132	-3.46	-1.63	-0.01	3.83	-0.09	-0.03	-0.01	0.09
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.05	0.00	0.05	-0.01	0.00	0.00	0.01
135	0.09	-0.22	-1.77	1.79	0.00	0.00	0.00	0.00
136	0.00	-0.39	0.00	0.39	-0.03	0.01	0.00	0.03
137	0.09	-0.56	-7.90	7.92	-0.06	0.01	0.00	0.07
138	0.00	-0.72	-10.97	11.00	0.00	0.01	0.00	0.01
139	0.09	-0.87	-7.64	7.69	0.07	0.02	0.00	0.07
140	0.00	-1.01	0.00	1.01	0.00	0.02	0.00	0.02
141	0.09	-1.15	-7.63	7.72	-0.06	0.02	0.00	0.07
142	0.00	-1.29	-10.66	10.74	0.00	0.02	0.00	0.02
143	0.11	-1.42	-6.86	7.01	0.07	0.03	0.00	0.07
144	0.00	-1.54	0.00	1.54	-0.09	0.03	0.01	0.09
145	0.00	0.00	0.49	0.49	-0.06	0.00	0.37	0.37
146	-2.47	-0.03	0.00	2.47	-0.06	0.00	0.12	0.13
147	-3.58	-0.13	-7.65	8.45	-0.06	0.00	0.00	0.06
148	-4.37	-0.22	-10.65	11.51	0.00	0.00	0.01	0.01
149	-5.17	-0.32	-7.31	8.96	0.07	0.00	0.01	0.07
150	-5.84	-0.41	0.03	5.85	0.00	0.00	0.01	0.01
151	-6.27	-0.50	-7.66	9.91	-0.07	0.00	0.01	0.07
152	-6.42	-0.58	-11.00	12.74	0.00	0.01	0.00	0.01
153	-6.22	-0.66	-7.45	9.73	0.07	0.01	0.00	0.07
154	-5.65	-0.74	0.02	5.70	-0.03	0.01	-0.01	0.03
155	-4.73	-0.81	-12.40	13.30	-0.12	0.01	-0.01	0.13
156	-3.47	-0.88	-20.47	20.78	-0.05	0.01	-0.02	0.05
157	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
158	0.00	-0.02	0.00	0.02	-0.03	0.00	0.01	0.03
159	0.09	-0.12	-7.65	7.65	-0.07	0.00	0.00	0.07
160	-0.05	-0.22	-10.65	10.65	0.00	0.00	0.00	0.00
161	0.09	-0.31	-7.31	7.31	0.07	0.01	0.00	0.07
162	0.00	-0.39	0.00	0.39	0.00	0.01	0.00	0.01
163	0.09	-0.47	-7.66	7.68	-0.07	0.01	0.00	0.07
164	-0.05	-0.55	-11.00	11.01	0.00	0.01	0.00	0.01
165	0.09	-0.63	-7.45	7.48	0.07	0.01	0.00	0.07
166	0.00	-0.70	0.00	0.70	-0.03	0.02	0.00	0.03
167	0.11	-0.77	-12.40	12.43	-0.12	0.02	0.00	0.13
168	-0.17	-0.84	-20.47	20.49	-0.05	0.02	0.02	0.05
169	-1.77	-1.47	-22.47	22.59	0.15	-0.01	-0.03	0.15
170	-1.79	-0.99	-22.48	22.57	0.15	0.01	-0.01	0.15
171	-1.87	-1.55	-21.52	21.66	-0.01	-0.04	-0.02	0.05
172	-1.79	-1.64	-21.52	21.66	-0.01	0.04	0.00	0.04
173	-1.88	-1.76	-20.80	20.96	0.12	0.00	-0.02	0.12
174	-1.79	-1.68	-20.80	20.95	0.12	0.02	0.00	0.12

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Job Ref : B11323

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-1.89	-1.74	-20.13	20.30	0.00	-0.02	-0.02	0.03
176	-1.80	-1.66	-20.14	20.29	0.00	0.04	0.00	0.04
177	-1.90	-1.77	-19.78	19.95	0.11	0.01	-0.02	0.12
178	-1.79	-1.68	-19.78	19.94	0.12	0.02	0.00	0.12
179	-1.91	-1.76	-19.45	19.62	0.00	-0.03	-0.02	0.04
180	-1.79	-1.66	-19.46	19.61	0.00	0.03	0.00	0.03
181	-1.91	-0.95	-19.36	19.48	0.12	0.01	-0.02	0.13
182	-1.79	-0.91	-19.36	19.47	0.13	0.02	0.01	0.13
183	-0.13	-1.51	-0.04	1.52	0.16	-0.01	-0.03	0.16
184	0.00	-1.27	0.00	1.27	0.16	0.01	-0.02	0.16
185	-0.16	-1.64	-0.41	1.70	0.17	-0.04	-0.02	0.17
186	-0.04	-1.73	-0.38	1.77	0.17	0.04	-0.01	0.17
187	-0.08	-1.84	-0.07	1.84	0.15	0.00	-0.01	0.15
188	0.00	-1.76	0.00	1.76	0.15	0.02	-0.01	0.15
189	-0.06	-1.83	-0.33	1.86	0.16	-0.02	-0.01	0.16
190	-0.02	-1.74	-0.31	1.77	0.15	0.04	-0.01	0.16
191	-0.03	-1.85	-0.07	1.85	0.15	0.01	-0.01	0.15
192	0.00	-1.76	0.00	1.76	0.14	0.02	-0.01	0.15
193	0.07	-1.84	-0.36	1.88	0.15	-0.03	-0.01	0.15
194	0.03	-1.75	-0.34	1.78	0.15	0.03	-0.01	0.15
195	0.12	-0.99	-0.03	1.00	0.14	0.01	0.02	0.14
196	0.00	-0.98	0.00	0.98	0.14	0.02	0.02	0.14

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	15.47C	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.34
	2	15.47C	0.00	-1.00	0.00	-0.50	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	10.07C	0.00	-0.01	0.35	-0.09	-0.27	0.00	0.00	0.76
	3	10.07C	0.00	0.06	0.27	0.03	0.27	@ 0.000	@ 0.000	@ 0.424
3	3	7.81C	0.00	-0.17	0.26	0.02	-0.07	0.00	0.00	0.53
	4	7.81C	0.00	-0.02	0.09	-0.02	0.11	@ 0.000	@ 0.000	@ 1.414
4	4	7.18C	0.00	-0.16	0.07	0.01	0.12	0.00	0.00	0.58
	5	7.18C	0.00	-0.01	-0.11	-0.01	-0.09	@ 0.000	@ 0.000	@ 0.566
5	5	6.87C	0.00	-0.17	-0.11	0.01	0.28	0.00	0.00	1.09
	6	6.87C	0.00	-0.01	-0.30	-0.01	-0.32	@ 0.000	@ 0.000	@ 1.515
6	13	4.93C	0.00	0.03	-0.22	0.00	0.00	0.00	0.00	0.07
	14	4.93C	0.00	0.03	-0.22	0.01	-0.11	@ 0.000	@ 0.000	@ 0.290
7	14	4.79C	0.00	0.00	0.37	0.00	-0.29	0.00	0.00	0.91
	15	4.79C	0.00	0.00	0.28	0.00	0.27	@ 0.000	@ 0.000	@ 0.465
8	15	4.67C	0.00	0.00	0.26	0.00	-0.07	0.00	0.00	0.55
	16	4.67C	0.00	0.00	0.09	0.00	0.11	@ 0.000	@ 0.000	@ 1.394
9	16	4.50C	0.00	0.00	0.08	0.00	0.12	0.00	0.00	0.57
	17	4.50C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
10	17	4.27C	0.00	-0.01	-0.11	0.01	0.28	0.00	0.00	1.09
	18	4.27C	0.00	-0.01	-0.30	-0.01	-0.32	@ 0.000	@ 0.000	@ 1.515

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	7.21C	0.00	-1.05	0.00	0.00	0.00	0.00	0.00	0.35
	26	7.21C	0.00	-1.05	0.00	-0.52	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	6.87C	0.00	-0.03	0.16	-0.07	-0.07	0.00	0.00	0.53
	27	6.87C	0.00	0.05	0.07	0.02	0.08	@ 0.000	@ 0.000	@ 0.727
18	27	6.53C	0.00	-0.17	0.06	0.02	0.10	0.00	0.00	0.44
	28	6.53C	0.00	-0.02	-0.11	-0.02	-0.12	@ 0.000	@ 0.000	@ 1.495
19	28	6.22C	0.00	-0.17	0.47	0.02	-0.30	0.00	0.00	0.89
	29	6.22C	0.00	-0.02	0.29	-0.02	0.28	@ 0.000	@ 0.000	@ 0.444
20	29	6.41C	0.00	-0.17	0.28	0.01	-0.07	0.00	0.00	0.53
	30	6.41C	0.00	-0.01	0.09	-0.01	0.11	@ 0.000	@ 0.000	@ 1.414
21	37	8.24C	0.00	0.02	-0.06	0.00	0.00	0.00	0.00	0.02
	38	8.24C	0.00	0.02	-0.06	0.01	-0.03	@ 0.000	@ 0.000	@ 0.290
22	38	7.96C	0.00	0.00	0.16	0.00	-0.07	0.00	0.00	0.24
	39	7.96C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.535
23	39	7.68C	0.00	0.00	0.06	0.00	0.10	0.00	0.00	0.44
	40	7.68C	0.00	0.00	-0.11	0.00	-0.12	@ 0.000	@ 0.000	@ 1.495
24	40	7.43C	0.00	0.00	0.47	0.00	-0.30	0.00	0.00	0.89
	41	7.43C	0.00	0.00	0.29	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
25	41	7.20C	0.00	0.00	0.27	0.00	-0.07	0.00	0.00	0.52
	42	7.20C	0.00	0.00	0.09	0.00	0.11	@ 0.000	@ 0.000	@ 1.414
31	49	8.91C	0.00	-1.00	0.00	0.00	0.00	0.00	0.00	0.34
	50	8.91C	0.00	-1.00	0.00	-0.50	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	8.63C	0.00	-0.01	0.26	-0.06	-0.20	0.00	0.00	0.56
	51	8.63C	0.00	0.04	0.20	0.02	0.20	@ 0.000	@ 0.000	@ 0.424
33	51	8.34C	0.00	-0.13	0.20	0.03	-0.05	0.00	0.00	0.39
	52	8.34C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
34	52	8.06C	0.00	-0.13	0.06	0.02	0.09	0.00	0.00	0.42
	53	8.06C	0.00	-0.02	-0.08	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.566
35	53	7.78C	0.00	-0.13	-0.08	0.02	0.21	0.00	0.00	0.80
	54	7.78C	0.00	-0.02	-0.22	-0.02	-0.24	@ 0.000	@ 0.000	@ 1.515
36	61	8.53C	0.00	0.02	-0.16	0.00	0.00	0.00	0.00	0.05
	62	8.53C	0.00	0.02	-0.16	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
37	62	8.26C	0.00	0.00	0.28	0.00	-0.22	0.00	0.00	0.68
	63	8.26C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
38	63	8.01C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.39
	64	8.01C	0.00	0.00	0.06	0.00	0.08	@ 0.000	@ 0.000	@ 1.394
39	64	7.72C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.41
	65	7.72C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 087

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	7.40C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.80
	66	7.40C	0.00	0.00	-0.22	0.00	-0.24	@ 0.000	@ 0.000	@ 1.515
46	73	8.85C	0.00	-0.96	0.00	0.00	0.00	0.00	0.00	0.32
	74	8.85C	0.00	-0.96	0.00	-0.48	0.00	@ 0.000	@ 0.000	@ 0.290
47	74	8.57C	0.00	-0.02	0.12	-0.05	-0.05	0.00	0.00	0.47
	75	8.57C	0.00	0.03	0.05	0.01	0.06	@ 0.000	@ 0.000	@ 0.768
48	75	8.28C	0.00	-0.13	0.05	0.02	0.08	0.00	0.00	0.33
	76	8.28C	0.00	-0.02	-0.08	-0.02	-0.09	@ 0.000	@ 0.000	@ 1.495
49	76	8.00C	0.00	-0.13	0.36	0.02	-0.23	0.00	0.00	0.68
	77	8.00C	0.00	-0.02	0.22	-0.02	0.21	@ 0.000	@ 0.000	@ 0.444
50	77	7.71C	0.00	-0.13	0.21	0.01	-0.06	0.00	0.00	0.41
	78	7.71C	0.00	-0.01	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
51	85	8.46C	0.00	0.02	-0.05	0.00	0.00	0.00	0.00	0.02
	86	8.46C	0.00	0.02	-0.05	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
52	86	8.18C	0.00	0.00	0.12	0.00	-0.06	0.00	0.00	0.18
	87	8.18C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
53	87	7.89C	0.00	0.00	0.05	0.00	0.08	0.00	0.00	0.33
	88	7.89C	0.00	0.00	-0.08	0.00	-0.09	@ 0.000	@ 0.000	@ 1.495
54	88	7.62C	0.00	0.00	0.36	0.00	-0.23	0.00	0.00	0.68
	89	7.62C	0.00	0.00	0.22	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
55	89	7.36C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.41
	90	7.36C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
91	97	8.96C	0.00	-0.93	0.00	0.00	0.00	0.00	0.00	0.31
	98	8.96C	0.00	-0.93	0.00	-0.47	0.00	@ 0.000	@ 0.000	@ 0.290
92	98	8.67C	0.00	-0.02	0.26	-0.05	-0.20	0.00	0.00	0.57
	99	8.67C	0.00	0.03	0.20	0.01	0.20	@ 0.000	@ 0.000	@ 0.424
93	99	8.39C	0.00	-0.13	0.20	0.02	-0.05	0.00	0.00	0.39
	100	8.39C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
94	100	8.11C	0.00	-0.13	0.06	0.02	0.09	0.00	0.00	0.42
	101	8.11C	0.00	-0.02	-0.08	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.566
95	101	7.82C	0.00	-0.13	-0.08	0.01	0.21	0.00	0.00	0.80
	102	7.82C	0.00	-0.01	-0.22	-0.02	-0.24	@ 0.000	@ 0.000	@ 1.515
96	109	8.54C	0.00	0.02	-0.16	0.00	0.00	0.00	0.00	0.05
	110	8.54C	0.00	0.02	-0.16	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
97	110	8.27C	0.00	0.00	0.28	0.00	-0.22	0.00	0.00	0.68
	111	8.27C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
98	111	8.01C	0.00	0.00	0.20	0.00	-0.05	0.00	0.00	0.39
	112	8.01C	0.00	0.00	0.06	0.00	0.08	@ 0.000	@ 0.000	@ 1.394

James Crosbie Associates Ltd.

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Job Ref : B11323

Sheet : SD / 088

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	7.73C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.42
	113	7.73C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
100	113	7.41C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.81
	114	7.41C	0.00	0.00	-0.22	0.00	-0.24	@ 0.000	@ 0.000	@ 1.515
120	121	8.87C	0.00	-0.92	0.00	0.00	0.00	0.00	0.00	0.31
	122	8.87C	0.00	-0.92	0.00	-0.46	0.00	@ 0.000	@ 0.000	@ 0.290
121	122	8.59C	0.00	-0.02	0.12	-0.05	-0.05	0.00	0.00	0.44
	123	8.59C	0.00	0.03	0.05	0.01	0.06	@ 0.000	@ 0.000	@ 0.808
122	123	8.30C	0.00	-0.13	0.05	0.02	0.08	0.00	0.00	0.34
	124	8.30C	0.00	-0.02	-0.08	-0.02	-0.09	@ 0.000	@ 0.000	@ 1.495
123	124	8.02C	0.00	-0.13	0.36	0.02	-0.23	0.00	0.00	0.68
	125	8.02C	0.00	-0.02	0.22	-0.02	0.21	@ 0.000	@ 0.000	@ 0.444
124	125	7.74C	0.00	-0.13	0.21	0.01	-0.06	0.00	0.00	0.41
	126	7.74C	0.00	-0.01	0.07	-0.01	0.08	@ 0.000	@ 0.000	@ 1.414
125	133	8.46C	0.00	0.02	-0.05	0.00	0.00	0.00	0.00	0.02
	134	8.46C	0.00	0.02	-0.05	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
126	134	8.18C	0.00	0.00	0.12	0.00	-0.06	0.00	0.00	0.18
	135	8.18C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
127	135	7.89C	0.00	0.00	0.05	0.00	0.08	0.00	0.00	0.33
	136	7.89C	0.00	0.00	-0.08	0.00	-0.09	@ 0.000	@ 0.000	@ 1.495
128	136	7.62C	0.00	0.00	0.36	0.00	-0.23	0.00	0.00	0.68
	137	7.62C	0.00	0.00	0.22	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
129	137	7.37C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.41
	138	7.37C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
135	145	4.84C	0.00	-0.82	0.00	0.00	0.00	0.00	0.00	0.28
	146	4.84C	0.00	-0.82	0.00	-0.41	0.00	@ 0.000	@ 0.000	@ 0.290
136	146	4.69C	0.00	-0.01	0.26	-0.06	-0.20	0.00	0.00	0.56
	147	4.69C	0.00	0.04	0.20	0.01	0.20	@ 0.000	@ 0.000	@ 0.424
137	147	4.54C	0.00	-0.12	0.20	0.02	-0.05	0.00	0.00	0.40
	148	4.54C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
138	148	4.38C	0.00	-0.12	0.06	0.01	0.09	0.00	0.00	0.42
	149	4.38C	0.00	-0.01	-0.08	-0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
139	149	4.22C	0.00	-0.12	-0.08	0.01	0.20	0.00	0.00	0.80
	150	4.22C	0.00	-0.01	-0.22	-0.01	-0.23	@ 0.000	@ 0.000	@ 1.515
140	157	4.61C	0.00	0.03	-0.16	0.00	0.00	0.00	0.00	0.05
	158	4.61C	0.00	0.03	-0.16	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
141	158	4.47C	0.00	0.00	0.27	0.00	-0.22	0.00	0.00	0.67
	159	4.47C	0.00	0.00	0.21	0.00	0.20	@ 0.000	@ 0.000	@ 0.465

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Job Ref : B11323

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	4.34C	0.00	0.00	0.20	0.00	-0.05	0.00	0.00	0.41
	160	4.34C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.394
143	160	4.18C	0.00	0.01	0.06	0.00	0.09	0.00	0.00	0.42
	161	4.18C	0.00	0.01	-0.08	0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
144	161	3.99C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.81
	162	3.99C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.515
170	6	6.54C	0.00	-0.17	0.50	0.01	-0.33	0.00	0.00	1.11
	7	6.54C	0.00	-0.01	0.31	-0.01	0.29	@ 0.000	@ 0.000	@ 0.485
171	7	6.18C	0.00	-0.17	0.30	0.00	-0.08	0.00	0.00	0.58
	8	6.18C	0.00	0.00	0.10	0.00	0.12	@ 0.000	@ 0.000	@ 1.414
172	8	5.79C	0.00	-0.17	0.09	0.00	0.13	0.00	0.00	0.61
	9	5.79C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
173	9	5.64T	0.00	-0.17	-0.12	-0.01	0.30	0.00	0.00	1.25
	10	5.64T	0.00	0.01	-0.32	0.01	-0.35	@ 0.000	@ 0.000	@ 1.495
174	18	4.09C	0.00	0.00	0.49	0.00	-0.32	0.00	0.00	1.10
	19	4.09C	0.00	0.00	0.30	0.00	0.29	@ 0.000	@ 0.000	@ 0.485
175	19	3.95C	0.00	-0.01	0.30	0.01	-0.08	0.00	0.00	0.59
	20	3.95C	0.00	-0.01	0.10	-0.01	0.12	@ 0.000	@ 0.000	@ 1.414
176	20	3.76C	0.00	0.00	0.09	0.00	0.13	0.00	0.00	0.61
	21	3.76C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
177	21	3.51C	0.00	-0.01	-0.12	0.01	0.30	0.00	0.00	1.26
	22	3.51C	0.00	-0.01	-0.32	-0.01	-0.35	@ 0.000	@ 0.000	@ 1.495
182	30	8.15C	0.00	-0.17	0.09	0.01	0.11	0.00	0.00	0.53
	31	8.15C	0.00	-0.01	-0.10	-0.01	-0.08	@ 0.000	@ 0.000	@ 0.566
183	31	9.85C	0.00	-0.17	-0.11	0.00	0.28	0.00	0.00	1.08
	32	9.85C	0.00	0.00	-0.30	0.00	-0.32	@ 0.000	@ 0.000	@ 1.515
184	32	10.87C	0.00	-0.17	0.51	0.00	-0.33	0.00	0.00	1.09
	33	10.87C	0.00	0.00	0.31	0.00	0.29	@ 0.000	@ 0.000	@ 0.485
185	33	11.19C	0.00	-0.16	0.30	-0.01	-0.08	0.00	0.00	0.55
	34	11.19C	0.00	0.01	0.10	0.01	0.11	@ 0.000	@ 0.000	@ 1.414
186	42	6.93C	0.00	0.00	0.09	0.00	0.11	0.00	0.00	0.54
	43	6.93C	0.00	0.00	-0.10	0.00	-0.08	@ 0.000	@ 0.000	@ 0.586
187	43	6.62C	0.00	0.00	-0.10	0.00	0.28	0.00	0.00	1.08
	44	6.62C	0.00	0.00	-0.30	0.00	-0.32	@ 0.000	@ 0.000	@ 1.515
188	44	6.35C	0.00	0.00	0.51	0.00	-0.33	0.00	0.00	1.09
	45	6.35C	0.00	0.00	0.31	0.00	0.29	@ 0.000	@ 0.000	@ 0.485
189	45	6.14C	0.00	-0.01	0.30	0.01	-0.07	0.00	0.00	0.55
	46	6.14C	0.00	-0.01	0.09	-0.01	0.11	@ 0.000	@ 0.000	@ 1.414

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Job Ref : B11323

Sheet : SD / 090

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Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	7.50C	0.00	-0.13	0.37	0.01	-0.24	0.00	0.00	0.82
	55	7.50C	0.00	-0.01	0.23	-0.01	0.22	@ 0.000	@ 0.000	@ 0.485
195	55	7.23C	0.00	-0.12	0.22	0.00	-0.06	0.00	0.00	0.42
	56	7.23C	0.00	0.00	0.07	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
196	56	6.95C	0.00	-0.12	0.07	0.00	0.09	0.00	0.00	0.43
	57	6.95C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
197	57	6.68C	0.00	-0.11	-0.08	-0.01	0.22	0.00	0.00	0.93
	58	6.68C	0.00	0.01	-0.24	0.01	-0.26	@ 0.000	@ 0.000	@ 1.495
198	66	7.11C	0.00	0.00	0.37	0.00	-0.24	0.00	0.00	0.82
	67	7.11C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
199	67	6.85C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.42
	68	6.85C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
200	68	6.56C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.43
	69	6.56C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
201	69	6.24C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.94
	70	6.24C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
206	78	7.43C	0.00	-0.12	0.07	0.01	0.09	0.00	0.00	0.42
	79	7.43C	0.00	-0.01	-0.08	-0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
207	79	7.15C	0.00	-0.12	-0.08	0.01	0.22	0.00	0.00	0.82
	80	7.15C	0.00	-0.01	-0.23	-0.01	-0.24	@ 0.000	@ 0.000	@ 1.515
208	80	6.87C	0.00	-0.12	0.38	-0.01	-0.24	0.00	0.00	0.82
	81	6.87C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
209	81	6.58C	0.00	-0.11	0.22	-0.01	-0.06	0.00	0.00	0.41
	82	6.58C	0.00	0.01	0.07	0.01	0.08	@ 0.000	@ 0.000	@ 1.414
210	90	7.07C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.42
	91	7.07C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
211	91	6.75C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.83
	92	6.75C	0.00	0.00	-0.23	0.00	-0.24	@ 0.000	@ 0.000	@ 1.515
212	92	6.46C	0.00	0.00	0.38	0.00	-0.24	0.00	0.00	0.82
	93	6.46C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
213	93	6.19C	0.00	0.00	0.22	0.00	-0.05	0.00	0.00	0.41
	94	6.19C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
218	102	7.54C	0.00	-0.12	0.37	0.01	-0.24	0.00	0.00	0.82
	103	7.54C	0.00	-0.01	0.23	-0.01	0.22	@ 0.000	@ 0.000	@ 0.485
219	103	7.26C	0.00	-0.12	0.22	0.01	-0.06	0.00	0.00	0.42
	104	7.26C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
220	104	6.98C	0.00	-0.12	0.07	-0.01	0.09	0.00	0.00	0.43
	105	6.98C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.566

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Telephone 01204 384585

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Job Ref : B11323

Sheet : SD / 091

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	6.70C	0.00	-0.11	-0.08	-0.01	0.22	0.00	0.00	0.93
	106	6.70C	0.00	0.01	-0.24	0.01	-0.26	@ 0.000	@ 0.000	@ 1.495
222	114	7.12C	0.00	0.00	0.37	0.00	-0.24	0.00	0.00	0.82
	115	7.12C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
223	115	6.86C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.42
	116	6.86C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
224	116	6.57C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.43
	117	6.57C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
225	117	6.25C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.93
	118	6.25C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
230	126	7.46C	0.00	-0.12	0.07	0.01	0.09	0.00	0.00	0.42
	127	7.46C	0.00	-0.01	-0.08	-0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
231	127	7.19C	0.00	-0.12	-0.08	0.01	0.22	0.00	0.00	0.83
	128	7.19C	0.00	-0.01	-0.23	-0.01	-0.24	@ 0.000	@ 0.000	@ 1.515
232	128	6.92C	0.00	-0.12	0.38	-0.01	-0.25	0.00	0.00	0.82
	129	6.92C	0.00	0.01	0.23	0.01	0.22	@ 0.000	@ 0.000	@ 0.485
233	129	6.64C	0.00	-0.11	0.22	-0.01	-0.06	0.00	0.00	0.41
	130	6.64C	0.00	0.01	0.07	0.01	0.08	@ 0.000	@ 0.000	@ 1.414
234	138	7.08C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.42
	139	7.08C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.566
235	139	6.77C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.83
	140	6.77C	0.00	0.00	-0.23	0.00	-0.25	@ 0.000	@ 0.000	@ 1.515
236	140	6.48C	0.00	0.01	0.38	-0.01	-0.25	0.00	0.00	0.82
	141	6.48C	0.00	0.01	0.23	0.01	0.22	@ 0.000	@ 0.000	@ 0.485
237	141	6.22C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.41
	142	6.22C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
242	150	4.07C	0.00	-0.12	0.37	-0.01	-0.24	0.00	0.00	0.82
	151	4.07C	0.00	0.01	0.23	0.01	0.21	@ 0.000	@ 0.000	@ 0.485
243	151	3.91C	0.00	-0.12	0.22	0.01	-0.06	0.00	0.00	0.44
	152	3.91C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
244	152	3.75C	0.00	-0.12	0.07	-0.01	0.10	0.00	0.00	0.45
	153	3.75C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.566
245	153	3.59C	0.00	-0.11	-0.08	-0.01	0.22	0.00	0.00	0.95
	154	3.59C	0.00	0.01	-0.24	0.01	-0.26	@ 0.000	@ 0.000	@ 1.495
246	162	3.83C	0.00	0.01	0.37	-0.01	-0.24	0.00	0.00	0.82
	163	3.83C	0.00	0.01	0.23	0.01	0.21	@ 0.000	@ 0.000	@ 0.485
247	163	3.69C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.44
	164	3.69C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.414

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 092

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	3.53C	0.00	0.01	0.07	-0.01	0.10	0.00	0.00	0.45
	165	3.53C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.586
249	165	3.33C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.95
	166	3.33C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
306	10	5.03T	0.00	-0.17	0.64	-0.01	-0.46	0.00	0.00	1.54
	11	5.03T	0.00	0.01	0.43	0.01	0.41	@ 0.000	@ 0.000	@ 0.485
307	11	4.42C	0.00	-0.17	0.43	-0.02	-0.19	0.00	0.00	0.89
	12	4.42C	0.00	0.02	0.21	0.02	0.23	@ 0.000	@ 0.000	@ 1.475
308	22	3.33C	0.00	0.00	0.64	0.00	-0.46	0.00	0.00	1.54
	23	3.33C	0.00	0.00	0.43	0.00	0.41	@ 0.000	@ 0.000	@ 0.485
309	23	3.23C	0.00	-0.01	0.42	0.01	-0.19	0.00	0.00	0.89
	24	3.23C	0.00	-0.01	0.21	0.01	0.23	@ 0.000	@ 0.000	@ 1.475
312	34	10.80C	0.00	-0.16	0.10	-0.02	0.13	0.00	0.00	0.57
	35	10.80C	0.00	0.02	-0.11	0.02	-0.09	@ 0.000	@ 0.000	@ 0.566
313	35	9.67C	0.00	-0.16	-0.11	-0.03	0.29	0.00	0.00	1.44
	36	9.67C	0.00	0.02	-0.33	0.02	-0.37	@ 0.000	@ 0.000	@ 1.475
314	46	5.88C	0.00	0.00	0.10	0.00	0.13	0.00	0.00	0.58
	47	5.88C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
315	47	5.57C	0.00	-0.01	-0.12	0.01	0.29	0.00	0.00	1.45
	48	5.57C	0.00	-0.01	-0.33	-0.01	-0.37	@ 0.000	@ 0.000	@ 1.475
318	58	6.40C	0.00	-0.11	0.51	-0.02	-0.37	0.00	0.00	1.22
	59	6.40C	0.00	0.02	0.35	0.02	0.33	@ 0.000	@ 0.000	@ 0.485
319	59	6.13C	0.00	-0.10	0.34	-0.03	-0.17	0.00	0.00	0.67
	60	6.13C	0.00	0.03	0.18	0.03	0.19	@ 0.000	@ 0.000	@ 1.515
320	70	5.98C	0.00	0.00	0.51	0.00	-0.37	0.00	0.00	1.22
	71	5.98C	0.00	0.00	0.35	0.00	0.33	@ 0.000	@ 0.000	@ 0.485
321	71	5.76C	0.00	0.00	0.34	0.00	-0.17	0.00	0.00	0.67
	72	5.76C	0.00	0.00	0.18	0.01	0.19	@ 0.000	@ 0.000	@ 1.515
324	82	6.30C	0.00	-0.11	0.07	-0.02	0.10	0.00	0.00	0.45
	83	6.30C	0.00	0.02	-0.09	0.02	-0.08	@ 0.000	@ 0.000	@ 0.545
325	83	6.02C	0.00	-0.10	-0.09	-0.03	0.22	0.00	0.00	1.20
	84	6.02C	0.00	0.03	-0.26	0.03	-0.29	@ 0.000	@ 0.000	@ 1.455
326	94	5.89C	0.00	0.00	0.07	0.00	0.11	0.00	0.00	0.46
	95	5.89C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.545
327	95	5.57C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	1.20
	96	5.57C	0.00	0.00	-0.26	0.00	-0.29	@ 0.000	@ 0.000	@ 1.455
330	106	6.42C	0.00	-0.11	0.50	-0.02	-0.36	0.00	0.00	1.19
	107	6.42C	0.00	0.02	0.34	0.02	0.32	@ 0.000	@ 0.000	@ 0.485

James Crosbie Associates Ltd.

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Job Ref : B11323

Sheet : SD / 093

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)										
Member No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	6.14C	0.00	-0.10	0.33	-0.03	-0.16	0.00	0.00	0.66
	108	6.14C	0.00	0.03	0.17	0.03	0.18	@ 0.000	@ 0.000	@ 1.515
332	118	5.98C	0.00	0.00	0.50	0.00	-0.36	0.00	0.00	1.19
	119	5.98C	0.00	0.00	0.34	0.00	0.32	@ 0.000	@ 0.000	@ 0.485
333	119	5.76C	0.00	0.00	0.33	0.00	-0.16	0.00	0.00	0.65
	120	5.76C	0.00	0.00	0.17	0.00	0.18	@ 0.000	@ 0.000	@ 1.515
336	130	6.38C	0.00	-0.11	0.07	-0.02	0.10	0.00	0.00	0.45
	131	6.38C	0.00	0.02	-0.09	0.02	-0.08	@ 0.000	@ 0.000	@ 0.545
337	131	6.11C	0.00	-0.10	-0.09	-0.03	0.22	0.00	0.00	1.18
	132	6.11C	0.00	0.03	-0.26	0.03	-0.29	@ 0.000	@ 0.000	@ 1.475
338	142	5.94C	0.00	0.01	0.07	-0.01	0.10	0.00	0.00	0.46
	143	5.94C	0.00	0.01	-0.09	0.01	-0.08	@ 0.000	@ 0.000	@ 0.545
339	143	5.63C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	1.19
	144	5.63C	0.00	0.00	-0.26	0.01	-0.29	@ 0.000	@ 0.000	@ 1.475
342	154	3.42C	0.00	-0.11	0.51	-0.02	-0.37	0.00	0.00	1.23
	155	3.42C	0.00	0.02	0.35	0.02	0.33	@ 0.000	@ 0.000	@ 0.485
343	155	3.26C	0.00	-0.10	0.34	-0.03	-0.17	0.00	0.00	0.74
	156	3.26C	0.00	0.03	0.18	-0.03	0.20	@ 0.000	@ 0.000	@ 1.495
344	166	3.19C	0.00	0.01	0.51	-0.01	-0.37	0.00	0.00	1.23
	167	3.19C	0.00	0.01	0.35	0.01	0.33	@ 0.000	@ 0.000	@ 0.485
345	167	3.10C	0.00	0.01	0.34	0.00	-0.16	0.00	0.00	0.73
	168	3.10C	0.00	0.01	0.18	0.01	0.20	@ 0.000	@ 0.000	@ 1.495
412	12	3.89C	0.00	-0.17	0.20	-0.02	0.06	0.00	0.01	0.87
	169	3.89C	0.00	0.02	-0.02	0.02	0.02	@ 0.000	@ 0.000	@ 0.909
413	169	1.93C	0.00	-0.25	0.33	-0.02	0.61		0.00	1.68
	183	1.93C	0.00	0.30	-1.57	0.02	-0.61	@ 0.000	@ 0.000	@ 0.429
414	24	3.06C	0.00	-0.06	0.20	0.06	0.06	0.00	0.00	0.88
	170	3.06C	0.00	-0.06	-0.02	-0.06	0.02	@ 0.000	@ 0.000	@ 0.909
415	170	1.88C	0.00	0.05	0.33	-0.05	0.61		0.00	1.67
	184	1.88C	0.00	0.05	-1.57	0.04	-0.61	@ 0.000	@ 0.000	@ 0.429
416	36	7.78C	0.00	-0.16	0.94	-0.03	-0.70	0.00	0.00	2.18
	171	7.78C	0.00	0.03	0.71	0.03	0.73	@ 0.000	@ 0.000	@ 1.555
417	171	4.56C	0.00	-0.23	0.29	-0.04	0.68	0.00	0.00	2.26
	185	4.56C	0.00	0.31	-1.61	0.04	-0.61	@ 0.000	@ 0.000	@ 0.469
418	48	5.37C	0.00	-0.06	0.94	0.06	-0.70	0.00	0.00	2.20
	172	5.37C	0.00	-0.06	0.72	-0.06	0.74	@ 0.000	@ 0.000	@ 1.555
419	172	3.45C	0.00	0.05	0.29	-0.05	0.68	0.00	0.00	2.24
	186	3.45C	0.00	0.05	-1.61	0.05	-0.61	@ 0.000	@ 0.000	@ 0.469

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Job Ref : B11323

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Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	5.86C	0.00	-0.10	0.22	-0.04	-0.02	0.00	0.00	0.81
	173	5.86C	0.00	0.04	0.05	0.04	0.09	@ 0.000	@ 0.000	@ 1.212
421	173	3.63C	0.00	-0.17	0.26	-0.05	0.58	0.00	0.00	1.64
	187	3.63C	0.00	0.27	-1.42	0.05	-0.56	@ 0.000	@ 0.000	@ 0.429
422	72	5.52C	0.00	-0.06	0.22	0.05	-0.02	0.00	0.00	0.83
	174	5.52C	0.00	-0.06	0.06	-0.06	0.09	@ 0.000	@ 0.000	@ 1.212
423	174	3.47C	0.00	0.06	0.26	-0.06	0.58	0.00	0.00	1.63
	188	3.47C	0.00	0.06	-1.42	0.05	-0.56	@ 0.000	@ 0.000	@ 0.429
424	84	5.75C	0.00	-0.10	0.83	-0.04	-0.64	0.00	0.00	2.05
	175	5.75C	0.00	0.03	0.66	0.03	0.68	@ 0.000	@ 0.000	@ 1.555
425	175	3.52C	0.00	-0.17	0.22	-0.04	0.64	0.00	0.00	2.12
	189	3.52C	0.00	0.27	-1.46	0.05	-0.58	@ 0.000	@ 0.000	@ 0.469
426	96	5.36C	0.00	-0.06	0.83	0.05	-0.64	0.00	0.00	2.07
	176	5.36C	0.00	-0.06	0.66	-0.06	0.68	@ 0.000	@ 0.000	@ 1.555
427	176	3.39C	0.00	0.05	0.22	-0.06	0.64	0.00	0.00	2.10
	190	3.39C	0.00	0.05	-1.46	0.05	-0.58	@ 0.000	@ 0.000	@ 0.469
428	108	5.86C	0.00	-0.10	0.21	-0.04	-0.01	0.00	0.00	0.76
	177	5.86C	0.00	0.03	0.04	0.03	0.08	@ 0.000	@ 0.000	@ 1.172
429	177	3.63C	0.00	-0.17	0.29	-0.04	0.55	0.00	0.00	1.55
	191	3.63C	0.00	0.27	-1.39	0.05	-0.53	@ 0.000	@ 0.000	@ 0.429
430	120	5.51C	0.00	-0.06	0.21	0.05	-0.01	0.00	0.00	0.78
	178	5.51C	0.00	-0.06	0.04	-0.06	0.08	@ 0.000	@ 0.000	@ 1.192
431	178	3.47C	0.00	0.05	0.29	-0.06	0.55	0.00	0.00	1.54
	192	3.47C	0.00	0.05	-1.39	0.05	-0.54	@ 0.000	@ 0.000	@ 0.429
432	132	5.84C	0.00	-0.10	0.80	-0.04	-0.62	0.00	0.00	1.98
	179	5.84C	0.00	0.04	0.64	0.04	0.66	@ 0.000	@ 0.000	@ 1.555
433	179	3.63C	0.00	-0.17	0.25	-0.05	0.62	0.00	0.00	2.05
	193	3.63C	0.00	0.27	-1.44	0.05	-0.56	@ 0.000	@ 0.000	@ 0.469
434	144	5.42C	0.00	-0.06	0.81	0.05	-0.62	0.00	0.00	2.00
	180	5.42C	0.00	-0.06	0.64	-0.06	0.66	@ 0.000	@ 0.000	@ 1.555
435	180	3.47C	0.00	0.06	0.25	-0.06	0.62	0.00	0.00	2.03
	194	3.46C	0.00	0.06	-1.44	0.05	-0.56	@ 0.000	@ 0.000	@ 0.469
436	156	3.09C	0.00	-0.10	0.18	-0.03	0.03		0.00	0.74
	181	3.09C	0.00	0.03	0.02	0.03	0.04	@ 0.000	@ 0.000	@ 1.030
437	181	1.90C	0.00	-0.17	0.31	-0.05	0.53		0.00	1.46
	195	1.90C	0.00	0.27	-1.38	0.05	-0.52	@ 0.000	@ 0.000	@ 0.429
438	168	2.97C	0.00	-0.05	0.18	0.05	0.03	0.00	0.00	0.75
	182	2.97C	0.00	-0.05	0.02	-0.06	0.05	@ 0.000	@ 0.000	@ 1.050

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Job Ref : B11323

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	1.85C	0.00	0.06	0.31	-0.06	0.53		0.00	1.46
	196	1.84C	0.00	0.06	-1.38	0.05	-0.52	@	0.000	@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.913	15.477	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.136	0.000	-0.250
3	0.000	0.000	0.000	0.158	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	-0.024
5	0.000	0.000	0.000	-0.162	0.000	-0.020
6	0.000	0.000	0.000	0.000	0.000	-0.014
7	0.000	0.000	0.000	0.172	0.000	0.000
9	0.000	0.000	0.000	-0.169	0.000	0.015
10	0.000	0.000	0.000	0.056	0.000	0.026
11	0.000	0.000	0.000	0.280	0.000	0.038
12	0.000	0.000	0.000	0.090	0.000	0.045
13	-0.025	4.932	-0.218	0.000	0.000	0.000
14	0.024	0.000	0.899	0.079	0.000	0.000
15	0.000	0.000	0.000	0.166	0.000	0.000
17	0.000	0.000	0.000	-0.163	0.000	0.000
18	-2.994	0.000	1.544	0.000	0.000	0.000
19	0.000	0.000	0.000	0.174	0.000	0.000
21	0.000	0.000	0.000	-0.170	0.000	0.000
22	-2.993	0.000	1.896	0.059	0.000	0.000
23	0.000	0.000	0.000	0.281	0.000	0.000
24	0.000	0.000	0.000	0.092	0.000	-0.021
25	1.080	7.211	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.040	0.000	-0.203
28	0.000	0.000	0.000	0.080	0.000	-0.019
29	0.000	0.000	0.000	0.148	0.000	-0.016
30	0.000	0.000	0.000	0.000	0.000	-0.012
31	0.000	0.000	0.000	-0.157	0.000	0.000
33	0.000	0.000	0.000	0.152	0.000	0.010
34	0.000	0.000	0.000	-0.011	0.000	0.019
35	0.000	0.000	0.000	-0.164	0.000	0.027
36	0.000	0.000	0.000	0.151	0.000	0.033
37	-0.019	8.241	-0.060	0.000	0.000	0.000
38	0.018	0.000	0.367	0.022	0.000	0.000
40	-1.672	0.000	1.116	0.079	0.000	0.000
41	0.000	0.000	0.000	0.150	0.000	0.000
43	0.000	0.000	0.000	-0.158	0.000	0.000
44	-1.734	0.000	1.569	0.000	0.000	0.000
45	0.000	0.000	0.000	0.154	0.000	0.000
47	0.000	0.000	0.000	-0.166	0.000	0.000
48	-6.110	0.000	2.533	0.152	0.000	-0.018
49	0.970	8.910	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.101	0.000	-0.197
51	0.000	0.000	0.000	0.114	0.000	0.000
52	0.000	0.000	0.000	0.000	0.000	-0.014
53	0.000	0.000	0.000	-0.117	0.000	-0.011
55	0.000	0.000	0.000	0.118	0.000	0.000
57	0.000	0.000	0.000	-0.122	0.000	0.000
58	0.000	0.000	0.000	0.048	0.000	0.014

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Job Ref : B11323

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
59	0.000	0.000	0.000	0.216	0.000	0.019
60	0.000	0.000	0.000	0.104	0.000	0.023
61	-0.019	8.532	-0.161	0.000	0.000	0.000
62	0.018	0.000	0.665	0.059	0.000	0.000
63	0.000	0.000	0.000	0.119	0.000	0.000
65	0.000	0.000	0.000	-0.116	0.000	0.000
66	1.208	0.000	1.161	0.000	0.000	0.000
67	0.000	0.000	0.000	0.118	0.000	0.000
69	0.000	0.000	0.000	-0.122	0.000	0.000
70	1.317	0.000	1.461	0.049	0.000	0.000
71	0.000	0.000	0.000	0.216	0.000	0.000
72	0.000	0.000	0.000	0.105	0.000	-0.021
73	0.933	8.852	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.031	0.000	-0.191
76	0.000	0.000	0.000	0.062	0.000	-0.017
77	0.000	0.000	0.000	0.116	0.000	-0.015
78	0.000	0.000	0.000	0.000	0.000	-0.011
79	0.000	0.000	0.000	-0.120	0.000	0.000
81	0.000	0.000	0.000	0.116	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.015
83	0.000	0.000	0.000	-0.124	0.000	0.022
84	0.000	0.000	0.000	0.166	0.000	0.027
85	-0.018	8.459	-0.046	0.000	0.000	0.000
86	0.017	0.000	0.274	0.017	0.000	0.000
88	-0.027	0.000	0.851	0.062	0.000	0.000
89	0.000	0.000	0.000	0.117	0.000	0.000
91	0.000	0.000	0.000	-0.120	0.000	0.000
92	-0.027	0.000	1.191	0.000	0.000	0.000
93	0.000	0.000	0.000	0.117	0.000	0.000
95	0.000	0.000	0.000	-0.124	0.000	0.000
96	0.420	0.000	2.209	0.168	0.000	-0.021
97	0.906	8.960	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.101	0.000	-0.187
99	0.000	0.000	0.000	0.114	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	-0.017
101	0.000	0.000	0.000	-0.117	0.000	-0.015
102	0.000	0.000	0.000	0.000	0.000	-0.011
103	0.000	0.000	0.000	0.119	0.000	0.000
105	0.000	0.000	0.000	-0.123	0.000	0.000
106	0.000	0.000	0.000	0.045	0.000	0.015
107	0.000	0.000	0.000	0.210	0.000	0.022
108	0.000	0.000	0.000	0.096	0.000	0.027
109	-0.018	8.541	-0.161	0.000	0.000	0.000
110	0.017	0.000	0.666	0.059	0.000	0.000
111	0.000	0.000	0.000	0.119	0.000	0.000
113	0.000	0.000	0.000	-0.117	0.000	0.000
114	-0.027	0.000	1.151	0.000	0.000	0.000
115	0.000	0.000	0.000	0.120	0.000	0.000
117	0.000	0.000	0.000	-0.123	0.000	0.000
118	-0.027	0.000	1.436	0.046	0.000	0.000
119	0.000	0.000	0.000	0.210	0.000	0.000
120	0.000	0.000	0.000	0.097	0.000	-0.021
121	0.893	8.871	0.000	0.000	0.000	0.000
122	0.000	0.000	0.000	0.031	0.000	-0.183
124	0.000	0.000	0.000	0.062	0.000	-0.017
125	0.000	0.000	0.000	0.116	0.000	-0.015
126	0.000	0.000	0.000	0.000	0.000	-0.012
127	0.000	0.000	0.000	-0.120	0.000	0.000

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
129	0.000	0.000	0.000	0.117	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.013
131	0.000	0.000	0.000	-0.124	0.000	0.019
132	0.000	0.000	0.000	0.157	0.000	0.024
133	-0.017	8.459	-0.046	0.000	0.000	0.000
134	0.016	0.000	0.274	0.017	0.000	0.000
136	1.685	0.000	0.844	0.062	0.000	0.000
137	0.000	0.000	0.000	0.117	0.000	0.000
139	0.000	0.000	0.000	-0.120	0.000	0.000
140	1.753	0.000	1.185	0.000	0.000	0.000
141	0.000	0.000	0.000	0.118	0.000	0.000
143	0.000	0.000	0.000	-0.123	0.000	0.000
144	5.794	0.000	2.113	0.159	0.000	-0.023
145	0.806	4.843	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.102	0.000	-0.214
147	0.000	0.000	0.000	0.117	0.000	0.000
148	0.000	0.000	0.000	0.000	0.000	-0.022
149	0.000	0.000	0.000	-0.123	0.000	-0.020
150	0.000	0.000	0.000	0.000	0.000	-0.016
151	0.000	0.000	0.000	0.125	0.000	0.000
153	0.000	0.000	0.000	-0.131	0.000	0.000
154	0.000	0.000	0.000	0.050	0.000	0.014
155	0.000	0.000	0.000	0.226	0.000	0.022
156	0.000	0.000	0.000	0.083	0.000	0.028
157	-0.027	4.606	-0.161	0.000	0.000	0.000
158	0.024	0.000	0.675	0.059	0.000	0.000
159	0.000	0.000	0.000	0.122	0.000	0.000
161	0.000	0.000	0.000	-0.122	0.000	0.000
162	1.789	0.000	1.157	0.000	0.000	0.000
163	0.000	0.000	0.000	0.126	0.000	0.000
165	0.000	0.000	0.000	-0.131	0.000	0.000
166	1.689	0.000	1.464	0.050	0.000	0.000
167	0.000	0.000	0.000	0.227	0.000	0.000
168	0.000	0.000	0.000	0.084	0.000	-0.029
169	0.000	0.000	0.000	-0.267	0.000	0.055
170	0.000	0.000	0.000	-0.272	0.000	0.013
171	0.000	0.000	0.000	0.015	0.000	0.040
172	0.000	0.000	0.000	0.017	0.000	0.000
173	0.000	0.000	0.000	-0.215	0.000	0.030
174	0.000	0.000	0.000	-0.223	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.035
177	0.000	0.000	0.000	-0.208	0.000	0.035
178	0.000	0.000	0.000	-0.215	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.032
181	0.000	0.000	0.000	-0.226	0.000	0.037
182	0.000	0.000	0.000	-0.229	0.000	-0.014
183	0.000	0.000	0.000	-0.292	0.000	0.054
184	1.595	0.000	4.250	-0.289	0.000	0.045
185	0.000	0.000	0.000	-0.307	0.000	0.029
186	0.000	0.000	0.000	-0.302	0.000	0.027
187	0.000	0.000	0.000	-0.280	0.000	0.015
188	2.515	0.000	6.363	-0.276	0.000	0.024
189	0.000	0.000	0.000	-0.282	0.000	0.023
190	0.000	0.000	0.000	-0.280	0.000	0.025
191	0.000	0.000	0.000	-0.266	0.000	0.023
192	1.465	0.000	6.102	-0.262	0.000	0.025
193	0.000	0.000	0.000	-0.273	0.000	0.020
194	0.000	0.000	0.000	-0.269	0.000	0.021

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
195	0.000	0.000	0.000	-0.260	0.000	-0.034
196	-0.956	0.000	3.656	-0.256	0.000	-0.033
Total	13.028	107.275	48.219	-0.633	0.000	-0.744

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	
Load Group G1	Live Load
Load Group G2	Live Load
Load Group G3	Live Load
Load Group G4	Live Load

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 W1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.089	2	2.500	0.089
3	4.500	0.089	4	6.500	0.089	5	8.500	0.089
6	10.500	0.089	7	12.500	0.089	8	14.500	0.089
9	16.500	0.089	10	18.500	0.089	11	20.500	0.089
12	22.500	0.846	13	24.500	1.475			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.005	3	0.005	4	0.005
5	0.005	6	0.005	7	0.005	8	0.005
9	0.005	10	0.005	11	0.005	12	0.005
13	0.000	14	0.004	15	0.004	16	0.004
17	0.004	18	0.004	19	0.004	20	0.004
21	0.004	22	0.004	23	0.004	24	0.004
25	0.000	26	0.009	27	0.009	28	0.009
29	0.009	30	0.009	31	0.009	32	0.009
33	0.009	34	0.009	35	0.009	36	0.009
37	0.000	38	0.007	39	0.007	40	0.007
41	0.007	42	0.007	43	0.007	44	0.007
45	0.007	46	0.007	47	0.007	48	0.007
49	0.000	50	0.007	51	0.007	52	0.007
53	0.007	54	0.007	55	0.007	56	0.007
57	0.007	58	0.007	59	0.007	60	0.007
61	0.000	62	0.007	63	0.007	64	0.007
65	0.007	66	0.007	67	0.007	68	0.007
69	0.007	70	0.007	71	0.007	72	0.007
73	0.000	74	0.007	75	0.007	76	0.007
77	0.007	78	0.007	79	0.007	80	0.007
81	0.007	82	0.007	83	0.007	84	0.007
85	0.000	86	0.007	87	0.007	88	0.007
89	0.007	90	0.007	91	0.007	92	0.007
93	0.007	94	0.007	95	0.007	96	0.007
97	0.000	98	0.007	99	0.007	100	0.007
101	0.007	102	0.007	103	0.007	104	0.007
105	0.007	106	0.007	107	0.007	108	0.007
109	0.000	110	0.007	111	0.007	112	0.007
113	0.007	114	0.007	115	0.007	116	0.007
117	0.007	118	0.007	119	0.007	120	0.007
121	0.000	122	0.007	123	0.007	124	0.007

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125	0.007	126	0.007	127	0.007	128	0.007
129	0.007	130	0.007	131	0.007	132	0.007
133	0.000	134	0.007	135	0.007	136	0.007
137	0.007	138	0.007	139	0.007	140	0.007
141	0.007	142	0.007	143	0.007	144	0.007
145	0.000	146	0.004	147	0.004	148	0.004
149	0.004	150	0.004	151	0.004	152	0.004
153	0.004	154	0.004	155	0.004	156	0.004
157	0.000	158	0.004	159	0.004	160	0.004
161	0.004	162	0.004	163	0.004	164	0.004
165	0.004	166	0.004	167	0.004	168	0.004
169	0.040	170	0.035	171	0.075	172	0.066
173	0.073	174	0.066	175	0.073	176	0.066
177	0.073	178	0.066	179	0.073	180	0.066
181	0.039	182	0.035	183	0.066	184	0.061
185	0.128	186	0.119	187	0.126	188	0.119
189	0.123	190	0.117	191	0.126	192	0.119
193	0.126	194	0.119	195	0.065	196	0.061

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 1.00 N1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W4 + 0.50 G1 + 0.50 G3

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W2 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W5 + 0.50 G1 + 0.50 G3

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	2.500	0.000	0.000	26	2.500	0.500	0.000
27	2.500	2.500	0.000	28	2.500	4.500	0.000
29	2.500	6.500	0.000	30	2.500	8.500	0.000
31	2.500	10.500	0.000	32	2.500	12.500	0.000
33	2.500	14.500	0.000	34	2.500	16.500	0.000
35	2.500	18.500	0.000	36	2.500	20.500	0.000
37	2.500	0.000	1.300	38	2.500	0.500	1.300
39	2.500	2.500	1.300	40	2.500	4.500	1.300
41	2.500	6.500	1.300	42	2.500	8.500	1.300
43	2.500	10.500	1.300	44	2.500	12.500	1.300
45	2.500	14.500	1.300	46	2.500	16.500	1.300
47	2.500	18.500	1.300	48	2.500	20.500	1.300
49	5.000	0.000	0.000	50	5.000	0.500	0.000
51	5.000	2.500	0.000	52	5.000	4.500	0.000
53	5.000	6.500	0.000	54	5.000	8.500	0.000
55	5.000	10.500	0.000	56	5.000	12.500	0.000
57	5.000	14.500	0.000	58	5.000	16.500	0.000
59	5.000	18.500	0.000	60	5.000	20.500	0.000
61	5.000	0.000	1.300	62	5.000	0.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 101****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	5.000	2.500	1.300	64	5.000	4.500	1.300
65	5.000	6.500	1.300	66	5.000	8.500	1.300
67	5.000	10.500	1.300	68	5.000	12.500	1.300
69	5.000	14.500	1.300	70	5.000	16.500	1.300
71	5.000	18.500	1.300	72	5.000	20.500	1.300
73	7.500	0.000	0.000	74	7.500	0.500	0.000
75	7.500	2.500	0.000	76	7.500	4.500	0.000
77	7.500	6.500	0.000	78	7.500	8.500	0.000
79	7.500	10.500	0.000	80	7.500	12.500	0.000
81	7.500	14.500	0.000	82	7.500	16.500	0.000
83	7.500	18.500	0.000	84	7.500	20.500	0.000
85	7.500	0.000	1.300	86	7.500	0.500	1.300
87	7.500	2.500	1.300	88	7.500	4.500	1.300
89	7.500	6.500	1.300	90	7.500	8.500	1.300
91	7.500	10.500	1.300	92	7.500	12.500	1.300
93	7.500	14.500	1.300	94	7.500	16.500	1.300
95	7.500	18.500	1.300	96	7.500	20.500	1.300
97	10.000	0.000	0.000	98	10.000	0.500	0.000
99	10.000	2.500	0.000	100	10.000	4.500	0.000
101	10.000	6.500	0.000	102	10.000	8.500	0.000
103	10.000	10.500	0.000	104	10.000	12.500	0.000
105	10.000	14.500	0.000	106	10.000	16.500	0.000
107	10.000	18.500	0.000	108	10.000	20.500	0.000
109	10.000	0.000	1.300	110	10.000	0.500	1.300
111	10.000	2.500	1.300	112	10.000	4.500	1.300
113	10.000	6.500	1.300	114	10.000	8.500	1.300
115	10.000	10.500	1.300	116	10.000	12.500	1.300
117	10.000	14.500	1.300	118	10.000	16.500	1.300
119	10.000	18.500	1.300	120	10.000	20.500	1.300
121	12.500	0.000	0.000	122	12.500	0.500	0.000
123	12.500	2.500	0.000	124	12.500	4.500	0.000
125	12.500	6.500	0.000	126	12.500	8.500	0.000
127	12.500	10.500	0.000	128	12.500	12.500	0.000
129	12.500	14.500	0.000	130	12.500	16.500	0.000
131	12.500	18.500	0.000	132	12.500	20.500	0.000
133	12.500	0.000	1.300	134	12.500	0.500	1.300
135	12.500	2.500	1.300	136	12.500	4.500	1.300
137	12.500	6.500	1.300	138	12.500	8.500	1.300
139	12.500	10.500	1.300	140	12.500	12.500	1.300
141	12.500	14.500	1.300	142	12.500	16.500	1.300
143	12.500	18.500	1.300	144	12.500	20.500	1.300
145	15.000	0.000	0.000	146	15.000	0.500	0.000
147	15.000	2.500	0.000	148	15.000	4.500	0.000
149	15.000	6.500	0.000	150	15.000	8.500	0.000
151	15.000	10.500	0.000	152	15.000	12.500	0.000
153	15.000	14.500	0.000	154	15.000	16.500	0.000
155	15.000	18.500	0.000	156	15.000	20.500	0.000
157	15.000	0.000	1.300	158	15.000	0.500	1.300
159	15.000	2.500	1.300	160	15.000	4.500	1.300
161	15.000	6.500	1.300	162	15.000	8.500	1.300
163	15.000	10.500	1.300	164	15.000	12.500	1.300
165	15.000	14.500	1.300	166	15.000	16.500	1.300
167	15.000	18.500	1.300	168	15.000	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	2.500	22.500	0.000	172	2.500	22.500	1.300
173	5.000	22.500	0.000	174	5.000	22.500	1.300
175	7.500	22.500	0.000	176	7.500	22.500	1.300
177	10.000	22.500	0.000	178	10.000	22.500	1.300
179	12.500	22.500	0.000	180	12.500	22.500	1.300
181	15.000	22.500	0.000	182	15.000	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	2.500	24.500	0.000	186	2.500	24.500	1.300
187	5.000	24.500	0.000	188	5.000	24.500	1.300
189	7.500	24.500	0.000	190	7.500	24.500	1.300
191	10.000	24.500	0.000	192	10.000	24.500	1.300
193	12.500	24.500	0.000	194	12.500	24.500	1.300
195	15.000	24.500	0.000	196	15.000	24.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 102****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties****Members 1-453**

M	48.3x3.2 CHS 3.56 [S 355]		
A 4.53E-4	Ix 11.59E-8	Iy 11.59E-8	J 23.17E-8
E 205.0E6	G 78.85E6		

Member Loading**Members 2 and 17**

W1 PZ	-000.015	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.085	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.013	0.000	(kN,m)
W5 PX	-000.071	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 3 and 18

W1 PZ	-000.032	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.174	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.026	0.000	(kN,m)
W5 PX	-000.147	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 4 and 19

W1 PZ	-000.033	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.180	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.027	0.000	(kN,m)
W5 PX	-000.152	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 5 and 20

W1 PZ	-000.033	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.185	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.028	0.000	(kN,m)
W5 PX	-000.156	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 7 and 22

W1 PZ	-000.015	0.000	(kN,m)
W4 PZ	-000.085	0.000	(kN,m)

Members 8 and 23

W1 PZ	-000.032	0.000	(kN,m)
W4 PZ	-000.174	0.000	(kN,m)

Members 9 and 24

W1 PZ	-000.033	0.000	(kN,m)
W4 PZ	-000.180	0.000	(kN,m)

Members 10 and 25

W1 PZ	-000.033	0.000	(kN,m)
W4 PZ	-000.185	0.000	(kN,m)

Members 11 and 26

D1 PY	-000.026	1.275	(kN,m)
D1 PY	-000.026	0.025	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 103****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 12-15, 27-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347 and 396

D1 PY -000.026 0.025 (kN,m)
D1 PY -000.026 1.275 (kN,m)

Members 32, 47, 92, 121 and 136

W1 PZ -000.009 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.063 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.009 0.000 (kN,m)
W5 PX -000.051 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 33, 48, 93, 122 and 137

W1 PZ -000.018 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.131 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.019 0.000 (kN,m)
W5 PX -000.106 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 34, 49, 94, 123 and 138

W1 PZ -000.019 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.135 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.019 0.000 (kN,m)
W5 PX -000.109 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 35, 50, 95, 124 and 139

W1 PZ -000.019 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.139 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.020 0.000 (kN,m)
W5 PX -000.112 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 37, 52, 97, 126 and 141

W1 PZ -000.009 0.000 (kN,m)
W4 PZ -000.063 0.000 (kN,m)

Members 38, 53, 98, 127 and 142

W1 PZ -000.018 0.000 (kN,m)
W4 PZ -000.131 0.000 (kN,m)

Members 39, 54, 99, 128 and 143

W1 PZ -000.019 0.000 (kN,m)
W4 PZ -000.135 0.000 (kN,m)

Members 40, 55, 100, 129 and 144

W1 PZ -000.019 0.000 (kN,m)
W4 PZ -000.139 0.000 (kN,m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY -000.186 0.025 (kN,m)
D1 PY -000.186 2.475 (kN,m)

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359 and 361-371

D1 PY -000.130 0.025 (kN,m)
D1 PY -000.130 2.475 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 104****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 170 and 182**

W1 PZ	-000.034	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.190	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.161	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 171 and 183

W1 PZ	-000.035	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.195	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.165	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 172 and 184

W1 PZ	-000.036	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.201	0.000	(kN,m)
W6 PZ	-002.000	0.000	(kN,m)
W2 PX	-000.030	0.000	(kN,m)
W5 PX	-000.170	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 173 and 185

W1 PZ	-000.037	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.206	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.031	0.000	(kN,m)
W5 PX	-000.174	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 174 and 186

W1 PZ	-000.034	0.000	(kN,m)
W4 PZ	-000.190	0.000	(kN,m)

Members 175 and 187

W1 PZ	-000.035	0.000	(kN,m)
W4 PZ	-000.195	0.000	(kN,m)

Members 176 and 188

W1 PZ	-000.036	0.000	(kN,m)
W4 PZ	-000.201	0.000	(kN,m)

Members 177 and 189

W1 PZ	-000.037	0.000	(kN,m)
W4 PZ	-000.206	0.000	(kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ	-000.020	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.143	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 195, 207, 219, 231 and 243

W1 PZ	-000.020	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 105****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ	-000.147	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.021	0.000	(kN, m)
W5 PX	-000.119	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.021	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.151	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.122	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.021	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.154	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.125	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.020	0.000	(kN, m)
W4 PZ	-000.143	0.000	(kN, m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.020	0.000	(kN, m)
W4 PZ	-000.147	0.000	(kN, m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.021	0.000	(kN, m)
W4 PZ	-000.151	0.000	(kN, m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.021	0.000	(kN, m)
W4 PZ	-000.154	0.000	(kN, m)

Members 306 and 312

W1 PZ	-000.038	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.211	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.032	0.000	(kN, m)
W5 PX	-000.178	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 307 and 313

W1 PZ	-000.039	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.216	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.033	0.000	(kN, m)
W5 PX	-000.183	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 308 and 314

W1 PZ	-000.038	0.000	(kN, m)
W4 PZ	-000.211	0.000	(kN, m)

Members 309 and 315

W1 PZ	-000.039	0.000	(kN, m)
W4 PZ	-000.216	0.000	(kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 106****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 318, 324, 330, 336 and 342**

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.159	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.128	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.162	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.159	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.162	0.000	(kN,m)

Members 374-380, 393-395 and 397-399

D1 PY	-000.145	0.025	(kN,m)
D1 PY	-000.110	1.275	(kN,m)

Member 381

D1 PY	-000.399	0.025	(kN,m)
D1 PY	-000.399	2.475	(kN,m)
L2 PY	-001.406	0.025	(kN,m)
L2 PY	-001.406	2.475	(kN,m)
L6 PY	-001.055	0.025	(kN,m)
L6 PY	-001.055	2.475	(kN,m)
G2 PY	-002.109	0.025	(kN,m)
G2 PY	-002.109	2.475	(kN,m)

Members 382-386

D1 PY	-000.343	0.025	(kN,m)
D1 PY	-000.343	2.475	(kN,m)
L2 PY	-001.406	0.025	(kN,m)
L2 PY	-001.406	2.475	(kN,m)
L5 PY	-001.055	0.025	(kN,m)
L5 PY	-001.055	2.475	(kN,m)
G2 PY	-002.109	0.025	(kN,m)
G2 PY	-002.109	2.475	(kN,m)

Members 387-392

D1 PY	-000.220	0.025	(kN,m)
D1 PY	-000.220	2.475	(kN,m)
L4 PY	-001.406	0.025	(kN,m)
L4 PY	-001.406	2.475	(kN,m)
L8 PY	-001.055	0.025	(kN,m)
L8 PY	-001.055	2.475	(kN,m)
G4 PY	-002.109	0.025	(kN,m)
G4 PY	-002.109	2.475	(kN,m)

Member 400

D1 PY	-000.399	0.025	(kN,m)
D1 PY	-000.399	2.475	(kN,m)
L1 PY	-001.406	0.025	(kN,m)
L1 PY	-001.406	2.475	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-001.055	0.025	(kN,m)
L5 PY	-001.055	2.475	(kN,m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 107****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Members 401-404

D1 PY -000.343 0.025 (kN,m)
 D1 PY -000.343 2.475 (kN,m)
 L1 PY -001.406 0.025 (kN,m)
 L1 PY -001.406 2.475 (kN,m)
 N1 PZ -000.300 0.025 (kN,m)
 L5 PY -001.055 0.025 (kN,m)
 L5 PY -001.055 2.475 (kN,m)
 G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Member 405

D1 PY -000.343 0.025 (kN,m)
 D1 PY -000.343 2.475 (kN,m)
 L1 PY -001.406 0.025 (kN,m)
 L1 PY -001.406 2.475 (kN,m)
 N1 PZ -000.300 0.025 (kN,m)
 N1 PZ -000.300 2.475 (kN,m)
 L5 PY -001.055 0.025 (kN,m)
 L5 PY -001.055 2.475 (kN,m)
 G1 PY -002.109 0.025 (kN,m)
 G1 PY -002.109 2.475 (kN,m)

Members 406-411

D1 PY -000.220 0.025 (kN,m)
 D1 PY -000.220 2.475 (kN,m)
 L3 PY -001.406 0.025 (kN,m)
 L3 PY -001.406 2.475 (kN,m)
 L7 PY -001.055 0.025 (kN,m)
 L7 PY -001.055 2.475 (kN,m)
 G3 PY -002.109 0.025 (kN,m)
 G3 PY -002.109 2.475 (kN,m)

Members 412 and 416

W1 PZ -000.040 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.222 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.033 0.000 (kN,m)
 W5 PX -000.187 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 413 and 417

W1 PZ -000.207 0.000 (kN,m)
 W1 PZ -000.212 2.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.938 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W3 PZ -000.000 2.000 (kN,m)
 W4 PZ -000.959 2.000 (kN,m)
 W6 PZ -000.000 2.000 (kN,m)
 W2 PX -000.067 0.000 (kN,m)
 W2 PX -000.069 2.000 (kN,m)
 W5 PX -000.268 0.000 (kN,m)
 W5 PX -000.275 2.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W7 PX -000.000 2.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 2.000 (kN,m)

Members 414 and 418

W1 PZ -000.040 0.000 (kN,m)
 W4 PZ -000.222 0.000 (kN,m)

Members 415 and 419

W1 PZ -000.207 0.000 (kN,m)
 W1 PZ -000.212 2.000 (kN,m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 108****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ -000.938 0.000 (kN,m)
W4 PZ -000.959 2.000 (kN,m)

Members 420, 424, 428, 432 and 436

W1 PZ -000.023 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.166 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.024 0.000 (kN,m)
W5 PX -000.135 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ -000.198 0.000 (kN,m)
W1 PZ -000.202 2.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.834 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W3 PZ -000.000 2.000 (kN,m)
W4 PZ -000.853 2.000 (kN,m)
W6 PZ -000.000 2.000 (kN,m)
W2 PX -000.067 0.000 (kN,m)
W2 PX -000.069 2.000 (kN,m)
W5 PX -000.215 0.000 (kN,m)
W5 PX -000.220 2.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W7 PX -000.000 2.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)
W8 PX -000.000 2.000 (kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ -000.023 0.000 (kN,m)
W4 PZ -000.166 0.000 (kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ -000.198 0.000 (kN,m)
W1 PZ -000.202 2.000 (kN,m)
W4 PZ -000.834 0.000 (kN,m)
W4 PZ -000.853 2.000 (kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Relased	® Fixed			
11	ROO ROO	12	ROO ROO	13	ROO ROO	14	ROO ROO
15	ROO ROO	26	ROO ROO	27	ROO ROO	28	ROO ROO
29	ROO ROO	30	ROO ROO	41	ROO ROO	42	ROO ROO
43	ROO ROO	44	ROO ROO	45	ROO ROO	56	ROO ROO
57	ROO ROO	58	ROO ROO	59	ROO ROO	60	ROO ROO
61	ROO ROO	62	ROO ROO	63	ROO ROO	64	ROO ROO
65	ROO ROO	66	ROO ROO	67	ROO ROO	68	ROO ROO
69	ROO ROO	70	ROO ROO	71	ROO ROO	72	ROO ROO
73	ROO ROO	74	ROO ROO	75	ROO ROO	76	ROO ROO
77	ROO ROO	78	ROO ROO	79	ROO ROO	80	ROO ROO
81	ROO ROO	82	ROO ROO	83	ROO ROO	84	ROO ROO
85	ROO ROO	86	ROO ROO	87	ROO ROO	88	ROO ROO
89	ROO ROO	90	ROO ROO	101	ROO ROO	102	ROO ROO
103	ROO ROO	104	ROO ROO	105	ROO ROO	106	ROO ROO
107	ROO ROO	108	ROO ROO	109	ROO ROO	110	ROO ROO
111	ROO ROO	112	ROO ROO	113	ROO ROO	114	ROO ROO
115	ROO ROO	116	ROO ROO	117	ROO ROO	118	ROO ROO
119	ROO ROO	130	ROO ROO	131	ROO ROO	132	ROO ROO
133	ROO ROO	134	ROO ROO	145	ROO ROO	146	ROO ROO
147	ROO ROO	148	ROO ROO	149	ROO ROO	150	ROO ROO
151	ROO ROO	152	ROO ROO	153	ROO ROO	154	ROO ROO
155	ROO ROO	156	ROO ROO	157	ROO ROO	158	ROO ROO
159	ROO ROO	160	ROO ROO	161	ROO ROO	162	ROO ROO
163	ROO ROO	164	ROO ROO	165	ROO ROO	166	ROO ROO
167	ROO ROO	168	ROO ROO	169	ROO ROO	178	ROO ROO
179	ROO ROO	180	ROO ROO	181	ROO ROO	190	ROO ROO
191	ROO ROO	192	ROO ROO	193	ROO ROO	202	ROO ROO

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 109****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

203	ROO	ROO	204	ROO	ROO	205	ROO	ROO	214	ROO	ROO
215	ROO	ROO	216	ROO	ROO	217	ROO	ROO	226	ROO	ROO
227	ROO	ROO	228	ROO	ROO	229	ROO	ROO	238	ROO	ROO
239	ROO	ROO	240	ROO	ROO	241	ROO	ROO	250	ROO	ROO
251	ROO	ROO	252	ROO	ROO	253	ROO	ROO	254	ROO	ROO
255	ROO	ROO	256	ROO	ROO	257	ROO	ROO	258	ROO	ROO
259	ROO	ROO	260	ROO	ROO	261	ROO	ROO	262	ROO	ROO
263	ROO	ROO	264	ROO	ROO	265	ROO	ROO	266	ROO	ROO
267	ROO	ROO	268	ROO	ROO	269	ROO	ROO	270	ROO	ROO
271	ROO	ROO	272	ROO	ROO	273	ROO	ROO	274	ROO	ROO
275	ROO	ROO	276	ROO	ROO	277	ROO	ROO	278	ROO	ROO
279	ROO	ROO	280	ROO	ROO	281	ROO	ROO	282	ROO	ROO
283	ROO	ROO	284	ROO	ROO	285	ROO	ROO	286	ROO	ROO
287	ROO	ROO	288	ROO	ROO	289	ROO	ROO	290	ROO	ROO
291	ROO	ROO	292	ROO	ROO	293	ROO	ROO	294	ROO	ROO
295	ROO	ROO	296	ROO	ROO	297	ROO	ROO	298	ROO	ROO
299	ROO	ROO	300	ROO	ROO	301	ROO	ROO	302	ROO	ROO
303	ROO	ROO	304	ROO	ROO	305	ROO	ROO	310	ROO	ROO
311	ROO	ROO	316	ROO	ROO	317	ROO	ROO	322	ROO	ROO
323	ROO	ROO	328	ROO	ROO	329	ROO	ROO	334	ROO	ROO
335	ROO	ROO	340	ROO	ROO	341	ROO	ROO	346	ROO	ROO
347	ROO	ROO	348	ROO	ROO	349	ROO	ROO	350	ROO	ROO
351	ROO	ROO	352	ROO	ROO	353	ROO	ROO	354	ROO	ROO
355	ROO	ROO	356	ROO	ROO	357	ROO	ROO	358	ROO	ROO
359	ROO	ROO	360	ROO	ROO	361	ROO	ROO	362	ROO	ROO
363	ROO	ROO	364	ROO	ROO	365	ROO	ROO	366	ROO	ROO
367	ROO	ROO	368	ROO	ROO	369	ROO	ROO	370	ROO	ROO
371	ROO	ROO	372	ROO	ROO	373	ROO	ROO	374	ROO	ROO
375	ROO	ROO	376	ROO	ROO	377	ROO	ROO	378	ROO	ROO
379	ROO	ROO	380	ROO	ROO	381	ROO	ROO	382	ROO	ROO
383	ROO	ROO	384	ROO	ROO	385	ROO	ROO	386	ROO	ROO
387	ROO	ROO	388	ROO	ROO	389	ROO	ROO	390	ROO	ROO
391	ROO	ROO	392	ROO	ROO	393	ROO	ROO	394	ROO	ROO
395	ROO	ROO	396	ROO	ROO	397	ROO	ROO	398	ROO	ROO
399	ROO	ROO	400	ROO	ROO	401	ROO	ROO	402	ROO	ROO
403	ROO	ROO	404	ROO	ROO	405	ROO	ROO	406	ROO	ROO
407	ROO	ROO	408	ROO	ROO	409	ROO	ROO	410	ROO	ROO
411	ROO	ROO	440	ROO	ROO	441	ROO	ROO	442	ROO	ROO
443	ROO	ROO	444	ROO	ROO	445	ROO	ROO	446	ROO	ROO
447	ROO	ROO	448	ROO	ROO	449	ROO	ROO	450	ROO	ROO
451	ROO	ROO	452	ROO	ROO	453	ROO	ROO			

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0104.050 0000.000 0104.050

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 110

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.66	0.66	-0.08	0.00	0.45	0.45
2	-3.01	-0.11	0.01	3.01	-0.08	0.00	0.14	0.16
3	-3.70	-0.35	-10.53	11.17	-0.09	0.00	0.00	0.09
4	-4.49	-0.51	-14.65	15.34	0.00	-0.02	0.01	0.03
5	-5.27	-0.69	-10.03	11.35	0.09	-0.02	0.01	0.09
6	-5.92	-0.85	0.03	5.98	0.00	0.00	0.01	0.01
7	-6.34	-1.01	-10.46	12.27	-0.10	0.00	0.00	0.10
8	-6.47	-1.17	-15.06	16.43	-0.01	-0.02	0.00	0.02
9	-6.24	-1.33	-10.26	12.08	0.09	-0.02	-0.01	0.10
10	-5.65	-1.47	0.02	5.84	-0.03	0.01	-0.01	0.04
11	-4.70	-1.61	-15.62	16.39	-0.16	0.01	-0.02	0.16
12	-3.39	-1.73	-25.25	25.53	-0.05	0.01	-0.03	0.06
13	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
14	0.00	-0.03	0.00	0.03	-0.04	0.00	0.01	0.04
15	0.09	-0.16	-10.53	10.53	-0.09	0.00	0.00	0.09
16	0.09	-0.29	-14.65	14.66	0.00	0.00	0.00	0.01
17	0.09	-0.41	-10.03	10.04	0.09	0.00	0.00	0.09
18	0.00	-0.53	0.00	0.53	-0.01	0.00	0.00	0.01
19	0.09	-0.64	-10.46	10.48	-0.10	0.00	0.00	0.10
20	0.09	-0.75	-15.06	15.08	-0.01	0.00	0.00	0.01
21	0.09	-0.86	-10.26	10.29	0.09	0.00	0.00	0.09
22	0.00	-0.96	0.00	0.96	-0.03	0.00	0.00	0.03
23	0.12	-1.06	-15.62	15.66	-0.16	0.00	0.00	0.16
24	0.25	-1.15	-25.25	25.28	-0.05	0.00	0.01	0.05
25	0.00	0.00	0.19	0.19	-0.02	0.00	0.44	0.44
26	-2.86	-0.05	0.01	2.86	-0.02	0.00	0.11	0.12
27	-3.56	-0.22	-2.39	4.29	0.00	-0.02	0.00	0.02
28	-4.37	-0.39	0.01	4.39	-0.04	-0.01	0.01	0.05
29	-5.17	-0.56	-10.49	11.71	-0.08	-0.01	0.01	0.08
30	-5.84	-0.72	-14.49	15.64	0.01	-0.01	0.01	0.01
31	-6.29	-0.87	-10.13	11.95	0.09	-0.03	0.00	0.09
32	-6.44	-1.02	0.03	6.52	0.00	-0.03	0.00	0.03
33	-6.24	-1.18	-10.36	12.16	-0.08	-0.01	-0.01	0.09
34	-5.68	-1.37	-14.47	15.61	0.01	-0.02	-0.01	0.02
35	-4.74	-1.57	-9.59	10.82	0.09	-0.05	-0.02	0.10
36	-3.47	-1.76	-0.02	3.89	-0.08	-0.05	-0.02	0.10
37	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
38	0.00	-0.06	0.00	0.06	-0.01	0.00	0.00	0.01
39	0.09	-0.27	-2.39	2.41	0.00	0.01	0.00	0.01
40	0.00	-0.48	0.00	0.48	-0.04	0.01	0.00	0.05
41	0.09	-0.68	-10.49	10.52	-0.08	0.01	0.00	0.09
42	0.00	-0.88	-14.49	14.52	0.01	0.02	0.00	0.02
43	0.09	-1.08	-10.13	10.19	0.09	0.02	0.00	0.09
44	0.00	-1.26	0.00	1.26	0.00	0.03	0.00	0.03
45	0.09	-1.45	-10.36	10.47	-0.09	0.03	0.00	0.09
46	0.00	-1.62	-14.47	14.56	0.01	0.03	0.00	0.03
47	0.12	-1.79	-9.59	9.76	0.09	0.04	0.00	0.10
48	0.00	-1.96	0.00	1.96	-0.08	0.04	0.01	0.10
49	0.00	0.00	0.50	0.50	-0.06	0.00	0.42	0.42
50	-2.74	-0.06	0.01	2.74	-0.06	0.00	0.11	0.12
51	-3.58	-0.29	-7.93	8.70	-0.06	0.00	0.00	0.06
52	-4.39	-0.51	-10.94	11.79	0.00	0.00	0.01	0.01
53	-5.19	-0.73	-7.55	9.19	0.07	0.00	0.01	0.07
54	-5.86	-0.95	0.03	5.93	0.00	0.00	0.00	0.00
55	-6.30	-1.15	-7.81	10.10	-0.07	0.00	0.00	0.07
56	-6.45	-1.35	-11.10	12.91	0.00	0.00	0.00	0.00
57	-6.26	-1.55	-7.58	9.95	0.07	0.00	0.00	0.07
58	-5.69	-1.74	0.02	5.95	-0.03	0.00	-0.01	0.03

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 111

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-4.76	-1.92	-12.54	13.55	-0.12	0.00	-0.01	0.12
60	-3.49	-2.10	-20.80	21.19	-0.06	0.00	-0.01	0.06
61	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
62	0.00	-0.06	0.00	0.06	-0.03	0.00	0.00	0.03
63	0.09	-0.28	-7.93	7.94	-0.07	0.00	0.00	0.07
64	0.00	-0.50	-10.94	10.95	0.00	0.00	0.00	0.00
65	0.09	-0.71	-7.55	7.59	0.07	0.01	0.00	0.07
66	0.00	-0.92	0.00	0.92	0.00	0.01	0.00	0.01
67	0.09	-1.12	-7.81	7.89	-0.07	0.01	0.00	0.07
68	0.00	-1.31	-11.10	11.18	0.00	0.01	0.00	0.01
69	0.09	-1.50	-7.58	7.73	0.07	0.01	0.00	0.07
70	0.00	-1.68	0.00	1.68	-0.03	0.02	0.00	0.03
71	0.12	-1.85	-12.54	12.67	-0.12	0.02	0.00	0.12
72	0.00	-2.03	-20.80	20.90	-0.06	0.02	0.01	0.06
73	0.00	0.00	0.15	0.15	-0.02	0.00	0.40	0.40
74	-2.65	-0.06	0.01	2.65	-0.02	0.00	0.11	0.11
75	-3.60	-0.29	-1.80	4.03	0.00	0.00	0.00	0.00
76	-4.40	-0.51	0.01	4.43	-0.04	-0.01	0.01	0.04
77	-5.20	-0.73	-8.10	9.65	-0.07	-0.01	0.01	0.07
78	-5.87	-0.94	-11.25	12.73	0.00	-0.01	0.01	0.01
79	-6.32	-1.15	-7.82	10.12	0.07	-0.01	0.00	0.07
80	-6.47	-1.35	0.03	6.60	0.00	-0.02	0.00	0.02
81	-6.27	-1.54	-7.77	10.10	-0.07	-0.02	0.00	0.07
82	-5.71	-1.73	-10.84	12.37	0.00	-0.02	-0.01	0.02
83	-4.77	-1.91	-6.91	8.61	0.07	-0.02	-0.01	0.07
84	-3.50	-2.08	-0.01	4.07	-0.09	-0.02	-0.02	0.10
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
86	0.00	-0.06	0.00	0.06	-0.01	0.00	0.00	0.01
87	0.09	-0.28	-1.80	1.83	0.00	0.00	0.00	0.00
88	0.00	-0.49	0.00	0.49	-0.04	0.01	0.00	0.04
89	0.09	-0.70	-8.10	8.13	-0.07	0.01	0.00	0.07
90	0.00	-0.91	-11.25	11.29	0.00	0.02	0.00	0.02
91	0.09	-1.11	-7.82	7.90	0.07	0.02	0.00	0.07
92	0.00	-1.30	0.00	1.30	0.00	0.02	0.00	0.02
93	0.09	-1.48	-7.77	7.91	-0.07	0.03	0.00	0.07
94	0.00	-1.66	-10.84	10.97	0.00	0.03	0.00	0.03
95	0.12	-1.83	-6.91	7.15	0.07	0.03	0.00	0.08
96	0.00	-2.00	0.00	2.00	-0.09	0.04	0.01	0.10
97	0.00	0.00	0.50	0.50	-0.06	0.00	0.39	0.40
98	-2.58	-0.06	0.01	2.58	-0.06	0.00	0.10	0.12
99	-3.61	-0.29	-7.94	8.72	-0.06	0.00	0.00	0.06
100	-4.41	-0.52	-10.95	11.81	0.00	0.00	0.01	0.01
101	-5.21	-0.74	-7.56	9.21	0.07	0.00	0.01	0.07
102	-5.88	-0.95	0.03	5.96	0.00	0.00	0.01	0.01
103	-6.33	-1.16	-7.83	10.14	-0.07	0.00	0.00	0.07
104	-6.47	-1.36	-11.15	12.96	0.00	0.00	0.00	0.01
105	-6.28	-1.56	-7.62	10.00	0.07	0.01	0.00	0.07
106	-5.72	-1.75	0.03	5.98	-0.03	0.01	-0.01	0.03
107	-4.78	-1.93	-12.23	13.27	-0.12	0.01	-0.01	0.12
108	-3.51	-2.11	-20.13	20.54	-0.05	0.01	-0.02	0.06
109	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
110	0.00	-0.06	0.00	0.06	-0.03	0.00	0.00	0.03
111	0.09	-0.28	-7.94	7.94	-0.07	0.00	0.00	0.07
112	0.00	-0.50	-10.95	10.96	0.00	0.00	0.00	0.00
113	0.09	-0.71	-7.56	7.59	0.07	0.00	0.00	0.07
114	0.00	-0.92	0.00	0.92	0.00	0.01	0.00	0.01
115	0.09	-1.12	-7.83	7.91	-0.07	0.01	0.00	0.07
116	0.00	-1.31	-11.15	11.23	0.00	0.01	0.00	0.01

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Job Ref : B11323

Sheet : SD / 112

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.09	-1.50	-7.62	7.77	0.07	0.01	0.00	0.07
118	0.00	-1.68	0.00	1.68	-0.03	0.01	0.00	0.03
119	0.12	-1.85	-12.23	12.37	-0.12	0.01	0.00	0.12
120	0.00	-2.03	-20.13	20.23	-0.05	0.02	0.01	0.06
121	0.00	0.00	0.15	0.15	-0.02	0.00	0.38	0.38
122	-2.53	-0.06	0.00	2.53	-0.02	0.00	0.10	0.10
123	-3.62	-0.29	-1.80	4.05	0.00	0.00	0.00	0.01
124	-4.41	-0.51	0.01	4.44	-0.04	-0.01	0.01	0.04
125	-5.21	-0.73	-8.10	9.66	-0.07	-0.01	0.01	0.07
126	-5.89	-0.94	-11.26	12.74	0.00	-0.02	0.01	0.02
127	-6.33	-1.15	-7.82	10.13	0.07	-0.02	0.00	0.07
128	-6.48	-1.35	0.03	6.62	0.00	-0.02	0.00	0.02
129	-6.29	-1.54	-7.81	10.14	-0.07	-0.02	0.00	0.07
130	-5.72	-1.73	-10.91	12.44	0.00	-0.03	-0.01	0.03
131	-4.79	-1.91	-7.00	8.69	0.07	-0.03	-0.01	0.08
132	-3.52	-2.09	-0.01	4.09	-0.09	-0.03	-0.01	0.10
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.06	0.00	0.06	-0.01	0.00	0.00	0.01
135	0.09	-0.28	-1.80	1.83	0.00	0.00	0.00	0.00
136	0.00	-0.49	0.00	0.49	-0.04	0.01	0.00	0.04
137	0.09	-0.70	-8.10	8.13	-0.07	0.01	0.00	0.07
138	0.00	-0.91	-11.26	11.30	0.00	0.01	0.00	0.01
139	0.09	-1.10	-7.82	7.90	0.07	0.02	0.00	0.07
140	0.00	-1.29	0.00	1.29	0.00	0.02	0.00	0.02
141	0.09	-1.48	-7.81	7.94	-0.07	0.02	0.00	0.07
142	0.00	-1.66	-10.91	11.03	0.00	0.03	0.00	0.03
143	0.12	-1.83	-7.00	7.23	0.07	0.03	0.00	0.08
144	0.00	-2.00	0.00	2.00	-0.09	0.03	0.01	0.10
145	0.00	0.00	0.49	0.49	-0.06	0.00	0.37	0.38
146	-2.51	-0.03	0.00	2.51	-0.06	0.00	0.12	0.13
147	-3.62	-0.16	-7.76	8.56	-0.07	0.00	0.00	0.07
148	-4.41	-0.28	-10.80	11.67	0.00	0.00	0.01	0.01
149	-5.22	-0.39	-7.40	9.06	0.07	0.00	0.01	0.07
150	-5.89	-0.51	0.03	5.91	0.00	0.00	0.01	0.01
151	-6.33	-0.62	-7.75	10.03	-0.07	0.01	0.01	0.07
152	-6.48	-0.73	-11.14	12.91	0.00	0.01	0.00	0.01
153	-6.29	-0.83	-7.53	9.85	0.07	0.01	0.00	0.07
154	-5.73	-0.93	0.03	5.80	-0.03	0.01	-0.01	0.03
155	-4.79	-1.03	-12.62	13.54	-0.13	0.01	-0.01	0.13
156	-3.52	-1.12	-20.87	21.20	-0.05	0.02	-0.01	0.05
157	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
158	0.00	-0.03	0.00	0.03	-0.03	0.00	0.01	0.03
159	0.09	-0.15	-7.76	7.76	-0.07	0.00	0.00	0.07
160	-0.05	-0.27	-10.80	10.80	0.00	0.01	0.00	0.01
161	0.09	-0.38	-7.40	7.41	0.07	0.01	0.00	0.07
162	0.00	-0.49	0.00	0.49	0.00	0.01	0.00	0.01
163	0.09	-0.60	-7.75	7.78	-0.07	0.01	0.00	0.07
164	-0.05	-0.70	-11.14	11.16	0.00	0.02	0.00	0.02
165	0.09	-0.80	-7.53	7.57	0.07	0.02	0.00	0.07
166	0.00	-0.89	0.00	0.89	-0.03	0.02	0.00	0.03
167	0.12	-0.99	-12.62	12.66	-0.13	0.02	0.00	0.13
168	-0.17	-1.08	-20.87	20.90	-0.05	0.02	0.02	0.06
169	-1.81	-1.84	-22.91	23.05	0.15	-0.01	-0.03	0.15
170	-1.82	-1.24	-22.91	23.02	0.15	0.00	-0.01	0.15
171	-1.90	-1.94	-21.96	22.12	-0.01	-0.05	-0.02	0.05
172	-1.82	-2.13	-21.96	22.14	-0.01	0.05	0.00	0.05
173	-1.91	-2.27	-21.24	21.45	0.12	0.00	-0.02	0.12
174	-1.82	-2.19	-21.24	21.43	0.13	0.02	0.00	0.13

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Job Ref : B11323

Sheet : SD / 113

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-1.92	-2.26	-20.57	20.78	0.00	-0.03	-0.02	0.03
176	-1.83	-2.17	-20.57	20.77	0.00	0.04	0.00	0.04
177	-1.93	-2.28	-20.21	20.42	0.12	0.01	-0.02	0.12
178	-1.82	-2.19	-20.21	20.41	0.12	0.02	0.00	0.12
179	-1.94	-2.26	-19.86	20.09	0.00	-0.03	-0.02	0.04
180	-1.82	-2.17	-19.87	20.07	0.00	0.04	0.00	0.04
181	-1.94	-1.21	-19.76	19.89	0.13	0.02	-0.02	0.13
182	-1.82	-1.17	-19.76	19.88	0.13	0.03	0.01	0.13
183	-0.12	-1.90	-0.04	1.90	0.16	-0.01	-0.04	0.17
184	0.00	-1.49	0.00	1.49	0.16	-0.01	-0.03	0.16
185	-0.16	-2.06	-0.40	2.10	0.17	-0.04	-0.02	0.18
186	-0.04	-2.25	-0.38	2.28	0.17	0.05	-0.02	0.18
187	-0.08	-2.38	-0.07	2.38	0.16	0.01	-0.01	0.16
188	0.00	-2.31	0.00	2.31	0.16	0.02	-0.01	0.16
189	-0.06	-2.37	-0.33	2.39	0.16	-0.03	-0.01	0.16
190	-0.02	-2.29	-0.31	2.31	0.16	0.04	-0.01	0.16
191	-0.03	-2.39	-0.07	2.39	0.15	0.01	-0.01	0.15
192	0.00	-2.31	0.00	2.31	0.15	0.02	-0.01	0.15
193	0.07	-2.38	-0.36	2.41	0.15	-0.03	-0.01	0.16
194	0.03	-2.29	-0.34	2.31	0.15	0.04	-0.01	0.16
195	0.12	-1.27	-0.03	1.27	0.15	0.02	0.03	0.15
196	0.00	-1.23	0.00	1.23	0.14	0.03	0.03	0.15

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	16.78C	0.00	-1.02	0.00	0.00	0.00	0.00	0.00	0.34
	2	16.78C	0.00	-1.02	0.00	-0.51	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	11.31C	0.00	-0.01	0.36	-0.09	-0.27	0.00	0.00	0.77
	3	11.31C	0.00	0.06	0.27	0.03	0.27	@ 0.000	@ 0.000	@ 0.424
3	3	9.60C	0.00	-0.17	0.27	0.02	-0.07	0.00	0.00	0.54
	4	9.60C	0.00	-0.02	0.09	-0.02	0.11	@ 0.000	@ 0.000	@ 1.414
4	4	8.88C	0.00	-0.16	0.07	0.01	0.13	0.00	0.00	0.59
	5	8.88C	0.00	-0.01	-0.11	-0.01	-0.09	@ 0.000	@ 0.000	@ 0.566
5	5	8.51C	0.00	-0.17	-0.12	0.01	0.28	0.00	0.00	1.11
	6	8.51C	0.00	-0.01	-0.30	-0.01	-0.32	@ 0.000	@ 0.000	@ 1.515
6	13	6.08C	0.00	0.03	-0.22	0.00	0.00	0.00	0.00	0.07
	14	6.08C	0.00	0.03	-0.22	0.01	-0.11	@ 0.000	@ 0.000	@ 0.290
7	14	5.94C	0.00	0.00	0.37	0.00	-0.30	0.00	0.00	0.93
	15	5.94C	0.00	0.00	0.29	0.00	0.28	@ 0.000	@ 0.000	@ 0.465
8	15	5.82C	0.00	0.00	0.26	0.00	-0.07	0.00	0.00	0.56
	16	5.82C	0.00	0.00	0.09	0.00	0.11	@ 0.000	@ 0.000	@ 1.394
9	16	5.64C	0.00	0.00	0.07	0.00	0.13	0.00	0.00	0.59
	17	5.64C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
10	17	5.41C	0.00	-0.01	-0.12	0.01	0.28	0.00	0.00	1.11
	18	5.41C	0.00	-0.01	-0.30	-0.01	-0.32	@ 0.000	@ 0.000	@ 1.515

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Job Ref : B11323

Sheet : SD / 114

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	8.51C	0.00	-1.07	0.00	0.00	0.00	0.00	0.00	0.36
	26	8.51C	0.00	-1.07	0.00	-0.53	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	8.17C	0.00	-0.02	0.16	-0.07	-0.07	0.00	0.00	0.54
	27	8.17C	0.00	0.05	0.07	0.02	0.08	@ 0.000	@ 0.000	@ 0.727
18	27	7.89C	0.00	-0.17	0.06	0.02	0.10	0.00	0.00	0.45
	28	7.89C	0.00	-0.02	-0.11	-0.02	-0.12	@ 0.000	@ 0.000	@ 1.495
19	28	7.64C	0.00	-0.17	0.47	0.02	-0.30	0.00	0.00	0.91
	29	7.64C	0.00	-0.02	0.29	-0.02	0.29	@ 0.000	@ 0.000	@ 0.444
20	29	7.88C	0.00	-0.17	0.28	0.01	-0.08	0.00	0.00	0.54
	30	7.88C	0.00	-0.01	0.09	-0.02	0.11	@ 0.000	@ 0.000	@ 1.414
21	37	10.25C	0.00	0.02	-0.06	0.00	0.00	0.00	0.00	0.02
	38	10.25C	0.00	0.02	-0.06	0.01	-0.03	@ 0.000	@ 0.000	@ 0.290
22	38	9.97C	0.00	0.00	0.16	0.00	-0.08	0.00	0.00	0.25
	39	9.97C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.535
23	39	9.69C	0.00	0.00	0.06	0.00	0.10	0.00	0.00	0.44
	40	9.69C	0.00	0.00	-0.11	0.00	-0.12	@ 0.000	@ 0.000	@ 1.495
24	40	9.44C	0.00	0.00	0.47	0.00	-0.30	0.00	0.00	0.91
	41	9.44C	0.00	0.00	0.29	0.00	0.29	@ 0.000	@ 0.000	@ 0.444
25	41	9.22C	0.00	0.00	0.28	0.00	-0.07	0.00	0.00	0.54
	42	9.22C	0.00	0.00	0.09	0.00	0.11	@ 0.000	@ 0.000	@ 1.414
31	49	11.00C	0.00	-1.02	0.00	0.00	0.00	0.00	0.00	0.34
	50	11.00C	0.00	-1.02	0.00	-0.51	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	10.72C	0.00	-0.01	0.27	-0.06	-0.21	0.00	0.00	0.58
	51	10.72C	0.00	0.04	0.21	0.02	0.21	@ 0.000	@ 0.000	@ 0.424
33	51	10.44C	0.00	-0.13	0.20	0.03	-0.05	0.00	0.00	0.40
	52	10.44C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
34	52	10.16C	0.00	-0.13	0.06	0.02	0.09	0.00	0.00	0.43
	53	10.16C	0.00	-0.02	-0.08	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.566
35	53	9.88C	0.00	-0.13	-0.09	0.02	0.21	0.00	0.00	0.82
	54	9.88C	0.00	-0.02	-0.23	-0.02	-0.24	@ 0.000	@ 0.000	@ 1.515
36	61	10.64C	0.00	0.02	-0.17	0.00	0.00	0.00	0.00	0.06
	62	10.64C	0.00	0.02	-0.17	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
37	62	10.37C	0.00	0.00	0.28	0.00	-0.23	0.00	0.00	0.70
	63	10.37C	0.00	0.00	0.22	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
38	63	10.12C	0.00	0.00	0.20	0.00	-0.05	0.00	0.00	0.40
	64	10.12C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.394
39	64	9.83C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.43
	65	9.83C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 115

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	9.51C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.82
	66	9.51C	0.00	0.00	-0.23	0.00	-0.24	@ 0.000	@ 0.000	@ 1.515
46	73	10.96C	0.00	-0.98	0.00	0.00	0.00	0.00	0.00	0.33
	74	10.96C	0.00	-0.98	0.00	-0.49	0.00	@ 0.000	@ 0.000	@ 0.290
47	74	10.68C	0.00	-0.02	0.12	-0.06	-0.05	0.00	0.00	0.48
	75	10.68C	0.00	0.03	0.05	0.01	0.06	@ 0.000	@ 0.000	@ 0.768
48	75	10.39C	0.00	-0.13	0.05	0.02	0.08	0.00	0.00	0.34
	76	10.39C	0.00	-0.02	-0.09	-0.02	-0.09	@ 0.000	@ 0.000	@ 1.495
49	76	10.11C	0.00	-0.13	0.36	0.02	-0.23	0.00	0.00	0.70
	77	10.11C	0.00	-0.02	0.23	-0.02	0.22	@ 0.000	@ 0.000	@ 0.444
50	77	9.82C	0.00	-0.13	0.21	0.01	-0.06	0.00	0.00	0.42
	78	9.82C	0.00	-0.01	0.07	-0.02	0.09	@ 0.000	@ 0.000	@ 1.414
51	85	10.57C	0.00	0.02	-0.05	0.00	0.00	0.00	0.00	0.02
	86	10.57C	0.00	0.02	-0.05	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
52	86	10.29C	0.00	0.00	0.12	0.00	-0.06	0.00	0.00	0.19
	87	10.29C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.535
53	87	10.00C	0.00	0.00	0.04	0.00	0.08	0.00	0.00	0.34
	88	10.00C	0.00	0.00	-0.09	0.00	-0.09	@ 0.000	@ 0.000	@ 1.495
54	88	9.73C	0.00	0.00	0.36	0.00	-0.23	0.00	0.00	0.70
	89	9.73C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
55	89	9.47C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.42
	90	9.47C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
91	97	11.07C	0.00	-0.95	0.00	0.00	0.00	0.00	0.00	0.32
	98	11.07C	0.00	-0.95	0.00	-0.47	0.00	@ 0.000	@ 0.000	@ 0.290
92	98	10.79C	0.00	-0.02	0.27	-0.05	-0.21	0.00	0.00	0.58
	99	10.79C	0.00	0.03	0.21	0.01	0.21	@ 0.000	@ 0.000	@ 0.424
93	99	10.50C	0.00	-0.13	0.20	0.02	-0.05	0.00	0.00	0.40
	100	10.50C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
94	100	10.22C	0.00	-0.13	0.06	0.02	0.09	0.00	0.00	0.43
	101	10.22C	0.00	-0.02	-0.08	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.566
95	101	9.93C	0.00	-0.13	-0.09	0.01	0.21	0.00	0.00	0.82
	102	9.93C	0.00	-0.02	-0.23	-0.02	-0.24	@ 0.000	@ 0.000	@ 1.515
96	109	10.65C	0.00	0.02	-0.17	0.00	0.00	0.00	0.00	0.06
	110	10.65C	0.00	0.02	-0.17	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
97	110	10.38C	0.00	0.00	0.28	0.00	-0.23	0.00	0.00	0.70
	111	10.38C	0.00	0.00	0.22	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
98	111	10.13C	0.00	0.00	0.20	0.00	-0.05	0.00	0.00	0.40
	112	10.13C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.394

James Crosbie Associates Ltd.

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Job Ref : B11323

Sheet : SD / 116

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	9.84C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.43
	113	9.84C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
100	113	9.52C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.83
	114	9.52C	0.00	0.00	-0.23	0.00	-0.24	@ 0.000	@ 0.000	@ 1.515
120	121	10.95C	0.00	-0.94	0.00	0.00	0.00		0.00	0.32
	122	10.95C	0.00	-0.94	0.00	-0.47	0.00		@ 0.000	@ 0.290
121	122	10.67C	0.00	-0.02	0.12	-0.05	-0.05	0.00	0.00	0.45
	123	10.67C	0.00	0.03	0.05	0.01	0.06	@ 0.000	@ 0.000	@ 0.808
122	123	10.39C	0.00	-0.13	0.05	0.02	0.08	0.00	0.00	0.34
	124	10.39C	0.00	-0.02	-0.09	-0.02	-0.09	@ 0.000	@ 0.000	@ 1.495
123	124	10.11C	0.00	-0.13	0.36	0.02	-0.23	0.00	0.00	0.70
	125	10.11C	0.00	-0.02	0.23	-0.02	0.22	@ 0.000	@ 0.000	@ 0.444
124	125	9.83C	0.00	-0.13	0.21	0.01	-0.06	0.00	0.00	0.42
	126	9.83C	0.00	-0.01	0.07	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
125	133	10.54C	0.00	0.02	-0.05	0.00	0.00	0.00	0.00	0.02
	134	10.54C	0.00	0.02	-0.05	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
126	134	10.26C	0.00	0.00	0.12	0.00	-0.06	0.00	0.00	0.19
	135	10.26C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
127	135	9.98C	0.00	0.00	0.04	0.00	0.08	0.00	0.00	0.34
	136	9.98C	0.00	0.00	-0.09	0.00	-0.09	@ 0.000	@ 0.000	@ 1.495
128	136	9.71C	0.00	0.00	0.36	0.00	-0.23	0.00	0.00	0.70
	137	9.71C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
129	137	9.45C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.42
	138	9.45C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
135	145	5.92C	0.00	-0.84	0.00	0.00	0.00	0.00	0.00	0.28
	146	5.92C	0.00	-0.84	0.00	-0.42	0.00	@ 0.000	@ 0.000	@ 0.290
136	146	5.77C	0.00	-0.01	0.26	-0.06	-0.20	0.00	0.00	0.57
	147	5.77C	0.00	0.04	0.20	0.01	0.20	@ 0.000	@ 0.000	@ 0.424
137	147	5.61C	0.00	-0.12	0.20	0.02	-0.05	0.00	0.00	0.41
	148	5.61C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.414
138	148	5.46C	0.00	-0.12	0.06	0.01	0.09	0.00	0.00	0.43
	149	5.46C	0.00	-0.01	-0.08	-0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
139	149	5.30C	0.00	-0.12	-0.08	0.01	0.21	0.00	0.00	0.81
	150	5.30C	0.00	-0.01	-0.22	-0.01	-0.24	@ 0.000	@ 0.000	@ 1.515
140	157	5.68C	0.00	0.03	-0.16	0.00	0.00	0.00	0.00	0.06
	158	5.68C	0.00	0.03	-0.16	0.01	-0.08	@ 0.000	@ 0.000	@ 0.290
141	158	5.55C	0.00	0.00	0.28	0.00	-0.22	0.00	0.00	0.68
	159	5.55C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.465

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Job Ref : B11323

Sheet : SD / 117

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)										
Member No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	5.42C	0.00	0.00	0.20	0.00	-0.05	0.00	0.00	0.41
	160	5.42C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.394
143	160	5.26C	0.00	0.01	0.06	-0.01	0.09	0.00	0.00	0.43
	161	5.26C	0.00	0.01	-0.08	0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
144	161	5.07C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.82
	162	5.07C	0.00	0.00	-0.22	0.00	-0.24	@ 0.000	@ 0.000	@ 1.515
170	6	8.13C	0.00	-0.17	0.50	0.01	-0.33	0.00	0.00	1.12
	7	8.13C	0.00	-0.01	0.31	-0.01	0.29	@ 0.000	@ 0.000	@ 0.485
171	7	7.71C	0.00	-0.17	0.30	0.00	-0.08	0.00	0.00	0.59
	8	7.71C	0.00	0.00	0.10	0.00	0.12	@ 0.000	@ 0.000	@ 1.414
172	8	7.26C	0.00	-0.17	0.09	0.00	0.13	0.00	0.00	0.62
	9	7.26C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
173	9	6.78C	0.00	-0.17	-0.12	-0.01	0.30	0.00	0.00	1.27
	10	6.78C	0.00	0.01	-0.33	0.01	-0.35	@ 0.000	@ 0.000	@ 1.495
174	18	5.22C	0.00	0.00	0.50	0.00	-0.33	0.00	0.00	1.12
	19	5.22C	0.00	0.00	0.31	0.00	0.29	@ 0.000	@ 0.000	@ 0.485
175	19	5.08C	0.00	-0.01	0.30	0.01	-0.08	0.00	0.00	0.59
	20	5.08C	0.00	-0.01	0.10	-0.01	0.12	@ 0.000	@ 0.000	@ 1.414
176	20	4.87C	0.00	0.00	0.09	0.00	0.13	0.00	0.00	0.62
	21	4.87C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
177	21	4.62C	0.00	-0.01	-0.12	0.01	0.30	0.00	0.00	1.28
	22	4.62C	0.00	-0.01	-0.33	-0.01	-0.35	@ 0.000	@ 0.000	@ 1.495
182	30	9.19C	0.00	-0.17	0.09	0.01	0.12	0.00	0.00	0.54
	31	9.19C	0.00	-0.01	-0.10	-0.01	-0.08	@ 0.000	@ 0.000	@ 0.566
183	31	10.94C	0.00	-0.17	-0.11	0.00	0.29	0.00	0.00	1.10
	32	10.94C	0.00	0.00	-0.31	-0.01	-0.32	@ 0.000	@ 0.000	@ 1.515
184	32	12.00C	0.00	-0.17	0.52	0.00	-0.33	0.00	0.00	1.11
	33	12.00C	0.00	0.00	0.32	0.00	0.30	@ 0.000	@ 0.000	@ 0.485
185	33	12.37C	0.00	-0.16	0.30	-0.01	-0.08	0.00	0.00	0.57
	34	12.37C	0.00	0.01	0.10	0.01	0.12	@ 0.000	@ 0.000	@ 1.414
186	42	8.96C	0.00	0.00	0.09	0.00	0.12	0.00	0.00	0.55
	43	8.96C	0.00	0.00	-0.10	0.00	-0.08	@ 0.000	@ 0.000	@ 0.586
187	43	8.65C	0.00	-0.01	-0.11	0.01	0.29	0.00	0.00	1.09
	44	8.65C	0.00	-0.01	-0.30	-0.01	-0.32	@ 0.000	@ 0.000	@ 1.515
188	44	8.40C	0.00	0.00	0.52	0.00	-0.33	0.00	0.00	1.12
	45	8.40C	0.00	0.00	0.32	0.00	0.30	@ 0.000	@ 0.000	@ 0.485
189	45	8.19C	0.00	-0.01	0.30	0.01	-0.08	0.00	0.00	0.56
	46	8.19C	0.00	-0.01	0.10	-0.01	0.12	@ 0.000	@ 0.000	@ 1.414

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 118

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Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	9.60C	0.00	-0.13	0.38	0.01	-0.25	0.00	0.00	0.84
	55	9.60C	0.00	-0.01	0.24	-0.01	0.22	@ 0.000	@ 0.000	@ 0.485
195	55	9.33C	0.00	-0.12	0.22	0.01	-0.06	0.00	0.00	0.43
	56	9.33C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
196	56	9.05C	0.00	-0.12	0.07	0.00	0.10	0.00	0.00	0.44
	57	9.05C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
197	57	8.78C	0.00	-0.11	-0.09	-0.01	0.22	0.00	0.00	0.95
	58	8.78C	0.00	0.01	-0.24	0.01	-0.26	@ 0.000	@ 0.000	@ 1.495
198	66	9.22C	0.00	0.00	0.38	0.00	-0.25	0.00	0.00	0.84
	67	9.22C	0.00	0.00	0.24	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
199	67	8.96C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.43
	68	8.96C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
200	68	8.67C	0.00	0.00	0.07	0.00	0.10	0.00	0.00	0.44
	69	8.67C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
201	69	8.35C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.96
	70	8.35C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
206	78	9.54C	0.00	-0.12	0.06	0.01	0.09	0.00	0.00	0.43
	79	9.54C	0.00	-0.01	-0.08	-0.01	-0.07	@ 0.000	@ 0.000	@ 0.566
207	79	9.26C	0.00	-0.12	-0.09	0.01	0.22	0.00	0.00	0.84
	80	9.26C	0.00	-0.01	-0.24	-0.01	-0.25	@ 0.000	@ 0.000	@ 1.515
208	80	8.98C	0.00	-0.12	0.39	-0.01	-0.25	0.00	0.00	0.84
	81	8.98C	0.00	0.00	0.24	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
209	81	8.69C	0.00	-0.11	0.23	-0.01	-0.06	0.00	0.00	0.42
	82	8.69C	0.00	0.01	0.07	0.01	0.09	@ 0.000	@ 0.000	@ 1.414
210	90	9.18C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.43
	91	9.18C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
211	91	8.86C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.85
	92	8.86C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.515
212	92	8.57C	0.00	0.00	0.39	0.00	-0.25	0.00	0.00	0.84
	93	8.57C	0.00	0.00	0.24	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
213	93	8.30C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.42
	94	8.30C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
218	102	9.65C	0.00	-0.13	0.38	0.01	-0.25	0.00	0.00	0.84
	103	9.65C	0.00	-0.01	0.24	-0.01	0.22	@ 0.000	@ 0.000	@ 0.485
219	103	9.37C	0.00	-0.12	0.22	0.01	-0.06	0.00	0.00	0.43
	104	9.37C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
220	104	9.09C	0.00	-0.12	0.07	-0.01	0.10	0.00	0.00	0.44
	105	9.09C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.566

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 119

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	8.81C	0.00	-0.11	-0.09	-0.01	0.22	0.00	0.00	0.95
	106	8.81C	0.00	0.01	-0.24	0.01	-0.26	@ 0.000	@ 0.000	@ 1.495
222	114	9.23C	0.00	0.00	0.38	0.00	-0.25	0.00	0.00	0.84
	115	9.23C	0.00	0.00	0.24	0.00	0.22	@ 0.000	@ 0.000	@ 0.485
223	115	8.97C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.43
	116	8.97C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
224	116	8.68C	0.00	0.00	0.07	0.00	0.10	0.00	0.00	0.44
	117	8.68C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
225	117	8.36C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.95
	118	8.36C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
230	126	9.55C	0.00	-0.12	0.06	-0.01	0.09	0.00	0.00	0.43
	127	9.55C	0.00	0.01	-0.08	-0.01	-0.07	@ 0.000	@ 0.000	@ 0.566
231	127	9.28C	0.00	-0.12	-0.09	0.01	0.22	0.00	0.00	0.84
	128	9.28C	0.00	-0.01	-0.24	-0.01	-0.25	@ 0.000	@ 0.000	@ 1.515
232	128	9.01C	0.00	-0.12	0.39	-0.01	-0.25	0.00	0.00	0.84
	129	9.01C	0.00	0.01	0.24	0.01	0.22	@ 0.000	@ 0.000	@ 0.485
233	129	8.74C	0.00	-0.11	0.23	-0.02	-0.06	0.00	0.00	0.43
	130	8.74C	0.00	0.01	0.07	0.01	0.09	@ 0.000	@ 0.000	@ 1.414
234	138	9.17C	0.00	0.01	0.06	-0.01	0.09	0.00	0.00	0.43
	139	9.17C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.566
235	139	8.86C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.85
	140	8.86C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.515
236	140	8.57C	0.00	0.01	0.39	-0.01	-0.25	0.00	0.00	0.84
	141	8.57C	0.00	0.01	0.24	0.01	0.22	@ 0.000	@ 0.000	@ 0.485
237	141	8.32C	0.00	0.00	0.23	0.00	-0.06	0.00	0.00	0.42
	142	8.32C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
242	150	5.14C	0.00	-0.12	0.37	-0.01	-0.25	0.00	0.00	0.83
	151	5.14C	0.00	0.01	0.23	0.01	0.22	@ 0.000	@ 0.000	@ 0.485
243	151	4.98C	0.00	-0.12	0.23	0.01	-0.06	0.00	0.00	0.45
	152	4.98C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414
244	152	4.82C	0.00	-0.12	0.07	-0.01	0.10	0.00	0.00	0.46
	153	4.82C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.566
245	153	4.66C	0.00	-0.11	-0.09	-0.01	0.22	0.00	0.00	0.96
	154	4.66C	0.00	0.01	-0.24	0.01	-0.26	@ 0.000	@ 0.000	@ 1.495
246	162	4.90C	0.00	0.01	0.37	-0.01	-0.25	0.00	0.00	0.83
	163	4.90C	0.00	0.01	0.23	0.01	0.22	@ 0.000	@ 0.000	@ 0.485
247	163	4.77C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.45
	164	4.77C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.414

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Job Ref : B11323

Sheet : SD / 120

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	4.60C	0.00	0.01	0.07	-0.01	0.10	0.00	0.00	0.46
	165	4.60C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.566
249	165	4.40C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.96
	166	4.40C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.495
306	10	6.28C	0.00	-0.17	0.65	-0.01	-0.46	0.00	0.00	1.57
	11	6.28C	0.00	0.01	0.44	0.01	0.41	@ 0.000	@ 0.000	@ 0.485
307	11	5.74C	0.00	-0.17	0.43	-0.02	-0.19	0.00	0.00	0.91
	12	5.74C	0.00	0.02	0.21	0.02	0.23	@ 0.000	@ 0.000	@ 1.475
308	22	4.43C	0.00	0.00	0.65	0.00	-0.46	0.00	0.00	1.56
	23	4.43C	0.00	0.00	0.44	0.00	0.41	@ 0.000	@ 0.000	@ 0.485
309	23	4.32C	0.00	-0.01	0.43	0.01	-0.19	0.00	0.00	0.91
	24	4.32C	0.00	-0.01	0.21	-0.01	0.23	@ 0.000	@ 0.000	@ 1.475
312	34	12.03C	0.00	-0.16	0.10	-0.02	0.13	0.00	0.00	0.58
	35	12.03C	0.00	0.02	-0.11	0.02	-0.09	@ 0.000	@ 0.000	@ 0.566
313	35	10.94C	0.00	-0.16	-0.12	-0.03	0.30	0.00	0.00	1.47
	36	10.94C	0.00	0.02	-0.34	0.02	-0.37	@ 0.000	@ 0.000	@ 1.475
314	46	7.94C	0.00	0.00	0.10	0.00	0.13	0.00	0.00	0.59
	47	7.94C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.566
315	47	7.64C	0.00	-0.01	-0.12	0.01	0.30	0.00	0.00	1.47
	48	7.64C	0.00	-0.01	-0.34	-0.01	-0.37	@ 0.000	@ 0.000	@ 1.475
318	58	8.50C	0.00	-0.11	0.51	-0.02	-0.37	0.00	0.00	1.24
	59	8.50C	0.00	0.02	0.35	0.02	0.33	@ 0.000	@ 0.000	@ 0.485
319	59	8.23C	0.00	-0.10	0.34	-0.03	-0.17	0.00	0.00	0.69
	60	8.23C	0.00	0.03	0.18	0.03	0.20	@ 0.000	@ 0.000	@ 1.515
320	70	8.08C	0.00	0.00	0.51	0.00	-0.37	0.00	0.00	1.24
	71	8.08C	0.00	0.00	0.35	0.00	0.33	@ 0.000	@ 0.000	@ 0.485
321	71	7.87C	0.00	0.00	0.34	0.00	-0.17	0.00	0.00	0.68
	72	7.87C	0.00	0.00	0.18	0.01	0.20	@ 0.000	@ 0.000	@ 1.515
324	82	8.41C	0.00	-0.11	0.06	-0.02	0.11	0.00	0.00	0.47
	83	8.41C	0.00	0.02	-0.09	0.02	-0.08	@ 0.000	@ 0.000	@ 0.545
325	83	8.13C	0.00	-0.10	-0.10	-0.03	0.23	0.00	0.00	1.23
	84	8.13C	0.00	0.03	-0.26	0.03	-0.29	@ 0.000	@ 0.000	@ 1.454
326	94	8.00C	0.00	0.00	0.06	0.00	0.11	0.00	0.00	0.47
	95	8.00C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.545
327	95	7.68C	0.00	0.00	-0.10	0.00	0.23	0.00	0.00	1.23
	96	7.68C	0.00	0.00	-0.26	0.00	-0.30	@ 0.000	@ 0.000	@ 1.454
330	106	8.53C	0.00	-0.11	0.51	-0.02	-0.37	0.00	0.00	1.22
	107	8.53C	0.00	0.02	0.35	0.02	0.33	@ 0.000	@ 0.000	@ 0.485

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Job Ref : B11323

Sheet : SD / 121

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	8.25C	0.00	-0.10	0.34	-0.03	-0.16	0.00	0.00	0.67
	108	8.25C	0.00	0.03	0.17	0.03	0.19	@ 0.000	@ 0.000	@ 1.515
332	118	8.09C	0.00	0.00	0.51	0.00	-0.37	0.00	0.00	1.22
	119	8.09C	0.00	0.00	0.35	0.00	0.33	@ 0.000	@ 0.000	@ 0.485
333	119	7.88C	0.00	0.00	0.34	0.00	-0.16	0.00	0.00	0.67
	120	7.88C	0.00	0.00	0.17	0.00	0.19	@ 0.000	@ 0.000	@ 1.515
336	130	8.47C	0.00	-0.11	0.07	-0.02	0.11	0.00	0.00	0.47
	131	8.47C	0.00	0.02	-0.09	0.02	-0.08	@ 0.000	@ 0.000	@ 0.545
337	131	8.21C	0.00	-0.10	-0.10	-0.03	0.23	0.00	0.00	1.21
	132	8.21C	0.00	0.03	-0.26	0.03	-0.29	@ 0.000	@ 0.000	@ 1.475
338	142	8.03C	0.00	0.01	0.06	-0.01	0.11	0.00	0.00	0.47
	143	8.03C	0.00	0.01	-0.09	0.01	-0.08	@ 0.000	@ 0.000	@ 0.545
339	143	7.73C	0.00	0.00	-0.10	0.00	0.23	0.00	0.00	1.21
	144	7.73C	0.00	0.00	-0.26	0.01	-0.29	@ 0.000	@ 0.000	@ 1.475
342	154	4.49C	0.00	-0.11	0.51	-0.02	-0.37	0.00	0.00	1.25
	155	4.49C	0.00	0.02	0.35	0.02	0.33	@ 0.000	@ 0.000	@ 0.485
343	155	4.32C	0.00	-0.10	0.35	-0.03	-0.17	0.00	0.00	0.76
	156	4.32C	0.00	0.03	0.19	0.03	0.20	@ 0.000	@ 0.000	@ 1.495
344	166	4.25C	0.00	0.01	0.51	-0.01	-0.37	0.00	0.00	1.25
	167	4.25C	0.00	0.01	0.35	0.01	0.33	@ 0.000	@ 0.000	@ 0.485
345	167	4.16C	0.00	0.01	0.35	-0.01	-0.17	0.00	0.00	0.75
	168	4.16C	0.00	0.01	0.19	0.01	0.20	@ 0.000	@ 0.000	@ 1.495
412	12	5.15C	0.00	-0.17	0.20	-0.02	0.06	0.00	0.00	0.88
	169	5.15C	0.00	0.02	-0.02	0.02	0.02	@ 0.000	@ 0.000	@ 0.909
413	169	2.62C	0.00	-0.25	0.32	-0.02	0.62		0.00	1.72
	183	2.62C	0.00	0.29	-1.58	-0.02	-0.62	@	@ 0.000	@ 0.429
414	24	4.14C	0.00	-0.06	0.20	0.06	0.06	0.00	0.00	0.90
	170	4.14C	0.00	-0.06	-0.02	-0.06	0.02	@ 0.000	@ 0.000	@ 0.909
415	170	2.59C	0.00	0.04	0.32	-0.05	0.62		0.00	1.71
	184	2.59C	0.00	0.04	-1.58	0.04	-0.62	@	@ 0.000	@ 0.429
416	36	9.10C	0.00	-0.16	0.95	-0.03	-0.71	0.00	0.00	2.22
	171	9.10C	0.00	0.03	0.73	0.03	0.75	@ 0.000	@ 0.000	@ 1.555
417	171	5.92C	0.00	-0.23	0.28	-0.04	0.70	0.00	0.00	2.31
	185	5.92C	0.00	0.31	-1.62	0.04	-0.62	@ 0.000	@ 0.000	@ 0.469
418	48	7.46C	0.00	-0.06	0.96	0.06	-0.71	0.00	0.00	2.25
	172	7.46C	0.00	-0.06	0.73	-0.06	0.75	@ 0.000	@ 0.000	@ 1.555
419	172	4.84C	0.00	0.05	0.28	-0.05	0.69	0.00	0.00	2.28
	186	4.84C	0.00	0.05	-1.62	0.05	-0.63	@ 0.000	@ 0.000	@ 0.469

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	7.96C	0.00	-0.10	0.22	-0.04	-0.02	0.00	0.00	0.82
	173	7.96C	0.00	0.04	0.05	0.04	0.09	@ 0.000	@ 0.000	@ 1.212
421	173	5.04C	0.00	-0.17	0.25	-0.05	0.59	0.00	0.00	1.68
	187	5.04C	0.00	0.27	-1.43	0.05	-0.57	@ 0.000	@ 0.000	@ 0.429
422	72	7.63C	0.00	-0.06	0.22	0.06	-0.02	0.00	0.00	0.85
	174	7.63C	0.00	-0.06	0.06	-0.06	0.10	@ 0.000	@ 0.000	@ 1.212
423	174	4.88C	0.00	0.06	0.25	-0.06	0.59	0.00	0.00	1.66
	188	4.88C	0.00	0.06	-1.44	0.05	-0.58	@ 0.000	@ 0.000	@ 0.429
424	84	7.86C	0.00	-0.10	0.84	-0.04	-0.65	0.00	0.00	2.09
	175	7.86C	0.00	0.03	0.67	0.03	0.69	@ 0.000	@ 0.000	@ 1.555
425	175	4.92C	0.00	-0.17	0.21	-0.04	0.66	0.00	0.00	2.17
	189	4.92C	0.00	0.27	-1.48	0.05	-0.59	@ 0.000	@ 0.000	@ 0.469
426	96	7.47C	0.00	-0.06	0.84	0.06	-0.66	0.00	0.00	2.12
	176	7.47C	0.00	-0.06	0.68	-0.06	0.70	@ 0.000	@ 0.000	@ 1.555
427	176	4.80C	0.00	0.06	0.21	-0.06	0.65	0.00	0.00	2.15
	190	4.80C	0.00	0.06	-1.48	0.05	-0.59	@ 0.000	@ 0.000	@ 0.469
428	108	7.97C	0.00	-0.10	0.21	-0.04	-0.01	0.00	0.00	0.77
	177	7.97C	0.00	0.03	0.04	0.03	0.08	@ 0.000	@ 0.000	@ 1.172
429	177	5.04C	0.00	-0.17	0.28	-0.05	0.56	0.00	0.00	1.59
	191	5.04C	0.00	0.27	-1.41	0.05	-0.55	@ 0.000	@ 0.000	@ 0.429
430	120	7.63C	0.00	-0.06	0.21	0.06	-0.01	0.00	0.00	0.80
	178	7.63C	0.00	-0.06	0.04	-0.06	0.08	@ 0.000	@ 0.000	@ 1.192
431	178	4.88C	0.00	0.06	0.28	-0.06	0.56	0.00	0.00	1.57
	192	4.88C	0.00	0.06	-1.41	0.05	-0.55	@ 0.000	@ 0.000	@ 0.429
432	132	7.95C	0.00	-0.10	0.82	-0.04	-0.63		0.00	2.02
	179	7.95C	0.00	0.04	0.65	0.04	0.67	@	0.000	@ 1.555
433	179	5.03C	0.00	-0.16	0.23	-0.05	0.63	0.00	0.00	2.09
	193	5.03C	0.00	0.27	-1.45	0.05	-0.57	@ 0.000	@ 0.000	@ 0.469
434	144	7.52C	0.00	-0.06	0.82	0.05	-0.64	0.00	0.00	2.04
	180	7.52C	0.00	-0.06	0.65	-0.06	0.67	@ 0.000	@ 0.000	@ 1.555
435	180	4.87C	0.00	0.06	0.23	-0.06	0.63	0.00	0.00	2.07
	194	4.87C	0.00	0.06	-1.45	0.06	-0.57	@ 0.000	@ 0.000	@ 0.469
436	156	4.15C	0.00	-0.10	0.18	-0.04	0.03		0.00	0.76
	181	4.15C	0.00	0.03	0.02	0.03	0.05	@	0.000	@ 1.030
437	181	2.60C	0.00	-0.16	0.30	-0.05	0.54		0.00	1.50
	195	2.60C	0.00	0.27	-1.39	0.06	-0.53	@	0.000	@ 0.429
438	168	4.04C	0.00	-0.05	0.18	0.05	0.03	0.00	0.00	0.77
	182	4.04C	0.00	-0.05	0.02	-0.06	0.05	@ 0.000	@ 0.000	@ 1.050

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	2.55C	0.00	0.06	0.30	-0.06	0.54		0.00	1.49
	196	2.55C	0.00	0.06	-1.39	0.06	-0.53	@	0.000	@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.921	16.781	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.139	0.000	-0.254
3	0.000	0.000	0.000	0.161	0.000	0.000
4	0.000	0.000	0.000	0.000	0.000	-0.024
5	0.000	0.000	0.000	-0.164	0.000	-0.020
6	0.000	0.000	0.000	0.000	0.000	-0.015
7	0.000	0.000	0.000	0.176	0.000	0.000
8	0.000	0.000	0.000	0.010	0.000	0.000
9	0.000	0.000	0.000	-0.170	0.000	0.015
10	0.000	0.000	0.000	0.058	0.000	0.026
11	0.000	0.000	0.000	0.287	0.000	0.038
12	0.000	0.000	0.000	0.094	0.000	0.046
13	-0.026	6.084	-0.222	0.000	0.000	0.000
14	0.025	0.000	0.902	0.081	0.000	0.000
15	0.000	0.000	0.000	0.169	0.000	0.000
17	0.000	0.000	0.000	-0.165	0.000	0.000
18	-3.120	0.000	1.544	0.000	0.000	0.000
19	0.000	0.000	0.000	0.178	0.000	0.000
20	0.000	0.000	0.000	0.011	0.000	0.000
21	0.000	0.000	0.000	-0.172	0.000	0.000
22	-3.114	0.000	1.899	0.061	0.000	0.000
23	0.000	0.000	0.000	0.288	0.000	0.000
24	0.000	0.000	0.000	0.095	0.000	-0.020
25	1.094	8.513	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.041	0.000	-0.206
28	0.000	0.000	0.000	0.081	0.000	-0.019
29	0.000	0.000	0.000	0.151	0.000	-0.016
30	0.000	0.000	0.000	-0.010	0.000	-0.012
31	0.000	0.000	0.000	-0.161	0.000	0.000
33	0.000	0.000	0.000	0.154	0.000	0.011
34	0.000	0.000	0.000	-0.013	0.000	0.019
35	0.000	0.000	0.000	-0.169	0.000	0.028
36	0.000	0.000	0.000	0.153	0.000	0.034
37	-0.019	10.246	-0.061	0.000	0.000	0.000
38	0.018	0.000	0.368	0.022	0.000	0.000
40	-1.755	0.000	1.117	0.081	0.000	0.000
41	0.000	0.000	0.000	0.153	0.000	0.000
43	0.000	0.000	0.000	-0.163	0.000	0.000
44	-1.816	0.000	1.568	0.000	0.000	0.000
45	0.000	0.000	0.000	0.156	0.000	0.000
47	0.000	0.000	0.000	-0.171	0.000	0.000
48	-6.357	0.000	2.535	0.154	0.000	-0.017
49	0.979	11.003	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.104	0.000	-0.200
51	0.000	0.000	0.000	0.117	0.000	0.000
52	0.000	0.000	0.000	0.000	0.000	-0.014
53	0.000	0.000	0.000	-0.120	0.000	-0.011
55	0.000	0.000	0.000	0.121	0.000	0.000

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Job Ref : B11323

Sheet : SD / 124

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)						
Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
57	0.000	0.000	0.000	-0.125	0.000	0.000
58	0.000	0.000	0.000	0.049	0.000	0.014
59	0.000	0.000	0.000	0.220	0.000	0.020
60	0.000	0.000	0.000	0.106	0.000	0.024
61	-0.019	10.640	-0.166	0.000	0.000	0.000
62	0.018	0.000	0.669	0.060	0.000	0.000
63	0.000	0.000	0.000	0.122	0.000	0.000
65	0.000	0.000	0.000	-0.119	0.000	0.000
66	1.239	0.000	1.162	0.000	0.000	0.000
67	0.000	0.000	0.000	0.121	0.000	0.000
69	0.000	0.000	0.000	-0.125	0.000	0.000
70	1.362	0.000	1.458	0.050	0.000	0.000
71	0.000	0.000	0.000	0.220	0.000	0.000
72	0.000	0.000	0.000	0.107	0.000	-0.022
73	0.942	10.962	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.032	0.000	-0.194
76	0.000	0.000	0.000	0.064	0.000	-0.017
77	0.000	0.000	0.000	0.119	0.000	-0.015
78	0.000	0.000	0.000	0.000	0.000	-0.011
79	0.000	0.000	0.000	-0.123	0.000	0.000
81	0.000	0.000	0.000	0.119	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.015
83	0.000	0.000	0.000	-0.127	0.000	0.022
84	0.000	0.000	0.000	0.170	0.000	0.027
85	-0.019	10.569	-0.047	0.000	0.000	0.000
86	0.018	0.000	0.274	0.017	0.000	0.000
88	-0.027	0.000	0.852	0.064	0.000	0.000
89	0.000	0.000	0.000	0.120	0.000	0.000
91	0.000	0.000	0.000	-0.123	0.000	0.000
92	-0.027	0.000	1.191	0.000	0.000	0.000
93	0.000	0.000	0.000	0.120	0.000	0.000
95	0.000	0.000	0.000	-0.127	0.000	0.000
96	0.434	0.000	2.214	0.171	0.000	-0.021
97	0.914	11.071	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.104	0.000	-0.190
99	0.000	0.000	0.000	0.117	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	-0.017
101	0.000	0.000	0.000	-0.121	0.000	-0.015
102	0.000	0.000	0.000	0.000	0.000	-0.011
103	0.000	0.000	0.000	0.122	0.000	0.000
105	0.000	0.000	0.000	-0.126	0.000	0.000
106	0.000	0.000	0.000	0.046	0.000	0.015
107	0.000	0.000	0.000	0.214	0.000	0.022
108	0.000	0.000	0.000	0.098	0.000	0.028
109	-0.018	10.651	-0.166	0.000	0.000	0.000
110	0.017	0.000	0.669	0.060	0.000	0.000
111	0.000	0.000	0.000	0.122	0.000	0.000
113	0.000	0.000	0.000	-0.120	0.000	0.000
114	-0.027	0.000	1.152	0.000	0.000	0.000
115	0.000	0.000	0.000	0.123	0.000	0.000
117	0.000	0.000	0.000	-0.126	0.000	0.000
118	-0.026	0.000	1.432	0.046	0.000	0.000
119	0.000	0.000	0.000	0.215	0.000	0.000
120	0.000	0.000	0.000	0.099	0.000	-0.021
121	0.901	10.955	0.000	0.000	0.000	0.000
122	0.000	0.000	0.000	0.032	0.000	-0.186
124	0.000	0.000	0.000	0.064	0.000	-0.017
125	0.000	0.000	0.000	0.119	0.000	-0.016

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Job Ref : B11323

Sheet : SD / 125

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
126	0.000	0.000	0.000	0.000	0.000	-0.013
127	0.000	0.000	0.000	-0.123	0.000	0.000
129	0.000	0.000	0.000	0.120	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.012
131	0.000	0.000	0.000	-0.126	0.000	0.019
132	0.000	0.000	0.000	0.161	0.000	0.023
133	-0.018	10.543	-0.047	0.000	0.000	0.000
134	0.016	0.000	0.274	0.017	0.000	0.000
136	1.774	0.000	0.844	0.064	0.000	0.000
137	0.000	0.000	0.000	0.120	0.000	0.000
139	0.000	0.000	0.000	-0.123	0.000	0.000
140	1.839	0.000	1.184	0.000	0.000	0.000
141	0.000	0.000	0.000	0.120	0.000	0.000
143	0.000	0.000	0.000	-0.126	0.000	0.000
144	6.036	0.000	2.116	0.162	0.000	-0.024
145	0.817	5.921	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.103	0.000	-0.218
147	0.000	0.000	0.000	0.118	0.000	0.000
148	0.000	0.000	0.000	0.000	0.000	-0.022
149	0.000	0.000	0.000	-0.125	0.000	-0.020
150	0.000	0.000	0.000	0.000	0.000	-0.016
151	0.000	0.000	0.000	0.127	0.000	-0.011
153	0.000	0.000	0.000	-0.133	0.000	0.000
154	0.000	0.000	0.000	0.051	0.000	0.013
155	0.000	0.000	0.000	0.230	0.000	0.022
156	0.000	0.000	0.000	0.085	0.000	0.027
157	-0.027	5.685	-0.163	0.000	0.000	0.000
158	0.024	0.000	0.677	0.059	0.000	0.000
159	0.000	0.000	0.000	0.123	0.000	0.000
161	0.000	0.000	0.000	-0.124	0.000	0.000
162	1.883	0.000	1.158	0.000	0.000	0.000
163	0.000	0.000	0.000	0.128	0.000	0.000
165	0.000	0.000	0.000	-0.132	0.000	0.000
166	1.767	0.000	1.467	0.051	0.000	0.000
167	0.000	0.000	0.000	0.231	0.000	0.000
168	0.000	0.000	0.000	0.086	0.000	-0.031
169	0.000	0.000	0.000	-0.271	0.000	0.055
170	0.000	0.000	0.000	-0.275	0.000	0.018
171	0.000	0.000	0.000	0.013	0.000	0.041
172	0.000	0.000	0.000	0.015	0.000	0.000
173	0.000	0.000	0.000	-0.219	0.000	0.031
174	0.000	0.000	0.000	-0.227	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.036
177	0.000	0.000	0.000	-0.212	0.000	0.036
178	0.000	0.000	0.000	-0.220	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.032
181	0.000	0.000	0.000	-0.230	0.000	0.037
182	0.000	0.000	0.000	-0.234	0.000	-0.018
183	0.000	0.000	0.000	-0.296	0.000	0.065
184	1.569	0.000	4.270	-0.293	0.000	0.057
185	0.000	0.000	0.000	-0.316	0.000	0.029
186	0.000	0.000	0.000	-0.310	0.000	0.028
187	0.000	0.000	0.000	-0.286	0.000	0.016
188	2.482	0.000	6.344	-0.282	0.000	0.024
189	0.000	0.000	0.000	-0.288	0.000	0.023
190	0.000	0.000	0.000	-0.287	0.000	0.025
191	0.000	0.000	0.000	-0.271	0.000	0.024
192	1.453	0.000	6.088	-0.268	0.000	0.026

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 126

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	R _x →(kN)	R _y ↑(kN)	R _z ↗(kN)	M _x →(kN.m)	M _y ↑(kN.m)	M _z ↗(kN.m)
193	0.000	0.000	0.000	-0.279	0.000	0.019
194	0.000	0.000	0.000	-0.275	0.000	0.021
195	0.000	0.000	0.000	-0.265	0.000	-0.047
196	-0.951	0.000	3.663	-0.261	0.000	-0.046
Total	13.028	132.583	48.220	-0.646	0.000	-0.791

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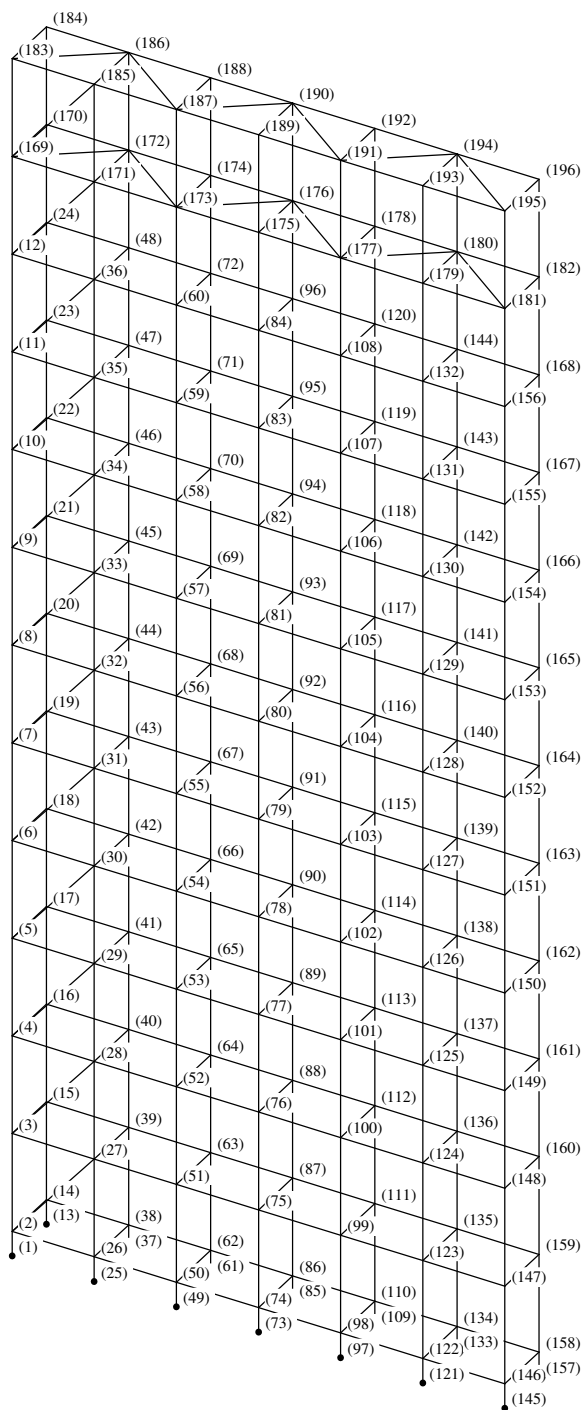
Consulting Civil and Structural Engineers

37 Chorley New Road,

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25252

Job Ref : B11323**Sheet : SD / 127****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Facsimile 01204 363358**

Section Size

48.3x3.2 CHS 3....

Frame Geometry - (Last Zoom) - 3D Front View**Not to Scale**

James Crosbie Associates Ltd.

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

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Job Ref : B11323

Sheet : SD / 128

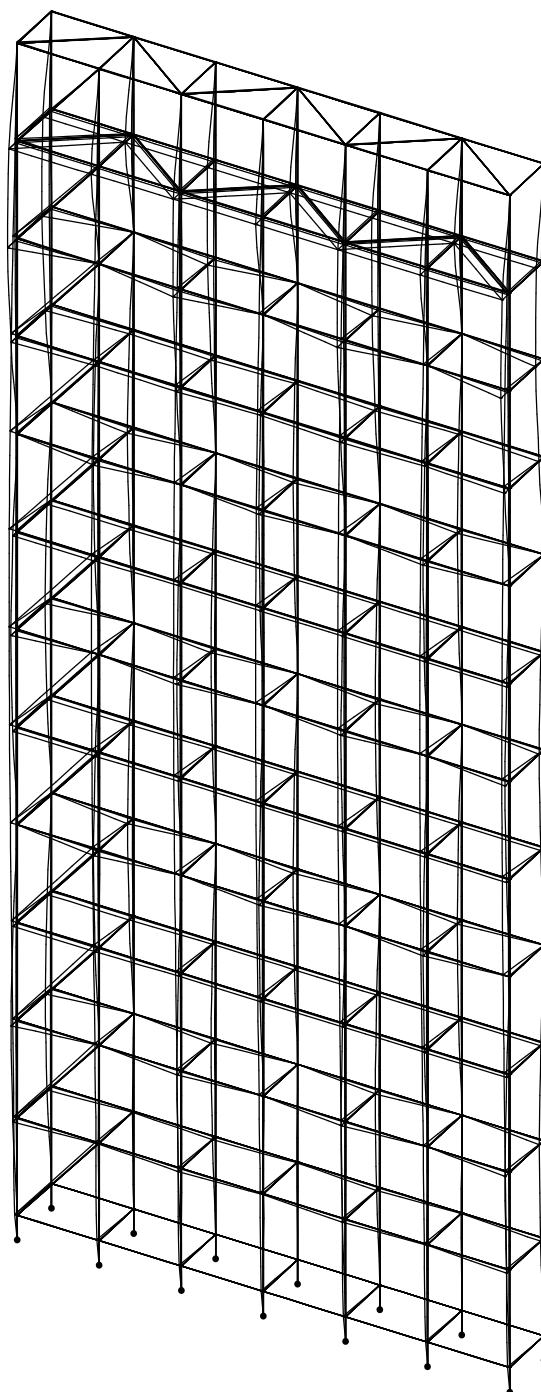
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Section Size

48.3x3.2 CHS 3...

Envelope (All Cases)

Deflected Shape - (Last Zoom) - 3D Front View

Not to Scale

20 Magnification

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Job Ref : B11323

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L5	Live Load
Load Group L6	Live Load
Load Group L7	Live Load
Load Group L8	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L5 + 0.25 L6 + 0.50 L7 + 0.25 L8
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L5 + 0.25 L6 + 0.50 L7 + 0.25 L8 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L5 + 0.25 L6 + 0.50 L7 + 0.25 L8
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.064	2	2.500	0.064
3	4.500	0.064	4	6.500	0.064	5	8.500	0.064
6	10.500	0.064	7	12.500	0.064	8	14.500	0.064
9	16.500	0.064	10	18.500	0.064	11	20.500	0.064
12	22.500	0.300	13	24.500	0.369			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.004	3	0.004	4	0.004
5	0.004	6	0.004	7	0.004	8	0.004
9	0.004	10	0.004	11	0.004	12	0.004
13	0.000	14	0.003	15	0.003	16	0.003
17	0.003	18	0.003	19	0.003	20	0.003
21	0.003	22	0.003	23	0.003	24	0.003
25	0.000	26	0.006	27	0.006	28	0.006
29	0.006	30	0.006	31	0.006	32	0.006
33	0.006	34	0.006	35	0.006	36	0.006
37	0.000	38	0.005	39	0.005	40	0.005
41	0.005	42	0.005	43	0.005	44	0.005
45	0.005	46	0.005	47	0.005	48	0.005
49	0.000	50	0.005	51	0.005	52	0.005
53	0.005	54	0.005	55	0.005	56	0.005
57	0.005	58	0.005	59	0.005	60	0.005
61	0.000	62	0.005	63	0.005	64	0.005
65	0.005	66	0.005	67	0.005	68	0.005
69	0.005	70	0.005	71	0.005	72	0.005
73	0.000	74	0.005	75	0.005	76	0.005
77	0.005	78	0.005	79	0.005	80	0.005
81	0.005	82	0.005	83	0.005	84	0.005
85	0.000	86	0.005	87	0.005	88	0.005
89	0.005	90	0.005	91	0.005	92	0.005
93	0.005	94	0.005	95	0.005	96	0.005
97	0.000	98	0.005	99	0.005	100	0.005
101	0.005	102	0.005	103	0.005	104	0.005
105	0.005	106	0.005	107	0.005	108	0.005
109	0.000	110	0.005	111	0.005	112	0.005
113	0.005	114	0.005	115	0.005	116	0.005
117	0.005	118	0.005	119	0.005	120	0.005
121	0.000	122	0.005	123	0.005	124	0.005

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Job Ref : B11323

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125	0.005	126	0.005	127	0.005	128	0.005
129	0.005	130	0.005	131	0.005	132	0.005
133	0.000	134	0.005	135	0.005	136	0.005
137	0.005	138	0.005	139	0.005	140	0.005
141	0.005	142	0.005	143	0.005	144	0.005
145	0.000	146	0.003	147	0.003	148	0.003
149	0.003	150	0.003	151	0.003	152	0.003
153	0.003	154	0.003	155	0.003	156	0.003
157	0.000	158	0.003	159	0.003	160	0.003
161	0.003	162	0.003	163	0.003	164	0.003
165	0.003	166	0.003	167	0.003	168	0.003
169	0.013	170	0.010	171	0.028	172	0.019
173	0.032	174	0.019	175	0.032	176	0.019
177	0.032	178	0.019	179	0.032	180	0.019
181	0.016	182	0.010	183	0.017	184	0.015
185	0.033	186	0.029	187	0.032	188	0.029
189	0.032	190	0.029	191	0.032	192	0.029
193	0.032	194	0.029	195	0.016	196	0.015

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 0.50 L5 + 0.25 L6 + 0.50 L7 + 0.25 L8 + 1.00 N1

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.50 L5 + 0.25 L6 + 0.50 L7 + 0.25 L8 + 1.00 W2

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W5

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	1.800	0.000	0.000	26	1.800	0.500	0.000
27	1.800	2.500	0.000	28	1.800	4.500	0.000
29	1.800	6.500	0.000	30	1.800	8.500	0.000
31	1.800	10.500	0.000	32	1.800	12.500	0.000
33	1.800	14.500	0.000	34	1.800	16.500	0.000
35	1.800	18.500	0.000	36	1.800	20.500	0.000
37	1.800	0.000	1.300	38	1.800	0.500	1.300
39	1.800	2.500	1.300	40	1.800	4.500	1.300
41	1.800	6.500	1.300	42	1.800	8.500	1.300
43	1.800	10.500	1.300	44	1.800	12.500	1.300
45	1.800	14.500	1.300	46	1.800	16.500	1.300
47	1.800	18.500	1.300	48	1.800	20.500	1.300
49	3.600	0.000	0.000	50	3.600	0.500	0.000
51	3.600	2.500	0.000	52	3.600	4.500	0.000
53	3.600	6.500	0.000	54	3.600	8.500	0.000
55	3.600	10.500	0.000	56	3.600	12.500	0.000
57	3.600	14.500	0.000	58	3.600	16.500	0.000
59	3.600	18.500	0.000	60	3.600	20.500	0.000
61	3.600	0.000	1.300	62	3.600	0.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 131****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	3.600	2.500	1.300	64	3.600	4.500	1.300
65	3.600	6.500	1.300	66	3.600	8.500	1.300
67	3.600	10.500	1.300	68	3.600	12.500	1.300
69	3.600	14.500	1.300	70	3.600	16.500	1.300
71	3.600	18.500	1.300	72	3.600	20.500	1.300
73	5.400	0.000	0.000	74	5.400	0.500	0.000
75	5.400	2.500	0.000	76	5.400	4.500	0.000
77	5.400	6.500	0.000	78	5.400	8.500	0.000
79	5.400	10.500	0.000	80	5.400	12.500	0.000
81	5.400	14.500	0.000	82	5.400	16.500	0.000
83	5.400	18.500	0.000	84	5.400	20.500	0.000
85	5.400	0.000	1.300	86	5.400	0.500	1.300
87	5.400	2.500	1.300	88	5.400	4.500	1.300
89	5.400	6.500	1.300	90	5.400	8.500	1.300
91	5.400	10.500	1.300	92	5.400	12.500	1.300
93	5.400	14.500	1.300	94	5.400	16.500	1.300
95	5.400	18.500	1.300	96	5.400	20.500	1.300
97	7.200	0.000	0.000	98	7.200	0.500	0.000
99	7.200	2.500	0.000	100	7.200	4.500	0.000
101	7.200	6.500	0.000	102	7.200	8.500	0.000
103	7.200	10.500	0.000	104	7.200	12.500	0.000
105	7.200	14.500	0.000	106	7.200	16.500	0.000
107	7.200	18.500	0.000	108	7.200	20.500	0.000
109	7.200	0.000	1.300	110	7.200	0.500	1.300
111	7.200	2.500	1.300	112	7.200	4.500	1.300
113	7.200	6.500	1.300	114	7.200	8.500	1.300
115	7.200	10.500	1.300	116	7.200	12.500	1.300
117	7.200	14.500	1.300	118	7.200	16.500	1.300
119	7.200	18.500	1.300	120	7.200	20.500	1.300
121	9.000	0.000	0.000	122	9.000	0.500	0.000
123	9.000	2.500	0.000	124	9.000	4.500	0.000
125	9.000	6.500	0.000	126	9.000	8.500	0.000
127	9.000	10.500	0.000	128	9.000	12.500	0.000
129	9.000	14.500	0.000	130	9.000	16.500	0.000
131	9.000	18.500	0.000	132	9.000	20.500	0.000
133	9.000	0.000	1.300	134	9.000	0.500	1.300
135	9.000	2.500	1.300	136	9.000	4.500	1.300
137	9.000	6.500	1.300	138	9.000	8.500	1.300
139	9.000	10.500	1.300	140	9.000	12.500	1.300
141	9.000	14.500	1.300	142	9.000	16.500	1.300
143	9.000	18.500	1.300	144	9.000	20.500	1.300
145	10.800	0.000	0.000	146	10.800	0.500	0.000
147	10.800	2.500	0.000	148	10.800	4.500	0.000
149	10.800	6.500	0.000	150	10.800	8.500	0.000
151	10.800	10.500	0.000	152	10.800	12.500	0.000
153	10.800	14.500	0.000	154	10.800	16.500	0.000
155	10.800	18.500	0.000	156	10.800	20.500	0.000
157	10.800	0.000	1.300	158	10.800	0.500	1.300
159	10.800	2.500	1.300	160	10.800	4.500	1.300
161	10.800	6.500	1.300	162	10.800	8.500	1.300
163	10.800	10.500	1.300	164	10.800	12.500	1.300
165	10.800	14.500	1.300	166	10.800	16.500	1.300
167	10.800	18.500	1.300	168	10.800	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	1.800	22.500	0.000	172	1.800	22.500	1.300
173	3.600	22.500	0.000	174	3.600	22.500	1.300
175	5.400	22.500	0.000	176	5.400	22.500	1.300
177	7.200	22.500	0.000	178	7.200	22.500	1.300
179	9.000	22.500	0.000	180	9.000	22.500	1.300
181	10.800	22.500	0.000	182	10.800	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	1.800	24.500	0.000	186	1.800	24.500	1.300
187	3.600	24.500	0.000	188	3.600	24.500	1.300
189	5.400	24.500	0.000	190	5.400	24.500	1.300
191	7.200	24.500	0.000	192	7.200	24.500	1.300
193	9.000	24.500	0.000	194	9.000	24.500	1.300
195	10.800	24.500	0.000	196	10.800	24.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 132****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties****Members 1-453**

M 48.3x3.2 CHS 3.56 [S 355]
 A 4.53E-4 Ix 11.59E-8 Iy 11.59E-8 J 23.17E-8
 E 205.0E6 G 78.85E6

Member Loading**Members 2 and 17**

W1 PZ -000.013 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.072 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.013 0.000 (kN,m)
 W5 PX -000.071 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 3 and 18

W1 PZ -000.027 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.148 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.026 0.000 (kN,m)
 W5 PX -000.147 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 4 and 19

W1 PZ -000.028 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.152 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.027 0.000 (kN,m)
 W5 PX -000.152 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 5 and 20

W1 PZ -000.029 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.157 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.028 0.000 (kN,m)
 W5 PX -000.156 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 7 and 22

W1 PZ -000.013 0.000 (kN,m)
 W4 PZ -000.072 0.000 (kN,m)

Members 8 and 23

W1 PZ -000.027 0.000 (kN,m)
 W4 PZ -000.148 0.000 (kN,m)

Members 9 and 24

W1 PZ -000.028 0.000 (kN,m)
 W4 PZ -000.152 0.000 (kN,m)

Members 10 and 25

W1 PZ -000.029 0.000 (kN,m)
 W4 PZ -000.157 0.000 (kN,m)

Members 11 and 26

D1 PY -000.026 1.275 (kN,m)
 D1 PY -000.026 0.025 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 133****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 12-15, 27-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

D1 PY -000.026 0.025 (kN, m)
D1 PY -000.026 1.275 (kN, m)

Members 32, 47, 92, 121 and 136

W1 PZ -000.009 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.054 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.009 0.000 (kN, m)
W5 PX -000.051 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 33, 48, 93, 122 and 137

W1 PZ -000.020 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.111 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.106 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 34, 49, 94, 123 and 138

W1 PZ -000.021 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.115 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.109 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 35, 50, 95, 124 and 139

W1 PZ -000.022 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.118 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.020 0.000 (kN, m)
W5 PX -000.112 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 37, 52, 97, 126 and 141

W1 PZ -000.009 0.000 (kN, m)
W4 PZ -000.054 0.000 (kN, m)

Members 38, 53, 98, 127 and 142

W1 PZ -000.020 0.000 (kN, m)
W4 PZ -000.111 0.000 (kN, m)

Members 39, 54, 99, 128 and 143

W1 PZ -000.021 0.000 (kN, m)
W4 PZ -000.115 0.000 (kN, m)

Members 40, 55, 100, 129 and 144

W1 PZ -000.022 0.000 (kN, m)
W4 PZ -000.118 0.000 (kN, m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY -000.143 0.025 (kN, m)
D1 PY -000.143 1.775 (kN, m)

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359 and 361-371

D1 PY -000.090 0.025 (kN, m)
D1 PY -000.090 1.775 (kN, m)

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W1 PZ	-000.029	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.161	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.161	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 171 and 183

W1 PZ	-000.030	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.166	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.165	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 172 and 184

W1 PZ	-000.031	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.170	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.030	0.000	(kN,m)
W5 PX	-000.170	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 173 and 185

W1 PZ	-000.032	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.175	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.031	0.000	(kN,m)
W5 PX	-000.174	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 174 and 186

W1 PZ	-000.029	0.000	(kN,m)
W4 PZ	-000.161	0.000	(kN,m)

Members 175 and 187

W1 PZ	-000.030	0.000	(kN,m)
W4 PZ	-000.166	0.000	(kN,m)

Members 176 and 188

W1 PZ	-000.031	0.000	(kN,m)
W4 PZ	-000.170	0.000	(kN,m)

Members 177 and 189

W1 PZ	-000.032	0.000	(kN,m)
W4 PZ	-000.175	0.000	(kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.121	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 195, 207, 219, 231 and 243

W1 PZ	-000.023	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 135****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ	-000.125	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.021	0.000	(kN, m)
W5 PX	-000.119	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.023	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.128	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.122	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.024	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.125	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.022	0.000	(kN, m)
W4 PZ	-000.121	0.000	(kN, m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.023	0.000	(kN, m)
W4 PZ	-000.125	0.000	(kN, m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.023	0.000	(kN, m)
W4 PZ	-000.128	0.000	(kN, m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.024	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)

Members 306 and 312

W1 PZ	-000.033	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.179	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.032	0.000	(kN, m)
W5 PX	-000.178	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 307 and 313

W1 PZ	-000.034	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.184	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.033	0.000	(kN, m)
W5 PX	-000.183	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 308 and 314

W1 PZ	-000.033	0.000	(kN, m)
W4 PZ	-000.179	0.000	(kN, m)

Members 309 and 315

W1 PZ	-000.034	0.000	(kN, m)
W4 PZ	-000.184	0.000	(kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 136****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 318, 324, 330, 336 and 342**

W1 PZ	-000.025	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.135	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.128	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1 PZ	-000.025	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.138	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1 PZ	-000.025	0.000	(kN,m)
W4 PZ	-000.135	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1 PZ	-000.025	0.000	(kN,m)
W4 PZ	-000.138	0.000	(kN,m)

Member 381

D1 PY	-000.292	0.025	(kN,m)
D1 PY	-000.292	1.775	(kN,m)
L2 PY	-001.013	0.025	(kN,m)
L2 PY	-001.013	1.775	(kN,m)
L6 PY	-000.759	0.025	(kN,m)
L6 PY	-000.759	1.775	(kN,m)
G2 PY	-001.519	0.025	(kN,m)
G2 PY	-001.519	1.775	(kN,m)

Members 382-386

D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L2 PY	-001.013	0.025	(kN,m)
L2 PY	-001.013	1.775	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G2 PY	-001.519	0.025	(kN,m)
G2 PY	-001.519	1.775	(kN,m)

Members 387-392

D1 PY	-000.185	0.025	(kN,m)
D1 PY	-000.185	1.775	(kN,m)
L4 PY	-001.013	0.025	(kN,m)
L4 PY	-001.013	1.775	(kN,m)
L8 PY	-000.759	0.025	(kN,m)
L8 PY	-000.759	1.775	(kN,m)
G4 PY	-001.519	0.025	(kN,m)
G4 PY	-001.519	1.775	(kN,m)

Member 400

D1 PY	-000.292	0.025	(kN,m)
D1 PY	-000.292	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Members 401-404

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 137****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Member 405

D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
N1 PZ	-000.300	1.775	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Members 406-411

D1 PY	-000.185	0.025	(kN,m)
D1 PY	-000.185	1.775	(kN,m)
L3 PY	-001.013	0.025	(kN,m)
L3 PY	-001.013	1.775	(kN,m)
L7 PY	-000.759	0.025	(kN,m)
L7 PY	-000.759	1.775	(kN,m)
G3 PY	-001.519	0.025	(kN,m)
G3 PY	-001.519	1.775	(kN,m)

Members 412 and 416

W1 PZ	-000.035	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.033	0.000	(kN,m)
W5 PX	-000.187	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 413 and 417

W1 PZ	-000.155	0.000	(kN,m)
W1 PZ	-000.158	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.671	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.686	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.058	0.000	(kN,m)
W2 PX	-000.059	2.000	(kN,m)
W5 PX	-000.269	0.000	(kN,m)
W5 PX	-000.275	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 414 and 418

W1 PZ	-000.035	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)

Members 415 and 419

W1 PZ	-000.155	0.000	(kN,m)
W4 PZ	-000.671	0.000	(kN,m)
W1 PZ	-000.158	2.000	(kN,m)
W4 PZ	-000.686	2.000	(kN,m)

Members 420, 424, 428, 432 and 436

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 138****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W1 PZ	-000.026	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.024	0.000	(kN,m)
W5 PX	-000.135	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.622	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.636	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.058	0.000	(kN,m)
W2 PX	-000.059	2.000	(kN,m)
W5 PX	-000.215	0.000	(kN,m)
W5 PX	-000.220	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ	-000.026	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W4 PZ	-000.622	0.000	(kN,m)
W4 PZ	-000.636	2.000	(kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Released	® Fixed			
11	ROO ROO	12	ROO ROO	13	ROO ROO	14	ROO ROO
15	ROO ROO	26	ROO ROO	27	ROO ROO	28	ROO ROO
29	ROO ROO	30	ROO ROO	41	ROO ROO	42	ROO ROO
43	ROO ROO	44	ROO ROO	45	ROO ROO	56	ROO ROO
57	ROO ROO	58	ROO ROO	59	ROO ROO	60	ROO ROO
61	ROO ROO	62	ROO ROO	63	ROO ROO	64	ROO ROO
65	ROO ROO	66	ROO ROO	67	ROO ROO	68	ROO ROO
69	ROO ROO	70	ROO ROO	71	ROO ROO	72	ROO ROO
73	ROO ROO	74	ROO ROO	75	ROO ROO	76	ROO ROO
77	ROO ROO	78	ROO ROO	79	ROO ROO	80	ROO ROO
81	ROO ROO	82	ROO ROO	83	ROO ROO	84	ROO ROO
85	ROO ROO	86	ROO ROO	87	ROO ROO	88	ROO ROO
89	ROO ROO	90	ROO ROO	101	ROO ROO	102	ROO ROO
103	ROO ROO	104	ROO ROO	105	ROO ROO	106	ROO ROO
107	ROO ROO	108	ROO ROO	109	ROO ROO	110	ROO ROO
111	ROO ROO	112	ROO ROO	113	ROO ROO	114	ROO ROO
115	ROO ROO	116	ROO ROO	117	ROO ROO	118	ROO ROO
119	ROO ROO	130	ROO ROO	131	ROO ROO	132	ROO ROO
133	ROO ROO	134	ROO ROO	145	ROO ROO	146	ROO ROO
147	ROO ROO	148	ROO ROO	149	ROO ROO	150	ROO ROO
151	ROO ROO	152	ROO ROO	153	ROO ROO	154	ROO ROO
155	ROO ROO	156	ROO ROO	157	ROO ROO	158	ROO ROO
159	ROO ROO	160	ROO ROO	161	ROO ROO	162	ROO ROO
163	ROO ROO	164	ROO ROO	165	ROO ROO	166	ROO ROO
167	ROO ROO	168	ROO ROO	169	ROO ROO	178	ROO ROO
179	ROO ROO	180	ROO ROO	181	ROO ROO	190	ROO ROO
191	ROO ROO	192	ROO ROO	193	ROO ROO	202	ROO ROO
203	ROO ROO	204	ROO ROO	205	ROO ROO	214	ROO ROO
215	ROO ROO	216	ROO ROO	217	ROO ROO	226	ROO ROO
227	ROO ROO	228	ROO ROO	229	ROO ROO	238	ROO ROO
239	ROO ROO	240	ROO ROO	241	ROO ROO	250	ROO ROO
251	ROO ROO	252	ROO ROO	253	ROO ROO	254	ROO ROO

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 139****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

255 @ @	256 @ @	257 @ @	258 @ @
259 @ @	260 @ @	261 @ @	262 @ @
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447 @ @	448 @ @	449 @ @	450 @ @
451 @ @	452 @ @	453 @ @	

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0104.050 0000.000 0104.050

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 140

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.53	0.53	-0.06	0.00	0.41	0.41
2	-2.71	-0.11	0.01	2.72	-0.06	0.00	0.12	0.14
3	-3.68	-0.35	-8.52	9.28	-0.07	0.00	0.01	0.07
4	-4.95	-0.47	-11.83	12.84	-0.01	-0.02	0.02	0.03
5	-6.28	-0.49	-8.14	10.29	0.07	-0.02	0.02	0.08
6	-7.45	-0.42	0.04	7.46	0.00	0.00	0.02	0.02
7	-8.29	-0.42	-8.60	11.95	-0.08	0.00	0.01	0.08
8	-8.68	-0.49	-12.36	15.11	0.00	-0.02	0.00	0.02
9	-8.54	-0.55	-8.51	12.07	0.08	-0.02	-0.01	0.08
10	-7.81	-0.61	0.05	7.84	-0.02	0.01	-0.02	0.03
11	-6.52	-0.66	-11.78	13.48	-0.11	0.01	-0.03	0.12
12	-4.71	-0.70	-18.49	19.09	-0.03	-0.01	-0.04	0.05
13	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
14	0.00	-0.01	0.00	0.01	-0.04	0.00	0.00	0.04
15	0.07	-0.09	-8.52	8.52	-0.07	0.00	0.00	0.07
16	0.08	-0.13	-11.83	11.83	-0.01	0.00	0.00	0.01
17	0.06	-0.18	-8.14	8.15	0.07	0.00	0.00	0.07
18	0.00	-0.25	0.00	0.25	-0.01	0.00	0.00	0.01
19	0.06	-0.31	-8.60	8.60	-0.08	0.00	0.00	0.08
20	0.08	-0.35	-12.36	12.37	0.00	0.00	0.00	0.00
21	0.06	-0.39	-8.51	8.52	0.08	0.00	0.00	0.08
22	0.00	-0.45	0.00	0.45	-0.02	0.00	0.00	0.02
23	0.13	-0.54	-11.78	11.79	-0.11	0.00	0.00	0.11
24	0.19	-0.59	-18.49	18.50	-0.03	0.01	0.01	0.03
25	0.00	0.00	0.17	0.17	-0.02	0.00	0.40	0.40
26	-2.61	0.05	0.01	2.61	-0.02	0.00	0.09	0.10
27	-3.58	0.30	-1.98	4.11	0.01	-0.01	0.01	0.02
28	-4.87	0.42	0.02	4.88	-0.03	-0.01	0.02	0.04
29	-6.21	0.42	-8.25	10.34	-0.06	-0.01	0.01	0.06
30	-7.40	0.33	-11.29	13.50	0.01	-0.01	0.01	0.01
31	-8.26	-0.38	-8.01	11.51	0.07	-0.02	0.01	0.07
32	-8.66	-0.43	0.06	8.68	0.00	-0.02	0.00	0.02
33	-8.54	-0.48	-8.31	11.92	-0.07	0.00	-0.01	0.07
34	-7.83	-0.56	-11.51	13.94	0.00	0.00	-0.01	0.01
35	-6.56	-0.81	-7.88	10.28	0.07	-0.03	-0.02	0.08
36	-4.76	-1.03	0.02	4.87	-0.05	-0.03	-0.03	0.07
37	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
38	0.00	-0.02	0.00	0.02	-0.01	0.00	0.00	0.01
39	0.07	-0.11	-1.98	1.99	0.00	0.00	0.00	0.01
40	0.00	-0.19	0.00	0.19	-0.03	0.00	0.00	0.03
41	0.06	-0.26	-8.25	8.26	-0.06	0.01	0.00	0.06
42	0.00	-0.33	-11.29	11.29	0.01	0.01	0.00	0.01
43	0.06	-0.40	-8.01	8.02	0.07	0.01	0.00	0.07
44	0.00	-0.47	0.00	0.47	0.00	0.01	0.00	0.01
45	0.06	-0.53	-8.31	8.33	-0.07	0.01	0.00	0.07
46	0.00	-0.58	-11.51	11.53	0.00	0.01	0.00	0.01
47	0.13	-0.63	-7.88	7.91	0.07	0.01	0.00	0.07
48	0.00	-0.68	0.00	0.68	-0.05	0.02	0.01	0.06
49	0.00	0.00	0.38	0.38	-0.04	0.00	0.39	0.39
50	-2.52	-0.03	0.00	2.53	-0.04	0.00	0.09	0.10
51	-3.60	-0.12	-6.21	7.17	-0.05	0.00	0.00	0.05
52	-4.88	-0.21	-8.52	9.82	0.00	0.00	0.01	0.01
53	-6.22	-0.30	-5.96	8.62	0.05	0.00	0.01	0.05
54	-7.41	-0.38	0.04	7.42	0.00	0.00	0.01	0.01
55	-8.27	-0.46	-6.21	10.35	-0.05	0.00	0.00	0.05
56	-8.67	-0.54	-8.76	12.34	0.00	0.00	0.00	0.00
57	-8.55	-0.61	-6.10	10.52	0.05	0.00	0.00	0.05
58	-7.84	-0.68	0.05	7.87	-0.02	0.00	-0.01	0.02

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 141

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-6.57	-0.74	-9.28	11.40	-0.08	0.00	-0.01	0.09
60	-4.77	-0.80	-15.00	15.77	-0.04	0.00	-0.01	0.04
61	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
62	0.00	-0.02	0.00	0.02	-0.03	0.00	0.00	0.03
63	0.07	-0.11	-6.21	6.21	-0.05	0.00	0.00	0.05
64	0.00	-0.20	-8.52	8.52	0.00	0.00	0.00	0.00
65	0.06	-0.27	-5.96	5.96	0.05	0.00	0.00	0.05
66	0.00	-0.35	0.00	0.35	0.00	0.00	0.00	0.00
67	0.06	-0.42	-6.21	6.23	-0.05	0.00	0.00	0.05
68	0.00	-0.49	-8.76	8.77	0.00	0.00	0.00	0.00
69	0.06	-0.55	-6.10	6.12	0.05	0.01	0.00	0.05
70	0.00	-0.61	0.00	0.61	-0.02	0.01	0.00	0.02
71	0.13	-0.66	-9.28	9.31	-0.08	0.01	0.00	0.09
72	0.00	-0.71	-15.00	15.02	-0.04	0.01	0.01	0.04
73	0.00	0.00	0.13	0.13	-0.01	0.00	0.38	0.38
74	-2.46	-0.03	0.00	2.46	-0.01	0.00	0.09	0.09
75	-3.61	-0.12	-1.48	3.90	0.00	0.00	0.01	0.01
76	-4.88	-0.22	0.02	4.89	-0.03	0.00	0.01	0.03
77	-6.23	-0.30	-6.36	8.90	-0.05	-0.01	0.01	0.05
78	-7.41	-0.39	-8.77	11.49	0.00	-0.01	0.01	0.01
79	-8.28	-0.47	-6.17	10.33	0.05	-0.01	0.01	0.05
80	-8.68	-0.54	0.06	8.70	0.00	-0.01	0.00	0.01
81	-8.55	-0.61	-6.27	10.63	-0.05	-0.01	0.00	0.05
82	-7.85	-0.68	-8.72	11.75	0.00	-0.01	-0.01	0.02
83	-6.58	-0.74	-5.75	8.76	0.05	-0.02	-0.02	0.06
84	-4.78	-0.80	0.02	4.85	-0.06	-0.02	-0.02	0.07
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	-0.02	0.00	0.02	-0.01	0.00	0.00	0.01
87	0.07	-0.11	-1.48	1.49	0.00	0.00	0.00	0.00
88	0.00	-0.19	0.00	0.19	-0.03	0.00	0.00	0.03
89	0.06	-0.27	-6.36	6.36	-0.05	0.00	0.00	0.05
90	0.00	-0.35	-8.77	8.77	0.00	0.01	0.00	0.01
91	0.06	-0.42	-6.17	6.19	0.05	0.01	0.00	0.05
92	0.00	-0.49	0.00	0.49	0.00	0.01	0.00	0.01
93	0.06	-0.55	-6.27	6.30	-0.05	0.01	0.00	0.05
94	0.00	-0.61	-8.72	8.74	0.00	0.01	0.00	0.01
95	0.13	-0.66	-5.75	5.78	0.05	0.01	0.00	0.06
96	0.00	-0.71	0.00	0.71	-0.06	0.01	0.01	0.07
97	0.00	0.00	0.38	0.38	-0.04	0.00	0.37	0.37
98	-2.41	-0.03	0.00	2.41	-0.04	0.00	0.09	0.10
99	-3.62	-0.12	-6.21	7.19	-0.05	0.00	0.01	0.05
100	-4.89	-0.22	-8.53	9.83	0.00	0.00	0.01	0.01
101	-6.23	-0.30	-5.96	8.63	0.05	0.00	0.01	0.05
102	-7.42	-0.39	0.04	7.43	0.00	0.00	0.01	0.01
103	-8.28	-0.47	-6.23	10.37	-0.05	0.00	0.01	0.05
104	-8.69	-0.54	-8.79	12.37	0.00	0.00	0.00	0.00
105	-8.56	-0.62	-6.12	10.54	0.05	0.00	0.00	0.05
106	-7.86	-0.68	0.05	7.89	-0.02	0.00	-0.01	0.02
107	-6.58	-0.74	-9.13	11.28	-0.08	0.00	-0.02	0.08
108	-4.79	-0.80	-14.68	15.46	-0.04	0.00	-0.02	0.04
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.02	0.00	0.02	-0.03	0.00	0.00	0.03
111	0.07	-0.11	-6.21	6.21	-0.05	0.00	0.00	0.05
112	0.00	-0.20	-8.53	8.53	0.00	0.00	0.00	0.00
113	0.06	-0.28	-5.96	5.97	0.05	0.00	0.00	0.05
114	0.00	-0.35	0.00	0.35	0.00	0.00	0.00	0.00
115	0.06	-0.42	-6.23	6.24	-0.05	0.00	0.00	0.05
116	0.00	-0.49	-8.79	8.80	0.00	0.00	0.00	0.00

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 142

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.06	-0.55	-6.12	6.15	0.05	0.00	0.00	0.05
118	0.00	-0.61	0.00	0.61	-0.02	0.00	0.00	0.02
119	0.13	-0.66	-9.13	9.16	-0.08	0.01	0.00	0.08
120	0.00	-0.71	-14.68	14.69	-0.04	0.01	0.01	0.04
121	0.00	0.00	0.13	0.13	-0.01	0.00	0.37	0.37
122	-2.38	-0.03	0.00	2.38	-0.01	0.00	0.09	0.09
123	-3.63	-0.12	-1.48	3.92	0.00	0.00	0.01	0.01
124	-4.89	-0.21	0.02	4.90	-0.03	-0.01	0.01	0.03
125	-6.24	-0.30	-6.35	8.90	-0.05	-0.01	0.01	0.05
126	-7.43	-0.38	-8.75	11.49	0.00	-0.01	0.01	0.02
127	-8.29	-0.46	-6.16	10.34	0.05	-0.01	0.01	0.05
128	-8.69	-0.53	0.06	8.71	0.00	-0.02	0.00	0.02
129	-8.57	-0.60	-6.28	10.64	-0.05	-0.02	0.00	0.05
130	-7.86	-0.67	-8.74	11.77	0.00	-0.02	-0.01	0.02
131	-6.59	-0.73	-5.79	8.80	0.05	-0.02	-0.01	0.06
132	-4.80	-0.78	0.02	4.86	-0.06	-0.02	-0.02	0.07
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.02	0.00	0.02	-0.01	0.00	0.00	0.01
135	0.07	-0.11	-1.48	1.49	0.00	0.00	0.00	0.00
136	0.00	-0.19	0.00	0.19	-0.03	0.00	0.00	0.03
137	0.06	-0.27	-6.35	6.35	-0.05	0.00	0.00	0.05
138	0.00	-0.34	-8.75	8.76	0.00	0.01	0.00	0.01
139	0.06	-0.41	-6.16	6.18	0.05	0.01	0.00	0.05
140	0.00	-0.48	0.00	0.48	0.00	0.01	0.00	0.01
141	0.06	-0.54	-6.28	6.30	-0.05	0.01	0.00	0.05
142	0.00	-0.59	-8.74	8.76	0.00	0.01	0.00	0.01
143	0.13	-0.64	-5.79	5.83	0.05	0.01	0.00	0.05
144	0.00	-0.69	0.00	0.69	-0.06	0.01	0.01	0.06
145	0.00	0.00	0.40	0.40	-0.05	0.00	0.35	0.36
146	-2.36	-0.02	0.00	2.36	-0.05	0.00	0.11	0.12
147	-3.63	-0.07	-6.35	7.32	-0.05	0.00	0.01	0.05
148	-4.90	-0.12	-8.84	10.11	0.00	0.00	0.02	0.02
149	-6.24	-0.17	-6.08	8.72	0.06	0.00	0.02	0.06
150	-7.43	-0.22	0.04	7.43	0.00	0.00	0.01	0.01
151	-8.29	-0.26	-6.41	10.48	-0.06	0.00	0.01	0.06
152	-8.70	-0.30	-9.20	12.66	0.00	0.00	0.00	0.01
153	-8.57	-0.34	-6.29	10.63	0.06	0.00	0.00	0.06
154	-7.86	-0.38	0.05	7.87	-0.02	0.01	-0.01	0.02
155	-6.59	-0.41	-9.67	11.71	-0.09	0.01	-0.02	0.10
156	-4.80	-0.44	-15.63	16.35	-0.03	0.01	-0.02	0.04
157	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
158	0.00	-0.01	0.00	0.01	-0.03	0.00	0.00	0.03
159	0.07	-0.07	-6.35	6.35	-0.06	0.00	0.00	0.06
160	-0.04	-0.11	-8.84	8.84	0.00	0.00	0.00	0.00
161	0.06	-0.16	-6.08	6.09	0.06	0.00	0.00	0.06
162	0.00	-0.20	0.00	0.20	0.00	0.00	0.00	0.00
163	0.06	-0.24	-6.41	6.42	-0.06	0.00	0.00	0.06
164	-0.05	-0.28	-9.20	9.20	0.00	0.01	0.00	0.01
165	0.06	-0.31	-6.29	6.30	0.06	0.01	0.00	0.06
166	0.00	-0.35	0.00	0.35	-0.02	0.01	0.00	0.02
167	0.13	-0.41	-9.67	9.68	-0.09	0.01	0.00	0.09
168	-0.14	-0.45	-15.63	15.63	-0.03	0.01	0.02	0.04
169	-2.48	-0.74	-15.92	16.13	0.11	-0.01	-0.04	0.12
170	-2.33	-0.61	-15.92	16.11	0.11	0.01	0.00	0.11
171	-2.55	-1.20	-15.50	15.76	-0.01	-0.03	-0.03	0.04
172	-2.33	-0.77	-15.51	15.70	-0.01	0.02	0.00	0.02
173	-2.55	-0.85	-15.17	15.41	0.09	0.00	-0.02	0.09
174	-2.33	-0.75	-15.17	15.37	0.09	0.01	0.00	0.09

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Job Ref : B11323

Sheet : SD / 143

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-2.56	-0.86	-14.84	15.09	0.00	-0.02	-0.02	0.03
176	-2.33	-0.76	-14.85	15.05	0.00	0.02	0.00	0.02
177	-2.56	-0.86	-14.63	14.87	0.08	0.00	-0.02	0.09
178	-2.33	-0.76	-14.63	14.83	0.09	0.01	0.00	0.09
179	-2.57	-0.84	-14.41	14.66	0.00	-0.02	-0.02	0.03
180	-2.33	-0.74	-14.41	14.62	0.00	0.01	0.00	0.02
181	-2.57	-0.47	-14.27	14.51	0.09	0.01	-0.03	0.10
182	-2.33	-0.47	-14.27	14.47	0.10	0.01	0.00	0.10
183	-0.10	-0.80	-0.03	0.81	0.11	-0.01	-0.04	0.12
184	0.00	-0.75	0.00	0.75	0.11	0.01	-0.03	0.12
185	-0.12	-1.30	-0.17	1.31	0.12	-0.02	-0.02	0.13
186	-0.03	-0.90	-0.15	0.91	0.12	0.02	-0.02	0.12
187	-0.07	-0.88	-0.05	0.88	0.11	0.00	-0.01	0.11
188	0.00	-0.79	0.00	0.79	0.11	0.01	-0.01	0.11
189	-0.05	-0.89	-0.16	0.90	0.12	-0.02	-0.02	0.12
190	-0.02	-0.82	-0.14	0.83	0.11	0.02	-0.02	0.12
191	-0.03	-0.88	-0.05	0.89	0.11	0.00	-0.01	0.11
192	0.00	-0.79	0.00	0.79	0.11	0.01	-0.02	0.11
193	0.03	-0.87	-0.15	0.88	0.11	-0.02	-0.01	0.12
194	-0.01	-0.80	-0.14	0.81	0.11	0.01	-0.01	0.11
195	0.05	-0.49	-0.02	0.49	0.11	0.01	-0.02	0.11
196	0.00	-0.59	0.00	0.59	0.10	0.01	-0.02	0.11

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	18.33C	0.00	-0.94	0.00	0.00	0.00		0.00	0.32
	2	18.33C	0.00	-0.94	0.00	-0.47	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	11.14C	0.00	-0.02	0.29	-0.07	-0.22	0.00	0.00	0.62
	3	11.14C	0.00	0.05	0.22	0.02	0.22	@ 0.000	@ 0.000	@ 0.424
3	3	5.44C	0.00	-0.17	0.22	0.03	-0.06	0.00	0.00	0.44
	4	5.44C	0.00	-0.03	0.07	-0.02	0.09	@ 0.000	@ 0.000	@ 1.414
4	4	3.74C	0.00	-0.17	0.07	0.02	0.10	0.00	0.00	0.47
	5	3.74C	0.00	-0.02	-0.09	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.566
5	5	3.59C	0.00	-0.17	-0.09	0.02	0.23	0.00	0.00	0.90
	6	3.59C	0.00	-0.02	-0.25	-0.02	-0.26	@ 0.000	@ 0.000	@ 1.515
6	13	2.56C	0.00	0.02	-0.18	0.00	0.00	0.00	0.00	0.06
	14	2.56C	0.00	0.02	-0.18	0.01	-0.09	@ 0.000	@ 0.000	@ 0.290
7	14	2.45C	0.00	0.00	0.31	0.00	-0.24	0.00	0.00	0.75
	15	2.45C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.465
8	15	2.37C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.45
	16	2.37C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.394
9	16	2.24C	0.00	0.00	0.07	0.00	0.10	0.00	0.00	0.47
	17	2.24C	0.00	0.00	-0.09	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
10	17	2.07C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.90
	18	2.07C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.515

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Job Ref : B11323

Sheet : SD / 144

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	11.65T	0.00	-1.02	0.00	0.00	0.00	0.00	0.00	0.34
	26	11.65T	0.00	-1.02	0.00	-0.51	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	11.86T	0.00	-0.04	0.13	-0.05	-0.05	0.00	0.00	0.40
	27	11.86T	0.00	0.03	0.06	0.01	0.06	@ 0.000	@ 0.000	@ 0.768
18	27	5.27T	0.00	-0.18	0.06	0.03	0.08	0.00	0.00	0.35
	28	5.27T	0.00	-0.03	-0.09	-0.03	-0.10	@ 0.000	@ 0.000	@ 1.495
19	28	3.26C	0.00	-0.18	0.39	0.03	-0.24	0.00	0.00	0.72
	29	3.26C	0.00	-0.03	0.23	-0.03	0.23	@ 0.000	@ 0.000	@ 0.444
20	29	4.20C	0.00	-0.18	0.23	0.03	-0.06	0.00	0.00	0.41
	30	4.20C	0.00	-0.03	0.07	-0.03	0.08	@ 0.000	@ 0.000	@ 1.414
21	37	4.09C	0.00	0.01	-0.05	0.00	0.00	0.00	0.00	0.02
	38	4.09C	0.00	0.01	-0.05	0.01	-0.03	@ 0.000	@ 0.000	@ 0.290
22	38	3.89C	0.00	0.00	0.14	0.00	-0.06	0.00	0.00	0.20
	39	3.89C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.556
23	39	3.69C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.35
	40	3.69C	0.00	0.00	-0.09	0.00	-0.10	@ 0.000	@ 0.000	@ 1.515
24	40	3.51C	0.00	0.00	0.39	0.00	-0.24	0.00	0.00	0.72
	41	3.51C	0.00	0.00	0.23	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
25	41	3.34C	0.00	0.00	0.23	0.00	-0.06	0.00	0.00	0.40
	42	3.34C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
31	49	4.67C	0.00	-0.98	0.00	0.00	0.00		0.00	0.33
	50	4.67C	0.00	-0.98	0.00	-0.49	0.00		@ 0.000	@ 0.290
32	50	4.46C	0.00	-0.03	0.22	-0.04	-0.16	0.00	0.00	0.45
	51	4.46C	0.00	0.02	0.16	0.00	0.16	@ 0.000	@ 0.000	@ 0.424
33	51	4.26C	0.00	-0.14	0.16	0.04	-0.04	0.00	0.00	0.30
	52	4.26C	0.00	-0.04	0.05	-0.04	0.06	@ 0.000	@ 0.000	@ 1.414
34	52	4.06C	0.00	-0.15	0.05	0.04	0.07	0.00	0.00	0.33
	53	4.06C	0.00	-0.04	-0.06	-0.04	-0.05	@ 0.000	@ 0.000	@ 0.566
35	53	3.87C	0.00	-0.15	-0.06	0.03	0.17	0.00	0.00	0.65
	54	3.87C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.515
36	61	4.27C	0.00	0.01	-0.13	0.00	0.00	0.00	0.00	0.04
	62	4.27C	0.00	0.01	-0.13	0.01	-0.06	@ 0.000	@ 0.000	@ 0.290
37	62	4.08C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.54
	63	4.08C	0.00	0.00	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
38	63	3.90C	0.00	0.00	0.16	0.00	-0.04	0.00	0.00	0.31
	64	3.90C	0.00	0.00	0.05	0.00	0.06	@ 0.000	@ 0.000	@ 1.394
39	64	3.69C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.33
	65	3.69C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	3.46C	0.00	0.00	-0.06	0.00	0.17	0.00	0.00	0.65
	66	3.46C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.515
46	73	4.73C	0.00	-0.95	0.00	0.00	0.00	0.00	0.00	0.32
	74	4.73C	0.00	-0.95	0.00	-0.47	0.00	@ 0.000	@ 0.000	@ 0.290
47	74	4.52C	0.00	-0.03	0.10	-0.04	-0.04	0.00	0.00	0.38
	75	4.52C	0.00	0.02	0.04	0.00	0.05	@ 0.000	@ 0.000	@ 0.828
48	75	4.32C	0.00	-0.14	0.04	0.03	0.06	0.00	0.00	0.27
	76	4.32C	0.00	-0.03	-0.07	-0.03	-0.07	@ 0.000	@ 0.000	@ 1.495
49	76	4.11C	0.00	-0.14	0.29	0.03	-0.18	0.00	0.00	0.55
	77	4.11C	0.00	-0.03	0.18	-0.03	0.17	@ 0.000	@ 0.000	@ 0.444
50	77	3.91C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.32
	78	3.91C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
51	85	4.28C	0.00	0.01	-0.04	0.00	0.00	0.00	0.00	0.01
	86	4.28C	0.00	0.01	-0.04	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
52	86	4.08C	0.00	0.00	0.10	0.00	-0.05	0.00	0.00	0.15
	87	4.08C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.556
53	87	3.87C	0.00	0.00	0.04	0.00	0.06	0.00	0.00	0.27
	88	3.87C	0.00	0.00	-0.07	0.00	-0.08	@ 0.000	@ 0.000	@ 1.515
54	88	3.68C	0.00	0.00	0.29	0.00	-0.18	0.00	0.00	0.55
	89	3.68C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
55	89	3.50C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.32
	90	3.50C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
91	97	4.73C	0.00	-0.93	0.00	0.00	0.00	0.00	0.00	0.31
	98	4.73C	0.00	-0.93	0.00	-0.46	0.00	@ 0.000	@ 0.000	@ 0.290
92	98	4.52C	0.00	-0.03	0.22	-0.03	-0.16	0.00	0.00	0.46
	99	4.52C	0.00	0.02	0.16	0.00	0.16	@ 0.000	@ 0.000	@ 0.424
93	99	4.32C	0.00	-0.14	0.16	0.03	-0.04	0.00	0.00	0.30
	100	4.32C	0.00	-0.03	0.05	-0.03	0.06	@ 0.000	@ 0.000	@ 1.414
94	100	4.12C	0.00	-0.14	0.05	0.03	0.07	0.00	0.00	0.33
	101	4.12C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.566
95	101	3.91C	0.00	-0.14	-0.06	0.03	0.17	0.00	0.00	0.65
	102	3.91C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.515
96	109	4.28C	0.00	0.01	-0.13	0.00	0.00	0.00	0.00	0.04
	110	4.28C	0.00	0.01	-0.13	0.01	-0.06	@ 0.000	@ 0.000	@ 0.290
97	110	4.09C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.54
	111	4.09C	0.00	0.00	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
98	111	3.91C	0.00	0.00	0.16	0.00	-0.04	0.00	0.00	0.31
	112	3.91C	0.00	0.00	0.05	0.00	0.06	@ 0.000	@ 0.000	@ 1.394

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 146

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	3.70C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.33
	113	3.70C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
100	113	3.47C	0.00	0.00	-0.06	0.00	0.17	0.00	0.00	0.65
	114	3.47C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.515
120	121	4.62C	0.00	-0.92	0.00	0.00	0.00		0.00	0.31
	122	4.62C	0.00	-0.92	0.00	-0.46	0.00		@ 0.000	@ 0.290
121	122	4.41C	0.00	-0.04	0.10	-0.03	-0.04	0.00	0.00	0.35
	123	4.41C	0.00	0.01	0.04	0.00	0.05	@ 0.000	@ 0.000	@ 0.869
122	123	4.21C	0.00	-0.14	0.04	0.03	0.06	0.00	0.00	0.27
	124	4.21C	0.00	-0.03	-0.07	-0.03	-0.07	@ 0.000	@ 0.000	@ 1.495
123	124	4.01C	0.00	-0.14	0.29	0.03	-0.18	0.00	0.00	0.55
	125	4.01C	0.00	-0.03	0.18	-0.03	0.17	@ 0.000	@ 0.000	@ 0.444
124	125	3.81C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.32
	126	3.81C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
125	133	4.18C	0.00	0.01	-0.04	0.00	0.00	0.00	0.00	0.01
	134	4.18C	0.00	0.01	-0.04	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
126	134	3.98C	0.00	0.00	0.10	0.00	-0.05	0.00	0.00	0.15
	135	3.98C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.556
127	135	3.78C	0.00	0.00	0.04	0.00	0.06	0.00	0.00	0.27
	136	3.78C	0.00	0.00	-0.07	0.00	-0.08	@ 0.000	@ 0.000	@ 1.515
128	136	3.59C	0.00	0.00	0.29	0.00	-0.18	0.00	0.00	0.55
	137	3.59C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
129	137	3.41C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.32
	138	3.41C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
135	145	2.63C	0.00	-0.81	0.00	0.00	0.00	0.00	0.00	0.27
	146	2.63C	0.00	-0.81	0.00	-0.41	0.00	@ 0.000	@ 0.000	@ 0.290
136	146	2.52C	0.00	-0.02	0.22	-0.05	-0.17	0.00	0.00	0.46
	147	2.52C	0.00	0.03	0.16	0.01	0.16	@ 0.000	@ 0.000	@ 0.424
137	147	2.40C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.33
	148	2.40C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
138	148	2.29C	0.00	-0.14	0.05	0.03	0.07	0.00	0.00	0.35
	149	2.29C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.566
139	149	2.17C	0.00	-0.14	-0.06	0.02	0.17	0.00	0.00	0.67
	150	2.17C	0.00	-0.02	-0.18	-0.02	-0.19	@ 0.000	@ 0.000	@ 1.515
140	157	2.39C	0.00	0.02	-0.13	0.00	0.00	0.00	0.00	0.04
	158	2.39C	0.00	0.02	-0.13	0.01	-0.07	@ 0.000	@ 0.000	@ 0.290
141	158	2.29C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.56
	159	2.29C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.465

James Crosbie Associates Ltd.

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Job Ref : B11323

Sheet : SD / 147

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	2.20C	0.00	0.00	0.17	0.00	-0.04	0.00	0.00	0.33
	160	2.20C	0.00	0.00	0.05	0.00	0.07	@ 0.000	@ 0.000	@ 1.394
143	160	2.08C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.35
	161	2.08C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
144	161	1.93C	0.00	0.00	-0.07	0.00	0.17	0.00	0.00	0.67
	162	1.93C	0.00	0.00	-0.18	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
170	6	6.01T	0.00	-0.17	0.42	0.01	-0.27	0.00	0.00	0.92
	7	6.01T	0.00	-0.01	0.26	-0.01	0.24	@ 0.000	@ 0.000	@ 0.485
171	7	7.95T	0.00	-0.17	0.25	0.00	-0.07	0.00	0.00	0.48
	8	7.95T	0.00	-0.01	0.09	-0.01	0.10	@ 0.000	@ 0.000	@ 1.414
172	8	8.95T	0.00	-0.17	0.08	0.00	0.11	0.00	0.00	0.50
	9	8.95T	0.00	0.00	-0.09	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
173	9	8.98T	0.00	-0.17	-0.09	-0.01	0.25	0.00	0.00	1.01
	10	8.98T	0.00	0.01	-0.27	0.01	-0.29	@ 0.000	@ 0.000	@ 1.515
174	18	1.94C	0.00	0.00	0.42	0.00	-0.27	0.00	0.00	0.92
	19	1.94C	0.00	0.00	0.26	0.00	0.24	@ 0.000	@ 0.000	@ 0.485
175	19	1.84C	0.00	0.00	0.25	0.00	-0.07	0.00	0.00	0.48
	20	1.84C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.414
176	20	1.70C	0.00	0.00	0.08	0.00	0.11	0.00	0.00	0.50
	21	1.70C	0.00	0.00	-0.09	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
177	21	1.52C	0.00	0.00	-0.09	0.00	0.25	0.00	0.00	1.02
	22	1.52C	0.00	0.00	-0.27	0.00	-0.29	@ 0.000	@ 0.000	@ 1.515
182	30	7.53C	0.00	-0.18	0.09	0.02	0.09	0.00	0.00	0.41
	31	7.53C	0.00	-0.02	-0.07	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.566
183	31	9.93C	0.00	-0.18	-0.08	0.01	0.23	0.00	0.00	0.87
	32	9.93C	0.00	-0.01	-0.24	-0.01	-0.26	@ 0.000	@ 0.000	@ 1.515
184	32	11.43C	0.00	-0.17	0.42	0.00	-0.27	0.00	0.00	0.88
	33	11.43C	0.00	0.00	0.25	0.00	0.24	@ 0.000	@ 0.000	@ 0.465
185	33	12.00C	0.00	-0.16	0.25	-0.01	-0.06	0.00	0.00	0.43
	34	12.00C	0.00	0.01	0.08	0.01	0.09	@ 0.000	@ 0.000	@ 1.414
186	42	3.14C	0.00	0.00	0.09	0.00	0.09	0.00	0.00	0.42
	43	3.14C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.586
187	43	2.91C	0.00	0.00	-0.08	0.00	0.23	0.00	0.00	0.87
	44	2.91C	0.00	0.00	-0.24	0.00	-0.26	@ 0.000	@ 0.000	@ 1.515
188	44	2.72C	0.00	0.00	0.42	0.00	-0.27	0.00	0.00	0.88
	45	2.72C	0.00	0.00	0.25	0.00	0.24	@ 0.000	@ 0.000	@ 0.465
189	45	2.56C	0.00	0.00	0.25	0.00	-0.06	0.00	0.00	0.43
	46	2.56C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414

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Sheet : SD / 148

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	3.68C	0.00	-0.14	0.31	0.02	-0.20	0.00	0.00	0.66
	55	3.68C	0.00	-0.03	0.19	-0.03	0.18	@ 0.000	@ 0.000	@ 0.465
195	55	3.48C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.33
	56	3.48C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.434
196	56	3.29C	0.00	-0.12	0.07	0.00	0.07	0.00	0.00	0.33
	57	3.29C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
197	57	3.10C	0.00	-0.11	-0.06	-0.02	0.18	0.00	0.00	0.74
	58	3.10C	0.00	0.02	-0.19	0.02	-0.21	@ 0.000	@ 0.000	@ 1.515
198	66	3.25C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.66
	67	3.25C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
199	67	3.07C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.33
	68	3.07C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.434
200	68	2.86C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.34
	69	2.86C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
201	69	2.62C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.74
	70	2.62C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.515
206	78	3.71C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.33
	79	3.71C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.566
207	79	3.50C	0.00	-0.13	-0.06	0.01	0.18	0.00	0.00	0.66
	80	3.50C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.515
208	80	3.30C	0.00	-0.12	0.32	0.00	-0.20	0.00	0.00	0.67
	81	3.30C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
209	81	3.10C	0.00	-0.11	0.19	-0.02	-0.05	0.00	0.00	0.33
	82	3.10C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.414
210	90	3.29C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.33
	91	3.29C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
211	91	3.05C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.67
	92	3.05C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
212	92	2.84C	0.00	0.00	0.32	0.00	-0.20	0.00	0.00	0.67
	93	2.84C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
213	93	2.65C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.33
	94	2.65C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
218	102	3.71C	0.00	-0.14	0.31	0.02	-0.20	0.00	0.00	0.66
	103	3.71C	0.00	-0.02	0.19	-0.02	0.18	@ 0.000	@ 0.000	@ 0.465
219	103	3.51C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.33
	104	3.51C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.434
220	104	3.31C	0.00	-0.12	0.07	-0.01	0.07	0.00	0.00	0.34
	105	3.31C	0.00	0.01	-0.06	0.01	-0.05	@ 0.000	@ 0.000	@ 0.566

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	3.11C	0.00	-0.11	-0.06	-0.02	0.18	0.00	0.00	0.74
	106	3.11C	0.00	0.02	-0.19	0.02	-0.21	@ 0.000	@ 0.000	@ 1.515
222	114	3.26C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.66
	115	3.26C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
223	115	3.07C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.33
	116	3.07C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.434
224	116	2.86C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.34
	117	2.86C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
225	117	2.62C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.74
	118	2.62C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.515
230	126	3.62C	0.00	-0.13	0.06	0.02	0.07	0.00	0.00	0.33
	127	3.62C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.566
231	127	3.42C	0.00	-0.13	-0.06	0.01	0.18	0.00	0.00	0.66
	128	3.42C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.515
232	128	3.23C	0.00	-0.12	0.32	-0.01	-0.20	0.00	0.00	0.67
	129	3.23C	0.00	0.01	0.19	0.01	0.18	@ 0.000	@ 0.000	@ 0.465
233	129	3.04C	0.00	-0.11	0.19	-0.02	-0.05	0.00	0.00	0.33
	130	3.04C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.414
234	138	3.21C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.33
	139	3.21C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
235	139	2.98C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.67
	140	2.98C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
236	140	2.77C	0.00	0.00	0.32	0.00	-0.20	0.00	0.00	0.67
	141	2.77C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
237	141	2.60C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.33
	142	2.60C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
242	150	2.06C	0.00	-0.13	0.31	0.02	-0.20	0.00	0.00	0.69
	151	2.06C	0.00	-0.02	0.19	-0.02	0.18	@ 0.000	@ 0.000	@ 0.485
243	151	1.94C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.37
	152	1.94C	0.00	-0.01	0.06	-0.01	0.08	@ 0.000	@ 0.000	@ 1.414
244	152	1.82C	0.00	-0.12	0.06	-0.01	0.08	0.00	0.00	0.37
	153	1.82C	0.00	0.01	-0.07	0.01	-0.05	@ 0.000	@ 0.000	@ 0.566
245	153	1.70C	0.00	-0.11	-0.07	-0.02	0.18	0.00	0.00	0.77
	154	1.70C	0.00	0.02	-0.20	0.01	-0.21	@ 0.000	@ 0.000	@ 1.495
246	162	1.81C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.69
	163	1.81C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.485
247	163	1.72C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.36
	164	1.72C	0.00	0.00	0.06	0.00	0.08	@ 0.000	@ 0.000	@ 1.414

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 150

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)										
Member No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	1.59C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.37
	165	1.59C	0.00	0.00	-0.07	0.00	-0.05	@ 0.000	@ 0.000	@ 0.586
249	165	1.43C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.78
	166	1.43C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.495
306	10	8.03T	0.00	-0.16	0.52	-0.02	-0.36	0.00	0.00	1.20
	11	8.03T	0.00	0.02	0.34	0.01	0.32	@ 0.000	@ 0.000	@ 0.485
307	11	6.05T	0.00	-0.16	0.33	-0.02	-0.13	0.00	0.00	0.67
	12	6.05T	0.00	0.02	0.15	0.02	0.17	@ 0.000	@ 0.000	@ 1.475
308	22	1.39C	0.00	0.00	0.52	0.00	-0.36	0.00	0.00	1.20
	23	1.39C	0.00	0.00	0.34	0.00	0.32	@ 0.000	@ 0.000	@ 0.485
309	23	1.32C	0.00	-0.01	0.33	0.00	-0.13	0.00	0.00	0.67
	24	1.32C	0.00	-0.01	0.15	0.01	0.17	@ 0.000	@ 0.000	@ 1.475
312	34	11.64C	0.00	-0.15	0.09	-0.03	0.10	0.00	0.00	0.44
	35	11.64C	0.00	0.02	-0.08	0.02	-0.07	@ 0.000	@ 0.000	@ 0.566
313	35	10.31C	0.00	-0.15	-0.09	-0.04	0.24	0.00	0.00	1.11
	36	10.31C	0.00	0.04	-0.27	0.03	-0.30	@ 0.000	@ 0.000	@ 1.495
314	46	2.37C	0.00	0.00	0.09	0.00	0.10	0.00	0.00	0.45
	47	2.37C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
315	47	2.13C	0.00	0.00	-0.09	0.00	0.24	0.00	0.00	1.12
	48	2.13C	0.00	0.00	-0.27	0.00	-0.30	@ 0.000	@ 0.000	@ 1.495
318	58	2.90C	0.00	-0.10	0.40	-0.03	-0.28	0.00	0.00	0.93
	59	2.90C	0.00	0.03	0.27	0.03	0.25	@ 0.000	@ 0.000	@ 0.465
319	59	2.71C	0.00	-0.09	0.26	-0.05	-0.12	0.00	0.00	0.48
	60	2.71C	0.00	0.05	0.13	0.05	0.14	@ 0.000	@ 0.000	@ 1.515
320	70	2.42C	0.00	0.00	0.40	0.00	-0.28	0.00	0.00	0.93
	71	2.42C	0.00	0.00	0.27	0.00	0.25	@ 0.000	@ 0.000	@ 0.465
321	71	2.27C	0.00	0.00	0.26	0.00	-0.12	0.00	0.00	0.48
	72	2.27C	0.00	0.00	0.13	0.01	0.14	@ 0.000	@ 0.000	@ 1.515
324	82	2.91C	0.00	-0.10	0.06	-0.03	0.08	0.00	0.00	0.36
	83	2.91C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.545
325	83	2.71C	0.00	-0.09	-0.07	-0.04	0.19	0.00	0.00	0.93
	84	2.71C	0.00	0.04	-0.21	0.04	-0.23	@ 0.000	@ 0.000	@ 1.475
326	94	2.44C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.36
	95	2.44C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.545
327	95	2.19C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.94
	96	2.19C	0.00	0.00	-0.21	0.01	-0.23	@ 0.000	@ 0.000	@ 1.475
330	106	2.91C	0.00	-0.10	0.40	-0.03	-0.28	0.00	0.00	0.92
	107	2.91C	0.00	0.03	0.26	0.03	0.25	@ 0.000	@ 0.000	@ 0.465

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 151

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)										
Member No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	2.71C	0.00	-0.09	0.26	-0.04	-0.11	0.00	0.00	0.48
	108	2.71C	0.00	0.04	0.12	0.04	0.13	@ 0.000	@ 0.000	@ 1.515
332	118	2.42C	0.00	0.00	0.40	0.00	-0.28	0.00	0.00	0.92
	119	2.42C	0.00	0.00	0.26	0.00	0.25	@ 0.000	@ 0.000	@ 0.465
333	119	2.27C	0.00	0.00	0.26	0.00	-0.11	0.00	0.00	0.47
	120	2.27C	0.00	0.00	0.12	0.01	0.13	@ 0.000	@ 0.000	@ 1.495
336	130	2.85C	0.00	-0.10	0.06	-0.03	0.08	0.00	0.00	0.36
	131	2.85C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.545
337	131	2.67C	0.00	-0.09	-0.07	-0.05	0.19	0.00	0.00	0.92
	132	2.67C	0.00	0.04	-0.21	0.04	-0.23	@ 0.000	@ 0.000	@ 1.475
338	142	2.39C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.36
	143	2.39C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.545
339	143	2.16C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.92
	144	2.16C	0.00	0.00	-0.21	0.01	-0.23	@ 0.000	@ 0.000	@ 1.475
342	154	1.57C	0.00	-0.10	0.41	-0.03	-0.29	0.00	0.00	0.97
	155	1.57C	0.00	0.03	0.27	0.03	0.26	@ 0.000	@ 0.000	@ 0.485
343	155	1.44C	0.00	-0.09	0.27	-0.04	-0.12	0.00	0.00	0.57
	156	1.44C	0.00	0.04	0.14	0.04	0.15	@ 0.000	@ 0.000	@ 1.495
344	166	1.32C	0.00	0.01	0.41	-0.01	-0.29	0.00	0.00	0.97
	167	1.32C	0.00	0.01	0.27	0.01	0.26	@ 0.000	@ 0.000	@ 0.485
345	167	1.25C	0.00	0.01	0.27	0.00	-0.12	0.00	0.00	0.56
	168	1.25C	0.00	0.01	0.13	0.01	0.15	@ 0.000	@ 0.000	@ 1.495
412	12	3.00T	0.00	-0.16	0.15	-0.03	0.07	0.00	0.00	0.63
	169	3.00T	0.00	0.03	-0.04	0.03	-0.01	@ 0.000	@ 0.000	@ 0.788
413	169	0.70C	0.00	-0.24	0.24	-0.03	0.43	0.00	0.00	1.17
	183	0.70C	0.00	0.31	-1.11	0.03	-0.43	@ 0.000	@ 0.000	@ 0.429
414	24	1.20C	0.00	-0.08	0.15	0.07	0.07	0.00	0.00	0.64
	170	1.20C	0.00	-0.08	-0.04	-0.08	-0.01	@ 0.000	@ 0.000	@ 0.788
415	170	0.69C	0.00	0.06	0.24	-0.07	0.43		0.00	1.16
	184	0.69C	0.00	0.06	-1.11	0.06	-0.43	@ 0.000	@ 0.000	@ 0.429
416	36	7.98C	0.00	-0.14	0.71	-0.05	-0.51	0.00	0.00	1.57
	171	7.98C	0.00	0.04	0.52	0.04	0.53	@ 0.000	@ 0.000	@ 1.556
417	171	4.28C	0.00	-0.22	0.20	-0.05	0.49	0.00	0.00	1.63
	185	4.28C	0.00	0.33	-1.16	0.06	-0.44	@ 0.000	@ 0.000	@ 0.469
418	48	1.99C	0.00	-0.08	0.71	0.08	-0.51	0.00	0.00	1.59
	172	1.99C	0.00	-0.08	0.52	-0.08	0.53	@ 0.000	@ 0.000	@ 1.555
419	172	1.22C	0.00	0.07	0.20	-0.07	0.49	0.00	0.00	1.62
	186	1.22C	0.00	0.07	-1.15	0.07	-0.44	@ 0.000	@ 0.000	@ 0.469

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 152

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)										
Member No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	2.51C	0.00	-0.08	0.18	-0.06	-0.01	0.00	0.00	0.57
	173	2.51C	0.00	0.06	0.03	0.06	0.06	@ 0.000	@ 0.000	@ 1.192
421	173	1.26C	0.00	-0.14	0.21	-0.07	0.42	0.00	0.00	1.20
	187	1.26C	0.00	0.29	-1.05	0.08	-0.41	@ 0.000	@ 0.000	@ 0.429
422	72	2.08C	0.00	-0.07	0.18	0.07	-0.01	0.00	0.00	0.59
	174	2.08C	0.00	-0.07	0.04	-0.08	0.06	@ 0.000	@ 0.000	@ 1.212
423	174	1.24C	0.00	0.07	0.21	-0.08	0.42	0.00	0.00	1.19
	188	1.24C	0.00	0.07	-1.05	0.07	-0.41	@ 0.000	@ 0.000	@ 0.429
424	84	2.51C	0.00	-0.08	0.63	-0.05	-0.48	0.00	0.00	1.51
	175	2.51C	0.00	0.05	0.49	0.05	0.50	@ 0.000	@ 0.000	@ 1.556
425	175	1.26C	0.00	-0.15	0.17	-0.06	0.47	0.00	0.00	1.57
	189	1.26C	0.00	0.28	-1.09	0.07	-0.43	@ 0.000	@ 0.000	@ 0.469
426	96	2.03C	0.00	-0.08	0.63	0.07	-0.48	0.00	0.00	1.53
	176	2.03C	0.00	-0.08	0.49	-0.08	0.51	@ 0.000	@ 0.000	@ 1.555
427	176	1.24C	0.00	0.07	0.17	-0.08	0.47	0.00	0.00	1.55
	190	1.24C	0.00	0.07	-1.09	0.07	-0.43	@ 0.000	@ 0.000	@ 0.469
428	108	2.51C	0.00	-0.08	0.17	-0.05	0.00	0.00	0.00	0.54
	177	2.51C	0.00	0.05	0.03	0.05	0.05	@ 0.000	@ 0.000	@ 1.172
429	177	1.26C	0.00	-0.15	0.22	-0.06	0.41	0.00	0.00	1.15
	191	1.26C	0.00	0.29	-1.04	0.07	-0.39	@ 0.000	@ 0.000	@ 0.429
430	120	2.08C	0.00	-0.08	0.17	0.07	0.00	0.00	0.00	0.56
	178	2.08C	0.00	-0.08	0.03	-0.08	0.06	@ 0.000	@ 0.000	@ 1.172
431	178	1.24C	0.00	0.07	0.22	-0.08	0.40	0.00	0.00	1.14
	192	1.24C	0.00	0.07	-1.04	0.07	-0.40	@ 0.000	@ 0.000	@ 0.429
432	132	2.49C	0.00	-0.08	0.62	-0.06	-0.46	0.00	0.00	1.47
	179	2.49C	0.00	0.05	0.48	0.05	0.49	@ 0.000	@ 0.000	@ 1.556
433	179	1.24C	0.00	-0.15	0.18	-0.07	0.46	0.00	0.00	1.52
	193	1.24C	0.00	0.29	-1.07	0.07	-0.41	@ 0.000	@ 0.000	@ 0.469
434	144	2.00C	0.00	-0.07	0.62	0.07	-0.47	0.00	0.00	1.49
	180	2.00C	0.00	-0.07	0.48	-0.08	0.49	@ 0.000	@ 0.000	@ 1.555
435	180	1.23C	0.00	0.07	0.19	-0.08	0.46	0.00	0.00	1.50
	194	1.23C	0.00	0.07	-1.07	0.07	-0.41	@ 0.000	@ 0.000	@ 0.469
436	156	1.31C	0.00	-0.09	0.13	-0.05	0.03	0.00	0.00	0.54
	181	1.31C	0.00	0.05	-0.01	0.05	0.02	@ 0.000	@ 0.000	@ 0.929
437	181	0.65C	0.00	-0.15	0.24	-0.06	0.39	0.00	0.00	1.07
	195	0.65C	0.00	0.28	-1.02	0.07	-0.38	@ 0.000	@ 0.000	@ 0.429
438	168	1.15C	0.00	-0.07	0.13	0.07	0.03	0.00	0.00	0.55
	182	1.15C	0.00	-0.07	-0.01	-0.07	0.02	@ 0.000	@ 0.000	@ 0.949

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Job Ref : B11323

Sheet : SD / 153

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Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	0.67C	0.00	0.07	0.24	-0.08	0.39	0.00	0.00	1.06
	196	0.67C	0.00	0.07	-1.02	0.07	-0.38	@ 0.000	@ 0.000	@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.844	18.336	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.112	0.000	-0.221
3	0.000	0.000	0.000	0.129	0.000	-0.016
4	0.000	0.000	0.000	0.000	0.000	-0.042
5	0.000	0.000	0.000	-0.132	0.000	-0.040
6	0.000	0.000	0.000	0.000	0.000	-0.032
7	0.000	0.000	0.000	0.140	0.000	-0.019
9	0.000	0.000	0.000	-0.139	0.000	0.016
10	0.000	0.000	0.000	0.034	0.000	0.035
11	0.000	0.000	0.000	0.206	0.000	0.054
12	0.000	0.000	0.000	0.053	0.000	0.067
13	-0.021	2.555	-0.179	0.000	0.000	0.000
14	0.020	0.000	0.758	0.065	0.000	0.000
15	0.000	0.000	0.000	0.135	0.000	0.000
16	0.000	0.000	0.000	0.010	0.000	0.000
17	0.000	0.000	0.000	-0.133	0.000	0.000
18	-3.652	0.000	1.320	0.000	0.000	0.000
19	0.000	0.000	0.000	0.142	0.000	0.000
21	0.000	0.000	0.000	-0.140	0.000	0.000
22	-3.801	0.000	1.569	0.036	0.000	0.000
23	0.000	0.000	0.000	0.207	0.000	0.000
24	0.000	0.000	0.000	0.053	0.000	-0.025
25	1.078	-11.640	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.035	0.000	-0.172
27	0.000	0.000	0.000	0.000	0.000	-0.014
28	0.000	0.000	0.000	0.062	0.000	-0.028
29	0.000	0.000	0.000	0.115	0.000	-0.026
30	0.000	0.000	0.000	-0.014	0.000	-0.020
31	0.000	0.000	0.000	-0.120	0.000	-0.011
33	0.000	0.000	0.000	0.120	0.000	0.012
34	0.000	0.000	0.000	0.000	0.000	0.025
35	0.000	0.000	0.000	-0.127	0.000	0.037
36	0.000	0.000	0.000	0.096	0.000	0.046
37	-0.014	4.088	-0.051	0.000	0.000	0.000
38	0.013	0.000	0.312	0.019	0.000	0.000
40	-2.071	0.000	0.941	0.062	0.000	0.000
41	0.000	0.000	0.000	0.116	0.000	0.000
42	0.000	0.000	0.000	-0.013	0.000	0.000
43	0.000	0.000	0.000	-0.121	0.000	0.000
44	-2.192	0.000	1.321	0.000	0.000	0.000
45	0.000	0.000	0.000	0.121	0.000	0.000
47	0.000	0.000	0.000	-0.128	0.000	0.000
48	-6.404	0.000	1.997	0.097	0.000	-0.020
49	0.963	4.667	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.081	0.000	-0.168
51	0.000	0.000	0.000	0.089	0.000	0.000
52	0.000	0.000	0.000	0.000	0.000	-0.016
53	0.000	0.000	0.000	-0.090	0.000	-0.014

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

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Job Ref : B11323

Sheet : SD / 154

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
54	0.000	0.000	0.000	0.000	0.000	-0.011
55	0.000	0.000	0.000	0.091	0.000	0.000
57	0.000	0.000	0.000	-0.095	0.000	0.000
58	0.000	0.000	0.000	0.030	0.000	0.016
59	0.000	0.000	0.000	0.153	0.000	0.022
60	0.000	0.000	0.000	0.071	0.000	0.027
61	-0.014	4.267	-0.129	0.000	0.000	0.000
62	0.014	0.000	0.555	0.047	0.000	0.000
63	0.000	0.000	0.000	0.093	0.000	0.000
65	0.000	0.000	0.000	-0.090	0.000	0.000
66	1.449	0.000	0.991	0.000	0.000	0.000
67	0.000	0.000	0.000	0.092	0.000	0.000
69	0.000	0.000	0.000	-0.095	0.000	0.000
70	1.620	0.000	1.210	0.031	0.000	0.000
71	0.000	0.000	0.000	0.154	0.000	0.000
72	0.000	0.000	0.000	0.072	0.000	-0.024
73	0.934	4.727	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.027	0.000	-0.165
75	0.000	0.000	0.000	0.000	0.000	-0.013
76	0.000	0.000	0.000	0.048	0.000	-0.024
77	0.000	0.000	0.000	0.090	0.000	-0.023
78	0.000	0.000	0.000	0.000	0.000	-0.019
79	0.000	0.000	0.000	-0.094	0.000	-0.012
81	0.000	0.000	0.000	0.092	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.018
83	0.000	0.000	0.000	-0.098	0.000	0.028
84	0.000	0.000	0.000	0.113	0.000	0.035
85	-0.014	4.277	-0.039	0.000	0.000	0.000
86	0.013	0.000	0.234	0.014	0.000	0.000
88	-0.020	0.000	0.727	0.049	0.000	0.000
89	0.000	0.000	0.000	0.090	0.000	0.000
91	0.000	0.000	0.000	-0.093	0.000	0.000
92	-0.019	0.000	1.015	0.000	0.000	0.000
93	0.000	0.000	0.000	0.092	0.000	0.000
95	0.000	0.000	0.000	-0.097	0.000	0.000
96	0.293	0.000	1.772	0.114	0.000	-0.024
97	0.914	4.730	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.080	0.000	-0.162
99	0.000	0.000	0.000	0.090	0.000	-0.013
100	0.000	0.000	0.000	0.000	0.000	-0.024
101	0.000	0.000	0.000	-0.091	0.000	-0.023
102	0.000	0.000	0.000	0.000	0.000	-0.018
103	0.000	0.000	0.000	0.093	0.000	-0.011
105	0.000	0.000	0.000	-0.096	0.000	0.000
106	0.000	0.000	0.000	0.029	0.000	0.018
107	0.000	0.000	0.000	0.151	0.000	0.027
108	0.000	0.000	0.000	0.067	0.000	0.035
109	-0.014	4.276	-0.129	0.000	0.000	0.000
110	0.013	0.000	0.555	0.047	0.000	0.000
111	0.000	0.000	0.000	0.093	0.000	0.000
113	0.000	0.000	0.000	-0.091	0.000	0.000
114	-0.019	0.000	0.979	0.000	0.000	0.000
115	0.000	0.000	0.000	0.093	0.000	0.000
117	0.000	0.000	0.000	-0.096	0.000	0.000
118	-0.019	0.000	1.188	0.029	0.000	0.000
119	0.000	0.000	0.000	0.152	0.000	0.000
120	0.000	0.000	0.000	0.068	0.000	-0.023
121	0.907	4.622	0.000	0.000	0.000	0.000

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 155

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
122	0.000	0.000	0.000	0.027	0.000	-0.158
123	0.000	0.000	0.000	0.000	0.000	-0.014
124	0.000	0.000	0.000	0.048	0.000	-0.024
125	0.000	0.000	0.000	0.089	0.000	-0.023
126	0.000	0.000	0.000	0.000	0.000	-0.019
127	0.000	0.000	0.000	-0.093	0.000	-0.013
129	0.000	0.000	0.000	0.092	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.015
131	0.000	0.000	0.000	-0.097	0.000	0.025
132	0.000	0.000	0.000	0.107	0.000	0.032
133	-0.013	4.184	-0.039	0.000	0.000	0.000
134	0.012	0.000	0.234	0.014	0.000	0.000
136	2.081	0.000	0.717	0.048	0.000	0.000
137	0.000	0.000	0.000	0.090	0.000	0.000
139	0.000	0.000	0.000	-0.093	0.000	0.000
140	2.211	0.000	1.005	0.000	0.000	0.000
141	0.000	0.000	0.000	0.092	0.000	0.000
143	0.000	0.000	0.000	-0.097	0.000	0.000
144	6.172	0.000	1.691	0.108	0.000	-0.025
145	0.803	2.630	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.084	0.000	-0.196
147	0.000	0.000	0.000	0.096	0.000	-0.015
148	0.000	0.000	0.000	0.000	0.000	-0.032
149	0.000	0.000	0.000	-0.101	0.000	-0.030
150	0.000	0.000	0.000	0.000	0.000	-0.025
151	0.000	0.000	0.000	0.103	0.000	-0.017
153	0.000	0.000	0.000	-0.108	0.000	0.000
154	0.000	0.000	0.000	0.033	0.000	0.019
155	0.000	0.000	0.000	0.170	0.000	0.031
156	0.000	0.000	0.000	0.055	0.000	0.040
157	-0.022	2.392	-0.133	0.000	0.000	0.000
158	0.020	0.000	0.571	0.049	0.000	0.000
159	0.000	0.000	0.000	0.100	0.000	0.000
161	0.000	0.000	0.000	-0.100	0.000	0.000
162	2.196	0.000	0.987	0.000	0.000	0.000
163	0.000	0.000	0.000	0.104	0.000	0.000
165	0.000	0.000	0.000	-0.107	0.000	0.000
166	2.187	0.000	1.215	0.033	0.000	0.000
167	0.000	0.000	0.000	0.171	0.000	0.000
168	0.000	0.000	0.000	0.056	0.000	-0.033
169	0.000	0.000	0.000	-0.198	0.000	0.081
170	0.000	0.000	0.000	-0.203	0.000	0.000
171	0.000	0.000	0.000	0.017	0.000	0.055
172	0.000	0.000	0.000	0.017	0.000	0.000
173	0.000	0.000	0.000	-0.156	0.000	0.033
174	0.000	0.000	0.000	-0.163	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.044
177	0.000	0.000	0.000	-0.152	0.000	0.043
178	0.000	0.000	0.000	-0.159	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.041
181	0.000	0.000	0.000	-0.171	0.000	0.050
182	0.000	0.000	0.000	-0.175	0.000	0.000
183	0.000	0.000	0.000	-0.207	0.000	0.074
184	1.468	0.000	3.092	-0.206	0.000	0.048
185	0.000	0.000	0.000	-0.221	0.000	0.041
186	0.000	0.000	0.000	-0.219	0.000	0.030
187	0.000	0.000	0.000	-0.205	0.000	0.013
188	2.407	0.000	4.639	-0.204	0.000	0.027

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 156

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
189	0.000	0.000	0.000	-0.210	0.000	0.028
190	0.000	0.000	0.000	-0.209	0.000	0.028
191	0.000	0.000	0.000	-0.197	0.000	0.027
192	1.556	0.000	4.514	-0.196	0.000	0.028
193	0.000	0.000	0.000	-0.204	0.000	0.023
194	0.000	0.000	0.000	-0.202	0.000	0.024
195	0.000	0.000	0.000	-0.191	0.000	0.030
196	0.626	0.000	2.785	-0.190	0.000	0.033
Total	13.033	55.626	38.194	-0.552	0.000	-0.620

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Job Ref : B11323

Sheet : SD / 157

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L5	Live Load
Load Group L6	Live Load
Load Group L7	Live Load
Load Group L8	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.064	2	2.500	0.064
3	4.500	0.064	4	6.500	0.064	5	8.500	0.064
6	10.500	0.064	7	12.500	0.064	8	14.500	0.064
9	16.500	0.064	10	18.500	0.064	11	20.500	0.064
12	22.500	0.464	13	24.500	0.597			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.004	3	0.004	4	0.004
5	0.004	6	0.004	7	0.004	8	0.004
9	0.004	10	0.004	11	0.004	12	0.004
13	0.000	14	0.003	15	0.003	16	0.003
17	0.003	18	0.003	19	0.003	20	0.003
21	0.003	22	0.003	23	0.003	24	0.003
25	0.000	26	0.006	27	0.006	28	0.006
29	0.006	30	0.006	31	0.006	32	0.006
33	0.006	34	0.006	35	0.006	36	0.006
37	0.000	38	0.005	39	0.005	40	0.005
41	0.005	42	0.005	43	0.005	44	0.005
45	0.005	46	0.005	47	0.005	48	0.005
49	0.000	50	0.005	51	0.005	52	0.005
53	0.005	54	0.005	55	0.005	56	0.005
57	0.005	58	0.005	59	0.005	60	0.005
61	0.000	62	0.005	63	0.005	64	0.005
65	0.005	66	0.005	67	0.005	68	0.005
69	0.005	70	0.005	71	0.005	72	0.005
73	0.000	74	0.005	75	0.005	76	0.005
77	0.005	78	0.005	79	0.005	80	0.005
81	0.005	82	0.005	83	0.005	84	0.005
85	0.000	86	0.005	87	0.005	88	0.005
89	0.005	90	0.005	91	0.005	92	0.005
93	0.005	94	0.005	95	0.005	96	0.005
97	0.000	98	0.005	99	0.005	100	0.005
101	0.005	102	0.005	103	0.005	104	0.005
105	0.005	106	0.005	107	0.005	108	0.005
109	0.000	110	0.005	111	0.005	112	0.005
113	0.005	114	0.005	115	0.005	116	0.005
117	0.005	118	0.005	119	0.005	120	0.005
121	0.000	122	0.005	123	0.005	124	0.005

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 158****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

125	0.005	126	0.005	127	0.005	128	0.005
129	0.005	130	0.005	131	0.005	132	0.005
133	0.000	134	0.005	135	0.005	136	0.005
137	0.005	138	0.005	139	0.005	140	0.005
141	0.005	142	0.005	143	0.005	144	0.005
145	0.000	146	0.003	147	0.003	148	0.003
149	0.003	150	0.003	151	0.003	152	0.003
153	0.003	154	0.003	155	0.003	156	0.003
157	0.000	158	0.003	159	0.003	160	0.003
161	0.003	162	0.003	163	0.003	164	0.003
165	0.003	166	0.003	167	0.003	168	0.003
169	0.017	170	0.015	171	0.042	172	0.029
173	0.051	174	0.029	175	0.051	176	0.029
177	0.051	178	0.029	179	0.051	180	0.029
181	0.026	182	0.015	183	0.027	184	0.024
185	0.052	186	0.048	187	0.051	188	0.048
189	0.051	190	0.048	191	0.051	192	0.048
193	0.051	194	0.048	195	0.026	196	0.024

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 N1

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L5 + 0.25 L7 + 1.00 W4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 W2

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L5 + 0.25 L7 + 1.00 W5

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	1.800	0.000	0.000	26	1.800	0.500	0.000
27	1.800	2.500	0.000	28	1.800	4.500	0.000
29	1.800	6.500	0.000	30	1.800	8.500	0.000
31	1.800	10.500	0.000	32	1.800	12.500	0.000
33	1.800	14.500	0.000	34	1.800	16.500	0.000
35	1.800	18.500	0.000	36	1.800	20.500	0.000
37	1.800	0.000	1.300	38	1.800	0.500	1.300
39	1.800	2.500	1.300	40	1.800	4.500	1.300
41	1.800	6.500	1.300	42	1.800	8.500	1.300
43	1.800	10.500	1.300	44	1.800	12.500	1.300
45	1.800	14.500	1.300	46	1.800	16.500	1.300
47	1.800	18.500	1.300	48	1.800	20.500	1.300
49	3.600	0.000	0.000	50	3.600	0.500	0.000
51	3.600	2.500	0.000	52	3.600	4.500	0.000
53	3.600	6.500	0.000	54	3.600	8.500	0.000
55	3.600	10.500	0.000	56	3.600	12.500	0.000
57	3.600	14.500	0.000	58	3.600	16.500	0.000
59	3.600	18.500	0.000	60	3.600	20.500	0.000
61	3.600	0.000	1.300	62	3.600	0.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 159****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	3.600	2.500	1.300	64	3.600	4.500	1.300
65	3.600	6.500	1.300	66	3.600	8.500	1.300
67	3.600	10.500	1.300	68	3.600	12.500	1.300
69	3.600	14.500	1.300	70	3.600	16.500	1.300
71	3.600	18.500	1.300	72	3.600	20.500	1.300
73	5.400	0.000	0.000	74	5.400	0.500	0.000
75	5.400	2.500	0.000	76	5.400	4.500	0.000
77	5.400	6.500	0.000	78	5.400	8.500	0.000
79	5.400	10.500	0.000	80	5.400	12.500	0.000
81	5.400	14.500	0.000	82	5.400	16.500	0.000
83	5.400	18.500	0.000	84	5.400	20.500	0.000
85	5.400	0.000	1.300	86	5.400	0.500	1.300
87	5.400	2.500	1.300	88	5.400	4.500	1.300
89	5.400	6.500	1.300	90	5.400	8.500	1.300
91	5.400	10.500	1.300	92	5.400	12.500	1.300
93	5.400	14.500	1.300	94	5.400	16.500	1.300
95	5.400	18.500	1.300	96	5.400	20.500	1.300
97	7.200	0.000	0.000	98	7.200	0.500	0.000
99	7.200	2.500	0.000	100	7.200	4.500	0.000
101	7.200	6.500	0.000	102	7.200	8.500	0.000
103	7.200	10.500	0.000	104	7.200	12.500	0.000
105	7.200	14.500	0.000	106	7.200	16.500	0.000
107	7.200	18.500	0.000	108	7.200	20.500	0.000
109	7.200	0.000	1.300	110	7.200	0.500	1.300
111	7.200	2.500	1.300	112	7.200	4.500	1.300
113	7.200	6.500	1.300	114	7.200	8.500	1.300
115	7.200	10.500	1.300	116	7.200	12.500	1.300
117	7.200	14.500	1.300	118	7.200	16.500	1.300
119	7.200	18.500	1.300	120	7.200	20.500	1.300
121	9.000	0.000	0.000	122	9.000	0.500	0.000
123	9.000	2.500	0.000	124	9.000	4.500	0.000
125	9.000	6.500	0.000	126	9.000	8.500	0.000
127	9.000	10.500	0.000	128	9.000	12.500	0.000
129	9.000	14.500	0.000	130	9.000	16.500	0.000
131	9.000	18.500	0.000	132	9.000	20.500	0.000
133	9.000	0.000	1.300	134	9.000	0.500	1.300
135	9.000	2.500	1.300	136	9.000	4.500	1.300
137	9.000	6.500	1.300	138	9.000	8.500	1.300
139	9.000	10.500	1.300	140	9.000	12.500	1.300
141	9.000	14.500	1.300	142	9.000	16.500	1.300
143	9.000	18.500	1.300	144	9.000	20.500	1.300
145	10.800	0.000	0.000	146	10.800	0.500	0.000
147	10.800	2.500	0.000	148	10.800	4.500	0.000
149	10.800	6.500	0.000	150	10.800	8.500	0.000
151	10.800	10.500	0.000	152	10.800	12.500	0.000
153	10.800	14.500	0.000	154	10.800	16.500	0.000
155	10.800	18.500	0.000	156	10.800	20.500	0.000
157	10.800	0.000	1.300	158	10.800	0.500	1.300
159	10.800	2.500	1.300	160	10.800	4.500	1.300
161	10.800	6.500	1.300	162	10.800	8.500	1.300
163	10.800	10.500	1.300	164	10.800	12.500	1.300
165	10.800	14.500	1.300	166	10.800	16.500	1.300
167	10.800	18.500	1.300	168	10.800	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	1.800	22.500	0.000	172	1.800	22.500	1.300
173	3.600	22.500	0.000	174	3.600	22.500	1.300
175	5.400	22.500	0.000	176	5.400	22.500	1.300
177	7.200	22.500	0.000	178	7.200	22.500	1.300
179	9.000	22.500	0.000	180	9.000	22.500	1.300
181	10.800	22.500	0.000	182	10.800	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	1.800	24.500	0.000	186	1.800	24.500	1.300
187	3.600	24.500	0.000	188	3.600	24.500	1.300
189	5.400	24.500	0.000	190	5.400	24.500	1.300
191	7.200	24.500	0.000	192	7.200	24.500	1.300
193	9.000	24.500	0.000	194	9.000	24.500	1.300
195	10.800	24.500	0.000	196	10.800	24.500	1.300

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M 48.3x3.2 CHS 3.56 [S 355]
 A 4.53E-4 Ix 11.59E-8 Iy 11.59E-8 J 23.17E-8
 E 205.0E6 G 78.85E6

Member Loading**Members 2 and 17**

W1 PZ -000.013 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.072 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.013 0.000 (kN,m)
 W5 PX -000.071 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 3 and 18

W1 PZ -000.027 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.148 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.026 0.000 (kN,m)
 W5 PX -000.147 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 4 and 19

W1 PZ -000.028 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.152 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.027 0.000 (kN,m)
 W5 PX -000.152 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 5 and 20

W1 PZ -000.029 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.157 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.028 0.000 (kN,m)
 W5 PX -000.156 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 7 and 22

W1 PZ -000.013 0.000 (kN,m)
 W4 PZ -000.072 0.000 (kN,m)

Members 8 and 23

W1 PZ -000.027 0.000 (kN,m)
 W4 PZ -000.148 0.000 (kN,m)

Members 9 and 24

W1 PZ -000.028 0.000 (kN,m)
 W4 PZ -000.152 0.000 (kN,m)

Members 10 and 25

W1 PZ -000.029 0.000 (kN,m)
 W4 PZ -000.157 0.000 (kN,m)

Members 11 and 26

D1 PY -000.026 1.275 (kN,m)
 D1 PY -000.026 0.025 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 161****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 12-15, 27-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

D1 PY -000.026 0.025 (kN, m)
D1 PY -000.026 1.275 (kN, m)

Members 32, 47, 92, 121 and 136

W1 PZ -000.009 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.054 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.009 0.000 (kN, m)
W5 PX -000.051 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 33, 48, 93, 122 and 137

W1 PZ -000.020 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.111 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.106 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 34, 49, 94, 123 and 138

W1 PZ -000.021 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.115 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.109 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 35, 50, 95, 124 and 139

W1 PZ -000.022 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.118 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.020 0.000 (kN, m)
W5 PX -000.112 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 37, 52, 97, 126 and 141

W1 PZ -000.009 0.000 (kN, m)
W4 PZ -000.054 0.000 (kN, m)

Members 38, 53, 98, 127 and 142

W1 PZ -000.020 0.000 (kN, m)
W4 PZ -000.111 0.000 (kN, m)

Members 39, 54, 99, 128 and 143

W1 PZ -000.021 0.000 (kN, m)
W4 PZ -000.115 0.000 (kN, m)

Members 40, 55, 100, 129 and 144

W1 PZ -000.022 0.000 (kN, m)
W4 PZ -000.118 0.000 (kN, m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY -000.143 0.025 (kN, m)
D1 PY -000.143 1.775 (kN, m)

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359 and 361-371

D1 PY -000.090 0.025 (kN, m)
D1 PY -000.090 1.775 (kN, m)

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W1 PZ	-000.029	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.161	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.161	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 171 and 183

W1 PZ	-000.030	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.166	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.165	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 172 and 184

W1 PZ	-000.031	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.170	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.030	0.000	(kN,m)
W5 PX	-000.170	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 173 and 185

W1 PZ	-000.032	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.175	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.031	0.000	(kN,m)
W5 PX	-000.174	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 174 and 186

W1 PZ	-000.029	0.000	(kN,m)
W4 PZ	-000.161	0.000	(kN,m)

Members 175 and 187

W1 PZ	-000.030	0.000	(kN,m)
W4 PZ	-000.166	0.000	(kN,m)

Members 176 and 188

W1 PZ	-000.031	0.000	(kN,m)
W4 PZ	-000.170	0.000	(kN,m)

Members 177 and 189

W1 PZ	-000.032	0.000	(kN,m)
W4 PZ	-000.175	0.000	(kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.121	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 195, 207, 219, 231 and 243

W1 PZ	-000.023	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)

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W4 PZ	-000.125	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.021	0.000	(kN, m)
W5 PX	-000.119	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.023	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.128	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.122	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.024	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.125	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.022	0.000	(kN, m)
W4 PZ	-000.121	0.000	(kN, m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.023	0.000	(kN, m)
W4 PZ	-000.125	0.000	(kN, m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.023	0.000	(kN, m)
W4 PZ	-000.128	0.000	(kN, m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.024	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)

Members 306 and 312

W1 PZ	-000.033	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.179	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.032	0.000	(kN, m)
W5 PX	-000.178	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 307 and 313

W1 PZ	-000.034	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.184	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.033	0.000	(kN, m)
W5 PX	-000.183	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 308 and 314

W1 PZ	-000.033	0.000	(kN, m)
W4 PZ	-000.179	0.000	(kN, m)

Members 309 and 315

W1 PZ	-000.034	0.000	(kN, m)
W4 PZ	-000.184	0.000	(kN, m)

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W1 PZ	-000.025	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.135	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.128	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1 PZ	-000.025	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.138	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1 PZ	-000.025	0.000	(kN,m)
W4 PZ	-000.135	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1 PZ	-000.025	0.000	(kN,m)
W4 PZ	-000.138	0.000	(kN,m)

Member 381

D1 PY	-000.292	0.025	(kN,m)
D1 PY	-000.292	1.775	(kN,m)
L2 PY	-001.013	0.025	(kN,m)
L2 PY	-001.013	1.775	(kN,m)
L6 PY	-000.759	0.025	(kN,m)
L6 PY	-000.759	1.775	(kN,m)
G2 PY	-001.519	0.025	(kN,m)
G2 PY	-001.519	1.775	(kN,m)

Members 382-386

D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L2 PY	-001.013	0.025	(kN,m)
L2 PY	-001.013	1.775	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G2 PY	-001.519	0.025	(kN,m)
G2 PY	-001.519	1.775	(kN,m)

Members 387-392

D1 PY	-000.185	0.025	(kN,m)
D1 PY	-000.185	1.775	(kN,m)
L4 PY	-001.013	0.025	(kN,m)
L4 PY	-001.013	1.775	(kN,m)
L8 PY	-000.759	0.025	(kN,m)
L8 PY	-000.759	1.775	(kN,m)
G4 PY	-001.519	0.025	(kN,m)
G4 PY	-001.519	1.775	(kN,m)

Member 400

D1 PY	-000.292	0.025	(kN,m)
D1 PY	-000.292	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Members 401-404

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D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Member 405

D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
N1 PZ	-000.300	1.775	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Members 406-411

D1 PY	-000.185	0.025	(kN,m)
D1 PY	-000.185	1.775	(kN,m)
L3 PY	-001.013	0.025	(kN,m)
L3 PY	-001.013	1.775	(kN,m)
L7 PY	-000.759	0.025	(kN,m)
L7 PY	-000.759	1.775	(kN,m)
G3 PY	-001.519	0.025	(kN,m)
G3 PY	-001.519	1.775	(kN,m)

Members 412 and 416

W1 PZ	-000.035	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.033	0.000	(kN,m)
W5 PX	-000.187	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 413 and 417

W1 PZ	-000.155	0.000	(kN,m)
W1 PZ	-000.158	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.671	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.686	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.058	0.000	(kN,m)
W2 PX	-000.059	2.000	(kN,m)
W5 PX	-000.269	0.000	(kN,m)
W5 PX	-000.275	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 414 and 418

W1 PZ	-000.035	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)

Members 415 and 419

W1 PZ	-000.155	0.000	(kN,m)
W4 PZ	-000.671	0.000	(kN,m)
W1 PZ	-000.158	2.000	(kN,m)
W4 PZ	-000.686	2.000	(kN,m)

Members 420, 424, 428, 432 and 436

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 166****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W1 PZ	-000.026	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.024	0.000	(kN,m)
W5 PX	-000.135	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.622	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.636	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.058	0.000	(kN,m)
W2 PX	-000.059	2.000	(kN,m)
W5 PX	-000.215	0.000	(kN,m)
W5 PX	-000.220	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ	-000.026	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W4 PZ	-000.622	0.000	(kN,m)
W4 PZ	-000.636	2.000	(kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Released	® Fixed			
11	ROO ROO	12	ROO ROO	13	ROO ROO	14	ROO ROO
15	ROO ROO	26	ROO ROO	27	ROO ROO	28	ROO ROO
29	ROO ROO	30	ROO ROO	41	ROO ROO	42	ROO ROO
43	ROO ROO	44	ROO ROO	45	ROO ROO	56	ROO ROO
57	ROO ROO	58	ROO ROO	59	ROO ROO	60	ROO ROO
61	ROO ROO	62	ROO ROO	63	ROO ROO	64	ROO ROO
65	ROO ROO	66	ROO ROO	67	ROO ROO	68	ROO ROO
69	ROO ROO	70	ROO ROO	71	ROO ROO	72	ROO ROO
73	ROO ROO	74	ROO ROO	75	ROO ROO	76	ROO ROO
77	ROO ROO	78	ROO ROO	79	ROO ROO	80	ROO ROO
81	ROO ROO	82	ROO ROO	83	ROO ROO	84	ROO ROO
85	ROO ROO	86	ROO ROO	87	ROO ROO	88	ROO ROO
89	ROO ROO	90	ROO ROO	101	ROO ROO	102	ROO ROO
103	ROO ROO	104	ROO ROO	105	ROO ROO	106	ROO ROO
107	ROO ROO	108	ROO ROO	109	ROO ROO	110	ROO ROO
111	ROO ROO	112	ROO ROO	113	ROO ROO	114	ROO ROO
115	ROO ROO	116	ROO ROO	117	ROO ROO	118	ROO ROO
119	ROO ROO	130	ROO ROO	131	ROO ROO	132	ROO ROO
133	ROO ROO	134	ROO ROO	145	ROO ROO	146	ROO ROO
147	ROO ROO	148	ROO ROO	149	ROO ROO	150	ROO ROO
151	ROO ROO	152	ROO ROO	153	ROO ROO	154	ROO ROO
155	ROO ROO	156	ROO ROO	157	ROO ROO	158	ROO ROO
159	ROO ROO	160	ROO ROO	161	ROO ROO	162	ROO ROO
163	ROO ROO	164	ROO ROO	165	ROO ROO	166	ROO ROO
167	ROO ROO	168	ROO ROO	169	ROO ROO	178	ROO ROO
179	ROO ROO	180	ROO ROO	181	ROO ROO	190	ROO ROO
191	ROO ROO	192	ROO ROO	193	ROO ROO	202	ROO ROO
203	ROO ROO	204	ROO ROO	205	ROO ROO	214	ROO ROO
215	ROO ROO	216	ROO ROO	217	ROO ROO	226	ROO ROO
227	ROO ROO	228	ROO ROO	229	ROO ROO	238	ROO ROO
239	ROO ROO	240	ROO ROO	241	ROO ROO	250	ROO ROO
251	ROO ROO	252	ROO ROO	253	ROO ROO	254	ROO ROO

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 167****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

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259 @ @	260 @ @	261 @ @	262 @ @
263 @ @	264 @ @	265 @ @	266 @ @
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447 @ @	448 @ @	449 @ @	450 @ @
451 @ @	452 @ @	453 @ @	

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0104.050 0000.000 0104.050

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 168

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.54	0.54	-0.06	0.00	0.41	0.41
2	-2.73	-0.12	0.01	2.73	-0.06	0.00	0.12	0.14
3	-3.70	-0.37	-8.56	9.34	-0.07	0.00	0.01	0.07
4	-4.97	-0.49	-11.90	12.91	-0.01	-0.02	0.02	0.03
5	-6.30	-0.52	-8.18	10.34	0.07	-0.02	0.02	0.08
6	-7.48	-0.48	0.04	7.49	-0.01	0.00	0.02	0.02
7	-8.33	-0.54	-8.63	12.01	-0.08	0.00	0.01	0.08
8	-8.72	-0.63	-12.42	15.19	0.00	-0.02	0.00	0.02
9	-8.58	-0.71	-8.55	12.13	0.08	-0.02	-0.01	0.08
10	-7.86	-0.79	0.05	7.90	-0.02	0.01	-0.02	0.03
11	-6.56	-0.85	-11.83	13.56	-0.11	0.01	-0.03	0.12
12	-4.74	-0.92	-18.58	19.19	-0.03	-0.01	-0.04	0.05
13	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
14	0.00	-0.02	0.00	0.02	-0.04	0.00	0.00	0.04
15	0.07	-0.09	-8.56	8.57	-0.07	0.00	0.00	0.07
16	0.08	-0.15	-11.90	11.90	-0.01	0.00	0.00	0.01
17	0.06	-0.21	-8.18	8.19	0.07	0.00	0.00	0.07
18	0.00	-0.27	0.00	0.27	-0.01	0.00	0.00	0.01
19	0.06	-0.34	-8.63	8.64	-0.08	0.00	0.00	0.08
20	0.09	-0.38	-12.42	12.43	0.00	0.00	0.00	0.01
21	0.06	-0.43	-8.55	8.56	0.08	0.00	0.00	0.08
22	0.00	-0.49	0.00	0.49	-0.02	0.00	0.00	0.02
23	0.13	-0.58	-11.83	11.85	-0.12	0.00	-0.01	0.12
24	0.19	-0.64	-18.58	18.59	-0.03	0.01	0.01	0.03
25	0.00	0.00	0.17	0.17	-0.02	0.00	0.40	0.40
26	-2.63	0.05	0.01	2.63	-0.02	0.00	0.10	0.10
27	-3.60	0.30	-1.99	4.12	0.01	-0.01	0.01	0.02
28	-4.88	0.40	0.02	4.90	-0.03	-0.01	0.02	0.04
29	-6.23	0.40	-8.30	10.38	-0.06	-0.01	0.01	0.07
30	-7.43	-0.39	-11.35	13.57	0.01	-0.01	0.01	0.01
31	-8.29	-0.47	-8.05	11.57	0.07	-0.02	0.01	0.07
32	-8.71	-0.55	0.06	8.72	0.00	-0.02	0.00	0.02
33	-8.58	-0.61	-8.35	11.99	-0.07	0.00	-0.01	0.07
34	-7.88	-0.71	-11.58	14.02	0.00	0.00	-0.01	0.02
35	-6.60	-0.88	-7.92	10.35	0.07	-0.03	-0.02	0.08
36	-4.80	-1.11	0.02	4.92	-0.05	-0.03	-0.03	0.07
37	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
38	0.00	-0.03	0.00	0.03	-0.01	0.00	0.00	0.01
39	0.07	-0.13	-1.99	2.00	0.00	0.00	0.00	0.01
40	0.00	-0.24	0.00	0.24	-0.03	0.00	0.00	0.03
41	0.06	-0.34	-8.30	8.30	-0.06	0.01	0.00	0.06
42	0.00	-0.43	-11.35	11.36	0.01	0.01	0.00	0.01
43	0.06	-0.52	-8.05	8.07	0.07	0.01	0.00	0.07
44	0.00	-0.61	0.00	0.61	0.00	0.01	0.00	0.01
45	0.06	-0.70	-8.35	8.38	-0.07	0.01	0.00	0.07
46	0.00	-0.77	-11.58	11.60	0.00	0.01	0.00	0.01
47	0.13	-0.85	-7.92	7.97	0.07	0.02	0.00	0.07
48	0.00	-0.92	0.00	0.92	-0.05	0.02	0.01	0.06
49	0.00	0.00	0.39	0.39	-0.04	0.00	0.39	0.39
50	-2.54	-0.03	0.00	2.54	-0.04	0.00	0.09	0.10
51	-3.61	-0.16	-6.26	7.23	-0.05	0.00	0.00	0.05
52	-4.89	-0.28	-8.59	9.89	0.00	0.00	0.01	0.01
53	-6.24	-0.40	-6.01	8.67	0.05	0.00	0.01	0.05
54	-7.44	-0.52	0.04	7.45	0.00	0.00	0.01	0.01
55	-8.30	-0.63	-6.26	10.42	-0.05	0.00	0.00	0.05
56	-8.72	-0.73	-8.83	12.43	0.00	0.00	0.00	0.00
57	-8.59	-0.83	-6.15	10.60	0.05	0.00	0.00	0.05
58	-7.89	-0.93	0.05	7.94	-0.02	0.00	-0.01	0.02

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 169

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-6.61	-1.03	-9.34	11.49	-0.09	0.00	-0.01	0.09
60	-4.81	-1.12	-15.09	15.88	-0.04	0.00	-0.02	0.04
61	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
62	0.00	-0.03	0.00	0.03	-0.03	0.00	0.00	0.03
63	0.07	-0.14	-6.26	6.26	-0.05	0.00	0.00	0.05
64	0.00	-0.25	-8.59	8.60	0.00	0.00	0.00	0.00
65	0.06	-0.36	-6.01	6.02	0.05	0.00	0.00	0.05
66	0.00	-0.46	0.00	0.46	0.00	0.00	0.00	0.00
67	0.06	-0.55	-6.26	6.28	-0.05	0.00	0.00	0.05
68	0.00	-0.65	-8.83	8.85	0.00	0.00	0.00	0.00
69	0.06	-0.73	-6.15	6.19	0.05	0.01	0.00	0.05
70	0.00	-0.81	0.00	0.81	-0.02	0.01	0.00	0.02
71	0.13	-0.89	-9.34	9.38	-0.09	0.01	0.00	0.09
72	0.00	-0.97	-15.09	15.12	-0.04	0.01	0.01	0.04
73	0.00	0.00	0.13	0.13	-0.01	0.00	0.38	0.38
74	-2.47	-0.03	0.00	2.48	-0.01	0.00	0.09	0.09
75	-3.63	-0.16	-1.49	3.92	0.00	0.00	0.01	0.01
76	-4.90	-0.29	0.02	4.91	-0.03	0.00	0.01	0.03
77	-6.25	-0.41	-6.41	8.96	-0.05	-0.01	0.01	0.05
78	-7.44	-0.52	-8.84	11.57	0.00	-0.01	0.01	0.01
79	-8.31	-0.64	-6.22	10.40	0.05	-0.01	0.01	0.05
80	-8.73	-0.74	0.06	8.76	0.00	-0.01	0.00	0.01
81	-8.60	-0.85	-6.32	10.71	-0.05	-0.01	0.00	0.05
82	-7.90	-0.94	-8.78	11.85	0.00	-0.01	-0.01	0.02
83	-6.62	-1.04	-5.79	8.85	0.05	-0.02	-0.02	0.06
84	-4.82	-1.13	0.02	4.95	-0.06	-0.02	-0.02	0.07
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	-0.03	0.00	0.03	-0.01	0.00	0.00	0.01
87	0.07	-0.14	-1.49	1.50	0.00	0.00	0.00	0.00
88	0.00	-0.25	0.00	0.25	-0.03	0.00	0.00	0.03
89	0.06	-0.36	-6.41	6.42	-0.05	0.00	0.00	0.05
90	0.00	-0.46	-8.84	8.85	0.00	0.01	0.00	0.01
91	0.06	-0.55	-6.22	6.25	0.05	0.01	0.00	0.05
92	0.00	-0.65	0.00	0.65	0.00	0.01	0.00	0.01
93	0.06	-0.73	-6.32	6.36	-0.05	0.01	0.00	0.05
94	0.00	-0.81	-8.78	8.82	0.00	0.01	0.00	0.01
95	0.13	-0.89	-5.79	5.86	0.05	0.01	0.00	0.05
96	0.00	-0.97	0.00	0.97	-0.06	0.02	0.01	0.07
97	0.00	0.00	0.39	0.39	-0.04	0.00	0.37	0.37
98	-2.43	-0.03	0.00	2.43	-0.04	0.00	0.09	0.10
99	-3.63	-0.16	-6.27	7.25	-0.05	0.00	0.01	0.05
100	-4.91	-0.29	-8.60	9.91	0.00	0.00	0.01	0.01
101	-6.26	-0.41	-6.01	8.69	0.05	0.00	0.01	0.05
102	-7.45	-0.52	0.04	7.47	0.00	0.00	0.01	0.01
103	-8.32	-0.64	-6.28	10.44	-0.05	0.00	0.01	0.05
104	-8.73	-0.74	-8.86	12.47	0.00	0.00	0.00	0.00
105	-8.61	-0.85	-6.17	10.63	0.05	0.00	0.00	0.05
106	-7.90	-0.95	0.05	7.96	-0.02	0.00	-0.01	0.02
107	-6.63	-1.04	-9.19	11.37	-0.08	0.00	-0.02	0.09
108	-4.83	-1.13	-14.76	15.57	-0.04	0.00	-0.02	0.04
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.03	0.00	0.03	-0.03	0.00	0.00	0.03
111	0.07	-0.14	-6.27	6.27	-0.05	0.00	0.00	0.05
112	0.00	-0.25	-8.60	8.61	0.00	0.00	0.00	0.00
113	0.06	-0.36	-6.01	6.02	0.05	0.00	0.00	0.05
114	0.00	-0.46	0.00	0.46	0.00	0.00	0.00	0.00
115	0.06	-0.56	-6.28	6.30	-0.05	0.00	0.00	0.05
116	0.00	-0.65	-8.86	8.89	0.00	0.00	0.00	0.00

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

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Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 170

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.06	-0.73	-6.17	6.22	0.05	0.00	0.00	0.05
118	0.00	-0.82	0.00	0.82	-0.02	0.01	0.00	0.02
119	0.13	-0.90	-9.19	9.23	-0.08	0.01	0.00	0.09
120	0.00	-0.97	-14.76	14.80	-0.04	0.01	0.01	0.04
121	0.00	0.00	0.13	0.13	-0.01	0.00	0.37	0.37
122	-2.39	-0.03	0.00	2.39	-0.01	0.00	0.09	0.09
123	-3.64	-0.16	-1.49	3.94	0.00	0.00	0.01	0.01
124	-4.91	-0.28	0.02	4.92	-0.03	-0.01	0.01	0.03
125	-6.26	-0.40	-6.40	8.96	-0.05	-0.01	0.01	0.05
126	-7.45	-0.51	-8.83	11.57	0.00	-0.01	0.01	0.02
127	-8.32	-0.62	-6.21	10.40	0.05	-0.01	0.01	0.05
128	-8.74	-0.72	0.06	8.77	0.00	-0.02	0.00	0.02
129	-8.61	-0.82	-6.33	10.72	-0.05	-0.02	0.00	0.05
130	-7.91	-0.92	-8.80	11.87	0.00	-0.02	-0.01	0.02
131	-6.63	-1.02	-5.83	8.89	0.05	-0.02	-0.01	0.06
132	-4.83	-1.10	0.02	4.96	-0.06	-0.02	-0.02	0.07
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.03	0.00	0.03	-0.01	0.00	0.00	0.01
135	0.07	-0.14	-1.49	1.50	0.00	0.00	0.00	0.00
136	0.00	-0.25	0.00	0.25	-0.03	0.00	0.00	0.03
137	0.06	-0.35	-6.40	6.41	-0.05	0.00	0.00	0.05
138	0.00	-0.45	-8.83	8.84	0.00	0.01	0.00	0.01
139	0.06	-0.54	-6.21	6.24	0.05	0.01	0.00	0.05
140	0.00	-0.63	0.00	0.63	0.00	0.01	0.00	0.01
141	0.06	-0.71	-6.33	6.37	-0.05	0.01	0.00	0.05
142	0.00	-0.80	-8.80	8.84	0.00	0.01	0.00	0.01
143	0.13	-0.87	-5.83	5.89	0.05	0.01	0.00	0.05
144	0.00	-0.94	0.00	0.94	-0.06	0.01	0.01	0.06
145	0.00	0.00	0.40	0.40	-0.05	0.00	0.35	0.36
146	-2.38	-0.02	0.00	2.38	-0.05	0.00	0.11	0.12
147	-3.64	-0.09	-6.38	7.35	-0.05	0.00	0.01	0.05
148	-4.91	-0.16	-8.89	10.16	0.00	0.00	0.02	0.02
149	-6.26	-0.22	-6.11	8.75	0.06	0.00	0.02	0.06
150	-7.46	-0.29	0.04	7.46	0.00	0.00	0.01	0.01
151	-8.32	-0.35	-6.44	10.53	-0.06	0.00	0.01	0.06
152	-8.74	-0.41	-9.24	12.73	0.00	0.01	0.00	0.01
153	-8.61	-0.46	-6.31	10.69	0.06	0.01	0.00	0.06
154	-7.91	-0.52	0.05	7.93	-0.02	0.01	-0.01	0.02
155	-6.63	-0.57	-9.73	11.79	-0.09	0.01	-0.02	0.10
156	-4.83	-0.61	-15.73	16.46	-0.03	0.01	-0.02	0.04
157	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
158	0.00	-0.02	0.00	0.02	-0.03	0.00	0.00	0.03
159	0.07	-0.08	-6.38	6.39	-0.06	0.00	0.00	0.06
160	-0.04	-0.14	-8.89	8.89	0.00	0.00	0.00	0.00
161	0.06	-0.20	-6.11	6.12	0.06	0.00	0.00	0.06
162	0.00	-0.25	0.00	0.25	0.00	0.00	0.00	0.01
163	0.06	-0.31	-6.44	6.45	-0.06	0.01	0.00	0.06
164	-0.05	-0.36	-9.24	9.25	0.00	0.01	0.00	0.01
165	0.06	-0.41	-6.31	6.33	0.06	0.01	0.00	0.06
166	0.00	-0.45	0.00	0.45	-0.02	0.01	0.00	0.02
167	0.13	-0.49	-9.73	9.74	-0.10	0.01	0.00	0.10
168	-0.14	-0.53	-15.73	15.74	-0.03	0.01	0.02	0.04
169	-2.50	-0.97	-16.00	16.23	0.11	-0.01	-0.04	0.12
170	-2.35	-0.67	-16.01	16.19	0.11	0.01	-0.01	0.11
171	-2.57	-1.30	-15.59	15.85	-0.01	-0.03	-0.03	0.04
172	-2.35	-0.99	-15.59	15.80	-0.01	0.02	0.00	0.02
173	-2.57	-1.20	-15.26	15.52	0.09	0.00	-0.02	0.09
174	-2.35	-1.04	-15.26	15.47	0.09	0.01	0.00	0.09

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Job Ref : B11323

Sheet : SD / 171

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Date : 29 September 2010 / Ver. 2010.06

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-2.58	-1.22	-14.93	15.20	0.00	-0.02	-0.02	0.03
176	-2.35	-1.04	-14.94	15.16	0.00	0.02	0.00	0.02
177	-2.58	-1.22	-14.72	14.99	0.08	0.00	-0.02	0.09
178	-2.35	-1.04	-14.72	14.94	0.09	0.01	0.00	0.09
179	-2.58	-1.19	-14.50	14.77	0.00	-0.02	-0.02	0.03
180	-2.35	-1.02	-14.50	14.73	0.00	0.02	0.00	0.02
181	-2.59	-0.66	-14.36	14.61	0.09	0.01	-0.03	0.10
182	-2.35	-0.57	-14.37	14.57	0.10	0.01	0.01	0.10
183	-0.10	-0.99	-0.03	0.99	0.11	-0.01	-0.04	0.12
184	0.00	-0.81	0.00	0.81	0.11	0.01	-0.03	0.12
185	-0.12	-1.40	-0.17	1.42	0.12	-0.02	-0.02	0.13
186	-0.03	-1.04	-0.15	1.05	0.12	0.02	-0.02	0.12
187	-0.07	-1.25	-0.05	1.25	0.11	0.00	-0.01	0.11
188	0.00	-1.09	0.00	1.09	0.11	0.01	-0.01	0.11
189	-0.05	-1.26	-0.16	1.27	0.12	-0.02	-0.02	0.12
190	-0.02	-1.09	-0.14	1.10	0.11	0.02	-0.02	0.12
191	-0.03	-1.26	-0.05	1.26	0.11	0.00	-0.01	0.11
192	0.00	-1.09	0.00	1.09	0.11	0.01	-0.02	0.11
193	0.03	-1.24	-0.15	1.25	0.11	-0.02	-0.01	0.12
194	-0.01	-1.07	-0.14	1.08	0.11	0.02	-0.01	0.11
195	0.05	-0.68	-0.02	0.68	0.11	0.01	-0.01	0.11
196	0.00	-0.65	0.00	0.65	0.10	0.01	-0.02	0.11

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	18.83C	0.00	-0.95	0.00	0.00	0.00		0.00	0.32
	2	18.83C	0.00	-0.95	0.00	-0.47	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	11.61C	0.00	-0.02	0.29	-0.07	-0.22	0.00	0.00	0.63
	3	11.61C	0.00	0.05	0.22	0.02	0.22	@ 0.000	@ 0.000	@ 0.424
3	3	5.89C	0.00	-0.17	0.22	0.03	-0.06	0.00	0.00	0.44
	4	5.89C	0.00	-0.03	0.07	-0.02	0.09	@ 0.000	@ 0.000	@ 1.414
4	4	4.78C	0.00	-0.17	0.06	0.02	0.10	0.00	0.00	0.47
	5	4.78C	0.00	-0.02	-0.09	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.566
5	5	4.59C	0.00	-0.17	-0.09	0.02	0.23	0.00	0.00	0.90
	6	4.59C	0.00	-0.02	-0.25	-0.02	-0.26	@ 0.000	@ 0.000	@ 1.515
6	13	3.21C	0.00	0.02	-0.18	0.00	0.00	0.00	0.00	0.06
	14	3.21C	0.00	0.02	-0.18	0.01	-0.09	@ 0.000	@ 0.000	@ 0.290
7	14	3.10C	0.00	0.00	0.31	0.00	-0.24	0.00	0.00	0.75
	15	3.10C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.465
8	15	3.01C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.45
	16	3.01C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.394
9	16	2.88C	0.00	0.00	0.07	0.00	0.10	0.00	0.00	0.47
	17	2.88C	0.00	0.00	-0.09	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
10	17	2.71C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.91
	18	2.71C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.515

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Job Ref : B11323

Sheet : SD / 172

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	11.40T	0.00	-1.02	0.00	0.00	0.00		0.00	0.35
	26	11.40T	0.00	-1.02	0.00	-0.51	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	11.60T	0.00	-0.04	0.13	-0.05	-0.05	0.00	0.00	0.41
	27	11.60T	0.00	0.03	0.06	0.01	0.06	@ 0.000	@ 0.000	@ 0.768
18	27	4.99T	0.00	-0.18	0.06	0.03	0.09	0.00	0.00	0.36
	28	4.99T	0.00	-0.03	-0.09	-0.03	-0.10	@ 0.000	@ 0.000	@ 1.495
19	28	4.10C	0.00	-0.18	0.39	0.03	-0.24	0.00	0.00	0.72
	29	4.10C	0.00	-0.03	0.23	-0.03	0.23	@ 0.000	@ 0.000	@ 0.444
20	29	4.54C	0.00	-0.18	0.23	0.03	-0.06	0.00	0.00	0.41
	30	4.54C	0.00	-0.03	0.07	-0.03	0.08	@ 0.000	@ 0.000	@ 1.414
21	37	5.17C	0.00	0.01	-0.05	0.00	0.00	0.00	0.00	0.02
	38	5.17C	0.00	0.01	-0.05	0.01	-0.03	@ 0.000	@ 0.000	@ 0.290
22	38	4.97C	0.00	0.00	0.14	0.00	-0.06	0.00	0.00	0.20
	39	4.97C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.556
23	39	4.77C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.35
	40	4.77C	0.00	0.00	-0.09	0.00	-0.10	@ 0.000	@ 0.000	@ 1.515
24	40	4.59C	0.00	0.00	0.39	0.00	-0.24	0.00	0.00	0.72
	41	4.59C	0.00	0.00	0.23	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
25	41	4.43C	0.00	0.00	0.23	0.00	-0.06	0.00	0.00	0.41
	42	4.43C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
31	49	6.10C	0.00	-0.99	0.00	0.00	0.00		0.00	0.33
	50	6.10C	0.00	-0.99	0.00	-0.49	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	5.90C	0.00	-0.03	0.22	-0.04	-0.17	0.00	0.00	0.46
	51	5.90C	0.00	0.02	0.16	0.00	0.16	@ 0.000	@ 0.000	@ 0.424
33	51	5.70C	0.00	-0.14	0.16	0.04	-0.04	0.00	0.00	0.30
	52	5.70C	0.00	-0.04	0.05	-0.04	0.06	@ 0.000	@ 0.000	@ 1.414
34	52	5.50C	0.00	-0.15	0.05	0.04	0.07	0.00	0.00	0.33
	53	5.50C	0.00	-0.04	-0.06	-0.04	-0.05	@ 0.000	@ 0.000	@ 0.566
35	53	5.31C	0.00	-0.15	-0.07	0.03	0.17	0.00	0.00	0.65
	54	5.31C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.515
36	61	5.45C	0.00	0.01	-0.13	0.00	0.00	0.00	0.00	0.04
	62	5.45C	0.00	0.01	-0.13	0.01	-0.07	@ 0.000	@ 0.000	@ 0.290
37	62	5.26C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.55
	63	5.26C	0.00	0.00	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
38	63	5.08C	0.00	0.00	0.16	0.00	-0.04	0.00	0.00	0.31
	64	5.08C	0.00	0.00	0.05	0.00	0.06	@ 0.000	@ 0.000	@ 1.394
39	64	4.87C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.33
	65	4.87C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566

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Job Ref : B11323

Sheet : SD / 173

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	4.63C	0.00	0.00	-0.07	0.00	0.17	0.00	0.00	0.65
	66	4.63C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.515
46	73	6.20C	0.00	-0.96	0.00	0.00	0.00		0.00	0.32
	74	6.20C	0.00	-0.96	0.00	-0.48	0.00	@ 0.000	@ 0.000	@ 0.290
47	74	6.00C	0.00	-0.03	0.10	-0.04	-0.04	0.00	0.00	0.38
	75	6.00C	0.00	0.02	0.04	0.00	0.05	@ 0.000	@ 0.000	@ 0.828
48	75	5.79C	0.00	-0.14	0.04	0.03	0.06	0.00	0.00	0.27
	76	5.79C	0.00	-0.03	-0.07	-0.03	-0.08	@ 0.000	@ 0.000	@ 1.495
49	76	5.59C	0.00	-0.14	0.30	0.03	-0.19	0.00	0.00	0.56
	77	5.59C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
50	77	5.39C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.32
	78	5.39C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
51	85	5.46C	0.00	0.01	-0.04	0.00	0.00	0.00	0.00	0.01
	86	5.46C	0.00	0.01	-0.04	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
52	86	5.26C	0.00	0.00	0.10	0.00	-0.05	0.00	0.00	0.15
	87	5.26C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.555
53	87	5.05C	0.00	0.00	0.04	0.00	0.07	0.00	0.00	0.27
	88	5.05C	0.00	0.00	-0.07	0.00	-0.08	@ 0.000	@ 0.000	@ 1.515
54	88	4.86C	0.00	0.00	0.30	0.00	-0.19	0.00	0.00	0.56
	89	4.86C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
55	89	4.68C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.32
	90	4.68C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
91	97	6.20C	0.00	-0.94	0.00	0.00	0.00		0.00	0.32
	98	6.20C	0.00	-0.94	0.00	-0.47	0.00	@ 0.000	@ 0.000	@ 0.290
92	98	6.00C	0.00	-0.03	0.22	-0.03	-0.17	0.00	0.00	0.46
	99	6.00C	0.00	0.02	0.16	0.00	0.16	@ 0.000	@ 0.000	@ 0.424
93	99	5.80C	0.00	-0.14	0.16	0.03	-0.04	0.00	0.00	0.31
	100	5.80C	0.00	-0.03	0.05	-0.03	0.06	@ 0.000	@ 0.000	@ 1.414
94	100	5.59C	0.00	-0.14	0.05	0.03	0.07	0.00	0.00	0.33
	101	5.59C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.566
95	101	5.39C	0.00	-0.14	-0.07	0.03	0.17	0.00	0.00	0.65
	102	5.39C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.515
96	109	5.46C	0.00	0.01	-0.13	0.00	0.00	0.00	0.00	0.04
	110	5.46C	0.00	0.01	-0.13	0.01	-0.07	@ 0.000	@ 0.000	@ 0.290
97	110	5.28C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.55
	111	5.28C	0.00	0.00	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
98	111	5.10C	0.00	0.00	0.16	0.00	-0.04	0.00	0.00	0.31
	112	5.10C	0.00	0.00	0.05	0.00	0.06	@ 0.000	@ 0.000	@ 1.394

James Crosbie Associates Ltd.

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Job Ref : B11323

Sheet : SD / 174

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	4.89C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.33
	113	4.89C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
100	113	4.65C	0.00	0.00	-0.07	0.00	0.17	0.00	0.00	0.66
	114	4.65C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.515
120	121	6.05C	0.00	-0.93	0.00	0.00	0.00		0.00	0.31
	122	6.05C	0.00	-0.93	0.00	-0.46	0.00		@ 0.000	@ 0.290
121	122	5.84C	0.00	-0.04	0.10	-0.03	-0.04	0.00	0.00	0.36
	123	5.84C	0.00	0.01	0.04	0.00	0.05	@ 0.000	@ 0.000	@ 0.869
122	123	5.64C	0.00	-0.14	0.04	0.03	0.06	0.00	0.00	0.27
	124	5.64C	0.00	-0.03	-0.07	-0.03	-0.08	@ 0.000	@ 0.000	@ 1.495
123	124	5.44C	0.00	-0.14	0.30	0.03	-0.18	0.00	0.00	0.55
	125	5.44C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
124	125	5.25C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.32
	126	5.25C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
125	133	5.33C	0.00	0.01	-0.04	0.00	0.00	0.00	0.00	0.01
	134	5.33C	0.00	0.01	-0.04	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
126	134	5.13C	0.00	0.00	0.10	0.00	-0.05	0.00	0.00	0.15
	135	5.13C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.556
127	135	4.93C	0.00	0.00	0.04	0.00	0.07	0.00	0.00	0.27
	136	4.93C	0.00	0.00	-0.07	0.00	-0.08	@ 0.000	@ 0.000	@ 1.515
128	136	4.74C	0.00	0.00	0.30	0.00	-0.18	0.00	0.00	0.55
	137	4.74C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
129	137	4.56C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.32
	138	4.56C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
135	145	3.40C	0.00	-0.82	0.00	0.00	0.00	0.00	0.00	0.28
	146	3.40C	0.00	-0.82	0.00	-0.41	0.00	@ 0.000	@ 0.000	@ 0.290
136	146	3.30C	0.00	-0.02	0.22	-0.05	-0.17	0.00	0.00	0.47
	147	3.30C	0.00	0.03	0.17	0.01	0.16	@ 0.000	@ 0.000	@ 0.424
137	147	3.18C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.33
	148	3.18C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
138	148	3.06C	0.00	-0.14	0.05	0.03	0.08	0.00	0.00	0.35
	149	3.06C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.566
139	149	2.95C	0.00	-0.14	-0.07	0.02	0.17	0.00	0.00	0.67
	150	2.95C	0.00	-0.02	-0.18	-0.02	-0.20	@ 0.000	@ 0.000	@ 1.515
140	157	3.02C	0.00	0.02	-0.13	0.00	0.00	0.00	0.00	0.05
	158	3.02C	0.00	0.02	-0.13	0.01	-0.07	@ 0.000	@ 0.000	@ 0.290
141	158	2.92C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.56
	159	2.92C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.465

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Job Ref : B11323

Sheet : SD / 175

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	2.83C	0.00	0.00	0.17	0.00	-0.04	0.00	0.00	0.34
	160	2.83C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.394
143	160	2.71C	0.00	0.00	0.05	0.00	0.08	0.00	0.00	0.35
	161	2.71C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
144	161	2.55C	0.00	0.00	-0.07	0.00	0.17	0.00	0.00	0.67
	162	2.55C	0.00	0.00	-0.18	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
170	6	5.65T	0.00	-0.17	0.42	0.01	-0.27	0.00	0.00	0.92
	7	5.65T	0.00	-0.01	0.26	-0.01	0.24	@ 0.000	@ 0.000	@ 0.485
171	7	7.61T	0.00	-0.17	0.25	0.00	-0.07	0.00	0.00	0.48
	8	7.61T	0.00	-0.01	0.09	-0.01	0.10	@ 0.000	@ 0.000	@ 1.414
172	8	8.64T	0.00	-0.17	0.08	0.00	0.11	0.00	0.00	0.50
	9	8.64T	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.566
173	9	8.70T	0.00	-0.17	-0.09	-0.01	0.25	0.00	0.00	1.02
	10	8.70T	0.00	0.01	-0.27	0.01	-0.29	@ 0.000	@ 0.000	@ 1.515
174	18	2.57C	0.00	0.00	0.42	0.00	-0.27	0.00	0.00	0.92
	19	2.57C	0.00	0.00	0.26	0.00	0.24	@ 0.000	@ 0.000	@ 0.485
175	19	2.47C	0.00	0.00	0.25	0.00	-0.07	0.00	0.00	0.49
	20	2.47C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.414
176	20	2.33C	0.00	0.00	0.08	0.00	0.11	0.00	0.00	0.50
	21	2.33C	0.00	0.00	-0.09	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
177	21	2.13C	0.00	-0.01	-0.09	0.01	0.25	0.00	0.00	1.03
	22	2.13C	0.00	-0.01	-0.27	-0.01	-0.29	@ 0.000	@ 0.000	@ 1.515
182	30	7.90C	0.00	-0.18	0.09	0.02	0.09	0.00	0.00	0.41
	31	7.90C	0.00	-0.02	-0.07	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.566
183	31	10.33C	0.00	-0.18	-0.08	0.01	0.23	0.00	0.00	0.87
	32	10.33C	0.00	-0.01	-0.25	-0.01	-0.26	@ 0.000	@ 0.000	@ 1.515
184	32	11.85C	0.00	-0.17	0.43	0.00	-0.27	0.00	0.00	0.89
	33	11.85C	0.00	0.00	0.26	0.00	0.24	@ 0.000	@ 0.000	@ 0.465
185	33	12.45C	0.00	-0.16	0.25	-0.01	-0.06	0.00	0.00	0.43
	34	12.45C	0.00	0.01	0.08	0.01	0.09	@ 0.000	@ 0.000	@ 1.414
186	42	4.23C	0.00	0.00	0.09	0.00	0.09	0.00	0.00	0.42
	43	4.23C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.586
187	43	4.00C	0.00	0.00	-0.08	0.00	0.23	0.00	0.00	0.87
	44	4.00C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.515
188	44	3.82C	0.00	0.00	0.43	0.00	-0.27	0.00	0.00	0.89
	45	3.82C	0.00	0.00	0.26	0.00	0.24	@ 0.000	@ 0.000	@ 0.465
189	45	3.67C	0.00	0.00	0.25	0.00	-0.06	0.00	0.00	0.43
	46	3.67C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414

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Job Ref : B11323

Sheet : SD / 176

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	5.12C	0.00	-0.14	0.31	0.03	-0.20	0.00	0.00	0.66
	55	5.12C	0.00	-0.03	0.19	-0.03	0.18	@ 0.000	@ 0.000	@ 0.465
195	55	4.94C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.33
	56	4.94C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.434
196	56	4.75C	0.00	-0.12	0.07	0.00	0.07	0.00	0.00	0.34
	57	4.75C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
197	57	4.56C	0.00	-0.11	-0.07	-0.02	0.18	0.00	0.00	0.75
	58	4.56C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.515
198	66	4.42C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.66
	67	4.42C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
199	67	4.24C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.33
	68	4.24C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.434
200	68	4.03C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.34
	69	4.03C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
201	69	3.78C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.75
	70	3.78C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.515
206	78	5.19C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.33
	79	5.19C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.566
207	79	4.99C	0.00	-0.13	-0.06	0.01	0.18	0.00	0.00	0.67
	80	4.99C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.515
208	80	4.79C	0.00	-0.12	0.32	0.00	-0.20	0.00	0.00	0.67
	81	4.79C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.485
209	81	4.60C	0.00	-0.11	0.19	-0.02	-0.05	0.00	0.00	0.33
	82	4.60C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.414
210	90	4.47C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.33
	91	4.47C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
211	91	4.22C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.67
	92	4.22C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
212	92	4.01C	0.00	0.00	0.32	0.00	-0.20	0.00	0.00	0.67
	93	4.01C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.485
213	93	3.82C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.33
	94	3.82C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
218	102	5.19C	0.00	-0.14	0.31	0.02	-0.20	0.00	0.00	0.67
	103	5.19C	0.00	-0.02	0.19	-0.02	0.18	@ 0.000	@ 0.000	@ 0.485
219	103	4.99C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.33
	104	4.99C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.434
220	104	4.79C	0.00	-0.12	0.07	-0.01	0.07	0.00	0.00	0.34
	105	4.79C	0.00	0.01	-0.06	0.01	-0.05	@ 0.000	@ 0.000	@ 0.566

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Job Ref : B11323

Sheet : SD / 177

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	4.60C	0.00	-0.11	-0.07	-0.02	0.18	0.00	0.00	0.75
	106	4.60C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.515
222	114	4.44C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.67
	115	4.44C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.485
223	115	4.25C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.33
	116	4.25C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
224	116	4.04C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.34
	117	4.04C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
225	117	3.79C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.75
	118	3.79C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.515
230	126	5.06C	0.00	-0.13	0.06	0.02	0.07	0.00	0.00	0.33
	127	5.06C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.566
231	127	4.87C	0.00	-0.13	-0.06	0.01	0.18	0.00	0.00	0.67
	128	4.87C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.515
232	128	4.69C	0.00	-0.12	0.32	-0.01	-0.20	0.00	0.00	0.67
	129	4.69C	0.00	0.01	0.19	0.01	0.18	@ 0.000	@ 0.000	@ 0.465
233	129	4.50C	0.00	-0.11	0.19	-0.02	-0.05	0.00	0.00	0.33
	130	4.50C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.414
234	138	4.36C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.33
	139	4.36C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
235	139	4.12C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.67
	140	4.12C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
236	140	3.92C	0.00	0.00	0.32	0.00	-0.20	0.00	0.00	0.67
	141	3.92C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
237	141	3.74C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.33
	142	3.74C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
242	150	2.83C	0.00	-0.13	0.31	0.02	-0.20	0.00	0.00	0.69
	151	2.83C	0.00	-0.02	0.19	-0.02	0.18	@ 0.000	@ 0.000	@ 0.485
243	151	2.71C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.37
	152	2.71C	0.00	-0.01	0.06	-0.01	0.08	@ 0.000	@ 0.000	@ 1.414
244	152	2.59C	0.00	-0.12	0.06	-0.01	0.08	0.00	0.00	0.37
	153	2.59C	0.00	0.01	-0.07	0.01	-0.05	@ 0.000	@ 0.000	@ 0.566
245	153	2.47C	0.00	-0.11	-0.07	-0.02	0.18	0.00	0.00	0.78
	154	2.47C	0.00	0.02	-0.20	0.02	-0.22	@ 0.000	@ 0.000	@ 1.495
246	162	2.43C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.69
	163	2.43C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.485
247	163	2.33C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.37
	164	2.33C	0.00	0.00	0.06	0.00	0.08	@ 0.000	@ 0.000	@ 1.414

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 178

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	2.20C	0.00	0.01	0.06	-0.01	0.08	0.00	0.00	0.37
	165	2.20C	0.00	0.01	-0.07	0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
249	165	2.04C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.78
	166	2.04C	0.00	0.00	-0.20	0.00	-0.22	@ 0.000	@ 0.000	@ 1.495
306	10	7.77T	0.00	-0.16	0.52	-0.02	-0.36	0.00	0.00	1.20
	11	7.77T	0.00	0.02	0.34	0.01	0.32	@ 0.000	@ 0.000	@ 0.485
307	11	5.81T	0.00	-0.16	0.33	-0.02	-0.13	0.00	0.00	0.68
	12	5.81T	0.00	0.02	0.15	0.02	0.17	@ 0.000	@ 0.000	@ 1.475
308	22	2.00C	0.00	0.00	0.52	0.00	-0.36	0.00	0.00	1.20
	23	2.00C	0.00	0.00	0.34	0.00	0.32	@ 0.000	@ 0.000	@ 0.485
309	23	1.92C	0.00	-0.01	0.33	0.01	-0.13	0.00	0.00	0.67
	24	1.92C	0.00	-0.01	0.15	-0.01	0.17	@ 0.000	@ 0.000	@ 1.475
312	34	12.11C	0.00	-0.15	0.09	-0.03	0.10	0.00	0.00	0.45
	35	12.11C	0.00	0.02	-0.08	0.02	-0.07	@ 0.000	@ 0.000	@ 0.566
313	35	10.80C	0.00	-0.15	-0.09	-0.04	0.25	0.00	0.00	1.12
	36	10.80C	0.00	0.04	-0.27	0.03	-0.30	@ 0.000	@ 0.000	@ 1.495
314	46	3.48C	0.00	0.00	0.09	0.00	0.10	0.00	0.00	0.45
	47	3.48C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
315	47	3.25C	0.00	-0.01	-0.09	0.01	0.25	0.00	0.00	1.12
	48	3.25C	0.00	-0.01	-0.27	-0.01	-0.30	@ 0.000	@ 0.000	@ 1.495
318	58	4.38C	0.00	-0.10	0.40	-0.03	-0.28	0.00	0.00	0.93
	59	4.38C	0.00	0.03	0.27	0.03	0.25	@ 0.000	@ 0.000	@ 0.465
319	59	4.20C	0.00	-0.09	0.26	-0.05	-0.12	0.00	0.00	0.48
	60	4.20C	0.00	0.05	0.13	0.05	0.14	@ 0.000	@ 0.000	@ 1.515
320	70	3.58C	0.00	0.00	0.40	0.00	-0.28	0.00	0.00	0.93
	71	3.58C	0.00	0.00	0.27	0.00	0.25	@ 0.000	@ 0.000	@ 0.465
321	71	3.42C	0.00	0.00	0.26	0.00	-0.12	0.00	0.00	0.48
	72	3.42C	0.00	0.00	0.13	0.01	0.14	@ 0.000	@ 0.000	@ 1.515
324	82	4.40C	0.00	-0.10	0.06	-0.03	0.08	0.00	0.00	0.36
	83	4.40C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.545
325	83	4.21C	0.00	-0.09	-0.07	-0.04	0.19	0.00	0.00	0.94
	84	4.21C	0.00	0.04	-0.21	0.04	-0.24	@ 0.000	@ 0.000	@ 1.475
326	94	3.60C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.36
	95	3.60C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.545
327	95	3.35C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.95
	96	3.35C	0.00	0.00	-0.21	0.01	-0.24	@ 0.000	@ 0.000	@ 1.475
330	106	4.40C	0.00	-0.10	0.40	-0.03	-0.28	0.00	0.00	0.92
	107	4.40C	0.00	0.03	0.26	0.03	0.25	@ 0.000	@ 0.000	@ 0.465

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 179

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	4.21C	0.00	-0.09	0.26	-0.04	-0.11	0.00	0.00	0.48
	108	4.21C	0.00	0.04	0.12	0.04	0.13	@ 0.000	@ 0.000	@ 1.495
332	118	3.59C	0.00	0.00	0.40	0.00	-0.28	0.00	0.00	0.92
	119	3.59C	0.00	0.00	0.26	0.00	0.25	@ 0.000	@ 0.000	@ 0.465
333	119	3.43C	0.00	0.00	0.26	0.00	-0.11	0.00	0.00	0.47
	120	3.43C	0.00	0.00	0.12	0.01	0.13	@ 0.000	@ 0.000	@ 1.495
336	130	4.33C	0.00	-0.10	0.06	-0.03	0.08	0.00	0.00	0.36
	131	4.33C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.545
337	131	4.15C	0.00	-0.09	-0.07	-0.05	0.19	0.00	0.00	0.93
	132	4.15C	0.00	0.05	-0.21	0.04	-0.24	@ 0.000	@ 0.000	@ 1.475
338	142	3.54C	0.00	0.01	0.06	-0.01	0.08	0.00	0.00	0.36
	143	3.54C	0.00	0.01	-0.07	0.01	-0.06	@ 0.000	@ 0.000	@ 0.545
339	143	3.31C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.93
	144	3.31C	0.00	0.00	-0.21	0.01	-0.24	@ 0.000	@ 0.000	@ 1.475
342	154	2.34C	0.00	-0.10	0.41	-0.03	-0.29	0.00	0.00	0.98
	155	2.34C	0.00	0.03	0.28	0.03	0.26	@ 0.000	@ 0.000	@ 0.485
343	155	2.21C	0.00	-0.09	0.27	-0.04	-0.12	0.00	0.00	0.57
	156	2.21C	0.00	0.04	0.14	0.04	0.15	@ 0.000	@ 0.000	@ 1.495
344	166	1.92C	0.00	0.01	0.41	-0.01	-0.29	0.00	0.00	0.98
	167	1.92C	0.00	0.01	0.28	0.01	0.26	@ 0.000	@ 0.000	@ 0.485
345	167	1.85C	0.00	0.01	0.27	0.00	-0.12	0.00	0.00	0.56
	168	1.85C	0.00	0.01	0.14	0.01	0.15	@ 0.000	@ 0.000	@ 1.495
412	12	2.78T	0.00	-0.16	0.15	-0.03	0.07	0.00	0.00	0.64
	169	2.78T	0.00	0.03	-0.04	0.03	-0.01	@ 0.000	@ 0.000	@ 0.788
413	169	1.07C	0.00	-0.24	0.24	-0.03	0.43	0.00	0.00	1.18
	183	1.07C	0.00	0.31	-1.12	0.03	-0.43	@ 0.000	@ 0.000	@ 0.429
414	24	1.78C	0.00	-0.08	0.15	0.07	0.07	0.00	0.00	0.65
	170	1.78C	0.00	-0.08	-0.04	-0.08	-0.01	@ 0.000	@ 0.000	@ 0.788
415	170	1.08C	0.00	0.06	0.24	-0.07	0.43		0.00	1.17
	184	1.08C	0.00	0.06	-1.12	0.06	-0.43	@ 0.000	@ 0.000	@ 0.429
416	36	8.49C	0.00	-0.14	0.71	-0.04	-0.51	0.00	0.00	1.57
	171	8.49C	0.00	0.04	0.52	0.04	0.53	@ 0.000	@ 0.000	@ 1.555
417	171	4.63C	0.00	-0.22	0.20	-0.05	0.50	0.00	0.00	1.64
	185	4.63C	0.00	0.33	-1.16	0.05	-0.45	@ 0.000	@ 0.000	@ 0.469
418	48	3.11C	0.00	-0.08	0.71	0.08	-0.51	0.00	0.00	1.60
	172	3.11C	0.00	-0.08	0.53	-0.08	0.54	@ 0.000	@ 0.000	@ 1.555
419	172	1.98C	0.00	0.07	0.20	-0.07	0.50	0.00	0.00	1.62
	186	1.98C	0.00	0.07	-1.16	0.07	-0.45	@ 0.000	@ 0.000	@ 0.469

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 180

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	4.01C	0.00	-0.08	0.17	-0.06	-0.01	0.00	0.00	0.57
	173	4.01C	0.00	0.06	0.03	0.06	0.06	@ 0.000	@ 0.000	@ 1.192
421	173	2.01C	0.00	-0.14	0.20	-0.07	0.42	0.00	0.00	1.21
	187	2.01C	0.00	0.29	-1.06	0.07	-0.41	@ 0.000	@ 0.000	@ 0.429
422	72	3.24C	0.00	-0.08	0.18	0.07	-0.01	0.00	0.00	0.59
	174	3.24C	0.00	-0.08	0.04	-0.08	0.06	@ 0.000	@ 0.000	@ 1.192
423	174	2.00C	0.00	0.07	0.20	-0.08	0.42	0.00	0.00	1.20
	188	2.00C	0.00	0.07	-1.05	0.07	-0.41	@ 0.000	@ 0.000	@ 0.429
424	84	4.02C	0.00	-0.08	0.63	-0.05	-0.48	0.00	0.00	1.52
	175	4.02C	0.00	0.05	0.49	0.05	0.51	@ 0.000	@ 0.000	@ 1.555
425	175	2.01C	0.00	-0.15	0.17	-0.06	0.48	0.00	0.00	1.58
	189	2.01C	0.00	0.29	-1.09	0.07	-0.43	@ 0.000	@ 0.000	@ 0.469
426	96	3.18C	0.00	-0.08	0.64	0.07	-0.48	0.00	0.00	1.54
	176	3.18C	0.00	-0.08	0.49	-0.08	0.51	@ 0.000	@ 0.000	@ 1.555
427	176	2.01C	0.00	0.07	0.17	-0.08	0.48	0.00	0.00	1.56
	190	2.01C	0.00	0.07	-1.09	0.07	-0.43	@ 0.000	@ 0.000	@ 0.469
428	108	4.02C	0.00	-0.08	0.17	-0.05	0.00	0.00	0.01	0.54
	177	4.02C	0.00	0.05	0.03	0.05	0.05	@ 0.000	@ 0.000	@ 1.152
429	177	2.01C	0.00	-0.15	0.22	-0.06	0.41	0.00	0.00	1.16
	191	2.01C	0.00	0.29	-1.04	0.07	-0.40	@ 0.000	@ 0.000	@ 0.429
430	120	3.24C	0.00	-0.08	0.17	0.07	0.00	0.00	0.01	0.57
	178	3.24C	0.00	-0.08	0.03	-0.08	0.05	@ 0.000	@ 0.000	@ 1.172
431	178	2.00C	0.00	0.07	0.22	-0.08	0.41	0.00	0.00	1.15
	192	2.00C	0.00	0.07	-1.04	0.07	-0.40	@ 0.000	@ 0.000	@ 0.429
432	132	3.98C	0.00	-0.08	0.62	-0.06	-0.47	0.00	0.00	1.47
	179	3.98C	0.00	0.06	0.48	0.05	0.49	@ 0.000	@ 0.000	@ 1.555
433	179	1.99C	0.00	-0.15	0.18	-0.07	0.46	0.00	0.00	1.53
	193	1.99C	0.00	0.29	-1.08	0.07	-0.42	@ 0.000	@ 0.000	@ 0.469
434	144	3.15C	0.00	-0.07	0.62	0.07	-0.47	0.00	0.00	1.49
	180	3.15C	0.00	-0.07	0.48	-0.08	0.49	@ 0.000	@ 0.000	@ 1.555
435	180	1.99C	0.00	0.08	0.18	-0.08	0.46	0.00	0.00	1.51
	194	1.99C	0.00	0.08	-1.08	0.07	-0.42	@ 0.000	@ 0.000	@ 0.469
436	156	2.07C	0.00	-0.08	0.13	-0.05	0.04		0.00	0.55
	181	2.07C	0.00	0.05	-0.01	0.05	0.02	@ 0.000	@ 0.000	@ 0.929
437	181	1.03C	0.00	-0.15	0.24	-0.06	0.39		0.00	1.08
	195	1.03C	0.00	0.29	-1.02	0.07	-0.38	@ 0.000	@ 0.000	@ 0.429
438	168	1.74C	0.00	-0.07	0.13	0.07	0.03	0.00	0.00	0.56
	182	1.74C	0.00	-0.07	-0.01	-0.07	0.02	@ 0.000	@ 0.000	@ 0.949

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	1.06C	0.00	0.07	0.23	-0.08	0.39		0.00	1.07
	196	1.06C	0.00	0.07	-1.02	0.07	-0.39	@	0.000	@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.847	18.835	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.112	0.000	-0.222
3	0.000	0.000	0.000	0.130	0.000	-0.016
4	0.000	0.000	0.000	0.000	0.000	-0.043
5	0.000	0.000	0.000	-0.132	0.000	-0.040
6	0.000	0.000	0.000	0.000	0.000	-0.033
7	0.000	0.000	0.000	0.141	0.000	-0.020
9	0.000	0.000	0.000	-0.139	0.000	0.016
10	0.000	0.000	0.000	0.035	0.000	0.035
11	0.000	0.000	0.000	0.208	0.000	0.054
12	0.000	0.000	0.000	0.054	0.000	0.068
13	-0.022	3.206	-0.180	0.000	0.000	0.000
14	0.020	0.000	0.758	0.066	0.000	0.000
15	0.000	0.000	0.000	0.136	0.000	0.000
16	0.000	0.000	0.000	0.010	0.000	0.000
17	0.000	0.000	0.000	-0.133	0.000	0.000
18	-3.691	0.000	1.320	0.000	0.000	0.000
19	0.000	0.000	0.000	0.143	0.000	0.000
21	0.000	0.000	0.000	-0.140	0.000	0.000
22	-3.842	0.000	1.570	0.037	0.000	0.000
23	0.000	0.000	0.000	0.209	0.000	0.000
24	0.000	0.000	0.000	0.055	0.000	-0.025
25	1.084	-11.393	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.035	0.000	-0.173
27	0.000	0.000	0.000	0.000	0.000	-0.014
28	0.000	0.000	0.000	0.063	0.000	-0.028
29	0.000	0.000	0.000	0.115	0.000	-0.026
30	0.000	0.000	0.000	-0.014	0.000	-0.020
31	0.000	0.000	0.000	-0.121	0.000	-0.011
33	0.000	0.000	0.000	0.120	0.000	0.013
34	0.000	0.000	0.000	0.000	0.000	0.026
35	0.000	0.000	0.000	-0.127	0.000	0.038
36	0.000	0.000	0.000	0.097	0.000	0.047
37	-0.014	5.167	-0.051	0.000	0.000	0.000
38	0.013	0.000	0.312	0.019	0.000	0.000
40	-2.106	0.000	0.941	0.062	0.000	0.000
41	0.000	0.000	0.000	0.116	0.000	0.000
42	0.000	0.000	0.000	-0.013	0.000	0.000
43	0.000	0.000	0.000	-0.122	0.000	0.000
44	-2.227	0.000	1.321	0.000	0.000	0.000
45	0.000	0.000	0.000	0.122	0.000	0.000
47	0.000	0.000	0.000	-0.128	0.000	0.000
48	-6.476	0.000	1.996	0.098	0.000	-0.019
49	0.967	6.102	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.081	0.000	-0.169
51	0.000	0.000	0.000	0.090	0.000	0.000
52	0.000	0.000	0.000	0.000	0.000	-0.016
53	0.000	0.000	0.000	-0.091	0.000	-0.014

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Job Ref : B11323

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
54	0.000	0.000	0.000	0.000	0.000	-0.010
55	0.000	0.000	0.000	0.093	0.000	0.000
57	0.000	0.000	0.000	-0.095	0.000	0.000
58	0.000	0.000	0.000	0.031	0.000	0.016
59	0.000	0.000	0.000	0.156	0.000	0.023
60	0.000	0.000	0.000	0.073	0.000	0.028
61	-0.015	5.446	-0.130	0.000	0.000	0.000
62	0.014	0.000	0.555	0.048	0.000	0.000
63	0.000	0.000	0.000	0.094	0.000	0.000
65	0.000	0.000	0.000	-0.090	0.000	0.000
66	1.449	0.000	0.991	0.000	0.000	0.000
67	0.000	0.000	0.000	0.093	0.000	0.000
69	0.000	0.000	0.000	-0.095	0.000	0.000
70	1.627	0.000	1.207	0.032	0.000	0.000
71	0.000	0.000	0.000	0.156	0.000	0.000
72	0.000	0.000	0.000	0.074	0.000	-0.024
73	0.937	6.201	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.027	0.000	-0.166
75	0.000	0.000	0.000	0.000	0.000	-0.013
76	0.000	0.000	0.000	0.049	0.000	-0.025
77	0.000	0.000	0.000	0.091	0.000	-0.023
78	0.000	0.000	0.000	0.000	0.000	-0.019
79	0.000	0.000	0.000	-0.094	0.000	-0.012
81	0.000	0.000	0.000	0.094	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.018
83	0.000	0.000	0.000	-0.097	0.000	0.028
84	0.000	0.000	0.000	0.115	0.000	0.035
85	-0.014	5.462	-0.039	0.000	0.000	0.000
86	0.013	0.000	0.234	0.014	0.000	0.000
88	-0.020	0.000	0.727	0.049	0.000	0.000
89	0.000	0.000	0.000	0.091	0.000	0.000
91	0.000	0.000	0.000	-0.093	0.000	0.000
92	-0.019	0.000	1.014	0.000	0.000	0.000
93	0.000	0.000	0.000	0.094	0.000	0.000
95	0.000	0.000	0.000	-0.097	0.000	0.000
96	0.293	0.000	1.771	0.116	0.000	-0.024
97	0.917	6.204	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.081	0.000	-0.164
99	0.000	0.000	0.000	0.091	0.000	-0.013
100	0.000	0.000	0.000	0.000	0.000	-0.024
101	0.000	0.000	0.000	-0.092	0.000	-0.023
102	0.000	0.000	0.000	0.000	0.000	-0.018
103	0.000	0.000	0.000	0.094	0.000	-0.011
105	0.000	0.000	0.000	-0.096	0.000	0.000
106	0.000	0.000	0.000	0.030	0.000	0.018
107	0.000	0.000	0.000	0.154	0.000	0.028
108	0.000	0.000	0.000	0.069	0.000	0.035
109	-0.014	5.463	-0.130	0.000	0.000	0.000
110	0.013	0.000	0.555	0.048	0.000	0.000
111	0.000	0.000	0.000	0.094	0.000	0.000
113	0.000	0.000	0.000	-0.091	0.000	0.000
114	-0.020	0.000	0.978	0.000	0.000	0.000
115	0.000	0.000	0.000	0.095	0.000	0.000
117	0.000	0.000	0.000	-0.096	0.000	0.000
118	-0.019	0.000	1.185	0.030	0.000	0.000
119	0.000	0.000	0.000	0.154	0.000	0.000
120	0.000	0.000	0.000	0.070	0.000	-0.024
121	0.910	6.051	0.000	0.000	0.000	0.000

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 183

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
122	0.000	0.000	0.000	0.027	0.000	-0.159
123	0.000	0.000	0.000	0.000	0.000	-0.014
124	0.000	0.000	0.000	0.049	0.000	-0.024
125	0.000	0.000	0.000	0.090	0.000	-0.024
126	0.000	0.000	0.000	0.000	0.000	-0.020
127	0.000	0.000	0.000	-0.093	0.000	-0.013
129	0.000	0.000	0.000	0.093	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.015
131	0.000	0.000	0.000	-0.096	0.000	0.024
132	0.000	0.000	0.000	0.109	0.000	0.031
133	-0.013	5.334	-0.039	0.000	0.000	0.000
134	0.012	0.000	0.233	0.014	0.000	0.000
136	2.118	0.000	0.717	0.049	0.000	0.000
137	0.000	0.000	0.000	0.091	0.000	0.000
139	0.000	0.000	0.000	-0.093	0.000	0.000
140	2.247	0.000	1.004	0.000	0.000	0.000
141	0.000	0.000	0.000	0.094	0.000	0.000
143	0.000	0.000	0.000	-0.096	0.000	0.000
144	6.246	0.000	1.689	0.110	0.000	-0.026
145	0.807	3.405	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.084	0.000	-0.197
147	0.000	0.000	0.000	0.097	0.000	-0.015
148	0.000	0.000	0.000	0.000	0.000	-0.032
149	0.000	0.000	0.000	-0.101	0.000	-0.031
150	0.000	0.000	0.000	0.000	0.000	-0.026
151	0.000	0.000	0.000	0.104	0.000	-0.017
153	0.000	0.000	0.000	-0.108	0.000	0.000
154	0.000	0.000	0.000	0.034	0.000	0.018
155	0.000	0.000	0.000	0.172	0.000	0.031
156	0.000	0.000	0.000	0.056	0.000	0.039
157	-0.023	3.017	-0.134	0.000	0.000	0.000
158	0.020	0.000	0.571	0.049	0.000	0.000
159	0.000	0.000	0.000	0.101	0.000	0.000
161	0.000	0.000	0.000	-0.101	0.000	0.000
162	2.233	0.000	0.987	0.000	0.000	0.000
163	0.000	0.000	0.000	0.104	0.000	0.000
165	0.000	0.000	0.000	-0.107	0.000	0.000
166	2.220	0.000	1.215	0.034	0.000	0.000
167	0.000	0.000	0.000	0.173	0.000	0.000
168	0.000	0.000	0.000	0.057	0.000	-0.034
169	0.000	0.000	0.000	-0.198	0.000	0.081
170	0.000	0.000	0.000	-0.203	0.000	0.011
171	0.000	0.000	0.000	0.017	0.000	0.058
172	0.000	0.000	0.000	0.017	0.000	0.000
173	0.000	0.000	0.000	-0.155	0.000	0.034
174	0.000	0.000	0.000	-0.162	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.044
177	0.000	0.000	0.000	-0.151	0.000	0.043
178	0.000	0.000	0.000	-0.158	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.040
181	0.000	0.000	0.000	-0.171	0.000	0.048
182	0.000	0.000	0.000	-0.175	0.000	-0.011
183	0.000	0.000	0.000	-0.207	0.000	0.077
184	1.458	0.000	3.101	-0.206	0.000	0.051
185	0.000	0.000	0.000	-0.222	0.000	0.042
186	0.000	0.000	0.000	-0.220	0.000	0.031
187	0.000	0.000	0.000	-0.204	0.000	0.014
188	2.394	0.000	4.638	-0.203	0.000	0.027

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

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Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 184

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
189	0.000	0.000	0.000	-0.209	0.000	0.028
190	0.000	0.000	0.000	-0.208	0.000	0.028
191	0.000	0.000	0.000	-0.196	0.000	0.027
192	1.551	0.000	4.516	-0.195	0.000	0.028
193	0.000	0.000	0.000	-0.203	0.000	0.022
194	0.000	0.000	0.000	-0.201	0.000	0.024
195	0.000	0.000	0.000	-0.191	0.000	0.027
196	0.627	0.000	2.790	-0.190	0.000	0.030
Total	13.033	71.185	38.193	-0.455	0.000	-0.625

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L1	Live Load
Load Group L2	Live Load
Load Group L3	Live Load
Load Group L4	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.064	2	2.500	0.064
3	4.500	0.064	4	6.500	0.064	5	8.500	0.064
6	10.500	0.064	7	12.500	0.064	8	14.500	0.064
9	16.500	0.064	10	18.500	0.064	11	20.500	0.064
12	22.500	0.442	13	24.500	0.749			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.004	3	0.004	4	0.004
5	0.004	6	0.004	7	0.004	8	0.004
9	0.004	10	0.004	11	0.004	12	0.004
13	0.000	14	0.003	15	0.003	16	0.003
17	0.003	18	0.003	19	0.003	20	0.003
21	0.003	22	0.003	23	0.003	24	0.003
25	0.000	26	0.006	27	0.006	28	0.006
29	0.006	30	0.006	31	0.006	32	0.006
33	0.006	34	0.006	35	0.006	36	0.006
37	0.000	38	0.005	39	0.005	40	0.005
41	0.005	42	0.005	43	0.005	44	0.005
45	0.005	46	0.005	47	0.005	48	0.005
49	0.000	50	0.005	51	0.005	52	0.005
53	0.005	54	0.005	55	0.005	56	0.005
57	0.005	58	0.005	59	0.005	60	0.005
61	0.000	62	0.005	63	0.005	64	0.005
65	0.005	66	0.005	67	0.005	68	0.005
69	0.005	70	0.005	71	0.005	72	0.005
73	0.000	74	0.005	75	0.005	76	0.005
77	0.005	78	0.005	79	0.005	80	0.005
81	0.005	82	0.005	83	0.005	84	0.005
85	0.000	86	0.005	87	0.005	88	0.005
89	0.005	90	0.005	91	0.005	92	0.005
93	0.005	94	0.005	95	0.005	96	0.005
97	0.000	98	0.005	99	0.005	100	0.005
101	0.005	102	0.005	103	0.005	104	0.005
105	0.005	106	0.005	107	0.005	108	0.005
109	0.000	110	0.005	111	0.005	112	0.005
113	0.005	114	0.005	115	0.005	116	0.005
117	0.005	118	0.005	119	0.005	120	0.005
121	0.000	122	0.005	123	0.005	124	0.005

James Crosbie Associates Ltd.

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125	0.005	126	0.005	127	0.005	128	0.005
129	0.005	130	0.005	131	0.005	132	0.005
133	0.000	134	0.005	135	0.005	136	0.005
137	0.005	138	0.005	139	0.005	140	0.005
141	0.005	142	0.005	143	0.005	144	0.005
145	0.000	146	0.003	147	0.003	148	0.003
149	0.003	150	0.003	151	0.003	152	0.003
153	0.003	154	0.003	155	0.003	156	0.003
157	0.000	158	0.003	159	0.003	160	0.003
161	0.003	162	0.003	163	0.003	164	0.003
165	0.003	166	0.003	167	0.003	168	0.003
169	0.021	170	0.018	171	0.039	172	0.035
173	0.038	174	0.035	175	0.038	176	0.035
177	0.038	178	0.035	179	0.038	180	0.035
181	0.019	182	0.018	183	0.033	184	0.031
185	0.065	186	0.061	187	0.063	188	0.061
189	0.063	190	0.061	191	0.063	192	0.061
193	0.063	194	0.061	195	0.032	196	0.031

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 N1

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L1 + 0.25 L3 + 1.00 W4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 W2

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L1 + 0.25 L3 + 1.00 W5

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	1.800	0.000	0.000	26	1.800	0.500	0.000
27	1.800	2.500	0.000	28	1.800	4.500	0.000
29	1.800	6.500	0.000	30	1.800	8.500	0.000
31	1.800	10.500	0.000	32	1.800	12.500	0.000
33	1.800	14.500	0.000	34	1.800	16.500	0.000
35	1.800	18.500	0.000	36	1.800	20.500	0.000
37	1.800	0.000	1.300	38	1.800	0.500	1.300
39	1.800	2.500	1.300	40	1.800	4.500	1.300
41	1.800	6.500	1.300	42	1.800	8.500	1.300
43	1.800	10.500	1.300	44	1.800	12.500	1.300
45	1.800	14.500	1.300	46	1.800	16.500	1.300
47	1.800	18.500	1.300	48	1.800	20.500	1.300
49	3.600	0.000	0.000	50	3.600	0.500	0.000
51	3.600	2.500	0.000	52	3.600	4.500	0.000
53	3.600	6.500	0.000	54	3.600	8.500	0.000
55	3.600	10.500	0.000	56	3.600	12.500	0.000
57	3.600	14.500	0.000	58	3.600	16.500	0.000
59	3.600	18.500	0.000	60	3.600	20.500	0.000
61	3.600	0.000	1.300	62	3.600	0.500	1.300

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 187****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	3.600	2.500	1.300	64	3.600	4.500	1.300
65	3.600	6.500	1.300	66	3.600	8.500	1.300
67	3.600	10.500	1.300	68	3.600	12.500	1.300
69	3.600	14.500	1.300	70	3.600	16.500	1.300
71	3.600	18.500	1.300	72	3.600	20.500	1.300
73	5.400	0.000	0.000	74	5.400	0.500	0.000
75	5.400	2.500	0.000	76	5.400	4.500	0.000
77	5.400	6.500	0.000	78	5.400	8.500	0.000
79	5.400	10.500	0.000	80	5.400	12.500	0.000
81	5.400	14.500	0.000	82	5.400	16.500	0.000
83	5.400	18.500	0.000	84	5.400	20.500	0.000
85	5.400	0.000	1.300	86	5.400	0.500	1.300
87	5.400	2.500	1.300	88	5.400	4.500	1.300
89	5.400	6.500	1.300	90	5.400	8.500	1.300
91	5.400	10.500	1.300	92	5.400	12.500	1.300
93	5.400	14.500	1.300	94	5.400	16.500	1.300
95	5.400	18.500	1.300	96	5.400	20.500	1.300
97	7.200	0.000	0.000	98	7.200	0.500	0.000
99	7.200	2.500	0.000	100	7.200	4.500	0.000
101	7.200	6.500	0.000	102	7.200	8.500	0.000
103	7.200	10.500	0.000	104	7.200	12.500	0.000
105	7.200	14.500	0.000	106	7.200	16.500	0.000
107	7.200	18.500	0.000	108	7.200	20.500	0.000
109	7.200	0.000	1.300	110	7.200	0.500	1.300
111	7.200	2.500	1.300	112	7.200	4.500	1.300
113	7.200	6.500	1.300	114	7.200	8.500	1.300
115	7.200	10.500	1.300	116	7.200	12.500	1.300
117	7.200	14.500	1.300	118	7.200	16.500	1.300
119	7.200	18.500	1.300	120	7.200	20.500	1.300
121	9.000	0.000	0.000	122	9.000	0.500	0.000
123	9.000	2.500	0.000	124	9.000	4.500	0.000
125	9.000	6.500	0.000	126	9.000	8.500	0.000
127	9.000	10.500	0.000	128	9.000	12.500	0.000
129	9.000	14.500	0.000	130	9.000	16.500	0.000
131	9.000	18.500	0.000	132	9.000	20.500	0.000
133	9.000	0.000	1.300	134	9.000	0.500	1.300
135	9.000	2.500	1.300	136	9.000	4.500	1.300
137	9.000	6.500	1.300	138	9.000	8.500	1.300
139	9.000	10.500	1.300	140	9.000	12.500	1.300
141	9.000	14.500	1.300	142	9.000	16.500	1.300
143	9.000	18.500	1.300	144	9.000	20.500	1.300
145	10.800	0.000	0.000	146	10.800	0.500	0.000
147	10.800	2.500	0.000	148	10.800	4.500	0.000
149	10.800	6.500	0.000	150	10.800	8.500	0.000
151	10.800	10.500	0.000	152	10.800	12.500	0.000
153	10.800	14.500	0.000	154	10.800	16.500	0.000
155	10.800	18.500	0.000	156	10.800	20.500	0.000
157	10.800	0.000	1.300	158	10.800	0.500	1.300
159	10.800	2.500	1.300	160	10.800	4.500	1.300
161	10.800	6.500	1.300	162	10.800	8.500	1.300
163	10.800	10.500	1.300	164	10.800	12.500	1.300
165	10.800	14.500	1.300	166	10.800	16.500	1.300
167	10.800	18.500	1.300	168	10.800	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	1.800	22.500	0.000	172	1.800	22.500	1.300
173	3.600	22.500	0.000	174	3.600	22.500	1.300
175	5.400	22.500	0.000	176	5.400	22.500	1.300
177	7.200	22.500	0.000	178	7.200	22.500	1.300
179	9.000	22.500	0.000	180	9.000	22.500	1.300
181	10.800	22.500	0.000	182	10.800	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	1.800	24.500	0.000	186	1.800	24.500	1.300
187	3.600	24.500	0.000	188	3.600	24.500	1.300
189	5.400	24.500	0.000	190	5.400	24.500	1.300
191	7.200	24.500	0.000	192	7.200	24.500	1.300
193	9.000	24.500	0.000	194	9.000	24.500	1.300
195	10.800	24.500	0.000	196	10.800	24.500	1.300

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M 48.3x3.2 CHS 3.56 [S 355]
 A 4.53E-4 Ix 11.59E-8 Iy 11.59E-8 J 23.17E-8
 E 205.0E6 G 78.85E6

Member Loading**Members 2 and 17**

W1 PZ -000.013 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.072 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.013 0.000 (kN,m)
 W5 PX -000.071 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 3 and 18

W1 PZ -000.027 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.148 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.026 0.000 (kN,m)
 W5 PX -000.147 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 4 and 19

W1 PZ -000.028 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.152 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.027 0.000 (kN,m)
 W5 PX -000.152 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 5 and 20

W1 PZ -000.029 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.157 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.028 0.000 (kN,m)
 W5 PX -000.156 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 7 and 22

W1 PZ -000.013 0.000 (kN,m)
 W4 PZ -000.072 0.000 (kN,m)

Members 8 and 23

W1 PZ -000.027 0.000 (kN,m)
 W4 PZ -000.148 0.000 (kN,m)

Members 9 and 24

W1 PZ -000.028 0.000 (kN,m)
 W4 PZ -000.152 0.000 (kN,m)

Members 10 and 25

W1 PZ -000.029 0.000 (kN,m)
 W4 PZ -000.157 0.000 (kN,m)

Members 11 and 26

D1 PY -000.026 1.275 (kN,m)
 D1 PY -000.026 0.025 (kN,m)

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Members 12-15, 27-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

D1 PY -000.026 0.025 (kN, m)
D1 PY -000.026 1.275 (kN, m)

Members 32, 47, 92, 121 and 136

W1 PZ -000.009 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.054 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.009 0.000 (kN, m)
W5 PX -000.051 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 33, 48, 93, 122 and 137

W1 PZ -000.020 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.111 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.106 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 34, 49, 94, 123 and 138

W1 PZ -000.021 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.115 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.109 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 35, 50, 95, 124 and 139

W1 PZ -000.022 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.118 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.020 0.000 (kN, m)
W5 PX -000.112 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 37, 52, 97, 126 and 141

W1 PZ -000.009 0.000 (kN, m)
W4 PZ -000.054 0.000 (kN, m)

Members 38, 53, 98, 127 and 142

W1 PZ -000.020 0.000 (kN, m)
W4 PZ -000.111 0.000 (kN, m)

Members 39, 54, 99, 128 and 143

W1 PZ -000.021 0.000 (kN, m)
W4 PZ -000.115 0.000 (kN, m)

Members 40, 55, 100, 129 and 144

W1 PZ -000.022 0.000 (kN, m)
W4 PZ -000.118 0.000 (kN, m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY -000.143 0.025 (kN, m)
D1 PY -000.143 1.775 (kN, m)

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359 and 361-371

D1 PY -000.090 0.025 (kN, m)
D1 PY -000.090 1.775 (kN, m)

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W1 PZ	-000.029	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.161	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.161	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 171 and 183

W1 PZ	-000.030	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.166	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.165	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 172 and 184

W1 PZ	-000.031	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.170	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.030	0.000	(kN,m)
W5 PX	-000.170	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 173 and 185

W1 PZ	-000.032	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.175	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.031	0.000	(kN,m)
W5 PX	-000.174	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 174 and 186

W1 PZ	-000.029	0.000	(kN,m)
W4 PZ	-000.161	0.000	(kN,m)

Members 175 and 187

W1 PZ	-000.030	0.000	(kN,m)
W4 PZ	-000.166	0.000	(kN,m)

Members 176 and 188

W1 PZ	-000.031	0.000	(kN,m)
W4 PZ	-000.170	0.000	(kN,m)

Members 177 and 189

W1 PZ	-000.032	0.000	(kN,m)
W4 PZ	-000.175	0.000	(kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.121	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 195, 207, 219, 231 and 243

W1 PZ	-000.023	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)

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W4 PZ	-000.125	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.021	0.000	(kN, m)
W5 PX	-000.119	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.023	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.128	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.122	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.024	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.125	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.022	0.000	(kN, m)
W4 PZ	-000.121	0.000	(kN, m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.023	0.000	(kN, m)
W4 PZ	-000.125	0.000	(kN, m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.023	0.000	(kN, m)
W4 PZ	-000.128	0.000	(kN, m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.024	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)

Members 306 and 312

W1 PZ	-000.033	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.179	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.032	0.000	(kN, m)
W5 PX	-000.178	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 307 and 313

W1 PZ	-000.034	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.184	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.033	0.000	(kN, m)
W5 PX	-000.183	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 308 and 314

W1 PZ	-000.033	0.000	(kN, m)
W4 PZ	-000.179	0.000	(kN, m)

Members 309 and 315

W1 PZ	-000.034	0.000	(kN, m)
W4 PZ	-000.184	0.000	(kN, m)

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W1 PZ	-000.025	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.135	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.128	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1 PZ	-000.025	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.138	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1 PZ	-000.025	0.000	(kN,m)
W4 PZ	-000.135	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1 PZ	-000.025	0.000	(kN,m)
W4 PZ	-000.138	0.000	(kN,m)

Member 381

D1 PY	-000.292	0.025	(kN,m)
D1 PY	-000.292	1.775	(kN,m)
L2 PY	-001.013	0.025	(kN,m)
L2 PY	-001.013	1.775	(kN,m)
L6 PY	-000.759	0.025	(kN,m)
L6 PY	-000.759	1.775	(kN,m)
G2 PY	-001.519	0.025	(kN,m)
G2 PY	-001.519	1.775	(kN,m)

Members 382-386

D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L2 PY	-001.013	0.025	(kN,m)
L2 PY	-001.013	1.775	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G2 PY	-001.519	0.025	(kN,m)
G2 PY	-001.519	1.775	(kN,m)

Members 387-392

D1 PY	-000.185	0.025	(kN,m)
D1 PY	-000.185	1.775	(kN,m)
L4 PY	-001.013	0.025	(kN,m)
L4 PY	-001.013	1.775	(kN,m)
L8 PY	-000.759	0.025	(kN,m)
L8 PY	-000.759	1.775	(kN,m)
G4 PY	-001.519	0.025	(kN,m)
G4 PY	-001.519	1.775	(kN,m)

Member 400

D1 PY	-000.292	0.025	(kN,m)
D1 PY	-000.292	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Members 401-404

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D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Member 405

D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
N1 PZ	-000.300	1.775	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Members 406-411

D1 PY	-000.185	0.025	(kN,m)
D1 PY	-000.185	1.775	(kN,m)
L3 PY	-001.013	0.025	(kN,m)
L3 PY	-001.013	1.775	(kN,m)
L7 PY	-000.759	0.025	(kN,m)
L7 PY	-000.759	1.775	(kN,m)
G3 PY	-001.519	0.025	(kN,m)
G3 PY	-001.519	1.775	(kN,m)

Members 412 and 416

W1 PZ	-000.035	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.033	0.000	(kN,m)
W5 PX	-000.187	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 413 and 417

W1 PZ	-000.155	0.000	(kN,m)
W1 PZ	-000.158	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.671	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.686	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.058	0.000	(kN,m)
W2 PX	-000.059	2.000	(kN,m)
W5 PX	-000.269	0.000	(kN,m)
W5 PX	-000.275	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 414 and 418

W1 PZ	-000.035	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)

Members 415 and 419

W1 PZ	-000.155	0.000	(kN,m)
W4 PZ	-000.671	0.000	(kN,m)
W1 PZ	-000.158	2.000	(kN,m)
W4 PZ	-000.686	2.000	(kN,m)

Members 420, 424, 428, 432 and 436

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 194****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W1 PZ	-000.026	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.024	0.000	(kN,m)
W5 PX	-000.135	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.622	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.636	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.058	0.000	(kN,m)
W2 PX	-000.059	2.000	(kN,m)
W5 PX	-000.215	0.000	(kN,m)
W5 PX	-000.220	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ	-000.026	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W4 PZ	-000.622	0.000	(kN,m)
W4 PZ	-000.636	2.000	(kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Released	® Fixed			
11	ROO ROO	12	ROO ROO	13	ROO ROO	14	ROO ROO
15	ROO ROO	26	ROO ROO	27	ROO ROO	28	ROO ROO
29	ROO ROO	30	ROO ROO	41	ROO ROO	42	ROO ROO
43	ROO ROO	44	ROO ROO	45	ROO ROO	56	ROO ROO
57	ROO ROO	58	ROO ROO	59	ROO ROO	60	ROO ROO
61	ROO ROO	62	ROO ROO	63	ROO ROO	64	ROO ROO
65	ROO ROO	66	ROO ROO	67	ROO ROO	68	ROO ROO
69	ROO ROO	70	ROO ROO	71	ROO ROO	72	ROO ROO
73	ROO ROO	74	ROO ROO	75	ROO ROO	76	ROO ROO
77	ROO ROO	78	ROO ROO	79	ROO ROO	80	ROO ROO
81	ROO ROO	82	ROO ROO	83	ROO ROO	84	ROO ROO
85	ROO ROO	86	ROO ROO	87	ROO ROO	88	ROO ROO
89	ROO ROO	90	ROO ROO	101	ROO ROO	102	ROO ROO
103	ROO ROO	104	ROO ROO	105	ROO ROO	106	ROO ROO
107	ROO ROO	108	ROO ROO	109	ROO ROO	110	ROO ROO
111	ROO ROO	112	ROO ROO	113	ROO ROO	114	ROO ROO
115	ROO ROO	116	ROO ROO	117	ROO ROO	118	ROO ROO
119	ROO ROO	130	ROO ROO	131	ROO ROO	132	ROO ROO
133	ROO ROO	134	ROO ROO	145	ROO ROO	146	ROO ROO
147	ROO ROO	148	ROO ROO	149	ROO ROO	150	ROO ROO
151	ROO ROO	152	ROO ROO	153	ROO ROO	154	ROO ROO
155	ROO ROO	156	ROO ROO	157	ROO ROO	158	ROO ROO
159	ROO ROO	160	ROO ROO	161	ROO ROO	162	ROO ROO
163	ROO ROO	164	ROO ROO	165	ROO ROO	166	ROO ROO
167	ROO ROO	168	ROO ROO	169	ROO ROO	178	ROO ROO
179	ROO ROO	180	ROO ROO	181	ROO ROO	190	ROO ROO
191	ROO ROO	192	ROO ROO	193	ROO ROO	202	ROO ROO
203	ROO ROO	204	ROO ROO	205	ROO ROO	214	ROO ROO
215	ROO ROO	216	ROO ROO	217	ROO ROO	226	ROO ROO
227	ROO ROO	228	ROO ROO	229	ROO ROO	238	ROO ROO
239	ROO ROO	240	ROO ROO	241	ROO ROO	250	ROO ROO
251	ROO ROO	252	ROO ROO	253	ROO ROO	254	ROO ROO

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 195****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

255 @ @	256 @ @	257 @ @	258 @ @
259 @ @	260 @ @	261 @ @	262 @ @
263 @ @	264 @ @	265 @ @	266 @ @
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271 @ @	272 @ @	273 @ @	274 @ @
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443 @ @	444 @ @	445 @ @	446 @ @
447 @ @	448 @ @	449 @ @	450 @ @
451 @ @	452 @ @	453 @ @	

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,

134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,

122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0104.050 0000.000 0104.050

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 196

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.54	0.54	-0.06	0.00	0.41	0.41
2	-2.73	-0.12	0.01	2.73	-0.06	0.00	0.12	0.14
3	-3.69	-0.37	-8.57	9.34	-0.07	0.00	0.01	0.07
4	-4.96	-0.49	-11.91	12.91	-0.01	-0.02	0.02	0.03
5	-6.29	-0.52	-8.19	10.34	0.07	-0.02	0.02	0.08
6	-7.46	-0.52	0.04	7.48	0.00	0.00	0.02	0.02
7	-8.31	-0.59	-8.64	12.01	-0.08	0.00	0.01	0.08
8	-8.71	-0.69	-12.43	15.19	0.00	-0.02	0.00	0.02
9	-8.57	-0.78	-8.55	12.13	0.08	-0.02	-0.01	0.08
10	-7.84	-0.86	0.05	7.89	-0.02	0.01	-0.02	0.03
11	-6.55	-0.94	-11.85	13.57	-0.11	0.01	-0.03	0.12
12	-4.73	-1.01	-18.60	19.22	-0.03	-0.01	-0.04	0.05
13	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
14	0.00	-0.02	0.00	0.02	-0.04	0.00	0.00	0.04
15	0.07	-0.10	-8.57	8.57	-0.07	0.00	0.00	0.07
16	0.08	-0.17	-11.91	11.91	-0.01	0.00	0.00	0.01
17	0.06	-0.24	-8.19	8.19	0.07	0.00	0.00	0.07
18	0.00	-0.31	0.00	0.31	-0.01	0.00	0.00	0.01
19	0.06	-0.37	-8.64	8.65	-0.08	0.00	0.00	0.08
20	0.09	-0.44	-12.43	12.44	0.00	0.00	0.00	0.01
21	0.06	-0.49	-8.55	8.57	0.08	0.00	0.00	0.08
22	0.00	-0.55	0.00	0.55	-0.02	0.00	0.00	0.02
23	0.13	-0.60	-11.85	11.87	-0.12	0.00	-0.01	0.12
24	0.19	-0.66	-18.60	18.61	-0.03	0.01	0.01	0.03
25	0.00	0.00	0.17	0.17	-0.02	0.00	0.40	0.40
26	-2.62	0.05	0.01	2.62	-0.02	0.00	0.09	0.10
27	-3.59	0.30	-1.99	4.12	0.01	-0.01	0.01	0.02
28	-4.87	0.40	0.02	4.89	-0.03	-0.01	0.02	0.04
29	-6.22	0.40	-8.31	10.39	-0.06	-0.01	0.01	0.07
30	-7.41	-0.43	-11.36	13.57	0.01	-0.01	0.01	0.01
31	-8.28	-0.51	-8.06	11.56	0.07	-0.02	0.01	0.07
32	-8.69	-0.59	0.06	8.71	0.00	-0.02	0.00	0.02
33	-8.56	-0.67	-8.36	11.99	-0.07	0.00	-0.01	0.07
34	-7.86	-0.78	-11.59	14.02	0.00	0.00	-0.01	0.01
35	-6.59	-0.90	-7.93	10.35	0.07	-0.03	-0.02	0.08
36	-4.79	-1.11	0.02	4.91	-0.05	-0.03	-0.03	0.07
37	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
38	0.00	-0.03	0.00	0.03	-0.01	0.00	0.00	0.01
39	0.07	-0.15	-1.99	2.00	0.00	0.00	0.00	0.01
40	0.00	-0.27	0.00	0.27	-0.03	0.00	0.00	0.03
41	0.06	-0.39	-8.31	8.32	-0.06	0.01	0.00	0.06
42	0.00	-0.50	-11.36	11.37	0.01	0.01	0.00	0.01
43	0.06	-0.60	-8.06	8.08	0.07	0.01	0.00	0.07
44	0.00	-0.71	0.00	0.71	0.00	0.01	0.00	0.01
45	0.06	-0.80	-8.36	8.40	-0.07	0.01	0.00	0.07
46	0.00	-0.90	-11.59	11.62	0.00	0.01	0.00	0.01
47	0.13	-0.99	-7.93	7.99	0.07	0.02	0.00	0.07
48	0.00	-1.08	0.00	1.08	-0.05	0.02	0.01	0.06
49	0.00	0.00	0.39	0.39	-0.04	0.00	0.39	0.39
50	-2.54	-0.03	0.00	2.54	-0.04	0.00	0.09	0.10
51	-3.61	-0.16	-6.26	7.23	-0.05	0.00	0.00	0.05
52	-4.89	-0.29	-8.59	9.89	0.00	0.00	0.01	0.01
53	-6.23	-0.41	-6.01	8.67	0.05	0.00	0.01	0.05
54	-7.42	-0.53	0.04	7.44	0.00	0.00	0.01	0.01
55	-8.29	-0.64	-6.26	10.41	-0.05	0.00	0.00	0.05
56	-8.70	-0.75	-8.83	12.42	0.00	0.00	0.00	0.00
57	-8.58	-0.85	-6.14	10.58	0.05	0.00	0.00	0.05
58	-7.87	-0.95	0.05	7.93	-0.02	0.00	-0.01	0.02

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 197

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-6.60	-1.05	-9.34	11.48	-0.09	0.00	-0.01	0.09
60	-4.80	-1.14	-15.10	15.88	-0.04	0.00	-0.02	0.04
61	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
62	0.00	-0.03	0.00	0.03	-0.03	0.00	0.00	0.03
63	0.07	-0.16	-6.26	6.26	-0.05	0.00	0.00	0.05
64	0.00	-0.29	-8.59	8.60	0.00	0.00	0.00	0.00
65	0.06	-0.40	-6.01	6.02	0.05	0.00	0.00	0.05
66	0.00	-0.52	0.00	0.52	0.00	0.00	0.00	0.00
67	0.06	-0.63	-6.26	6.29	-0.05	0.00	0.00	0.05
68	0.00	-0.74	-8.83	8.86	0.00	0.00	0.00	0.00
69	0.06	-0.84	-6.14	6.20	0.05	0.01	0.00	0.05
70	0.00	-0.94	0.00	0.94	-0.02	0.01	0.00	0.02
71	0.13	-1.03	-9.34	9.40	-0.09	0.01	0.00	0.09
72	0.00	-1.12	-15.10	15.14	-0.04	0.01	0.01	0.04
73	0.00	0.00	0.13	0.13	-0.01	0.00	0.38	0.38
74	-2.47	-0.03	0.00	2.47	-0.01	0.00	0.09	0.09
75	-3.62	-0.17	-1.49	3.92	0.00	0.00	0.01	0.01
76	-4.89	-0.29	0.02	4.90	-0.03	0.00	0.01	0.03
77	-6.24	-0.41	-6.41	8.96	-0.05	-0.01	0.01	0.05
78	-7.43	-0.53	-8.84	11.56	0.00	-0.01	0.01	0.01
79	-8.30	-0.65	-6.22	10.39	0.05	-0.01	0.01	0.05
80	-8.71	-0.75	0.06	8.74	0.00	-0.01	0.00	0.01
81	-8.58	-0.86	-6.32	10.69	-0.05	-0.01	0.00	0.05
82	-7.88	-0.96	-8.78	11.84	0.00	-0.01	-0.01	0.02
83	-6.61	-1.06	-5.78	8.84	0.05	-0.02	-0.02	0.06
84	-4.81	-1.15	0.02	4.94	-0.06	-0.02	-0.02	0.07
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	-0.03	0.00	0.03	-0.01	0.00	0.00	0.01
87	0.07	-0.16	-1.49	1.50	0.00	0.00	0.00	0.00
88	0.00	-0.28	0.00	0.28	-0.03	0.00	0.00	0.03
89	0.06	-0.40	-6.41	6.42	-0.05	0.00	0.00	0.05
90	0.00	-0.52	-8.84	8.86	0.00	0.01	0.00	0.01
91	0.06	-0.63	-6.22	6.25	0.05	0.01	0.00	0.05
92	0.00	-0.74	0.00	0.74	0.00	0.01	0.00	0.01
93	0.06	-0.84	-6.32	6.38	-0.05	0.01	0.00	0.05
94	0.00	-0.94	-8.78	8.83	0.00	0.01	0.00	0.01
95	0.13	-1.03	-5.78	5.88	0.05	0.01	0.00	0.06
96	0.00	-1.12	0.00	1.12	-0.06	0.01	0.01	0.07
97	0.00	0.00	0.39	0.39	-0.04	0.00	0.37	0.37
98	-2.42	-0.03	0.00	2.42	-0.04	0.00	0.09	0.10
99	-3.63	-0.17	-6.27	7.24	-0.05	0.00	0.01	0.05
100	-4.90	-0.29	-8.60	9.90	0.00	0.00	0.01	0.01
101	-6.25	-0.41	-6.01	8.68	0.05	0.00	0.01	0.05
102	-7.44	-0.53	0.04	7.46	0.00	0.00	0.01	0.01
103	-8.30	-0.65	-6.28	10.43	-0.05	0.00	0.01	0.05
104	-8.72	-0.75	-8.86	12.45	0.00	0.00	0.00	0.00
105	-8.59	-0.86	-6.17	10.61	0.05	0.00	0.00	0.05
106	-7.89	-0.96	0.05	7.95	-0.02	0.00	-0.01	0.02
107	-6.61	-1.06	-9.19	11.37	-0.08	0.00	-0.02	0.09
108	-4.82	-1.15	-14.77	15.58	-0.04	0.00	-0.02	0.04
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.03	0.00	0.03	-0.03	0.00	0.00	0.03
111	0.07	-0.16	-6.27	6.27	-0.05	0.00	0.00	0.05
112	0.00	-0.29	-8.60	8.61	0.00	0.00	0.00	0.00
113	0.06	-0.41	-6.01	6.02	0.05	0.00	0.00	0.05
114	0.00	-0.52	0.00	0.52	0.00	0.00	0.00	0.00
115	0.06	-0.63	-6.28	6.31	-0.05	0.00	0.00	0.05
116	0.00	-0.74	-8.86	8.89	0.00	0.00	0.00	0.00

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 198

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.06	-0.84	-6.17	6.23	0.05	0.00	0.00	0.05
118	0.00	-0.94	0.00	0.94	-0.02	0.01	0.00	0.02
119	0.13	-1.03	-9.19	9.25	-0.08	0.01	0.00	0.08
120	0.00	-1.12	-14.77	14.82	-0.04	0.01	0.01	0.04
121	0.00	0.00	0.13	0.13	-0.01	0.00	0.37	0.37
122	-2.39	-0.03	0.00	2.39	-0.01	0.00	0.09	0.09
123	-3.63	-0.16	-1.49	3.93	0.00	0.00	0.01	0.01
124	-4.90	-0.28	0.02	4.91	-0.03	-0.01	0.01	0.03
125	-6.25	-0.40	-6.40	8.95	-0.05	-0.01	0.01	0.05
126	-7.44	-0.52	-8.83	11.56	0.00	-0.01	0.01	0.02
127	-8.31	-0.63	-6.21	10.39	0.05	-0.01	0.01	0.05
128	-8.72	-0.74	0.06	8.75	0.00	-0.02	0.00	0.02
129	-8.59	-0.84	-6.33	10.70	-0.05	-0.02	0.00	0.05
130	-7.89	-0.94	-8.80	11.86	0.00	-0.02	-0.01	0.02
131	-6.62	-1.03	-5.83	8.88	0.05	-0.02	-0.01	0.06
132	-4.82	-1.12	0.02	4.95	-0.06	-0.02	-0.02	0.07
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.03	0.00	0.03	-0.01	0.00	0.00	0.01
135	0.07	-0.16	-1.49	1.50	0.00	0.00	0.00	0.00
136	0.00	-0.28	0.00	0.28	-0.03	0.00	0.00	0.03
137	0.06	-0.39	-6.40	6.41	-0.05	0.00	0.00	0.05
138	0.00	-0.51	-8.83	8.84	0.00	0.01	0.00	0.01
139	0.06	-0.61	-6.21	6.24	0.05	0.01	0.00	0.05
140	0.00	-0.72	0.00	0.72	0.00	0.01	0.00	0.01
141	0.06	-0.82	-6.33	6.38	-0.05	0.01	0.00	0.05
142	0.00	-0.91	-8.80	8.85	0.00	0.01	0.00	0.01
143	0.13	-1.01	-5.83	5.91	0.05	0.01	0.00	0.06
144	0.00	-1.09	0.00	1.09	-0.06	0.01	0.01	0.06
145	0.00	0.00	0.40	0.40	-0.05	0.00	0.35	0.36
146	-2.37	-0.02	0.00	2.37	-0.05	0.00	0.11	0.12
147	-3.64	-0.09	-6.38	7.35	-0.05	0.00	0.01	0.05
148	-4.91	-0.16	-8.88	10.15	0.00	0.00	0.02	0.02
149	-6.25	-0.23	-6.11	8.75	0.06	0.00	0.02	0.06
150	-7.44	-0.29	0.04	7.45	0.00	0.00	0.01	0.01
151	-8.31	-0.35	-6.44	10.52	-0.06	0.00	0.01	0.06
152	-8.72	-0.41	-9.24	12.71	0.00	0.00	0.00	0.01
153	-8.60	-0.47	-6.31	10.68	0.06	0.01	0.00	0.06
154	-7.90	-0.52	0.05	7.91	-0.02	0.01	-0.01	0.02
155	-6.62	-0.57	-9.73	11.78	-0.09	0.01	-0.02	0.10
156	-4.82	-0.62	-15.73	16.47	-0.03	0.01	-0.02	0.04
157	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
158	0.00	-0.02	0.00	0.02	-0.03	0.00	0.00	0.03
159	0.07	-0.09	-6.38	6.38	-0.06	0.00	0.00	0.06
160	-0.04	-0.16	-8.88	8.89	0.00	0.00	0.00	0.00
161	0.06	-0.22	-6.11	6.12	0.06	0.00	0.00	0.06
162	0.00	-0.29	0.00	0.29	0.00	0.00	0.00	0.01
163	0.06	-0.35	-6.44	6.45	-0.06	0.01	0.00	0.06
164	-0.05	-0.41	-9.24	9.25	0.00	0.01	0.00	0.01
165	0.06	-0.46	-6.31	6.33	0.06	0.01	0.00	0.06
166	0.00	-0.51	0.00	0.51	-0.02	0.01	0.00	0.02
167	0.13	-0.56	-9.73	9.75	-0.09	0.01	0.00	0.10
168	-0.14	-0.61	-15.73	15.75	-0.03	0.01	0.02	0.04
169	-2.50	-1.07	-16.03	16.26	0.11	-0.01	-0.04	0.12
170	-2.34	-0.70	-16.03	16.22	0.11	0.01	-0.01	0.11
171	-2.57	-1.30	-15.61	15.87	-0.01	-0.03	-0.03	0.04
172	-2.35	-1.17	-15.61	15.83	-0.01	0.02	0.00	0.02
173	-2.57	-1.22	-15.28	15.54	0.09	0.00	-0.02	0.09
174	-2.35	-1.21	-15.28	15.51	0.09	0.01	0.00	0.09

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 199

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Date : 29 September 2010 / Ver. 2010.06

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-2.57	-1.23	-14.95	15.22	0.00	-0.02	-0.02	0.03
176	-2.35	-1.21	-14.96	15.19	0.00	0.02	0.00	0.02
177	-2.57	-1.23	-14.73	15.01	0.08	0.00	-0.02	0.09
178	-2.35	-1.21	-14.74	14.97	0.09	0.01	0.00	0.09
179	-2.58	-1.21	-14.51	14.79	0.00	-0.02	-0.02	0.03
180	-2.35	-1.18	-14.52	14.75	0.00	0.02	0.00	0.02
181	-2.58	-0.67	-14.38	14.62	0.09	0.01	-0.03	0.10
182	-2.34	-0.66	-14.38	14.59	0.10	0.01	0.01	0.10
183	-0.10	-1.09	-0.03	1.10	0.11	-0.01	-0.04	0.12
184	0.00	-0.83	0.00	0.83	0.11	0.01	-0.03	0.12
185	-0.12	-1.40	-0.17	1.42	0.12	-0.02	-0.02	0.13
186	-0.03	-1.23	-0.15	1.24	0.12	0.02	-0.02	0.12
187	-0.07	-1.28	-0.05	1.28	0.11	0.00	-0.01	0.11
188	0.00	-1.27	0.00	1.27	0.11	0.01	-0.01	0.11
189	-0.05	-1.29	-0.16	1.30	0.12	-0.02	-0.02	0.12
190	-0.02	-1.27	-0.14	1.28	0.12	0.02	-0.02	0.12
191	-0.03	-1.29	-0.05	1.29	0.11	0.00	-0.01	0.11
192	0.00	-1.27	0.00	1.27	0.11	0.01	-0.02	0.11
193	0.03	-1.26	-0.15	1.27	0.11	-0.02	-0.01	0.12
194	-0.01	-1.24	-0.14	1.25	0.11	0.02	-0.01	0.11
195	0.05	-0.69	-0.02	0.70	0.11	0.01	0.02	0.11
196	0.00	-0.69	0.00	0.69	0.11	0.01	-0.02	0.11

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	18.81C	0.00	-0.95	0.00	0.00	0.00		0.00	0.32
	2	18.81C	0.00	-0.95	0.00	-0.47	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	11.60C	0.00	-0.02	0.29	-0.07	-0.22	0.00	0.00	0.63
	3	11.60C	0.00	0.05	0.22	0.02	0.22	@ 0.000	@ 0.000	@ 0.424
3	3	6.00C	0.00	-0.17	0.22	0.03	-0.06	0.00	0.00	0.44
	4	6.00C	0.00	-0.03	0.07	-0.02	0.09	@ 0.000	@ 0.000	@ 1.414
4	4	5.21C	0.00	-0.17	0.06	0.02	0.10	0.00	0.00	0.47
	5	5.21C	0.00	-0.02	-0.09	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.566
5	5	5.01C	0.00	-0.17	-0.09	0.02	0.23	0.00	0.00	0.90
	6	5.01C	0.00	-0.02	-0.25	-0.02	-0.26	@ 0.000	@ 0.000	@ 1.515
6	13	3.61C	0.00	0.02	-0.18	0.00	0.00	0.00	0.00	0.06
	14	3.61C	0.00	0.02	-0.18	0.01	-0.09	@ 0.000	@ 0.000	@ 0.290
7	14	3.50C	0.00	0.00	0.31	0.00	-0.24	0.00	0.00	0.75
	15	3.50C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.465
8	15	3.42C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.45
	16	3.42C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.394
9	16	3.29C	0.00	0.00	0.07	0.00	0.10	0.00	0.00	0.47
	17	3.29C	0.00	0.00	-0.09	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
10	17	3.11C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.91
	18	3.11C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.515

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	11.37T	0.00	-1.02	0.00	0.00	0.00		0.00	0.35
	26	11.37T	0.00	-1.02	0.00	-0.51	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	11.58T	0.00	-0.04	0.13	-0.05	-0.06	0.00	0.00	0.41
	27	11.58T	0.00	0.03	0.06	0.01	0.06	@ 0.000	@ 0.000	@ 0.768
18	27	4.97T	0.00	-0.18	0.06	0.03	0.09	0.00	0.00	0.36
	28	4.97T	0.00	-0.03	-0.09	-0.03	-0.10	@ 0.000	@ 0.000	@ 1.495
19	28	4.46C	0.00	-0.18	0.39	0.03	-0.24	0.00	0.00	0.72
	29	4.46C	0.00	-0.03	0.23	-0.03	0.23	@ 0.000	@ 0.000	@ 0.444
20	29	4.61C	0.00	-0.18	0.23	0.03	-0.06	0.00	0.00	0.41
	30	4.61C	0.00	-0.03	0.07	-0.03	0.08	@ 0.000	@ 0.000	@ 1.414
21	37	5.86C	0.00	0.01	-0.05	0.00	0.00	0.00	0.00	0.02
	38	5.86C	0.00	0.01	-0.05	0.01	-0.03	@ 0.000	@ 0.000	@ 0.290
22	38	5.66C	0.00	0.00	0.14	0.00	-0.06	0.00	0.00	0.20
	39	5.66C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.555
23	39	5.46C	0.00	0.00	0.06	0.00	0.09	0.00	0.00	0.35
	40	5.46C	0.00	0.00	-0.09	0.00	-0.10	@ 0.000	@ 0.000	@ 1.515
24	40	5.28C	0.00	0.00	0.39	0.00	-0.24	0.00	0.00	0.72
	41	5.28C	0.00	0.00	0.23	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
25	41	5.13C	0.00	0.00	0.23	0.00	-0.06	0.00	0.00	0.41
	42	5.13C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414
31	49	6.21C	0.00	-0.98	0.00	0.00	0.00		0.00	0.33
	50	6.21C	0.00	-0.98	0.00	-0.49	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	6.01C	0.00	-0.03	0.22	-0.04	-0.17	0.00	0.00	0.46
	51	6.01C	0.00	0.02	0.16	0.00	0.16	@ 0.000	@ 0.000	@ 0.424
33	51	5.81C	0.00	-0.14	0.16	0.04	-0.04	0.00	0.00	0.30
	52	5.81C	0.00	-0.04	0.05	-0.04	0.06	@ 0.000	@ 0.000	@ 1.414
34	52	5.61C	0.00	-0.15	0.05	0.04	0.07	0.00	0.00	0.33
	53	5.61C	0.00	-0.04	-0.06	-0.04	-0.05	@ 0.000	@ 0.000	@ 0.566
35	53	5.41C	0.00	-0.15	-0.07	0.03	0.17	0.00	0.00	0.65
	54	5.41C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.515
36	61	6.12C	0.00	0.01	-0.13	0.00	0.00	0.00	0.00	0.04
	62	6.12C	0.00	0.01	-0.13	0.01	-0.07	@ 0.000	@ 0.000	@ 0.290
37	62	5.93C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.55
	63	5.93C	0.00	0.00	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
38	63	5.76C	0.00	0.00	0.16	0.00	-0.04	0.00	0.00	0.31
	64	5.76C	0.00	0.00	0.05	0.00	0.06	@ 0.000	@ 0.000	@ 1.394
39	64	5.55C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.33
	65	5.55C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	5.31C	0.00	0.00	-0.07	0.00	0.17	0.00	0.00	0.65
	66	5.31C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.515
46	73	6.30C	0.00	-0.96	0.00	0.00	0.00		0.00	0.32
	74	6.30C	0.00	-0.96	0.00	-0.48	0.00	@ 0.000	@ 0.000	@ 0.290
47	74	6.09C	0.00	-0.03	0.10	-0.04	-0.04	0.00	0.00	0.38
	75	6.09C	0.00	0.02	0.04	0.00	0.05	@ 0.000	@ 0.000	@ 0.828
48	75	5.88C	0.00	-0.14	0.04	0.03	0.06	0.00	0.00	0.27
	76	5.88C	0.00	-0.03	-0.07	-0.03	-0.08	@ 0.000	@ 0.000	@ 1.495
49	76	5.68C	0.00	-0.14	0.30	0.03	-0.19	0.00	0.00	0.56
	77	5.68C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
50	77	5.47C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.32
	78	5.47C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
51	85	6.13C	0.00	0.01	-0.04	0.00	0.00	0.00	0.00	0.01
	86	6.13C	0.00	0.01	-0.04	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
52	86	5.93C	0.00	0.00	0.10	0.00	-0.05	0.00	0.00	0.15
	87	5.93C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.555
53	87	5.72C	0.00	0.00	0.04	0.00	0.07	0.00	0.00	0.27
	88	5.72C	0.00	0.00	-0.07	0.00	-0.08	@ 0.000	@ 0.000	@ 1.515
54	88	5.53C	0.00	0.00	0.30	0.00	-0.19	0.00	0.00	0.56
	89	5.53C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
55	89	5.36C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.32
	90	5.36C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
91	97	6.30C	0.00	-0.93	0.00	0.00	0.00		0.00	0.32
	98	6.30C	0.00	-0.93	0.00	-0.47	0.00	@ 0.000	@ 0.000	@ 0.290
92	98	6.09C	0.00	-0.03	0.22	-0.03	-0.17	0.00	0.00	0.46
	99	6.09C	0.00	0.02	0.16	0.00	0.16	@ 0.000	@ 0.000	@ 0.424
93	99	5.89C	0.00	-0.14	0.16	0.03	-0.04	0.00	0.00	0.31
	100	5.89C	0.00	-0.03	0.05	-0.03	0.06	@ 0.000	@ 0.000	@ 1.414
94	100	5.68C	0.00	-0.14	0.05	0.03	0.07	0.00	0.00	0.33
	101	5.68C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.566
95	101	5.48C	0.00	-0.14	-0.07	0.03	0.17	0.00	0.00	0.65
	102	5.48C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.515
96	109	6.13C	0.00	0.01	-0.13	0.00	0.00	0.00	0.00	0.04
	110	6.13C	0.00	0.01	-0.13	0.01	-0.07	@ 0.000	@ 0.000	@ 0.290
97	110	5.95C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.55
	111	5.95C	0.00	0.00	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
98	111	5.77C	0.00	0.00	0.16	0.00	-0.04	0.00	0.00	0.31
	112	5.77C	0.00	0.00	0.05	0.00	0.06	@ 0.000	@ 0.000	@ 1.394

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	5.56C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.33
	113	5.56C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
100	113	5.33C	0.00	0.00	-0.07	0.00	0.17	0.00	0.00	0.65
	114	5.33C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.515
120	121	6.14C	0.00	-0.93	0.00	0.00	0.00		0.00	0.31
	122	6.14C	0.00	-0.93	0.00	-0.46	0.00		@ 0.000	@ 0.290
121	122	5.94C	0.00	-0.04	0.10	-0.03	-0.04	0.00	0.00	0.36
	123	5.94C	0.00	0.01	0.04	0.00	0.05	@ 0.000	@ 0.000	@ 0.869
122	123	5.73C	0.00	-0.14	0.04	0.03	0.06	0.00	0.00	0.27
	124	5.73C	0.00	-0.03	-0.07	-0.03	-0.08	@ 0.000	@ 0.000	@ 1.495
123	124	5.53C	0.00	-0.14	0.30	0.03	-0.19	0.00	0.00	0.56
	125	5.53C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
124	125	5.33C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.32
	126	5.33C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
125	133	5.98C	0.00	0.01	-0.04	0.00	0.00	0.00	0.00	0.01
	134	5.98C	0.00	0.01	-0.04	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
126	134	5.78C	0.00	0.00	0.10	0.00	-0.05	0.00	0.00	0.15
	135	5.78C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.555
127	135	5.58C	0.00	0.00	0.04	0.00	0.07	0.00	0.00	0.27
	136	5.58C	0.00	0.00	-0.07	0.00	-0.08	@ 0.000	@ 0.000	@ 1.515
128	136	5.39C	0.00	0.00	0.30	0.00	-0.19	0.00	0.00	0.55
	137	5.39C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
129	137	5.22C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.32
	138	5.22C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
135	145	3.46C	0.00	-0.82	0.00	0.00	0.00	0.00	0.00	0.28
	146	3.46C	0.00	-0.82	0.00	-0.41	0.00	@ 0.000	@ 0.000	@ 0.290
136	146	3.35C	0.00	-0.02	0.22	-0.05	-0.17	0.00	0.00	0.47
	147	3.35C	0.00	0.03	0.17	0.01	0.16	@ 0.000	@ 0.000	@ 0.424
137	147	3.23C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.33
	148	3.23C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
138	148	3.11C	0.00	-0.14	0.05	0.03	0.07	0.00	0.00	0.35
	149	3.11C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.566
139	149	2.99C	0.00	-0.14	-0.07	0.02	0.17	0.00	0.00	0.67
	150	2.99C	0.00	-0.02	-0.18	-0.02	-0.20	@ 0.000	@ 0.000	@ 1.515
140	157	3.37C	0.00	0.02	-0.13	0.00	0.00	0.00	0.00	0.05
	158	3.37C	0.00	0.02	-0.13	0.01	-0.07	@ 0.000	@ 0.000	@ 0.290
141	158	3.27C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.56
	159	3.27C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.465

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 203

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	3.18C	0.00	0.00	0.17	0.00	-0.04	0.00	0.00	0.34
	160	3.18C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.394
143	160	3.06C	0.00	0.00	0.05	0.00	0.08	0.00	0.00	0.35
	161	3.06C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
144	161	2.91C	0.00	0.00	-0.07	0.00	0.17	0.00	0.00	0.67
	162	2.91C	0.00	0.00	-0.18	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
170	6	5.63T	0.00	-0.17	0.42	0.01	-0.27	0.00	0.00	0.92
	7	5.63T	0.00	-0.01	0.26	-0.01	0.24	@ 0.000	@ 0.000	@ 0.485
171	7	7.59T	0.00	-0.17	0.25	0.00	-0.07	0.00	0.00	0.48
	8	7.59T	0.00	-0.01	0.09	-0.01	0.10	@ 0.000	@ 0.000	@ 1.414
172	8	8.61T	0.00	-0.17	0.08	0.00	0.11	0.00	0.00	0.50
	9	8.61T	0.00	0.00	-0.09	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
173	9	8.66T	0.00	-0.17	-0.09	-0.01	0.25	0.00	0.00	1.02
	10	8.66T	0.00	0.01	-0.27	0.01	-0.29	@ 0.000	@ 0.000	@ 1.515
174	18	2.97C	0.00	0.00	0.42	0.00	-0.27	0.00	0.00	0.92
	19	2.97C	0.00	0.00	0.26	0.00	0.24	@ 0.000	@ 0.000	@ 0.485
175	19	2.87C	0.00	-0.01	0.25	0.01	-0.07	0.00	0.00	0.49
	20	2.87C	0.00	-0.01	0.09	-0.01	0.10	@ 0.000	@ 0.000	@ 1.414
176	20	2.72C	0.00	0.00	0.08	0.00	0.11	0.00	0.00	0.50
	21	2.72C	0.00	0.00	-0.09	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
177	21	2.53C	0.00	-0.01	-0.09	0.01	0.25	0.00	0.00	1.03
	22	2.53C	0.00	-0.01	-0.27	-0.01	-0.29	@ 0.000	@ 0.000	@ 1.515
182	30	7.90C	0.00	-0.18	0.09	0.02	0.09	0.00	0.00	0.41
	31	7.90C	0.00	-0.02	-0.07	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.566
183	31	10.32C	0.00	-0.18	-0.08	0.01	0.23	0.00	0.00	0.87
	32	10.32C	0.00	-0.01	-0.25	-0.01	-0.26	@ 0.000	@ 0.000	@ 1.515
184	32	11.83C	0.00	-0.17	0.43	0.00	-0.27	0.00	0.00	0.89
	33	11.83C	0.00	0.00	0.26	0.00	0.24	@ 0.000	@ 0.000	@ 0.465
185	33	12.43C	0.00	-0.16	0.25	-0.01	-0.06	0.00	0.00	0.43
	34	12.43C	0.00	0.01	0.08	0.01	0.09	@ 0.000	@ 0.000	@ 1.414
186	42	4.93C	0.00	0.00	0.09	0.00	0.09	0.00	0.00	0.42
	43	4.93C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.586
187	43	4.71C	0.00	0.00	-0.08	0.00	0.23	0.00	0.00	0.87
	44	4.71C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.515
188	44	4.53C	0.00	0.00	0.43	0.00	-0.27	0.00	0.00	0.89
	45	4.53C	0.00	0.00	0.26	0.00	0.24	@ 0.000	@ 0.000	@ 0.465
189	45	4.38C	0.00	-0.01	0.25	0.01	-0.06	0.00	0.00	0.43
	46	4.38C	0.00	-0.01	0.07	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414

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Sheet : SD / 204

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	5.22C	0.00	-0.14	0.31	0.02	-0.20	0.00	0.00	0.67
	55	5.22C	0.00	-0.03	0.19	-0.03	0.18	@ 0.000	@ 0.000	@ 0.465
195	55	5.03C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.33
	56	5.03C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.434
196	56	4.83C	0.00	-0.12	0.07	0.00	0.07	0.00	0.00	0.34
	57	4.83C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
197	57	4.64C	0.00	-0.11	-0.07	-0.02	0.18	0.00	0.00	0.74
	58	4.64C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.515
198	66	5.11C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.67
	67	5.11C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
199	67	4.93C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.33
	68	4.93C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.434
200	68	4.72C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.34
	69	4.72C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
201	69	4.49C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.75
	70	4.49C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.515
206	78	5.27C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.33
	79	5.27C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.566
207	79	5.06C	0.00	-0.13	-0.06	0.01	0.18	0.00	0.00	0.67
	80	5.06C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.515
208	80	4.86C	0.00	-0.12	0.32	0.00	-0.20	0.00	0.00	0.68
	81	4.86C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
209	81	4.66C	0.00	-0.11	0.19	-0.02	-0.05	0.00	0.00	0.33
	82	4.66C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.414
210	90	5.15C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.33
	91	5.15C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
211	91	4.91C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.67
	92	4.91C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
212	92	4.70C	0.00	0.00	0.32	0.00	-0.20	0.00	0.00	0.68
	93	4.70C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
213	93	4.52C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.33
	94	4.52C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
218	102	5.27C	0.00	-0.14	0.31	0.02	-0.20	0.00	0.00	0.67
	103	5.27C	0.00	-0.02	0.19	-0.02	0.18	@ 0.000	@ 0.000	@ 0.465
219	103	5.07C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.34
	104	5.07C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.434
220	104	4.86C	0.00	-0.12	0.07	-0.01	0.07	0.00	0.00	0.34
	105	4.86C	0.00	0.01	-0.06	0.01	-0.05	@ 0.000	@ 0.000	@ 0.566

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Sheet : SD / 205

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	4.66C	0.00	-0.11	-0.07	-0.02	0.18	0.00	0.00	0.74
	106	4.66C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.515
222	114	5.12C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.67
	115	5.12C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
223	115	4.94C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.33
	116	4.94C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.434
224	116	4.73C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.34
	117	4.73C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
225	117	4.50C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.74
	118	4.50C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.515
230	126	5.14C	0.00	-0.13	0.06	0.02	0.07	0.00	0.00	0.33
	127	5.14C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.566
231	127	4.94C	0.00	-0.13	-0.06	0.01	0.18	0.00	0.00	0.67
	128	4.94C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.515
232	128	4.75C	0.00	-0.12	0.32	-0.01	-0.20	0.00	0.00	0.68
	129	4.75C	0.00	0.01	0.19	0.01	0.18	@ 0.000	@ 0.000	@ 0.465
233	129	4.56C	0.00	-0.11	0.19	-0.02	-0.05	0.00	0.00	0.33
	130	4.56C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.414
234	138	5.02C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.33
	139	5.02C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
235	139	4.80C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.67
	140	4.80C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
236	140	4.60C	0.00	0.01	0.32	-0.01	-0.20	0.00	0.00	0.68
	141	4.60C	0.00	0.01	0.19	0.01	0.18	@ 0.000	@ 0.000	@ 0.465
237	141	4.44C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.33
	142	4.44C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
242	150	2.88C	0.00	-0.13	0.31	0.02	-0.20	0.00	0.00	0.69
	151	2.88C	0.00	-0.02	0.19	-0.02	0.18	@ 0.000	@ 0.000	@ 0.485
243	151	2.75C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.37
	152	2.75C	0.00	-0.01	0.07	-0.01	0.08	@ 0.000	@ 0.000	@ 1.414
244	152	2.63C	0.00	-0.12	0.06	-0.01	0.08	0.00	0.00	0.37
	153	2.63C	0.00	0.01	-0.07	0.01	-0.05	@ 0.000	@ 0.000	@ 0.566
245	153	2.50C	0.00	-0.11	-0.07	-0.02	0.18	0.00	0.00	0.78
	154	2.50C	0.00	0.02	-0.20	0.02	-0.22	@ 0.000	@ 0.000	@ 1.495
246	162	2.79C	0.00	0.01	0.31	-0.01	-0.20	0.00	0.00	0.69
	163	2.79C	0.00	0.01	0.19	0.01	0.18	@ 0.000	@ 0.000	@ 0.485
247	163	2.69C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.37
	164	2.69C	0.00	0.00	0.06	0.00	0.08	@ 0.000	@ 0.000	@ 1.414

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	2.56C	0.00	0.01	0.06	-0.01	0.08	0.00	0.00	0.37
	165	2.56C	0.00	0.01	-0.07	0.01	-0.05	@ 0.000	@ 0.000	@ 0.586
249	165	2.40C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.78
	166	2.40C	0.00	0.00	-0.20	0.00	-0.22	@ 0.000	@ 0.000	@ 1.495
306	10	7.73T	0.00	-0.16	0.52	-0.02	-0.36	0.00	0.00	1.21
	11	7.73T	0.00	0.02	0.34	0.01	0.32	@ 0.000	@ 0.000	@ 0.485
307	11	5.77T	0.00	-0.16	0.34	-0.02	-0.13	0.00	0.00	0.68
	12	5.77T	0.00	0.02	0.15	0.02	0.17	@ 0.000	@ 0.000	@ 1.475
308	22	2.39C	0.00	0.00	0.52	0.00	-0.36	0.00	0.00	1.20
	23	2.39C	0.00	0.00	0.34	0.00	0.32	@ 0.000	@ 0.000	@ 0.485
309	23	2.31C	0.00	-0.01	0.33	0.01	-0.13	0.00	0.00	0.68
	24	2.31C	0.00	-0.01	0.15	-0.01	0.17	@ 0.000	@ 0.000	@ 1.475
312	34	12.08C	0.00	-0.15	0.09	-0.03	0.10	0.00	0.00	0.45
	35	12.08C	0.00	0.02	-0.08	0.02	-0.07	@ 0.000	@ 0.000	@ 0.566
313	35	10.77C	0.00	-0.15	-0.09	-0.04	0.25	0.00	0.00	1.12
	36	10.76C	0.00	0.04	-0.27	0.03	-0.30	@ 0.000	@ 0.000	@ 1.495
314	46	4.20C	0.00	0.00	0.09	0.00	0.10	0.00	0.00	0.45
	47	4.20C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
315	47	3.99C	0.00	-0.01	-0.09	0.01	0.25	0.00	0.00	1.12
	48	3.99C	0.00	-0.01	-0.27	-0.01	-0.30	@ 0.000	@ 0.000	@ 1.495
318	58	4.44C	0.00	-0.10	0.40	-0.03	-0.28	0.00	0.00	0.93
	59	4.44C	0.00	0.03	0.27	0.03	0.26	@ 0.000	@ 0.000	@ 0.465
319	59	4.24C	0.00	-0.09	0.27	-0.05	-0.12	0.00	0.00	0.49
	60	4.24C	0.00	0.05	0.13	0.05	0.14	@ 0.000	@ 0.000	@ 1.515
320	70	4.30C	0.00	0.00	0.40	0.00	-0.28	0.00	0.00	0.93
	71	4.30C	0.00	0.00	0.27	0.00	0.26	@ 0.000	@ 0.000	@ 0.465
321	71	4.15C	0.00	0.00	0.27	0.00	-0.12	0.00	0.00	0.48
	72	4.15C	0.00	0.00	0.13	0.01	0.14	@ 0.000	@ 0.000	@ 1.515
324	82	4.45C	0.00	-0.10	0.06	-0.03	0.08	0.00	0.00	0.36
	83	4.45C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.545
325	83	4.25C	0.00	-0.09	-0.07	-0.04	0.19	0.00	0.00	0.94
	84	4.25C	0.00	0.04	-0.21	0.04	-0.24	@ 0.000	@ 0.000	@ 1.475
326	94	4.31C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.36
	95	4.31C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.545
327	95	4.08C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.94
	96	4.08C	0.00	0.00	-0.21	0.01	-0.24	@ 0.000	@ 0.000	@ 1.475
330	106	4.45C	0.00	-0.10	0.40	-0.03	-0.28	0.00	0.00	0.92
	107	4.45C	0.00	0.03	0.27	0.03	0.25	@ 0.000	@ 0.000	@ 0.465

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 207

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	4.25C	0.00	-0.09	0.26	-0.04	-0.11	0.00	0.00	0.48
	108	4.25C	0.00	0.04	0.12	0.04	0.13	@ 0.000	@ 0.000	@ 1.515
332	118	4.30C	0.00	0.00	0.40	0.00	-0.28	0.00	0.00	0.92
	119	4.30C	0.00	0.00	0.27	0.00	0.25	@ 0.000	@ 0.000	@ 0.465
333	119	4.15C	0.00	0.00	0.26	0.00	-0.11	0.00	0.00	0.47
	120	4.15C	0.00	0.00	0.12	0.01	0.13	@ 0.000	@ 0.000	@ 1.495
336	130	4.38C	0.00	-0.10	0.06	-0.03	0.08	0.00	0.00	0.36
	131	4.38C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.545
337	131	4.19C	0.00	-0.09	-0.07	-0.05	0.19	0.00	0.00	0.93
	132	4.19C	0.00	0.04	-0.21	0.04	-0.23	@ 0.000	@ 0.000	@ 1.475
338	142	4.24C	0.00	0.01	0.06	-0.01	0.08	0.00	0.00	0.36
	143	4.24C	0.00	0.01	-0.07	0.01	-0.06	@ 0.000	@ 0.000	@ 0.545
339	143	4.02C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.93
	144	4.02C	0.00	0.00	-0.21	0.01	-0.24	@ 0.000	@ 0.000	@ 1.475
342	154	2.36C	0.00	-0.10	0.41	-0.03	-0.29	0.00	0.00	0.98
	155	2.36C	0.00	0.03	0.28	0.03	0.26	@ 0.000	@ 0.000	@ 0.485
343	155	2.23C	0.00	-0.09	0.27	-0.04	-0.12	0.00	0.00	0.57
	156	2.23C	0.00	0.04	0.14	0.04	0.15	@ 0.000	@ 0.000	@ 1.495
344	166	2.29C	0.00	0.01	0.41	-0.01	-0.29	0.00	0.00	0.98
	167	2.29C	0.00	0.01	0.28	0.01	0.26	@ 0.000	@ 0.000	@ 0.485
345	167	2.22C	0.00	0.01	0.27	0.00	-0.12	0.00	0.00	0.57
	168	2.22C	0.00	0.01	0.14	0.01	0.15	@ 0.000	@ 0.000	@ 1.495
412	12	2.76C	0.00	-0.16	0.15	-0.03	0.07	0.00	0.00	0.64
	169	2.76C	0.00	0.03	-0.04	0.03	-0.01	@ 0.000	@ 0.000	@ 0.788
413	169	1.32C	0.00	-0.24	0.24	-0.03	0.43	0.00	0.00	1.18
	183	1.32C	0.00	0.31	-1.12	0.03	-0.43	@ 0.000	@ 0.000	@ 0.429
414	24	2.17C	0.00	-0.08	0.15	0.07	0.07	0.00	0.00	0.65
	170	2.17C	0.00	-0.08	-0.04	-0.08	-0.01	@ 0.000	@ 0.000	@ 0.788
415	170	1.34C	0.00	0.06	0.24	-0.07	0.43	0.00	0.00	1.17
	184	1.34C	0.00	0.06	-1.12	0.06	-0.43	@ 0.000	@ 0.000	@ 0.429
416	36	8.45C	0.00	-0.14	0.71	-0.05	-0.51	0.00	0.00	1.58
	171	8.45C	0.00	0.04	0.52	0.04	0.54	@ 0.000	@ 0.000	@ 1.555
417	171	4.77C	0.00	-0.21	0.20	-0.05	0.50	0.00	0.00	1.64
	185	4.77C	0.00	0.33	-1.16	0.06	-0.45	@ 0.000	@ 0.000	@ 0.469
418	48	3.86C	0.00	-0.08	0.71	0.08	-0.51	0.00	0.00	1.60
	172	3.86C	0.00	-0.08	0.53	-0.08	0.54	@ 0.000	@ 0.000	@ 1.555
419	172	2.48C	0.00	0.07	0.20	-0.07	0.50	0.00	0.00	1.63
	186	2.48C	0.00	0.07	-1.16	0.07	-0.45	@ 0.000	@ 0.000	@ 0.469

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Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	4.04C	0.00	-0.08	0.18	-0.06	-0.01	0.00	0.00	0.57
	173	4.04C	0.00	0.06	0.04	0.06	0.06	@ 0.000	@ 0.000	@ 1.192
421	173	2.53C	0.00	-0.14	0.20	-0.07	0.42	0.00	0.00	1.21
	187	2.53C	0.00	0.29	-1.05	0.08	-0.41	@ 0.000	@ 0.000	@ 0.429
422	72	3.97C	0.00	-0.08	0.18	0.07	-0.01	0.00	0.00	0.60
	174	3.97C	0.00	-0.08	0.04	-0.08	0.06	@ 0.000	@ 0.000	@ 1.212
423	174	2.50C	0.00	0.07	0.20	-0.08	0.42	0.00	0.00	1.20
	188	2.50C	0.00	0.07	-1.05	0.07	-0.41	@ 0.000	@ 0.000	@ 0.429
424	84	4.05C	0.00	-0.08	0.64	-0.05	-0.48	0.00	0.00	1.52
	175	4.05C	0.00	0.05	0.49	0.05	0.51	@ 0.000	@ 0.000	@ 1.555
425	175	2.53C	0.00	-0.15	0.17	-0.06	0.48	0.00	0.00	1.58
	189	2.53C	0.00	0.29	-1.09	0.07	-0.43	@ 0.000	@ 0.000	@ 0.469
426	96	3.92C	0.00	-0.08	0.64	0.07	-0.48	0.00	0.00	1.54
	176	3.92C	0.00	-0.08	0.50	-0.08	0.51	@ 0.000	@ 0.000	@ 1.555
427	176	2.50C	0.00	0.07	0.17	-0.08	0.48	0.00	0.00	1.56
	190	2.50C	0.00	0.07	-1.09	0.07	-0.43	@ 0.000	@ 0.000	@ 0.469
428	108	4.05C	0.00	-0.08	0.17	-0.05	0.00	0.00	0.00	0.55
	177	4.05C	0.00	0.05	0.03	0.05	0.05	@ 0.000	@ 0.000	@ 1.172
429	177	2.53C	0.00	-0.15	0.22	-0.06	0.41	0.00	0.00	1.16
	191	2.53C	0.00	0.29	-1.04	0.07	-0.40	@ 0.000	@ 0.000	@ 0.429
430	120	3.97C	0.00	-0.08	0.17	0.07	0.00	0.00	0.00	0.57
	178	3.97C	0.00	-0.08	0.03	-0.08	0.06	@ 0.000	@ 0.000	@ 1.172
431	178	2.50C	0.00	0.07	0.22	-0.08	0.41	0.00	0.00	1.15
	192	2.50C	0.00	0.07	-1.04	0.07	-0.40	@ 0.000	@ 0.000	@ 0.429
432	132	4.01C	0.00	-0.08	0.62	-0.06	-0.47	0.00	0.00	1.48
	179	4.01C	0.00	0.06	0.48	0.05	0.49	@ 0.000	@ 0.000	@ 1.555
433	179	2.51C	0.00	-0.15	0.18	-0.07	0.46	0.00	0.00	1.53
	193	2.51C	0.00	0.29	-1.08	0.07	-0.42	@ 0.000	@ 0.000	@ 0.469
434	144	3.88C	0.00	-0.07	0.62	0.07	-0.47	0.00	0.00	1.50
	180	3.88C	0.00	-0.07	0.48	-0.08	0.50	@ 0.000	@ 0.000	@ 1.555
435	180	2.49C	0.00	0.08	0.18	-0.08	0.46	0.00	0.00	1.51
	194	2.49C	0.00	0.08	-1.08	0.07	-0.42	@ 0.000	@ 0.000	@ 0.469
436	156	2.09C	0.00	-0.09	0.13	-0.05	0.03		0.00	0.55
	181	2.09C	0.00	0.05	-0.01	0.05	0.02	@ 0.000	@ 0.000	@ 0.929
437	181	1.29C	0.00	-0.15	0.24	-0.06	0.39		0.00	1.08
	195	1.29C	0.00	0.29	-1.02	0.07	-0.38	@ 0.000	@ 0.000	@ 0.429
438	168	2.11C	0.00	-0.07	0.13	0.07	0.03	0.00	0.00	0.56
	182	2.11C	0.00	-0.07	-0.01	-0.07	0.02	@ 0.000	@ 0.000	@ 0.949

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	1.31C	0.00	0.07	0.24	-0.08	0.39		0.00	1.07
	196	1.31C	0.00	0.07	-1.02	0.07	-0.38	@	0.000	@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.846	18.820	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.113	0.000	-0.222
3	0.000	0.000	0.000	0.130	0.000	-0.016
4	0.000	0.000	0.000	0.000	0.000	-0.043
5	0.000	0.000	0.000	-0.133	0.000	-0.040
6	0.000	0.000	0.000	0.000	0.000	-0.033
7	0.000	0.000	0.000	0.141	0.000	-0.020
9	0.000	0.000	0.000	-0.140	0.000	0.016
10	0.000	0.000	0.000	0.035	0.000	0.035
11	0.000	0.000	0.000	0.208	0.000	0.054
12	0.000	0.000	0.000	0.054	0.000	0.067
13	-0.022	3.609	-0.180	0.000	0.000	0.000
14	0.020	0.000	0.759	0.066	0.000	0.000
15	0.000	0.000	0.000	0.136	0.000	0.000
16	0.000	0.000	0.000	0.010	0.000	0.000
17	0.000	0.000	0.000	-0.133	0.000	0.000
18	-3.699	0.000	1.320	0.000	0.000	0.000
19	0.000	0.000	0.000	0.143	0.000	0.000
21	0.000	0.000	0.000	-0.141	0.000	0.000
22	-3.849	0.000	1.570	0.037	0.000	0.000
23	0.000	0.000	0.000	0.209	0.000	0.000
24	0.000	0.000	0.000	0.054	0.000	-0.024
25	1.082	-11.364	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.035	0.000	-0.172
27	0.000	0.000	0.000	0.000	0.000	-0.014
28	0.000	0.000	0.000	0.063	0.000	-0.028
29	0.000	0.000	0.000	0.115	0.000	-0.026
30	0.000	0.000	0.000	-0.014	0.000	-0.020
31	0.000	0.000	0.000	-0.122	0.000	-0.011
33	0.000	0.000	0.000	0.120	0.000	0.013
34	0.000	0.000	0.000	0.000	0.000	0.025
35	0.000	0.000	0.000	-0.128	0.000	0.037
36	0.000	0.000	0.000	0.097	0.000	0.047
37	-0.014	5.856	-0.052	0.000	0.000	0.000
38	0.013	0.000	0.313	0.019	0.000	0.000
40	-2.105	0.000	0.941	0.062	0.000	0.000
41	0.000	0.000	0.000	0.116	0.000	0.000
42	0.000	0.000	0.000	-0.013	0.000	0.000
43	0.000	0.000	0.000	-0.122	0.000	0.000
44	-2.226	0.000	1.321	0.000	0.000	0.000
45	0.000	0.000	0.000	0.122	0.000	0.000
47	0.000	0.000	0.000	-0.129	0.000	0.000
48	-6.486	0.000	1.997	0.098	0.000	-0.019
49	0.966	6.213	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.081	0.000	-0.169
51	0.000	0.000	0.000	0.090	0.000	0.000
52	0.000	0.000	0.000	0.000	0.000	-0.016
53	0.000	0.000	0.000	-0.091	0.000	-0.014

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
54	0.000	0.000	0.000	0.000	0.000	-0.011
55	0.000	0.000	0.000	0.092	0.000	0.000
57	0.000	0.000	0.000	-0.096	0.000	0.000
58	0.000	0.000	0.000	0.030	0.000	0.016
59	0.000	0.000	0.000	0.154	0.000	0.023
60	0.000	0.000	0.000	0.072	0.000	0.028
61	-0.015	6.120	-0.130	0.000	0.000	0.000
62	0.014	0.000	0.556	0.048	0.000	0.000
63	0.000	0.000	0.000	0.094	0.000	0.000
65	0.000	0.000	0.000	-0.091	0.000	0.000
66	1.459	0.000	0.992	0.000	0.000	0.000
67	0.000	0.000	0.000	0.093	0.000	0.000
69	0.000	0.000	0.000	-0.096	0.000	0.000
70	1.635	0.000	1.209	0.031	0.000	0.000
71	0.000	0.000	0.000	0.155	0.000	0.000
72	0.000	0.000	0.000	0.073	0.000	-0.024
73	0.937	6.295	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.027	0.000	-0.166
75	0.000	0.000	0.000	0.000	0.000	-0.013
76	0.000	0.000	0.000	0.049	0.000	-0.025
77	0.000	0.000	0.000	0.090	0.000	-0.023
78	0.000	0.000	0.000	0.000	0.000	-0.019
79	0.000	0.000	0.000	-0.094	0.000	-0.012
81	0.000	0.000	0.000	0.092	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.018
83	0.000	0.000	0.000	-0.098	0.000	0.028
84	0.000	0.000	0.000	0.114	0.000	0.035
85	-0.014	6.132	-0.039	0.000	0.000	0.000
86	0.013	0.000	0.234	0.014	0.000	0.000
88	-0.020	0.000	0.728	0.049	0.000	0.000
89	0.000	0.000	0.000	0.091	0.000	0.000
91	0.000	0.000	0.000	-0.094	0.000	0.000
92	-0.019	0.000	1.015	0.000	0.000	0.000
93	0.000	0.000	0.000	0.093	0.000	0.000
95	0.000	0.000	0.000	-0.098	0.000	0.000
96	0.295	0.000	1.774	0.115	0.000	-0.024
97	0.916	6.300	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.081	0.000	-0.163
99	0.000	0.000	0.000	0.090	0.000	-0.013
100	0.000	0.000	0.000	0.000	0.000	-0.024
101	0.000	0.000	0.000	-0.092	0.000	-0.023
102	0.000	0.000	0.000	0.000	0.000	-0.018
103	0.000	0.000	0.000	0.093	0.000	-0.011
105	0.000	0.000	0.000	-0.097	0.000	0.000
106	0.000	0.000	0.000	0.029	0.000	0.018
107	0.000	0.000	0.000	0.152	0.000	0.027
108	0.000	0.000	0.000	0.068	0.000	0.035
109	-0.014	6.134	-0.130	0.000	0.000	0.000
110	0.013	0.000	0.556	0.047	0.000	0.000
111	0.000	0.000	0.000	0.094	0.000	0.000
113	0.000	0.000	0.000	-0.092	0.000	0.000
114	-0.020	0.000	0.979	0.000	0.000	0.000
115	0.000	0.000	0.000	0.094	0.000	0.000
117	0.000	0.000	0.000	-0.097	0.000	0.000
118	-0.019	0.000	1.187	0.029	0.000	0.000
119	0.000	0.000	0.000	0.153	0.000	0.000
120	0.000	0.000	0.000	0.069	0.000	-0.024
121	0.910	6.143	0.000	0.000	0.000	0.000

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 211

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
122	0.000	0.000	0.000	0.027	0.000	-0.159
123	0.000	0.000	0.000	0.000	0.000	-0.014
124	0.000	0.000	0.000	0.049	0.000	-0.024
125	0.000	0.000	0.000	0.090	0.000	-0.023
126	0.000	0.000	0.000	0.000	0.000	-0.019
127	0.000	0.000	0.000	-0.094	0.000	-0.013
129	0.000	0.000	0.000	0.092	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.015
131	0.000	0.000	0.000	-0.098	0.000	0.024
132	0.000	0.000	0.000	0.108	0.000	0.031
133	-0.013	5.985	-0.039	0.000	0.000	0.000
134	0.012	0.000	0.234	0.014	0.000	0.000
136	2.117	0.000	0.718	0.049	0.000	0.000
137	0.000	0.000	0.000	0.090	0.000	0.000
139	0.000	0.000	0.000	-0.094	0.000	0.000
140	2.246	0.000	1.004	0.000	0.000	0.000
141	0.000	0.000	0.000	0.093	0.000	0.000
143	0.000	0.000	0.000	-0.098	0.000	0.000
144	6.255	0.000	1.692	0.109	0.000	-0.026
145	0.806	3.455	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.084	0.000	-0.197
147	0.000	0.000	0.000	0.096	0.000	-0.015
148	0.000	0.000	0.000	0.000	0.000	-0.032
149	0.000	0.000	0.000	-0.101	0.000	-0.031
150	0.000	0.000	0.000	0.000	0.000	-0.026
151	0.000	0.000	0.000	0.103	0.000	-0.017
153	0.000	0.000	0.000	-0.108	0.000	0.000
154	0.000	0.000	0.000	0.033	0.000	0.019
155	0.000	0.000	0.000	0.171	0.000	0.031
156	0.000	0.000	0.000	0.055	0.000	0.039
157	-0.023	3.369	-0.134	0.000	0.000	0.000
158	0.020	0.000	0.571	0.049	0.000	0.000
159	0.000	0.000	0.000	0.100	0.000	0.000
161	0.000	0.000	0.000	-0.101	0.000	0.000
162	2.232	0.000	0.988	0.000	0.000	0.000
163	0.000	0.000	0.000	0.104	0.000	0.000
165	0.000	0.000	0.000	-0.108	0.000	0.000
166	2.219	0.000	1.216	0.034	0.000	0.000
167	0.000	0.000	0.000	0.172	0.000	0.000
168	0.000	0.000	0.000	0.056	0.000	-0.034
169	0.000	0.000	0.000	-0.199	0.000	0.081
170	0.000	0.000	0.000	-0.203	0.000	0.013
171	0.000	0.000	0.000	0.016	0.000	0.055
172	0.000	0.000	0.000	0.016	0.000	0.000
173	0.000	0.000	0.000	-0.157	0.000	0.034
174	0.000	0.000	0.000	-0.164	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.044
177	0.000	0.000	0.000	-0.153	0.000	0.043
178	0.000	0.000	0.000	-0.160	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.040
181	0.000	0.000	0.000	-0.172	0.000	0.050
182	0.000	0.000	0.000	-0.176	0.000	-0.013
183	0.000	0.000	0.000	-0.208	0.000	0.077
184	1.461	0.000	3.099	-0.207	0.000	0.052
185	0.000	0.000	0.000	-0.224	0.000	0.041
186	0.000	0.000	0.000	-0.221	0.000	0.031
187	0.000	0.000	0.000	-0.207	0.000	0.013
188	2.398	0.000	4.633	-0.205	0.000	0.027

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 212

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	R _x →(kN)	R _y ↑(kN)	R _z ↗(kN)	M _x →(kN.m)	M _y ↑(kN.m)	M _z ↗(kN.m)
189	0.000	0.000	0.000	-0.212	0.000	0.028
190	0.000	0.000	0.000	-0.210	0.000	0.028
191	0.000	0.000	0.000	-0.199	0.000	0.027
192	1.552	0.000	4.509	-0.198	0.000	0.028
193	0.000	0.000	0.000	-0.205	0.000	0.023
194	0.000	0.000	0.000	-0.204	0.000	0.023
195	0.000	0.000	0.000	-0.193	0.000	-0.028
196	0.627	0.000	2.787	-0.192	0.000	0.029
Total	13.033	76.534	38.193	-0.565	0.000	-0.628

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	
Load Group G1	Live Load
Load Group G2	Live Load
Load Group G3	Live Load
Load Group G4	Live Load

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 W1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.064	2	2.500	0.064
3	4.500	0.064	4	6.500	0.064	5	8.500	0.064
6	10.500	0.064	7	12.500	0.064	8	14.500	0.064
9	16.500	0.064	10	18.500	0.064	11	20.500	0.064
12	22.500	0.597	13	24.500	1.053			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.004	3	0.004	4	0.004
5	0.004	6	0.004	7	0.004	8	0.004
9	0.004	10	0.004	11	0.004	12	0.004
13	0.000	14	0.003	15	0.003	16	0.003
17	0.003	18	0.003	19	0.003	20	0.003
21	0.003	22	0.003	23	0.003	24	0.003
25	0.000	26	0.006	27	0.006	28	0.006
29	0.006	30	0.006	31	0.006	32	0.006
33	0.006	34	0.006	35	0.006	36	0.006
37	0.000	38	0.005	39	0.005	40	0.005
41	0.005	42	0.005	43	0.005	44	0.005
45	0.005	46	0.005	47	0.005	48	0.005
49	0.000	50	0.005	51	0.005	52	0.005
53	0.005	54	0.005	55	0.005	56	0.005
57	0.005	58	0.005	59	0.005	60	0.005
61	0.000	62	0.005	63	0.005	64	0.005
65	0.005	66	0.005	67	0.005	68	0.005
69	0.005	70	0.005	71	0.005	72	0.005
73	0.000	74	0.005	75	0.005	76	0.005
77	0.005	78	0.005	79	0.005	80	0.005
81	0.005	82	0.005	83	0.005	84	0.005
85	0.000	86	0.005	87	0.005	88	0.005
89	0.005	90	0.005	91	0.005	92	0.005
93	0.005	94	0.005	95	0.005	96	0.005
97	0.000	98	0.005	99	0.005	100	0.005
101	0.005	102	0.005	103	0.005	104	0.005
105	0.005	106	0.005	107	0.005	108	0.005
109	0.000	110	0.005	111	0.005	112	0.005
113	0.005	114	0.005	115	0.005	116	0.005
117	0.005	118	0.005	119	0.005	120	0.005
121	0.000	122	0.005	123	0.005	124	0.005

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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125	0.005	126	0.005	127	0.005	128	0.005
129	0.005	130	0.005	131	0.005	132	0.005
133	0.000	134	0.005	135	0.005	136	0.005
137	0.005	138	0.005	139	0.005	140	0.005
141	0.005	142	0.005	143	0.005	144	0.005
145	0.000	146	0.003	147	0.003	148	0.003
149	0.003	150	0.003	151	0.003	152	0.003
153	0.003	154	0.003	155	0.003	156	0.003
157	0.000	158	0.003	159	0.003	160	0.003
161	0.003	162	0.003	163	0.003	164	0.003
165	0.003	166	0.003	167	0.003	168	0.003
169	0.027	170	0.024	171	0.052	172	0.048
173	0.051	174	0.048	175	0.051	176	0.048
177	0.051	178	0.048	179	0.051	180	0.048
181	0.026	182	0.024	183	0.046	184	0.043
185	0.090	186	0.086	187	0.089	188	0.086
189	0.089	190	0.086	191	0.089	192	0.086
193	0.089	194	0.086	195	0.045	196	0.043

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 1.00 N1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W4 + 0.50 G1 + 0.50 G3

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W2 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W5 + 0.50 G1 + 0.50 G3

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	1.800	0.000	0.000	26	1.800	0.500	0.000
27	1.800	2.500	0.000	28	1.800	4.500	0.000
29	1.800	6.500	0.000	30	1.800	8.500	0.000
31	1.800	10.500	0.000	32	1.800	12.500	0.000
33	1.800	14.500	0.000	34	1.800	16.500	0.000
35	1.800	18.500	0.000	36	1.800	20.500	0.000
37	1.800	0.000	1.300	38	1.800	0.500	1.300
39	1.800	2.500	1.300	40	1.800	4.500	1.300
41	1.800	6.500	1.300	42	1.800	8.500	1.300
43	1.800	10.500	1.300	44	1.800	12.500	1.300
45	1.800	14.500	1.300	46	1.800	16.500	1.300
47	1.800	18.500	1.300	48	1.800	20.500	1.300
49	3.600	0.000	0.000	50	3.600	0.500	0.000
51	3.600	2.500	0.000	52	3.600	4.500	0.000
53	3.600	6.500	0.000	54	3.600	8.500	0.000
55	3.600	10.500	0.000	56	3.600	12.500	0.000
57	3.600	14.500	0.000	58	3.600	16.500	0.000
59	3.600	18.500	0.000	60	3.600	20.500	0.000
61	3.600	0.000	1.300	62	3.600	0.500	1.300

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 215****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	3.600	2.500	1.300	64	3.600	4.500	1.300
65	3.600	6.500	1.300	66	3.600	8.500	1.300
67	3.600	10.500	1.300	68	3.600	12.500	1.300
69	3.600	14.500	1.300	70	3.600	16.500	1.300
71	3.600	18.500	1.300	72	3.600	20.500	1.300
73	5.400	0.000	0.000	74	5.400	0.500	0.000
75	5.400	2.500	0.000	76	5.400	4.500	0.000
77	5.400	6.500	0.000	78	5.400	8.500	0.000
79	5.400	10.500	0.000	80	5.400	12.500	0.000
81	5.400	14.500	0.000	82	5.400	16.500	0.000
83	5.400	18.500	0.000	84	5.400	20.500	0.000
85	5.400	0.000	1.300	86	5.400	0.500	1.300
87	5.400	2.500	1.300	88	5.400	4.500	1.300
89	5.400	6.500	1.300	90	5.400	8.500	1.300
91	5.400	10.500	1.300	92	5.400	12.500	1.300
93	5.400	14.500	1.300	94	5.400	16.500	1.300
95	5.400	18.500	1.300	96	5.400	20.500	1.300
97	7.200	0.000	0.000	98	7.200	0.500	0.000
99	7.200	2.500	0.000	100	7.200	4.500	0.000
101	7.200	6.500	0.000	102	7.200	8.500	0.000
103	7.200	10.500	0.000	104	7.200	12.500	0.000
105	7.200	14.500	0.000	106	7.200	16.500	0.000
107	7.200	18.500	0.000	108	7.200	20.500	0.000
109	7.200	0.000	1.300	110	7.200	0.500	1.300
111	7.200	2.500	1.300	112	7.200	4.500	1.300
113	7.200	6.500	1.300	114	7.200	8.500	1.300
115	7.200	10.500	1.300	116	7.200	12.500	1.300
117	7.200	14.500	1.300	118	7.200	16.500	1.300
119	7.200	18.500	1.300	120	7.200	20.500	1.300
121	9.000	0.000	0.000	122	9.000	0.500	0.000
123	9.000	2.500	0.000	124	9.000	4.500	0.000
125	9.000	6.500	0.000	126	9.000	8.500	0.000
127	9.000	10.500	0.000	128	9.000	12.500	0.000
129	9.000	14.500	0.000	130	9.000	16.500	0.000
131	9.000	18.500	0.000	132	9.000	20.500	0.000
133	9.000	0.000	1.300	134	9.000	0.500	1.300
135	9.000	2.500	1.300	136	9.000	4.500	1.300
137	9.000	6.500	1.300	138	9.000	8.500	1.300
139	9.000	10.500	1.300	140	9.000	12.500	1.300
141	9.000	14.500	1.300	142	9.000	16.500	1.300
143	9.000	18.500	1.300	144	9.000	20.500	1.300
145	10.800	0.000	0.000	146	10.800	0.500	0.000
147	10.800	2.500	0.000	148	10.800	4.500	0.000
149	10.800	6.500	0.000	150	10.800	8.500	0.000
151	10.800	10.500	0.000	152	10.800	12.500	0.000
153	10.800	14.500	0.000	154	10.800	16.500	0.000
155	10.800	18.500	0.000	156	10.800	20.500	0.000
157	10.800	0.000	1.300	158	10.800	0.500	1.300
159	10.800	2.500	1.300	160	10.800	4.500	1.300
161	10.800	6.500	1.300	162	10.800	8.500	1.300
163	10.800	10.500	1.300	164	10.800	12.500	1.300
165	10.800	14.500	1.300	166	10.800	16.500	1.300
167	10.800	18.500	1.300	168	10.800	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	1.800	22.500	0.000	172	1.800	22.500	1.300
173	3.600	22.500	0.000	174	3.600	22.500	1.300
175	5.400	22.500	0.000	176	5.400	22.500	1.300
177	7.200	22.500	0.000	178	7.200	22.500	1.300
179	9.000	22.500	0.000	180	9.000	22.500	1.300
181	10.800	22.500	0.000	182	10.800	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	1.800	24.500	0.000	186	1.800	24.500	1.300
187	3.600	24.500	0.000	188	3.600	24.500	1.300
189	5.400	24.500	0.000	190	5.400	24.500	1.300
191	7.200	24.500	0.000	192	7.200	24.500	1.300
193	9.000	24.500	0.000	194	9.000	24.500	1.300
195	10.800	24.500	0.000	196	10.800	24.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 216****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties****Members 1-453**

M 48.3x3.2 CHS 3.56 [S 355]
 A 4.53E-4 Ix 11.59E-8 Iy 11.59E-8 J 23.17E-8
 E 205.0E6 G 78.85E6

Member Loading**Members 2 and 17**

W1 PZ -000.013 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.072 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.013 0.000 (kN,m)
 W5 PX -000.071 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 3 and 18

W1 PZ -000.027 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.148 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.026 0.000 (kN,m)
 W5 PX -000.147 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 4 and 19

W1 PZ -000.028 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.152 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.027 0.000 (kN,m)
 W5 PX -000.152 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 5 and 20

W1 PZ -000.029 0.000 (kN,m)
 W3 PZ -000.000 0.000 (kN,m)
 W4 PZ -000.157 0.000 (kN,m)
 W6 PZ -000.000 0.000 (kN,m)
 W2 PX -000.028 0.000 (kN,m)
 W5 PX -000.156 0.000 (kN,m)
 W7 PX -000.000 0.000 (kN,m)
 W8 PX -000.000 0.000 (kN,m)

Members 7 and 22

W1 PZ -000.013 0.000 (kN,m)
 W4 PZ -000.072 0.000 (kN,m)

Members 8 and 23

W1 PZ -000.027 0.000 (kN,m)
 W4 PZ -000.148 0.000 (kN,m)

Members 9 and 24

W1 PZ -000.028 0.000 (kN,m)
 W4 PZ -000.152 0.000 (kN,m)

Members 10 and 25

W1 PZ -000.029 0.000 (kN,m)
 W4 PZ -000.157 0.000 (kN,m)

Members 11 and 26

D1 PY -000.026 1.275 (kN,m)
 D1 PY -000.026 0.025 (kN,m)

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Members 12-15, 27-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

D1 PY -000.026 0.025 (kN, m)
D1 PY -000.026 1.275 (kN, m)

Members 32, 47, 92, 121 and 136

W1 PZ -000.009 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.054 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.009 0.000 (kN, m)
W5 PX -000.051 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 33, 48, 93, 122 and 137

W1 PZ -000.020 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.111 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.106 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 34, 49, 94, 123 and 138

W1 PZ -000.021 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.115 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.019 0.000 (kN, m)
W5 PX -000.109 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 35, 50, 95, 124 and 139

W1 PZ -000.022 0.000 (kN, m)
W3 PZ -000.000 0.000 (kN, m)
W4 PZ -000.118 0.000 (kN, m)
W6 PZ -000.000 0.000 (kN, m)
W2 PX -000.020 0.000 (kN, m)
W5 PX -000.112 0.000 (kN, m)
W7 PX -000.000 0.000 (kN, m)
W8 PX -000.000 0.000 (kN, m)

Members 37, 52, 97, 126 and 141

W1 PZ -000.009 0.000 (kN, m)
W4 PZ -000.054 0.000 (kN, m)

Members 38, 53, 98, 127 and 142

W1 PZ -000.020 0.000 (kN, m)
W4 PZ -000.111 0.000 (kN, m)

Members 39, 54, 99, 128 and 143

W1 PZ -000.021 0.000 (kN, m)
W4 PZ -000.115 0.000 (kN, m)

Members 40, 55, 100, 129 and 144

W1 PZ -000.022 0.000 (kN, m)
W4 PZ -000.118 0.000 (kN, m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY -000.143 0.025 (kN, m)
D1 PY -000.143 1.775 (kN, m)

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359 and 361-371

D1 PY -000.090 0.025 (kN, m)
D1 PY -000.090 1.775 (kN, m)

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W1 PZ	-000.029	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.161	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.161	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 171 and 183

W1 PZ	-000.030	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.166	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.029	0.000	(kN,m)
W5 PX	-000.165	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 172 and 184

W1 PZ	-000.031	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.170	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.030	0.000	(kN,m)
W5 PX	-000.170	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 173 and 185

W1 PZ	-000.032	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.175	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.031	0.000	(kN,m)
W5 PX	-000.174	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 174 and 186

W1 PZ	-000.029	0.000	(kN,m)
W4 PZ	-000.161	0.000	(kN,m)

Members 175 and 187

W1 PZ	-000.030	0.000	(kN,m)
W4 PZ	-000.166	0.000	(kN,m)

Members 176 and 188

W1 PZ	-000.031	0.000	(kN,m)
W4 PZ	-000.170	0.000	(kN,m)

Members 177 and 189

W1 PZ	-000.032	0.000	(kN,m)
W4 PZ	-000.175	0.000	(kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.121	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 195, 207, 219, 231 and 243

W1 PZ	-000.023	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)

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W4 PZ	-000.125	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.021	0.000	(kN, m)
W5 PX	-000.119	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.023	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.128	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.122	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.024	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.125	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.022	0.000	(kN, m)
W4 PZ	-000.121	0.000	(kN, m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.023	0.000	(kN, m)
W4 PZ	-000.125	0.000	(kN, m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.023	0.000	(kN, m)
W4 PZ	-000.128	0.000	(kN, m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.024	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)

Members 306 and 312

W1 PZ	-000.033	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.179	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.032	0.000	(kN, m)
W5 PX	-000.178	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 307 and 313

W1 PZ	-000.034	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.184	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.033	0.000	(kN, m)
W5 PX	-000.183	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 308 and 314

W1 PZ	-000.033	0.000	(kN, m)
W4 PZ	-000.179	0.000	(kN, m)

Members 309 and 315

W1 PZ	-000.034	0.000	(kN, m)
W4 PZ	-000.184	0.000	(kN, m)

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W1 PZ	-000.025	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.135	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.128	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1 PZ	-000.025	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.138	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1 PZ	-000.025	0.000	(kN,m)
W4 PZ	-000.135	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1 PZ	-000.025	0.000	(kN,m)
W4 PZ	-000.138	0.000	(kN,m)

Member 381

D1 PY	-000.292	0.025	(kN,m)
D1 PY	-000.292	1.775	(kN,m)
L2 PY	-001.013	0.025	(kN,m)
L2 PY	-001.013	1.775	(kN,m)
L6 PY	-000.759	0.025	(kN,m)
L6 PY	-000.759	1.775	(kN,m)
G2 PY	-001.519	0.025	(kN,m)
G2 PY	-001.519	1.775	(kN,m)

Members 382-386

D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L2 PY	-001.013	0.025	(kN,m)
L2 PY	-001.013	1.775	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G2 PY	-001.519	0.025	(kN,m)
G2 PY	-001.519	1.775	(kN,m)

Members 387-392

D1 PY	-000.185	0.025	(kN,m)
D1 PY	-000.185	1.775	(kN,m)
L4 PY	-001.013	0.025	(kN,m)
L4 PY	-001.013	1.775	(kN,m)
L8 PY	-000.759	0.025	(kN,m)
L8 PY	-000.759	1.775	(kN,m)
G4 PY	-001.519	0.025	(kN,m)
G4 PY	-001.519	1.775	(kN,m)

Member 400

D1 PY	-000.292	0.025	(kN,m)
D1 PY	-000.292	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Members 401-404

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D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Member 405

D1 PY	-000.240	0.025	(kN,m)
D1 PY	-000.240	1.775	(kN,m)
L1 PY	-001.013	0.025	(kN,m)
L1 PY	-001.013	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
N1 PZ	-000.300	1.775	(kN,m)
L5 PY	-000.759	0.025	(kN,m)
L5 PY	-000.759	1.775	(kN,m)
G1 PY	-001.519	0.025	(kN,m)
G1 PY	-001.519	1.775	(kN,m)

Members 406-411

D1 PY	-000.185	0.025	(kN,m)
D1 PY	-000.185	1.775	(kN,m)
L3 PY	-001.013	0.025	(kN,m)
L3 PY	-001.013	1.775	(kN,m)
L7 PY	-000.759	0.025	(kN,m)
L7 PY	-000.759	1.775	(kN,m)
G3 PY	-001.519	0.025	(kN,m)
G3 PY	-001.519	1.775	(kN,m)

Members 412 and 416

W1 PZ	-000.035	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.033	0.000	(kN,m)
W5 PX	-000.187	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 413 and 417

W1 PZ	-000.155	0.000	(kN,m)
W1 PZ	-000.158	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.671	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.686	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.058	0.000	(kN,m)
W2 PX	-000.059	2.000	(kN,m)
W5 PX	-000.269	0.000	(kN,m)
W5 PX	-000.275	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 414 and 418

W1 PZ	-000.035	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)

Members 415 and 419

W1 PZ	-000.155	0.000	(kN,m)
W4 PZ	-000.671	0.000	(kN,m)
W1 PZ	-000.158	2.000	(kN,m)
W4 PZ	-000.686	2.000	(kN,m)

Members 420, 424, 428, 432 and 436

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W1 PZ	-000.026	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.024	0.000	(kN,m)
W5 PX	-000.135	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.622	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.636	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.058	0.000	(kN,m)
W2 PX	-000.059	2.000	(kN,m)
W5 PX	-000.215	0.000	(kN,m)
W5 PX	-000.220	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ	-000.026	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W4 PZ	-000.622	0.000	(kN,m)
W4 PZ	-000.636	2.000	(kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Released	® Fixed			
11	ROO ROO	12	ROO ROO	13	ROO ROO	14	ROO ROO
15	ROO ROO	26	ROO ROO	27	ROO ROO	28	ROO ROO
29	ROO ROO	30	ROO ROO	41	ROO ROO	42	ROO ROO
43	ROO ROO	44	ROO ROO	45	ROO ROO	56	ROO ROO
57	ROO ROO	58	ROO ROO	59	ROO ROO	60	ROO ROO
61	ROO ROO	62	ROO ROO	63	ROO ROO	64	ROO ROO
65	ROO ROO	66	ROO ROO	67	ROO ROO	68	ROO ROO
69	ROO ROO	70	ROO ROO	71	ROO ROO	72	ROO ROO
73	ROO ROO	74	ROO ROO	75	ROO ROO	76	ROO ROO
77	ROO ROO	78	ROO ROO	79	ROO ROO	80	ROO ROO
81	ROO ROO	82	ROO ROO	83	ROO ROO	84	ROO ROO
85	ROO ROO	86	ROO ROO	87	ROO ROO	88	ROO ROO
89	ROO ROO	90	ROO ROO	101	ROO ROO	102	ROO ROO
103	ROO ROO	104	ROO ROO	105	ROO ROO	106	ROO ROO
107	ROO ROO	108	ROO ROO	109	ROO ROO	110	ROO ROO
111	ROO ROO	112	ROO ROO	113	ROO ROO	114	ROO ROO
115	ROO ROO	116	ROO ROO	117	ROO ROO	118	ROO ROO
119	ROO ROO	130	ROO ROO	131	ROO ROO	132	ROO ROO
133	ROO ROO	134	ROO ROO	145	ROO ROO	146	ROO ROO
147	ROO ROO	148	ROO ROO	149	ROO ROO	150	ROO ROO
151	ROO ROO	152	ROO ROO	153	ROO ROO	154	ROO ROO
155	ROO ROO	156	ROO ROO	157	ROO ROO	158	ROO ROO
159	ROO ROO	160	ROO ROO	161	ROO ROO	162	ROO ROO
163	ROO ROO	164	ROO ROO	165	ROO ROO	166	ROO ROO
167	ROO ROO	168	ROO ROO	169	ROO ROO	178	ROO ROO
179	ROO ROO	180	ROO ROO	181	ROO ROO	190	ROO ROO
191	ROO ROO	192	ROO ROO	193	ROO ROO	202	ROO ROO
203	ROO ROO	204	ROO ROO	205	ROO ROO	214	ROO ROO
215	ROO ROO	216	ROO ROO	217	ROO ROO	226	ROO ROO
227	ROO ROO	228	ROO ROO	229	ROO ROO	238	ROO ROO
239	ROO ROO	240	ROO ROO	241	ROO ROO	250	ROO ROO
251	ROO ROO	252	ROO ROO	253	ROO ROO	254	ROO ROO

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 223****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

255	ROO	ROO	256	ROO	ROO	257	ROO	ROO	258	ROO	ROO
259	ROO	ROO	260	ROO	ROO	261	ROO	ROO	262	ROO	ROO
263	ROO	ROO	264	ROO	ROO	265	ROO	ROO	266	ROO	ROO
267	ROO	ROO	268	ROO	ROO	269	ROO	ROO	270	ROO	ROO
271	ROO	ROO	272	ROO	ROO	273	ROO	ROO	274	ROO	ROO
275	ROO	ROO	276	ROO	ROO	277	ROO	ROO	278	ROO	ROO
279	ROO	ROO	280	ROO	ROO	281	ROO	ROO	282	ROO	ROO
283	ROO	ROO	284	ROO	ROO	285	ROO	ROO	286	ROO	ROO
287	ROO	ROO	288	ROO	ROO	289	ROO	ROO	290	ROO	ROO
291	ROO	ROO	292	ROO	ROO	293	ROO	ROO	294	ROO	ROO
295	ROO	ROO	296	ROO	ROO	297	ROO	ROO	298	ROO	ROO
299	ROO	ROO	300	ROO	ROO	301	ROO	ROO	302	ROO	ROO
303	ROO	ROO	304	ROO	ROO	305	ROO	ROO	310	ROO	ROO
311	ROO	ROO	316	ROO	ROO	317	ROO	ROO	322	ROO	ROO
323	ROO	ROO	328	ROO	ROO	329	ROO	ROO	334	ROO	ROO
335	ROO	ROO	340	ROO	ROO	341	ROO	ROO	346	ROO	ROO
347	ROO	ROO	348	ROO	ROO	349	ROO	ROO	350	ROO	ROO
351	ROO	ROO	352	ROO	ROO	353	ROO	ROO	354	ROO	ROO
355	ROO	ROO	356	ROO	ROO	357	ROO	ROO	358	ROO	ROO
359	ROO	ROO	360	ROO	ROO	361	ROO	ROO	362	ROO	ROO
363	ROO	ROO	364	ROO	ROO	365	ROO	ROO	366	ROO	ROO
367	ROO	ROO	368	ROO	ROO	369	ROO	ROO	370	ROO	ROO
371	ROO	ROO	372	ROO	ROO	373	ROO	ROO	374	ROO	ROO
375	ROO	ROO	376	ROO	ROO	377	ROO	ROO	378	ROO	ROO
379	ROO	ROO	380	ROO	ROO	381	ROO	ROO	382	ROO	ROO
383	ROO	ROO	384	ROO	ROO	385	ROO	ROO	386	ROO	ROO
387	ROO	ROO	388	ROO	ROO	389	ROO	ROO	390	ROO	ROO
391	ROO	ROO	392	ROO	ROO	393	ROO	ROO	394	ROO	ROO
395	ROO	ROO	396	ROO	ROO	397	ROO	ROO	398	ROO	ROO
399	ROO	ROO	400	ROO	ROO	401	ROO	ROO	402	ROO	ROO
403	ROO	ROO	404	ROO	ROO	405	ROO	ROO	406	ROO	ROO
407	ROO	ROO	408	ROO	ROO	409	ROO	ROO	410	ROO	ROO
411	ROO	ROO	440	ROO	ROO	441	ROO	ROO	442	ROO	ROO
443	ROO	ROO	444	ROO	ROO	445	ROO	ROO	446	ROO	ROO
447	ROO	ROO	448	ROO	ROO	449	ROO	ROO	450	ROO	ROO
451	ROO	ROO	452	ROO	ROO	453	ROO	ROO			

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,

134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,

122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0104.050 0000.000 0104.050

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 224

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.54	0.54	-0.06	0.00	0.41	0.42
2	-2.76	-0.12	0.01	2.76	-0.06	0.00	0.12	0.14
3	-3.71	-0.39	-8.68	9.45	-0.07	0.00	0.01	0.07
4	-4.98	-0.54	-12.07	13.06	-0.01	-0.02	0.02	0.03
5	-6.31	-0.58	-8.29	10.44	0.07	-0.02	0.02	0.08
6	-7.50	-0.64	0.04	7.53	-0.01	0.00	0.02	0.02
7	-8.36	-0.73	-8.73	12.11	-0.08	0.00	0.01	0.08
8	-8.76	-0.85	-12.57	15.34	0.00	-0.02	0.00	0.02
9	-8.63	-0.97	-8.64	12.25	0.08	-0.02	-0.01	0.08
10	-7.91	-1.07	0.05	7.98	-0.02	0.01	-0.02	0.03
11	-6.61	-1.17	-11.99	13.74	-0.12	0.01	-0.03	0.12
12	-4.78	-1.26	-18.84	19.48	-0.03	-0.01	-0.04	0.05
13	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
14	0.00	-0.02	0.00	0.02	-0.04	0.00	0.00	0.04
15	0.07	-0.12	-8.68	8.68	-0.08	0.00	0.00	0.08
16	0.08	-0.21	-12.07	12.07	-0.01	0.00	0.00	0.01
17	0.06	-0.30	-8.29	8.29	0.07	0.00	0.00	0.07
18	0.00	-0.39	0.00	0.39	-0.01	0.00	0.00	0.01
19	0.06	-0.47	-8.73	8.75	-0.08	0.00	0.00	0.08
20	0.09	-0.55	-12.57	12.58	0.00	0.00	0.00	0.01
21	0.06	-0.63	-8.64	8.66	0.08	0.00	0.00	0.08
22	0.00	-0.70	0.00	0.70	-0.02	0.00	0.00	0.02
23	0.13	-0.77	-11.99	12.02	-0.12	0.00	-0.01	0.12
24	0.20	-0.84	-18.84	18.86	-0.03	0.01	0.01	0.03
25	0.00	0.00	0.17	0.17	-0.02	0.00	0.41	0.41
26	-2.65	0.04	0.01	2.65	-0.02	0.00	0.10	0.10
27	-3.61	0.28	-2.02	4.15	0.01	-0.02	0.01	0.02
28	-4.90	0.37	0.02	4.91	-0.03	-0.01	0.02	0.04
29	-6.25	-0.40	-8.42	10.49	-0.06	-0.01	0.01	0.07
30	-7.45	-0.52	-11.51	13.72	0.01	-0.01	0.01	0.01
31	-8.32	-0.63	-8.16	11.67	0.07	-0.02	0.01	0.07
32	-8.74	-0.73	0.06	8.77	0.00	-0.02	0.00	0.02
33	-8.62	-0.83	-8.47	12.11	-0.07	0.00	-0.01	0.07
34	-7.92	-0.97	-11.73	14.19	0.00	-0.01	-0.01	0.02
35	-6.64	-1.12	-8.02	10.48	0.07	-0.03	-0.02	0.08
36	-4.84	-1.28	0.02	5.00	-0.05	-0.03	-0.03	0.07
37	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
38	0.00	-0.04	0.00	0.04	-0.01	0.00	0.00	0.01
39	0.07	-0.19	-2.02	2.03	0.00	0.00	0.00	0.01
40	0.00	-0.34	0.00	0.34	-0.03	0.00	0.00	0.03
41	0.06	-0.49	-8.42	8.43	-0.06	0.01	0.00	0.06
42	0.00	-0.63	-11.51	11.53	0.01	0.01	0.00	0.01
43	0.06	-0.76	-8.16	8.20	0.07	0.01	0.00	0.07
44	0.00	-0.90	0.00	0.90	0.00	0.01	0.00	0.01
45	0.06	-1.03	-8.47	8.53	-0.07	0.01	0.00	0.07
46	0.00	-1.15	-11.73	11.79	0.00	0.01	0.00	0.02
47	0.13	-1.28	-8.02	8.13	0.07	0.02	0.00	0.07
48	0.00	-1.40	0.00	1.40	-0.05	0.02	0.01	0.06
49	0.00	0.00	0.39	0.39	-0.05	0.00	0.39	0.40
50	-2.56	-0.04	0.01	2.56	-0.05	0.00	0.09	0.10
51	-3.63	-0.20	-6.37	7.33	-0.05	0.00	0.00	0.05
52	-4.91	-0.36	-8.74	10.03	0.00	0.00	0.01	0.01
53	-6.26	-0.51	-6.11	8.76	0.05	0.00	0.01	0.05
54	-7.46	-0.66	0.04	7.49	0.00	0.00	0.01	0.01
55	-8.33	-0.81	-6.36	10.51	-0.05	0.00	0.00	0.05
56	-8.75	-0.95	-8.97	12.57	0.00	0.00	0.00	0.00
57	-8.63	-1.08	-6.24	10.71	0.05	0.00	0.00	0.05
58	-7.94	-1.22	0.05	8.03	-0.02	0.00	-0.01	0.02

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 225

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-6.66	-1.34	-9.46	11.65	-0.09	0.00	-0.01	0.09
60	-4.85	-1.47	-15.30	16.11	-0.04	0.00	-0.02	0.04
61	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
62	0.00	-0.04	0.00	0.04	-0.03	0.00	0.00	0.03
63	0.07	-0.20	-6.37	6.37	-0.05	0.00	0.00	0.05
64	0.00	-0.36	-8.74	8.75	0.00	0.00	0.00	0.00
65	0.06	-0.51	-6.11	6.13	0.05	0.00	0.00	0.05
66	0.00	-0.66	0.00	0.66	0.00	0.00	0.00	0.00
67	0.06	-0.80	-6.36	6.41	-0.05	0.00	0.00	0.05
68	0.00	-0.94	-8.97	9.02	0.00	0.01	0.00	0.01
69	0.06	-1.08	-6.24	6.33	0.05	0.01	0.00	0.05
70	0.00	-1.21	0.00	1.21	-0.02	0.01	0.00	0.02
71	0.13	-1.33	-9.46	9.56	-0.09	0.01	0.00	0.09
72	0.00	-1.46	-15.30	15.36	-0.04	0.01	0.01	0.04
73	0.00	0.00	0.13	0.13	-0.02	0.00	0.38	0.38
74	-2.50	-0.04	0.00	2.50	-0.02	0.00	0.09	0.09
75	-3.64	-0.21	-1.51	3.95	0.00	0.00	0.01	0.01
76	-4.91	-0.37	0.02	4.93	-0.03	0.00	0.01	0.03
77	-6.26	-0.52	-6.52	9.06	-0.05	-0.01	0.01	0.05
78	-7.47	-0.67	-8.99	11.71	0.00	-0.01	0.01	0.01
79	-8.34	-0.82	-6.32	10.50	0.05	-0.01	0.01	0.05
80	-8.76	-0.96	0.06	8.81	0.00	-0.01	0.00	0.01
81	-8.64	-1.10	-6.42	10.82	-0.05	-0.01	0.00	0.05
82	-7.94	-1.23	-8.92	12.01	0.00	-0.01	-0.01	0.02
83	-6.67	-1.36	-5.86	8.98	0.06	-0.02	-0.02	0.06
84	-4.86	-1.48	0.02	5.08	-0.06	-0.02	-0.02	0.07
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	-0.04	0.00	0.04	-0.01	0.00	0.00	0.01
87	0.07	-0.20	-1.51	1.53	0.00	0.00	0.00	0.00
88	0.00	-0.36	0.00	0.36	-0.03	0.00	0.00	0.03
89	0.06	-0.51	-6.52	6.54	-0.05	0.01	0.00	0.05
90	0.00	-0.66	-8.99	9.02	0.00	0.01	0.00	0.01
91	0.06	-0.80	-6.32	6.37	0.05	0.01	0.00	0.05
92	0.00	-0.94	0.00	0.94	0.00	0.01	0.00	0.01
93	0.06	-1.08	-6.42	6.51	-0.05	0.01	0.00	0.05
94	0.00	-1.21	-8.92	9.00	0.00	0.01	0.00	0.01
95	0.13	-1.33	-5.86	6.01	0.05	0.01	0.00	0.06
96	0.00	-1.45	0.00	1.45	-0.06	0.02	0.01	0.07
97	0.00	0.00	0.39	0.39	-0.05	0.00	0.38	0.38
98	-2.45	-0.04	0.00	2.45	-0.05	0.00	0.09	0.10
99	-3.65	-0.21	-6.38	7.35	-0.05	0.00	0.01	0.05
100	-4.92	-0.37	-8.75	10.05	0.00	0.00	0.01	0.01
101	-6.27	-0.52	-6.11	8.77	0.05	0.00	0.01	0.05
102	-7.47	-0.67	0.04	7.50	0.00	0.00	0.01	0.01
103	-8.35	-0.82	-6.38	10.54	-0.05	0.00	0.01	0.05
104	-8.77	-0.96	-9.01	12.61	0.00	0.00	0.00	0.00
105	-8.65	-1.10	-6.27	10.74	0.05	0.00	0.00	0.05
106	-7.95	-1.23	0.05	8.05	-0.02	0.00	-0.01	0.02
107	-6.67	-1.36	-9.31	11.54	-0.08	0.00	-0.02	0.09
108	-4.86	-1.48	-14.97	15.81	-0.04	0.00	-0.02	0.04
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.04	0.00	0.04	-0.03	0.00	0.00	0.03
111	0.07	-0.20	-6.38	6.38	-0.05	0.00	0.00	0.05
112	0.00	-0.36	-8.75	8.76	0.00	0.00	0.00	0.00
113	0.06	-0.51	-6.11	6.13	0.05	0.00	0.00	0.05
114	0.00	-0.66	0.00	0.66	0.00	0.00	0.00	0.00
115	0.06	-0.80	-6.38	6.43	-0.05	0.00	0.00	0.05
116	0.00	-0.94	-9.01	9.06	0.00	0.00	0.00	0.00

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Telephone 01204 384585

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Job Ref : B11323

Sheet : SD / 226

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.06	-1.08	-6.27	6.36	0.05	0.01	0.00	0.05
118	0.00	-1.21	0.00	1.21	-0.02	0.01	0.00	0.02
119	0.13	-1.34	-9.31	9.41	-0.09	0.01	0.00	0.09
120	0.00	-1.46	-14.97	15.04	-0.04	0.01	0.01	0.04
121	0.00	0.00	0.13	0.13	-0.02	0.00	0.37	0.37
122	-2.41	-0.04	0.00	2.42	-0.02	0.00	0.09	0.09
123	-3.66	-0.20	-1.51	3.96	0.00	0.00	0.01	0.01
124	-4.92	-0.36	0.02	4.94	-0.03	-0.01	0.01	0.03
125	-6.28	-0.51	-6.51	9.05	-0.05	-0.01	0.01	0.05
126	-7.48	-0.65	-8.97	11.70	0.00	-0.01	0.01	0.02
127	-8.35	-0.80	-6.31	10.50	0.05	-0.01	0.01	0.05
128	-8.77	-0.93	0.06	8.82	0.00	-0.02	0.00	0.02
129	-8.65	-1.07	-6.42	10.83	-0.05	-0.02	0.00	0.05
130	-7.96	-1.20	-8.93	12.02	0.00	-0.02	-0.01	0.02
131	-6.68	-1.33	-5.90	9.01	0.05	-0.02	-0.01	0.06
132	-4.87	-1.45	0.02	5.08	-0.06	-0.02	-0.02	0.07
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.04	0.00	0.04	-0.01	0.00	0.00	0.01
135	0.07	-0.20	-1.51	1.52	0.00	0.00	0.00	0.00
136	0.00	-0.35	0.00	0.35	-0.03	0.00	0.00	0.03
137	0.06	-0.50	-6.51	6.53	-0.05	0.01	0.00	0.05
138	0.00	-0.64	-8.97	9.00	0.00	0.01	0.00	0.01
139	0.06	-0.78	-6.31	6.36	0.05	0.01	0.00	0.05
140	0.00	-0.92	0.00	0.92	0.00	0.01	0.00	0.01
141	0.06	-1.05	-6.42	6.51	-0.05	0.01	0.00	0.05
142	0.00	-1.18	-8.93	9.01	0.00	0.01	0.00	0.01
143	0.13	-1.30	-5.90	6.05	0.05	0.01	0.00	0.06
144	0.00	-1.42	0.00	1.42	-0.06	0.02	0.02	0.06
145	0.00	0.00	0.41	0.41	-0.05	0.00	0.36	0.36
146	-2.40	-0.03	0.00	2.40	-0.05	0.00	0.11	0.12
147	-3.66	-0.11	-6.45	7.41	-0.05	0.00	0.01	0.05
148	-4.93	-0.20	-8.98	10.24	0.00	0.00	0.02	0.02
149	-6.28	-0.28	-6.17	8.81	0.06	0.00	0.02	0.06
150	-7.48	-0.36	0.04	7.49	0.00	0.00	0.01	0.02
151	-8.35	-0.44	-6.50	10.59	-0.06	0.01	0.01	0.06
152	-8.77	-0.52	-9.33	12.82	0.00	0.01	0.00	0.01
153	-8.66	-0.59	-6.36	10.76	0.06	0.01	0.00	0.06
154	-7.96	-0.66	0.05	7.99	-0.02	0.01	-0.01	0.02
155	-6.68	-0.73	-9.85	11.93	-0.10	0.01	-0.02	0.10
156	-4.87	-0.80	-15.95	16.70	-0.03	0.01	-0.02	0.04
157	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
158	0.00	-0.02	0.00	0.02	-0.03	0.00	0.00	0.03
159	0.07	-0.11	-6.45	6.45	-0.06	0.00	0.00	0.06
160	-0.04	-0.20	-8.98	8.98	0.00	0.00	0.00	0.00
161	0.06	-0.28	-6.17	6.18	0.06	0.00	0.00	0.06
162	0.00	-0.36	0.00	0.36	0.00	0.01	0.00	0.01
163	0.06	-0.44	-6.50	6.51	-0.06	0.01	0.00	0.06
164	-0.05	-0.51	-9.33	9.34	0.00	0.01	0.00	0.01
165	0.06	-0.59	-6.36	6.39	0.06	0.01	0.00	0.06
166	0.00	-0.65	0.00	0.65	-0.02	0.01	0.00	0.02
167	0.13	-0.72	-9.85	9.88	-0.10	0.01	0.01	0.10
168	-0.14	-0.79	-15.95	15.97	-0.03	0.01	0.02	0.04
169	-2.53	-1.34	-16.24	16.49	0.11	-0.01	-0.04	0.12
170	-2.37	-0.90	-16.25	16.44	0.11	0.01	-0.01	0.11
171	-2.59	-1.48	-15.83	16.11	-0.01	-0.03	-0.03	0.04
172	-2.38	-1.52	-15.83	16.08	-0.01	0.02	0.00	0.02
173	-2.60	-1.59	-15.50	15.79	0.09	0.00	-0.02	0.09
174	-2.38	-1.57	-15.50	15.76	0.09	0.01	0.00	0.09

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 227

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Date : 29 September 2010 / Ver. 2010.06

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-2.60	-1.60	-15.17	15.48	0.00	-0.02	-0.02	0.03
176	-2.38	-1.58	-15.18	15.44	0.00	0.02	0.00	0.02
177	-2.60	-1.60	-14.95	15.26	0.09	0.00	-0.02	0.09
178	-2.37	-1.58	-14.96	15.23	0.09	0.01	0.00	0.09
179	-2.61	-1.57	-14.73	15.04	0.00	-0.03	-0.02	0.03
180	-2.37	-1.54	-14.74	15.00	0.00	0.02	0.00	0.02
181	-2.61	-0.86	-14.59	14.85	0.10	0.01	-0.03	0.10
182	-2.37	-0.85	-14.60	14.81	0.10	0.02	0.01	0.10
183	-0.10	-1.38	-0.03	1.38	0.12	-0.01	-0.05	0.12
184	0.00	-0.98	0.00	0.98	0.11	0.01	-0.03	0.12
185	-0.12	-1.61	-0.16	1.62	0.13	-0.02	-0.02	0.13
186	-0.03	-1.60	-0.15	1.61	0.12	0.02	-0.02	0.13
187	-0.07	-1.66	-0.05	1.67	0.12	0.00	-0.01	0.12
188	0.00	-1.66	0.00	1.66	0.11	0.01	-0.02	0.12
189	-0.05	-1.68	-0.15	1.69	0.12	-0.02	-0.02	0.12
190	-0.02	-1.66	-0.14	1.66	0.12	0.02	-0.02	0.12
191	-0.03	-1.68	-0.05	1.68	0.11	0.00	-0.02	0.11
192	0.00	-1.66	0.00	1.66	0.11	0.01	-0.02	0.11
193	0.03	-1.65	-0.15	1.65	0.11	-0.03	-0.01	0.12
194	-0.01	-1.62	-0.14	1.63	0.11	0.02	-0.01	0.12
195	0.05	-0.90	-0.02	0.90	0.11	0.01	0.02	0.11
196	0.00	-0.90	0.00	0.90	0.11	0.02	0.02	0.11

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	19.84C	0.00	-0.96	0.00	0.00	0.00	0.00	0.00	0.32
	2	19.84C	0.00	-0.96	0.00	-0.48	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	12.52C	0.00	-0.02	0.30	-0.07	-0.23	0.00	0.00	0.64
	3	12.52C	0.00	0.05	0.23	0.02	0.22	@ 0.000	@ 0.000	@ 0.424
3	3	7.32C	0.00	-0.17	0.22	0.03	-0.06	0.00	0.00	0.44
	4	7.32C	0.00	-0.02	0.08	-0.02	0.09	@ 0.000	@ 0.000	@ 1.414
4	4	6.45C	0.00	-0.17	0.06	0.02	0.10	0.00	0.00	0.48
	5	6.45C	0.00	-0.02	-0.09	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.566
5	5	6.22C	0.00	-0.17	-0.09	0.02	0.24	0.00	0.00	0.91
	6	6.22C	0.00	-0.02	-0.25	-0.02	-0.27	@ 0.000	@ 0.000	@ 1.515
6	13	4.46C	0.00	0.02	-0.18	0.00	0.00	0.00	0.00	0.06
	14	4.46C	0.00	0.02	-0.18	0.01	-0.09	@ 0.000	@ 0.000	@ 0.290
7	14	4.35C	0.00	0.00	0.31	0.00	-0.25	0.00	0.00	0.76
	15	4.35C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.465
8	15	4.27C	0.00	0.00	0.22	0.00	-0.06	0.00	0.00	0.45
	16	4.27C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.394
9	16	4.13C	0.00	0.00	0.06	0.00	0.10	0.00	0.00	0.48
	17	4.13C	0.00	0.00	-0.09	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
10	17	3.95C	0.00	0.00	-0.09	0.00	0.24	0.00	0.00	0.92
	18	3.95C	0.00	0.00	-0.25	0.00	-0.27	@ 0.000	@ 0.000	@ 1.515

James Crosbie Associates Ltd.

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Job Ref : B11323

Sheet : SD / 228

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	10.76T	0.00	-1.03	0.00	0.00	0.00		0.00	0.35
	26	10.76T	0.00	-1.03	0.00	-0.52	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	11.01T	0.00	-0.04	0.13	-0.05	-0.06	0.00	0.00	0.41
	27	11.01T	0.00	0.03	0.06	0.01	0.06	@ 0.000	@ 0.000	@ 0.768
18	27	5.73C	0.00	-0.18	0.05	0.03	0.09	0.00	0.00	0.36
	28	5.73C	0.00	-0.03	-0.09	-0.03	-0.10	@ 0.000	@ 0.000	@ 1.495
19	28	5.48C	0.00	-0.18	0.39	0.03	-0.24	0.00	0.00	0.73
	29	5.48C	0.00	-0.03	0.24	-0.03	0.23	@ 0.000	@ 0.000	@ 0.444
20	29	5.65C	0.00	-0.18	0.23	0.03	-0.06	0.00	0.00	0.42
	30	5.65C	0.00	-0.03	0.07	-0.03	0.09	@ 0.000	@ 0.000	@ 1.414
21	37	7.28C	0.00	0.01	-0.05	0.00	0.00	0.00	0.00	0.02
	38	7.28C	0.00	0.01	-0.05	0.01	-0.03	@ 0.000	@ 0.000	@ 0.290
22	38	7.08C	0.00	0.00	0.14	0.00	-0.06	0.00	0.00	0.20
	39	7.08C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.555
23	39	6.88C	0.00	0.00	0.05	0.00	0.09	0.00	0.00	0.36
	40	6.88C	0.00	0.00	-0.09	0.00	-0.10	@ 0.000	@ 0.000	@ 1.515
24	40	6.71C	0.00	0.00	0.39	0.00	-0.24	0.00	0.00	0.73
	41	6.71C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
25	41	6.56C	0.00	0.00	0.23	0.00	-0.06	0.00	0.00	0.41
	42	6.56C	0.00	0.00	0.07	0.00	0.09	@ 0.000	@ 0.000	@ 1.414
31	49	7.70C	0.00	-1.00	0.00	0.00	0.00		0.00	0.34
	50	7.70C	0.00	-1.00	0.00	-0.50	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	7.50C	0.00	-0.03	0.22	-0.04	-0.17	0.00	0.00	0.47
	51	7.50C	0.00	0.02	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
33	51	7.30C	0.00	-0.14	0.16	0.04	-0.04	0.00	0.00	0.31
	52	7.30C	0.00	-0.04	0.05	-0.04	0.06	@ 0.000	@ 0.000	@ 1.414
34	52	7.10C	0.00	-0.15	0.05	0.04	0.07	0.00	0.00	0.33
	53	7.10C	0.00	-0.04	-0.06	-0.04	-0.05	@ 0.000	@ 0.000	@ 0.566
35	53	6.91C	0.00	-0.15	-0.07	0.03	0.18	0.00	0.00	0.66
	54	6.91C	0.00	-0.03	-0.19	-0.03	-0.20	@ 0.000	@ 0.000	@ 1.515
36	61	7.64C	0.00	0.01	-0.13	0.00	0.00	0.00	0.00	0.04
	62	7.64C	0.00	0.01	-0.13	0.01	-0.07	@ 0.000	@ 0.000	@ 0.290
37	62	7.45C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.56
	63	7.45C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
38	63	7.27C	0.00	0.00	0.16	0.00	-0.04	0.00	0.00	0.31
	64	7.27C	0.00	0.00	0.05	0.00	0.06	@ 0.000	@ 0.000	@ 1.394
39	64	7.07C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.33
	65	7.07C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566

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Job Ref : B11323

Sheet : SD / 229

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	6.83C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.66
	66	6.83C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
46	73	7.82C	0.00	-0.97	0.00	0.00	0.00		0.00	0.33
	74	7.82C	0.00	-0.97	0.00	-0.48	0.00	@ 0.000	@ 0.000	@ 0.290
47	74	7.61C	0.00	-0.03	0.10	-0.04	-0.04	0.00	0.00	0.39
	75	7.61C	0.00	0.02	0.04	0.00	0.05	@ 0.000	@ 0.000	@ 0.828
48	75	7.40C	0.00	-0.14	0.04	0.03	0.06	0.00	0.00	0.28
	76	7.40C	0.00	-0.03	-0.07	-0.03	-0.08	@ 0.000	@ 0.000	@ 1.495
49	76	7.20C	0.00	-0.14	0.30	0.03	-0.19	0.00	0.00	0.57
	77	7.20C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
50	77	6.99C	0.00	-0.14	0.18	0.03	-0.05	0.00	0.00	0.33
	78	6.99C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
51	85	7.65C	0.00	0.01	-0.04	0.00	0.00	0.00	0.00	0.01
	86	7.65C	0.00	0.01	-0.04	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
52	86	7.45C	0.00	0.00	0.10	0.00	-0.05	0.00	0.00	0.15
	87	7.45C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.555
53	87	7.24C	0.00	0.00	0.04	0.00	0.07	0.00	0.00	0.28
	88	7.24C	0.00	0.00	-0.07	0.00	-0.08	@ 0.000	@ 0.000	@ 1.515
54	88	7.05C	0.00	0.00	0.30	0.00	-0.19	0.00	0.00	0.57
	89	7.05C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
55	89	6.88C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.32
	90	6.88C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
91	97	7.82C	0.00	-0.94	0.00	0.00	0.00		0.00	0.32
	98	7.82C	0.00	-0.94	0.00	-0.47	0.00	@ 0.000	@ 0.000	@ 0.290
92	98	7.61C	0.00	-0.03	0.22	-0.04	-0.17	0.00	0.00	0.47
	99	7.61C	0.00	0.02	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
93	99	7.41C	0.00	-0.14	0.16	0.03	-0.04	0.00	0.00	0.31
	100	7.41C	0.00	-0.03	0.05	-0.03	0.06	@ 0.000	@ 0.000	@ 1.414
94	100	7.20C	0.00	-0.14	0.05	0.03	0.07	0.00	0.00	0.34
	101	7.20C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.566
95	101	7.00C	0.00	-0.14	-0.07	0.03	0.18	0.00	0.00	0.66
	102	7.00C	0.00	-0.03	-0.19	-0.03	-0.20	@ 0.000	@ 0.000	@ 1.515
96	109	7.65C	0.00	0.01	-0.13	0.00	0.00	0.00	0.00	0.04
	110	7.65C	0.00	0.01	-0.13	0.01	-0.07	@ 0.000	@ 0.000	@ 0.290
97	110	7.47C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.56
	111	7.47C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
98	111	7.29C	0.00	0.00	0.16	0.00	-0.04	0.00	0.00	0.32
	112	7.29C	0.00	0.00	0.05	0.00	0.06	@ 0.000	@ 0.000	@ 1.394

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	7.09C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.34
	113	7.09C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
100	113	6.85C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.66
	114	6.85C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
120	121	7.62C	0.00	-0.94	0.00	0.00	0.00		0.00	0.32
	122	7.62C	0.00	-0.94	0.00	-0.47	0.00		@ 0.000	@ 0.290
121	122	7.41C	0.00	-0.04	0.10	-0.03	-0.04	0.00	0.00	0.36
	123	7.41C	0.00	0.02	0.04	0.00	0.05	@ 0.000	@ 0.000	@ 0.848
122	123	7.21C	0.00	-0.14	0.04	0.03	0.06	0.00	0.00	0.28
	124	7.21C	0.00	-0.03	-0.07	-0.03	-0.08	@ 0.000	@ 0.000	@ 1.495
123	124	7.01C	0.00	-0.14	0.30	0.03	-0.19	0.00	0.00	0.56
	125	7.01C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
124	125	6.81C	0.00	-0.14	0.18	0.03	-0.05	0.00	0.00	0.32
	126	6.81C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
125	133	7.46C	0.00	0.01	-0.04	0.00	0.00	0.00	0.00	0.01
	134	7.46C	0.00	0.01	-0.04	0.01	-0.02	@ 0.000	@ 0.000	@ 0.290
126	134	7.26C	0.00	0.00	0.10	0.00	-0.05	0.00	0.00	0.15
	135	7.26C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.555
127	135	7.06C	0.00	0.00	0.04	0.00	0.07	0.00	0.00	0.27
	136	7.06C	0.00	0.00	-0.07	0.00	-0.08	@ 0.000	@ 0.000	@ 1.515
128	136	6.87C	0.00	0.00	0.30	0.00	-0.19	0.00	0.00	0.56
	137	6.87C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
129	137	6.70C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.32
	138	6.70C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
135	145	4.26C	0.00	-0.82	0.00	0.00	0.00		0.00	0.28
	146	4.26C	0.00	-0.82	0.00	-0.41	0.00		@ 0.000	@ 0.290
136	146	4.15C	0.00	-0.02	0.22	-0.05	-0.17	0.00	0.00	0.47
	147	4.15C	0.00	0.03	0.17	0.01	0.17	@ 0.000	@ 0.000	@ 0.424
137	147	4.03C	0.00	-0.13	0.17	0.03	-0.05	0.00	0.00	0.34
	148	4.03C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.414
138	148	3.91C	0.00	-0.14	0.05	0.03	0.08	0.00	0.00	0.36
	149	3.91C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.566
139	149	3.79C	0.00	-0.14	-0.07	0.02	0.17	0.00	0.00	0.68
	150	3.79C	0.00	-0.02	-0.19	-0.02	-0.20	@ 0.000	@ 0.000	@ 1.515
140	157	4.17C	0.00	0.02	-0.14	0.00	0.00	0.00	0.00	0.05
	158	4.17C	0.00	0.02	-0.14	0.01	-0.07	@ 0.000	@ 0.000	@ 0.290
141	158	4.07C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.57
	159	4.07C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.465

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 231

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	3.98C	0.00	0.00	0.17	0.00	-0.04	0.00	0.00	0.34
	160	3.98C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.394
143	160	3.86C	0.00	0.00	0.05	0.00	0.08	0.00	0.00	0.35
	161	3.86C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
144	161	3.71C	0.00	0.00	-0.07	0.00	0.17	0.00	0.00	0.68
	162	3.71C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
170	6	5.95C	0.00	-0.17	0.42	0.01	-0.28	0.00	0.00	0.93
	7	5.95C	0.00	-0.01	0.26	-0.01	0.24	@ 0.000	@ 0.000	@ 0.485
171	7	6.87T	0.00	-0.17	0.25	0.00	-0.07	0.00	0.00	0.49
	8	6.87T	0.00	-0.01	0.09	-0.01	0.10	@ 0.000	@ 0.000	@ 1.414
172	8	7.93T	0.00	-0.17	0.08	0.00	0.11	0.00	0.00	0.51
	9	7.93T	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.566
173	9	8.02T	0.00	-0.17	-0.10	-0.01	0.25	0.00	0.00	1.03
	10	8.02T	0.00	0.01	-0.27	0.01	-0.29	@ 0.000	@ 0.000	@ 1.515
174	18	3.81C	0.00	0.00	0.42	0.00	-0.27	0.00	0.00	0.93
	19	3.81C	0.00	0.00	0.26	0.00	0.24	@ 0.000	@ 0.000	@ 0.485
175	19	3.70C	0.00	-0.01	0.25	0.01	-0.07	0.00	0.00	0.49
	20	3.70C	0.00	-0.01	0.09	-0.01	0.10	@ 0.000	@ 0.000	@ 1.414
176	20	3.54C	0.00	0.00	0.08	0.00	0.11	0.00	0.00	0.51
	21	3.54C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.566
177	21	3.34C	0.00	-0.01	-0.10	0.01	0.25	0.00	0.00	1.04
	22	3.34C	0.00	-0.01	-0.27	-0.01	-0.29	@ 0.000	@ 0.000	@ 1.515
182	30	8.64C	0.00	-0.18	0.09	0.02	0.09	0.00	0.00	0.42
	31	8.64C	0.00	-0.02	-0.07	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.586
183	31	11.09C	0.00	-0.18	-0.08	0.01	0.23	0.00	0.00	0.88
	32	11.09C	0.00	-0.01	-0.25	-0.01	-0.26	@ 0.000	@ 0.000	@ 1.515
184	32	12.64C	0.00	-0.17	0.43	0.00	-0.27	0.00	0.00	0.90
	33	12.64C	0.00	0.00	0.26	0.00	0.25	@ 0.000	@ 0.000	@ 0.465
185	33	13.27C	0.00	-0.16	0.25	-0.01	-0.06	0.00	0.00	0.44
	34	13.27C	0.00	0.01	0.08	0.01	0.09	@ 0.000	@ 0.000	@ 1.414
186	42	6.37C	0.00	0.00	0.09	0.00	0.09	0.00	0.00	0.42
	43	6.37C	0.00	0.00	-0.08	0.00	-0.06	@ 0.000	@ 0.000	@ 0.586
187	43	6.15C	0.00	-0.01	-0.08	0.01	0.23	0.00	0.00	0.88
	44	6.15C	0.00	-0.01	-0.25	-0.01	-0.26	@ 0.000	@ 0.000	@ 1.515
188	44	5.98C	0.00	0.00	0.43	0.00	-0.27	0.00	0.00	0.90
	45	5.98C	0.00	0.00	0.26	0.00	0.25	@ 0.000	@ 0.000	@ 0.465
189	45	5.85C	0.00	-0.01	0.25	0.01	-0.06	0.00	0.00	0.44
	46	5.85C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.414

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 232

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	6.71C	0.00	-0.14	0.31	0.03	-0.20	0.00	0.00	0.68
	55	6.71C	0.00	-0.03	0.19	-0.03	0.18	@ 0.000	@ 0.000	@ 0.465
195	55	6.52C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.34
	56	6.52C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.434
196	56	6.33C	0.00	-0.12	0.06	0.00	0.07	0.00	0.00	0.34
	57	6.33C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
197	57	6.14C	0.00	-0.11	-0.07	-0.02	0.18	0.00	0.00	0.75
	58	6.14C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.515
198	66	6.63C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.68
	67	6.63C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.465
199	67	6.45C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.34
	68	6.45C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.434
200	68	6.24C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.34
	69	6.24C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
201	69	6.00C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.76
	70	6.00C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.515
206	78	6.79C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.33
	79	6.79C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.566
207	79	6.58C	0.00	-0.13	-0.07	0.01	0.18	0.00	0.00	0.68
	80	6.58C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.515
208	80	6.38C	0.00	-0.12	0.32	0.00	-0.21	0.00	0.00	0.69
	81	6.38C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.465
209	81	6.17C	0.00	-0.11	0.19	-0.02	-0.05	0.00	0.00	0.34
	82	6.17C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.414
210	90	6.67C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.34
	91	6.67C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
211	91	6.43C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.68
	92	6.43C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
212	92	6.22C	0.00	0.00	0.32	0.00	-0.21	0.00	0.00	0.69
	93	6.22C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.465
213	93	6.04C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.34
	94	6.04C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
218	102	6.79C	0.00	-0.14	0.31	0.02	-0.20	0.00	0.00	0.68
	103	6.79C	0.00	-0.02	0.19	-0.02	0.18	@ 0.000	@ 0.000	@ 0.465
219	103	6.59C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.34
	104	6.59C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.434
220	104	6.38C	0.00	-0.12	0.06	-0.01	0.07	0.00	0.00	0.35
	105	6.38C	0.00	0.01	-0.06	0.01	-0.05	@ 0.000	@ 0.000	@ 0.566

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 233

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	6.18C	0.00	-0.11	-0.07	-0.02	0.18	0.00	0.00	0.75
	106	6.18C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.515
222	114	6.64C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.68
	115	6.64C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.485
223	115	6.46C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.34
	116	6.46C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.434
224	116	6.26C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.35
	117	6.26C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.566
225	117	6.02C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.76
	118	6.02C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.515
230	126	6.62C	0.00	-0.13	0.06	0.02	0.07	0.00	0.00	0.33
	127	6.62C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.566
231	127	6.43C	0.00	-0.13	-0.07	0.01	0.18	0.00	0.00	0.68
	128	6.43C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.515
232	128	6.24C	0.00	-0.12	0.32	-0.01	-0.21	0.00	0.00	0.69
	129	6.24C	0.00	0.01	0.20	0.01	0.19	@ 0.000	@ 0.000	@ 0.465
233	129	6.05C	0.00	-0.11	0.19	-0.02	-0.05	0.00	0.00	0.34
	130	6.05C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.414
234	138	6.51C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.33
	139	6.51C	0.00	0.00	-0.06	0.01	-0.05	@ 0.000	@ 0.000	@ 0.566
235	139	6.28C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.68
	140	6.28C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.515
236	140	6.09C	0.00	0.01	0.32	-0.01	-0.21	0.00	0.00	0.69
	141	6.09C	0.00	0.01	0.20	0.01	0.19	@ 0.000	@ 0.000	@ 0.465
237	141	5.93C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.34
	142	5.93C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.414
242	150	3.67C	0.00	-0.13	0.32	0.02	-0.21	0.00	0.00	0.70
	151	3.67C	0.00	-0.02	0.19	-0.02	0.18	@ 0.000	@ 0.000	@ 0.485
243	151	3.54C	0.00	-0.13	0.19	0.01	-0.05	0.00	0.00	0.37
	152	3.54C	0.00	-0.01	0.07	-0.01	0.08	@ 0.000	@ 0.000	@ 1.414
244	152	3.42C	0.00	-0.12	0.06	-0.01	0.08	0.00	0.00	0.38
	153	3.42C	0.00	0.01	-0.07	0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
245	153	3.28C	0.00	-0.11	-0.07	-0.02	0.18	0.00	0.00	0.79
	154	3.28C	0.00	0.02	-0.20	0.02	-0.22	@ 0.000	@ 0.000	@ 1.495
246	162	3.58C	0.00	0.01	0.32	-0.01	-0.21	0.00	0.00	0.70
	163	3.58C	0.00	0.01	0.19	0.01	0.18	@ 0.000	@ 0.000	@ 0.485
247	163	3.48C	0.00	0.00	0.19	0.00	-0.05	0.00	0.00	0.37
	164	3.48C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.414

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Job Ref : B11323

Sheet : SD / 234

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	3.35C	0.00	0.01	0.06	-0.01	0.08	0.00	0.00	0.38
	165	3.35C	0.00	0.01	-0.07	0.01	-0.06	@ 0.000	@ 0.000	@ 0.566
249	165	3.19C	0.00	0.01	-0.07	-0.01	0.18	0.00	0.00	0.79
	166	3.19C	0.00	0.01	-0.20	0.01	-0.22	@ 0.000	@ 0.000	@ 1.495
306	10	7.12T	0.00	-0.16	0.52	-0.02	-0.36	0.00	0.00	1.22
	11	7.12T	0.00	0.02	0.34	0.01	0.32	@ 0.000	@ 0.000	@ 0.485
307	11	5.20T	0.00	-0.16	0.34	-0.03	-0.13	0.00	0.00	0.68
	12	5.20T	0.00	0.02	0.15	0.02	0.17	@ 0.000	@ 0.000	@ 1.475
308	22	3.19C	0.00	0.00	0.52	0.00	-0.36	0.00	0.00	1.21
	23	3.19C	0.00	0.00	0.34	-0.01	0.32	@ 0.000	@ 0.000	@ 0.485
309	23	3.10C	0.00	-0.01	0.34	0.01	-0.13	0.00	0.00	0.68
	24	3.10C	0.00	-0.01	0.15	-0.01	0.17	@ 0.000	@ 0.000	@ 1.475
312	34	12.97C	0.00	-0.15	0.09	-0.03	0.10	0.00	0.00	0.45
	35	12.97C	0.00	0.02	-0.08	0.02	-0.07	@ 0.000	@ 0.000	@ 0.566
313	35	11.68C	0.00	-0.15	-0.09	-0.04	0.25	0.00	0.00	1.13
	36	11.68C	0.00	0.04	-0.27	0.03	-0.30	@ 0.000	@ 0.000	@ 1.495
314	46	5.68C	0.00	0.00	0.09	0.00	0.10	0.00	0.00	0.46
	47	5.68C	0.00	0.00	-0.09	0.00	-0.07	@ 0.000	@ 0.000	@ 0.566
315	47	5.47C	0.00	-0.01	-0.09	0.01	0.25	0.00	0.00	1.14
	48	5.47C	0.00	-0.01	-0.27	-0.01	-0.30	@ 0.000	@ 0.000	@ 1.495
318	58	5.94C	0.00	-0.10	0.41	-0.03	-0.29	0.00	0.00	0.95
	59	5.94C	0.00	0.03	0.27	0.03	0.26	@ 0.000	@ 0.000	@ 0.465
319	59	5.75C	0.00	-0.09	0.27	-0.05	-0.12	0.00	0.00	0.49
	60	5.75C	0.00	0.05	0.13	0.05	0.14	@ 0.000	@ 0.000	@ 1.515
320	70	5.81C	0.00	0.00	0.41	0.00	-0.29	0.00	0.00	0.95
	71	5.81C	0.00	0.00	0.27	0.00	0.26	@ 0.000	@ 0.000	@ 0.465
321	71	5.67C	0.00	0.00	0.27	0.00	-0.12	0.00	0.00	0.49
	72	5.67C	0.00	0.00	0.13	0.01	0.14	@ 0.000	@ 0.000	@ 1.515
324	82	5.97C	0.00	-0.10	0.06	-0.03	0.08	0.00	0.00	0.37
	83	5.97C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.545
325	83	5.77C	0.00	-0.09	-0.08	-0.04	0.19	0.00	0.00	0.95
	84	5.77C	0.00	0.04	-0.21	0.04	-0.24	@ 0.000	@ 0.000	@ 1.475
326	94	5.83C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.37
	95	5.83C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.545
327	95	5.60C	0.00	0.00	-0.08	0.00	0.19	0.00	0.00	0.96
	96	5.60C	0.00	0.00	-0.21	0.01	-0.24	@ 0.000	@ 0.000	@ 1.475
330	106	5.97C	0.00	-0.10	0.40	-0.03	-0.28	0.00	0.00	0.94
	107	5.97C	0.00	0.03	0.27	0.03	0.25	@ 0.000	@ 0.000	@ 0.465

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 235

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	5.77C	0.00	-0.09	0.26	-0.04	-0.12	0.00	0.00	0.49
	108	5.77C	0.00	0.04	0.13	0.04	0.14	@ 0.000	@ 0.000	@ 1.515
332	118	5.82C	0.00	0.00	0.40	0.00	-0.28	0.00	0.00	0.93
	119	5.82C	0.00	0.00	0.27	0.00	0.25	@ 0.000	@ 0.000	@ 0.465
333	119	5.68C	0.00	0.00	0.26	0.00	-0.12	0.00	0.00	0.48
	120	5.68C	0.00	0.00	0.12	0.01	0.13	@ 0.000	@ 0.000	@ 1.515
336	130	5.87C	0.00	-0.10	0.06	-0.03	0.08	0.00	0.00	0.36
	131	5.87C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.545
337	131	5.69C	0.00	-0.09	-0.08	-0.05	0.19	0.00	0.00	0.94
	132	5.69C	0.00	0.05	-0.21	0.05	-0.24	@ 0.000	@ 0.000	@ 1.475
338	142	5.74C	0.00	0.01	0.06	-0.01	0.08	0.00	0.00	0.37
	143	5.74C	0.00	0.01	-0.07	0.01	-0.06	@ 0.000	@ 0.000	@ 0.545
339	143	5.52C	0.00	0.01	-0.08	-0.01	0.19	0.00	0.00	0.94
	144	5.52C	0.00	0.01	-0.21	0.01	-0.24	@ 0.000	@ 0.000	@ 1.475
342	154	3.14C	0.00	-0.10	0.41	-0.03	-0.30	0.00	0.00	0.99
	155	3.14C	0.00	0.03	0.28	0.03	0.26	@ 0.000	@ 0.000	@ 0.485
343	155	3.00C	0.00	-0.09	0.28	-0.04	-0.13	0.00	0.00	0.58
	156	3.00C	0.00	0.04	0.14	0.04	0.15	@ 0.000	@ 0.000	@ 1.495
344	166	3.07C	0.00	0.01	0.41	-0.01	-0.30	0.00	0.00	0.99
	167	3.07C	0.00	0.01	0.28	0.01	0.26	@ 0.000	@ 0.000	@ 0.485
345	167	2.99C	0.00	0.01	0.28	-0.01	-0.12	0.00	0.00	0.57
	168	2.99C	0.00	0.01	0.14	0.01	0.15	@ 0.000	@ 0.000	@ 1.495
412	12	3.70C	0.00	-0.16	0.15	-0.03	0.07	0.00	0.00	0.65
	169	3.70C	0.00	0.03	-0.04	0.03	-0.01	@ 0.000	@ 0.000	@ 0.788
413	169	1.82C	0.00	-0.24	0.23	-0.03	0.44	0.00	0.00	1.20
	183	1.82C	0.00	0.31	-1.12	0.03	-0.44	@ 0.000	@ 0.000	@ 0.429
414	24	2.95C	0.00	-0.08	0.15	0.08	0.07	0.00	0.00	0.66
	170	2.95C	0.00	-0.08	-0.04	-0.08	-0.01	@ 0.000	@ 0.000	@ 0.788
415	170	1.85C	0.00	0.06	0.23	-0.07	0.44	0.00	0.00	1.19
	184	1.85C	0.00	0.06	-1.12	0.05	-0.44	@ 0.000	@ 0.000	@ 0.429
416	36	9.40C	0.00	-0.14	0.72	-0.05	-0.52	0.00	0.00	1.60
	171	9.40C	0.00	0.04	0.53	0.04	0.54	@ 0.000	@ 0.000	@ 1.555
417	171	5.75C	0.00	-0.21	0.19	-0.05	0.50	0.00	0.00	1.67
	185	5.75C	0.00	0.33	-1.16	0.06	-0.45	@ 0.000	@ 0.000	@ 0.469
418	48	5.35C	0.00	-0.08	0.72	0.08	-0.52	0.00	0.00	1.62
	172	5.35C	0.00	-0.08	0.53	-0.08	0.55	@ 0.000	@ 0.000	@ 1.555
419	172	3.48C	0.00	0.07	0.19	-0.07	0.50	0.00	0.00	1.65
	186	3.48C	0.00	0.07	-1.16	0.07	-0.45	@ 0.000	@ 0.000	@ 0.469

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Job Ref : B11323

Sheet : SD / 236

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	5.55C	0.00	-0.08	0.18	-0.06	-0.01	0.00	0.00	0.58
	173	5.55C	0.00	0.06	0.04	0.06	0.06	@ 0.000	@ 0.000	@ 1.212
421	173	3.54C	0.00	-0.14	0.20	-0.07	0.43	0.00	0.00	1.23
	187	3.54C	0.00	0.29	-1.06	0.08	-0.42	@ 0.000	@ 0.000	@ 0.429
422	72	5.49C	0.00	-0.08	0.18	0.07	-0.01	0.00	0.00	0.61
	174	5.49C	0.00	-0.08	0.04	-0.08	0.07	@ 0.000	@ 0.000	@ 1.212
423	174	3.51C	0.00	0.08	0.20	-0.08	0.43	0.00	0.00	1.21
	188	3.51C	0.00	0.08	-1.06	0.07	-0.42	@ 0.000	@ 0.000	@ 0.429
424	84	5.56C	0.00	-0.08	0.64	-0.05	-0.49	0.00	0.00	1.55
	175	5.56C	0.00	0.05	0.50	0.05	0.51	@ 0.000	@ 0.000	@ 1.555
425	175	3.54C	0.00	-0.15	0.16	-0.06	0.49	0.00	0.00	1.60
	189	3.54C	0.00	0.29	-1.10	0.07	-0.44	@ 0.000	@ 0.000	@ 0.469
426	96	5.44C	0.00	-0.08	0.64	0.07	-0.49	0.00	0.00	1.57
	176	5.44C	0.00	-0.08	0.50	-0.08	0.52	@ 0.000	@ 0.000	@ 1.555
427	176	3.52C	0.00	0.07	0.16	-0.08	0.48	0.00	0.00	1.58
	190	3.52C	0.00	0.07	-1.10	0.07	-0.44	@ 0.000	@ 0.000	@ 0.469
428	108	5.57C	0.00	-0.08	0.17	-0.05	0.00	0.00	0.00	0.56
	177	5.57C	0.00	0.05	0.03	0.05	0.05	@ 0.000	@ 0.000	@ 1.172
429	177	3.54C	0.00	-0.15	0.21	-0.07	0.41	0.00	0.00	1.18
	191	3.54C	0.00	0.29	-1.04	0.07	-0.40	@ 0.000	@ 0.000	@ 0.429
430	120	5.50C	0.00	-0.08	0.17	0.07	0.00	0.00	0.00	0.58
	178	5.50C	0.00	-0.08	0.03	-0.08	0.06	@ 0.000	@ 0.000	@ 1.172
431	178	3.51C	0.00	0.07	0.21	-0.08	0.41	0.00	0.00	1.17
	192	3.51C	0.00	0.07	-1.04	0.07	-0.40	@ 0.000	@ 0.000	@ 0.429
432	132	5.52C	0.00	-0.08	0.63	-0.06	-0.48		0.00	1.50
	179	5.52C	0.00	0.06	0.49	0.06	0.50	@	@ 0.000	@ 1.555
433	179	3.52C	0.00	-0.14	0.17	-0.07	0.47	0.00	0.00	1.55
	193	3.52C	0.00	0.29	-1.08	0.07	-0.42	@ 0.000	@ 0.000	@ 0.469
434	144	5.39C	0.00	-0.07	0.63	0.07	-0.48	0.00	0.00	1.52
	180	5.39C	0.00	-0.07	0.49	-0.08	0.50	@ 0.000	@ 0.000	@ 1.555
435	180	3.50C	0.00	0.08	0.18	-0.08	0.47	0.00	0.00	1.54
	194	3.50C	0.00	0.08	-1.08	0.07	-0.42	@ 0.000	@ 0.000	@ 0.469
436	156	2.85C	0.00	-0.08	0.13	-0.05	0.03		0.00	0.56
	181	2.85C	0.00	0.05	-0.01	0.05	0.02	@	@ 0.000	@ 0.949
437	181	1.80C	0.00	-0.15	0.23	-0.07	0.39		0.00	1.09
	195	1.80C	0.00	0.29	-1.03	0.07	-0.39	@	@ 0.000	@ 0.429
438	168	2.88C	0.00	-0.07	0.13	0.07	0.03	0.00	0.00	0.57
	182	2.88C	0.00	-0.07	0.01	-0.07	0.02	@ 0.000	@ 0.000	@ 0.949

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	1.82C	0.00	0.08	0.23	-0.08	0.39		0.00	1.09
	196	1.82C	0.00	0.08	-1.03	0.08	-0.39	@	0.000	@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.849	19.845	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.114	0.000	-0.224
3	0.000	0.000	0.000	0.132	0.000	-0.016
4	0.000	0.000	0.000	0.010	0.000	-0.043
5	0.000	0.000	0.000	-0.134	0.000	-0.040
6	0.000	0.000	0.000	0.000	0.000	-0.033
7	0.000	0.000	0.000	0.144	0.000	-0.020
9	0.000	0.000	0.000	-0.140	0.000	0.015
10	0.000	0.000	0.000	0.036	0.000	0.035
11	0.000	0.000	0.000	0.212	0.000	0.054
12	0.000	0.000	0.000	0.055	0.000	0.068
13	-0.022	4.461	-0.182	0.000	0.000	0.000
14	0.020	0.000	0.760	0.067	0.000	0.000
15	0.000	0.000	0.000	0.138	0.000	0.000
16	0.000	0.000	0.000	0.011	0.000	0.000
17	0.000	0.000	0.000	-0.135	0.000	0.000
18	-3.796	0.000	1.321	0.011	0.000	0.000
19	0.000	0.000	0.000	0.145	0.000	0.000
21	0.000	0.000	0.000	-0.141	0.000	0.000
22	-3.947	0.000	1.572	0.038	0.000	0.000
23	0.000	0.000	0.000	0.213	0.000	0.011
24	0.000	0.000	0.000	0.056	0.000	-0.024
25	1.091	-10.756	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.035	0.000	-0.174
27	0.000	0.000	0.000	0.000	0.000	-0.013
28	0.000	0.000	0.000	0.063	0.000	-0.028
29	0.000	0.000	0.000	0.116	0.000	-0.026
30	0.000	0.000	0.000	-0.015	0.000	-0.020
31	0.000	0.000	0.000	-0.124	0.000	-0.011
33	0.000	0.000	0.000	0.121	0.000	0.013
34	0.000	0.000	0.000	0.000	0.000	0.026
35	0.000	0.000	0.000	-0.131	0.000	0.038
36	0.000	0.000	0.000	0.097	0.000	0.047
37	-0.014	7.278	-0.052	0.000	0.000	0.000
38	0.013	0.000	0.313	0.019	0.000	0.000
40	-2.174	0.000	0.942	0.063	0.000	0.000
41	0.000	0.000	0.000	0.117	0.000	0.000
42	0.000	0.000	0.000	-0.014	0.000	0.000
43	0.000	0.000	0.000	-0.125	0.000	0.000
44	-2.296	0.000	1.320	0.000	0.000	0.000
45	0.000	0.000	0.000	0.122	0.000	0.000
47	0.000	0.000	0.000	-0.132	0.000	0.000
48	-6.652	0.000	1.998	0.098	0.000	-0.018
49	0.971	7.702	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.083	0.000	-0.171
51	0.000	0.000	0.000	0.092	0.000	0.000
52	0.000	0.000	0.000	0.000	0.000	-0.016
53	0.000	0.000	0.000	-0.093	0.000	-0.014

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
54	0.000	0.000	0.000	0.000	0.000	-0.010
55	0.000	0.000	0.000	0.093	0.000	0.000
57	0.000	0.000	0.000	-0.098	0.000	0.000
58	0.000	0.000	0.000	0.030	0.000	0.016
59	0.000	0.000	0.000	0.156	0.000	0.024
60	0.000	0.000	0.000	0.073	0.000	0.028
61	-0.015	7.635	-0.133	0.000	0.000	0.000
62	0.014	0.000	0.557	0.048	0.000	0.000
63	0.000	0.000	0.000	0.096	0.000	0.000
65	0.000	0.000	0.000	-0.092	0.000	0.000
66	1.478	0.000	0.992	0.000	0.000	0.000
67	0.000	0.000	0.000	0.094	0.000	0.000
69	0.000	0.000	0.000	-0.097	0.000	0.000
70	1.665	0.000	1.207	0.031	0.000	0.000
71	0.000	0.000	0.000	0.157	0.000	0.000
72	0.000	0.000	0.000	0.074	0.000	-0.025
73	0.942	7.815	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.027	0.000	-0.167
75	0.000	0.000	0.000	0.000	0.000	-0.012
76	0.000	0.000	0.000	0.050	0.000	-0.025
77	0.000	0.000	0.000	0.092	0.000	-0.023
78	0.000	0.000	0.000	0.000	0.000	-0.019
79	0.000	0.000	0.000	-0.096	0.000	-0.012
81	0.000	0.000	0.000	0.094	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.018
83	0.000	0.000	0.000	-0.100	0.000	0.028
84	0.000	0.000	0.000	0.115	0.000	0.035
85	-0.014	7.650	-0.040	0.000	0.000	0.000
86	0.013	0.000	0.234	0.015	0.000	0.000
88	-0.020	0.000	0.728	0.050	0.000	0.000
89	0.000	0.000	0.000	0.092	0.000	0.000
91	0.000	0.000	0.000	-0.096	0.000	0.000
92	-0.019	0.000	1.015	0.000	0.000	0.000
93	0.000	0.000	0.000	0.094	0.000	0.000
95	0.000	0.000	0.000	-0.100	0.000	0.000
96	0.299	0.000	1.777	0.117	0.000	-0.024
97	0.921	7.821	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.082	0.000	-0.165
99	0.000	0.000	0.000	0.092	0.000	-0.013
100	0.000	0.000	0.000	0.000	0.000	-0.024
101	0.000	0.000	0.000	-0.094	0.000	-0.023
102	0.000	0.000	0.000	0.000	0.000	-0.019
103	0.000	0.000	0.000	0.095	0.000	-0.012
105	0.000	0.000	0.000	-0.099	0.000	0.000
106	0.000	0.000	0.000	0.029	0.000	0.018
107	0.000	0.000	0.000	0.154	0.000	0.028
108	0.000	0.000	0.000	0.069	0.000	0.035
109	-0.014	7.655	-0.132	0.000	0.000	0.000
110	0.013	0.000	0.557	0.048	0.000	0.000
111	0.000	0.000	0.000	0.096	0.000	0.000
113	0.000	0.000	0.000	-0.093	0.000	0.000
114	-0.020	0.000	0.979	0.000	0.000	0.000
115	0.000	0.000	0.000	0.095	0.000	0.000
117	0.000	0.000	0.000	-0.098	0.000	0.000
118	-0.019	0.000	1.184	0.029	0.000	0.000
119	0.000	0.000	0.000	0.155	0.000	0.000
120	0.000	0.000	0.000	0.070	0.000	-0.024
121	0.915	7.617	0.000	0.000	0.000	0.000

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Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 239

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
122	0.000	0.000	0.000	0.027	0.000	-0.161
123	0.000	0.000	0.000	0.000	0.000	-0.014
124	0.000	0.000	0.000	0.050	0.000	-0.024
125	0.000	0.000	0.000	0.091	0.000	-0.024
126	0.000	0.000	0.000	0.000	0.000	-0.020
127	0.000	0.000	0.000	-0.095	0.000	-0.014
129	0.000	0.000	0.000	0.094	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.014
131	0.000	0.000	0.000	-0.099	0.000	0.023
132	0.000	0.000	0.000	0.109	0.000	0.030
133	-0.013	7.458	-0.040	0.000	0.000	0.000
134	0.012	0.000	0.234	0.015	0.000	0.000
136	2.191	0.000	0.718	0.050	0.000	0.000
137	0.000	0.000	0.000	0.092	0.000	0.000
139	0.000	0.000	0.000	-0.095	0.000	0.000
140	2.319	0.000	1.004	0.000	0.000	0.000
141	0.000	0.000	0.000	0.094	0.000	0.000
143	0.000	0.000	0.000	-0.099	0.000	0.000
144	6.422	0.000	1.693	0.111	0.000	-0.028
145	0.812	4.255	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.085	0.000	-0.199
147	0.000	0.000	0.000	0.097	0.000	-0.015
148	0.000	0.000	0.000	0.000	0.000	-0.033
149	0.000	0.000	0.000	-0.102	0.000	-0.031
150	0.000	0.000	0.000	0.000	0.000	-0.026
151	0.000	0.000	0.000	0.104	0.000	-0.018
153	0.000	0.000	0.000	-0.109	0.000	0.000
154	0.000	0.000	0.000	0.034	0.000	0.017
155	0.000	0.000	0.000	0.174	0.000	0.030
156	0.000	0.000	0.000	0.056	0.000	0.038
157	-0.023	4.170	-0.135	0.000	0.000	0.000
158	0.020	0.000	0.572	0.049	0.000	0.000
159	0.000	0.000	0.000	0.102	0.000	0.000
161	0.000	0.000	0.000	-0.102	0.000	0.000
162	2.307	0.000	0.988	0.000	0.000	0.000
163	0.000	0.000	0.000	0.105	0.000	0.000
165	0.000	0.000	0.000	-0.109	0.000	0.000
166	2.286	0.000	1.218	0.035	0.000	0.000
167	0.000	0.000	0.000	0.174	0.000	0.000
168	0.000	0.000	0.000	0.057	0.000	-0.036
169	0.000	0.000	0.000	-0.200	0.000	0.081
170	0.000	0.000	0.000	-0.205	0.000	0.017
171	0.000	0.000	0.000	0.015	0.000	0.057
172	0.000	0.000	0.000	0.015	0.000	0.000
173	0.000	0.000	0.000	-0.159	0.000	0.035
174	0.000	0.000	0.000	-0.166	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.045
177	0.000	0.000	0.000	-0.155	0.000	0.044
178	0.000	0.000	0.000	-0.162	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.039
181	0.000	0.000	0.000	-0.174	0.000	0.049
182	0.000	0.000	0.000	-0.178	0.000	-0.017
183	0.000	0.000	0.000	-0.210	0.000	0.085
184	1.446	0.000	3.112	-0.208	0.000	0.061
185	0.000	0.000	0.000	-0.228	0.000	0.042
186	0.000	0.000	0.000	-0.226	0.000	0.033
187	0.000	0.000	0.000	-0.210	0.000	0.015
188	2.379	0.000	4.620	-0.209	0.000	0.027

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Job Ref : B11323

Sheet : SD / 240

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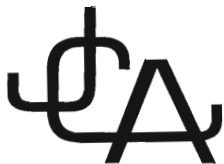
Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	R _x →(kN)	R _y ↑(kN)	R _z ↗(kN)	M _x →(kN.m)	M _y ↑(kN.m)	M _z ↗(kN.m)
189	0.000	0.000	0.000	-0.215	0.000	0.028
190	0.000	0.000	0.000	-0.213	0.000	0.028
191	0.000	0.000	0.000	-0.202	0.000	0.027
192	1.545	0.000	4.500	-0.201	0.000	0.029
193	0.000	0.000	0.000	-0.209	0.000	0.022
194	0.000	0.000	0.000	-0.207	0.000	0.023
195	0.000	0.000	0.000	-0.196	0.000	-0.038
196	0.630	0.000	2.790	-0.195	0.000	-0.038
Total	13.033	94.750	38.191	-0.572	0.000	-0.634



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Calculation

Sheet No. *SDW* rev.

Contract

TUNLOK

Part of Structure

SYSTEM CONFIGURATIONS

Contract No.

B11323

Date

SEP 10

Designer

111

Checked

Member

TRE FRAME SUMMARY :

Tie Arrangement B 12 Lift (24.5m) Frame										
Tube Transom Frames										
Axial Cap	14	LC 1-5-0				LC 2-5-0				
Mmt Cap	1405	Axial	Mmt	Defln	Status	Axial	Mmt	Defln	Status	
In Service D + L + W Unsheathed					0.00	8.4	0.02	5.3	0.61	
Out of Service D + L + W Unsheathed	2.5m bays				0.00	11.2	0.02	24.7	0.81	
Axial Cap	14	LC 3-5-0				LC 4-5-0				
Mmt Cap	1405	Axial	Mmt	Defln	Status	Axial	Mmt	Defln	Status	
In Service D + L + W Unsheathed		9.01	0.02	5.3	0.66	10.9	0.02	5.4	0.79	
Out of Service D + L + W Unsheathed	2.5m bays	11.2	0.01	24.8	0.81	12.4	0.01	25.2	0.89	
Axial Cap	14	LC 1-5-0				LC 2-5-0				
Mmt Cap	1405	Axial	Mmt	Defln	Status	Axial	Mmt	Defln	Status	
In Service D + L + W Unsheathed		5.76	0.01	3.7	0.42	6.91	0.02	3.7	0.51	
Out of Service D + L + W Unsheathed	1.8m bays	12	0.01	18.5	0.86	12.4	0.01	18.8	0.89	
Axial Cap	14	LC 3-5-0				LC 4-5-0				
Mmt Cap	1405	Axial	Mmt	Defln	Status	Axial	Mmt	Defln	Status	
In Service D + L + W Unsheathed		7.35	0.02	4.1	0.54	8.73	0.02	4.1	0.64	
Out of Service D + L + W Unsheathed	1.8m bays	12.4	0.01	18.6	0.89	13.3	0.01	18.8	0.96	

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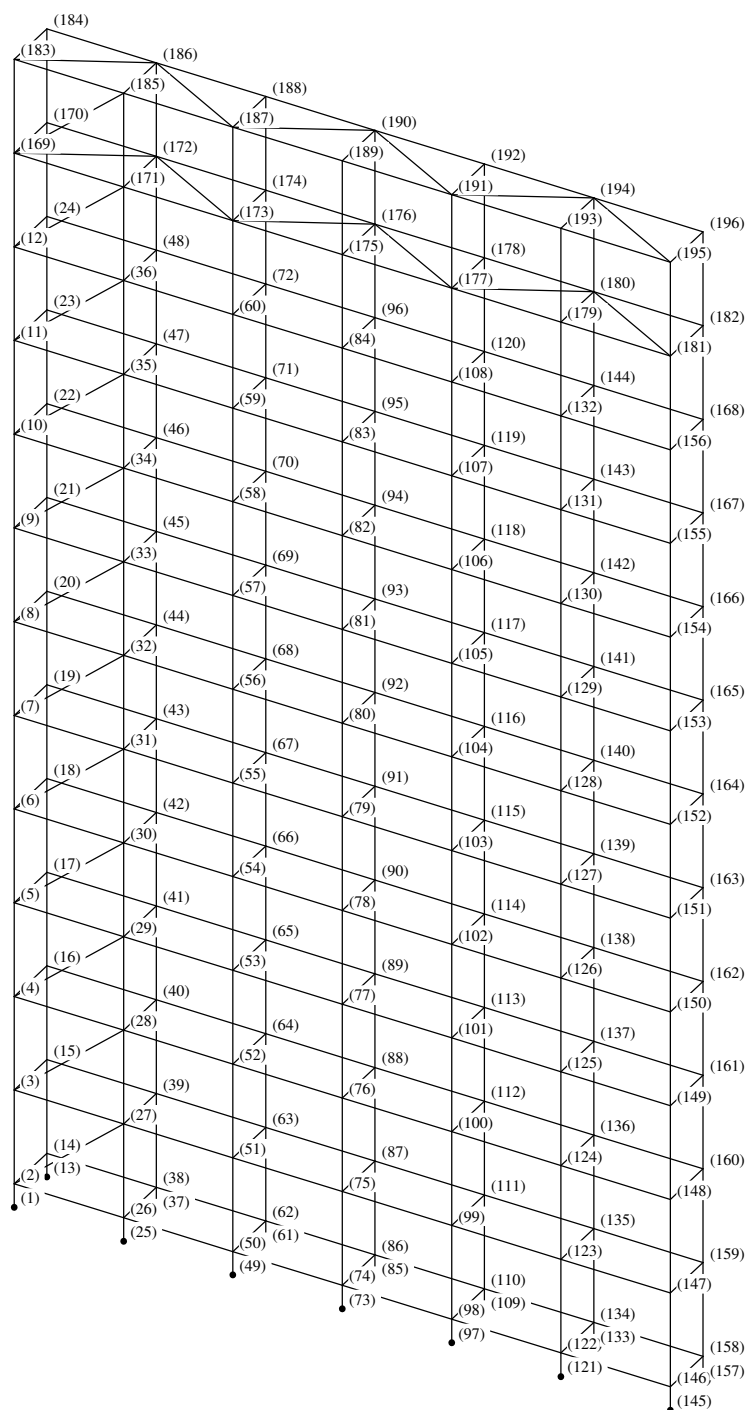
Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Section Size

48.3x3.2 CHS 3....

Omega Transom

Frame Geometry - (Last Zoom) - 3D Front View

Not to Scale

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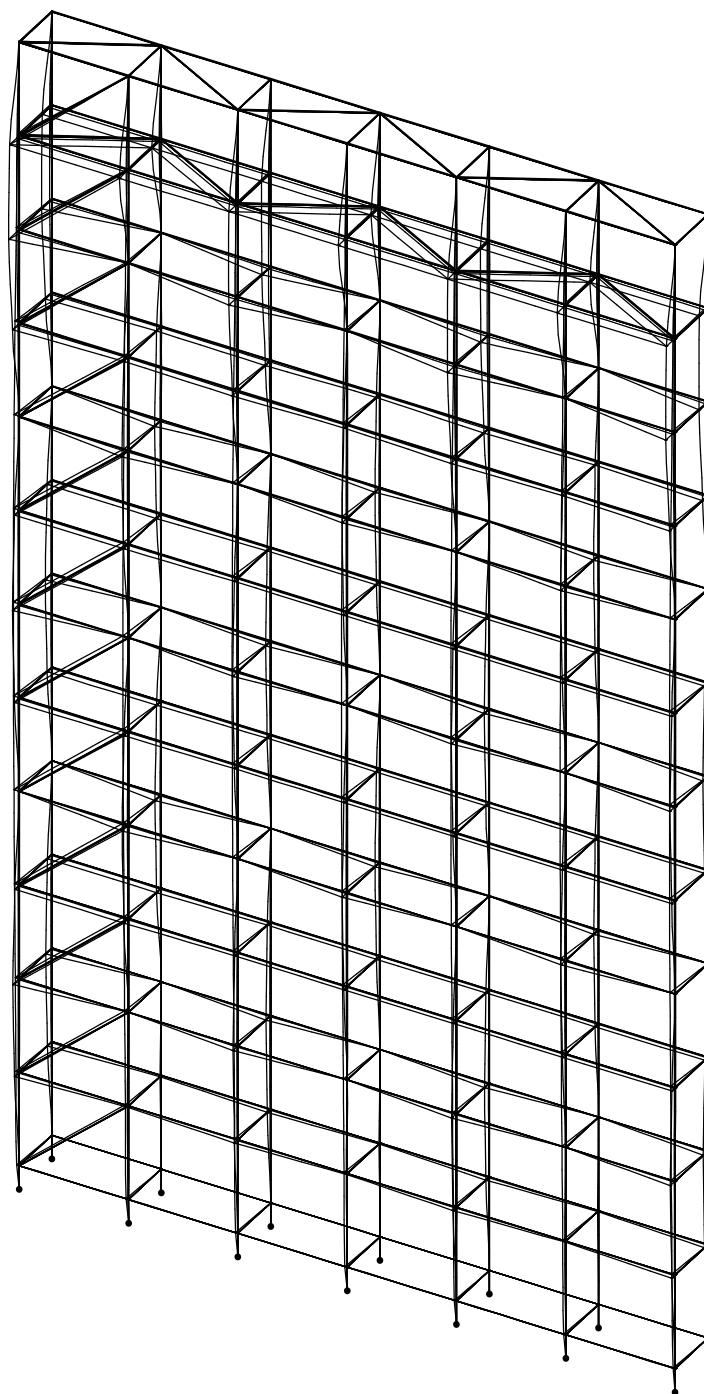
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Section Size
48.3x3.2 CHS 3...
Omega Transom

Envelope (All Cases)

Deflected Shape - (Last Zoom) - 3D Front View

Not to Scale

20 Magnification

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L1	Live Load
Load Group L2	Live Load
Load Group L3	Live Load
Load Group L4	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L1 + 0.25 L2 + 0.50 L3 + 0.25 L4
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L1 + 0.25 L2 + 0.50 L3 + 0.25 L4 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L1 + 0.25 L2 + 0.50 L3 + 0.25 L4
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.075	2	2.500	0.075
3	4.500	0.075	4	6.500	0.075	5	8.500	0.075
6	10.500	0.075	7	12.500	0.075	8	14.500	0.075
9	16.500	0.075	10	18.500	0.075	11	20.500	0.075
12	22.500	0.460	13	24.500	0.646			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.005	3	0.005	4	0.005
5	0.005	6	0.005	7	0.005	8	0.005
9	0.005	10	0.005	11	0.005	12	0.005
13	0.000	14	0.003	15	0.003	16	0.003
17	0.003	18	0.003	19	0.003	20	0.003
21	0.003	22	0.003	23	0.003	24	0.003
25	0.000	26	0.007	27	0.007	28	0.007
29	0.007	30	0.007	31	0.007	32	0.007
33	0.007	34	0.007	35	0.007	36	0.007
37	0.000	38	0.006	39	0.006	40	0.006
41	0.006	42	0.006	43	0.006	44	0.006
45	0.006	46	0.006	47	0.006	48	0.006
49	0.000	50	0.006	51	0.006	52	0.006
53	0.006	54	0.006	55	0.006	56	0.006
57	0.006	58	0.006	59	0.006	60	0.006
61	0.000	62	0.006	63	0.006	64	0.006
65	0.006	66	0.006	67	0.006	68	0.006
69	0.006	70	0.006	71	0.006	72	0.006
73	0.000	74	0.006	75	0.006	76	0.006
77	0.006	78	0.006	79	0.006	80	0.006
81	0.006	82	0.006	83	0.006	84	0.006
85	0.000	86	0.006	87	0.006	88	0.006
89	0.006	90	0.006	91	0.006	92	0.006
93	0.006	94	0.006	95	0.006	96	0.006
97	0.000	98	0.006	99	0.006	100	0.006
101	0.006	102	0.006	103	0.006	104	0.006
105	0.006	106	0.006	107	0.006	108	0.006
109	0.000	110	0.006	111	0.006	112	0.006
113	0.006	114	0.006	115	0.006	116	0.006
117	0.006	118	0.006	119	0.006	120	0.006
121	0.000	122	0.006	123	0.006	124	0.006

James Crosbie Associates Ltd.

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125	0.006	126	0.006	127	0.006	128	0.006
129	0.006	130	0.006	131	0.006	132	0.006
133	0.000	134	0.006	135	0.006	136	0.006
137	0.006	138	0.006	139	0.006	140	0.006
141	0.006	142	0.006	143	0.006	144	0.006
145	0.000	146	0.003	147	0.003	148	0.003
149	0.003	150	0.003	151	0.003	152	0.003
153	0.003	154	0.003	155	0.003	156	0.003
157	0.000	158	0.003	159	0.003	160	0.003
161	0.003	162	0.003	163	0.003	164	0.003
165	0.003	166	0.003	167	0.003	168	0.003
169	0.034	170	0.028	171	0.039	172	0.030
173	0.037	174	0.030	175	0.037	176	0.030
177	0.037	178	0.030	179	0.037	180	0.030
181	0.033	182	0.028	183	0.047	184	0.041
185	0.052	186	0.043	187	0.051	188	0.043
189	0.051	190	0.043	191	0.051	192	0.043
193	0.051	194	0.043	195	0.046	196	0.041

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 0.50 L1 + 0.25 L2 + 0.50 L3 + 0.25 L4 + 1.00 N1

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.50 L1 + 0.25 L2 + 0.50 L3 + 0.25 L4 + 1.00 W2

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W5

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	2.500	0.000	0.000	26	2.500	0.500	0.000
27	2.500	2.500	0.000	28	2.500	4.500	0.000
29	2.500	6.500	0.000	30	2.500	8.500	0.000
31	2.500	10.500	0.000	32	2.500	12.500	0.000
33	2.500	14.500	0.000	34	2.500	16.500	0.000
35	2.500	18.500	0.000	36	2.500	20.500	0.000
37	2.500	0.000	1.300	38	2.500	0.500	1.300
39	2.500	2.500	1.300	40	2.500	4.500	1.300
41	2.500	6.500	1.300	42	2.500	8.500	1.300
43	2.500	10.500	1.300	44	2.500	12.500	1.300
45	2.500	14.500	1.300	46	2.500	16.500	1.300
47	2.500	18.500	1.300	48	2.500	20.500	1.300
49	5.000	0.000	0.000	50	5.000	0.500	0.000
51	5.000	2.500	0.000	52	5.000	4.500	0.000
53	5.000	6.500	0.000	54	5.000	8.500	0.000
55	5.000	10.500	0.000	56	5.000	12.500	0.000
57	5.000	14.500	0.000	58	5.000	16.500	0.000
59	5.000	18.500	0.000	60	5.000	20.500	0.000
61	5.000	0.000	1.300	62	5.000	0.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 246****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	5.000	2.500	1.300	64	5.000	4.500	1.300
65	5.000	6.500	1.300	66	5.000	8.500	1.300
67	5.000	10.500	1.300	68	5.000	12.500	1.300
69	5.000	14.500	1.300	70	5.000	16.500	1.300
71	5.000	18.500	1.300	72	5.000	20.500	1.300
73	7.500	0.000	0.000	74	7.500	0.500	0.000
75	7.500	2.500	0.000	76	7.500	4.500	0.000
77	7.500	6.500	0.000	78	7.500	8.500	0.000
79	7.500	10.500	0.000	80	7.500	12.500	0.000
81	7.500	14.500	0.000	82	7.500	16.500	0.000
83	7.500	18.500	0.000	84	7.500	20.500	0.000
85	7.500	0.000	1.300	86	7.500	0.500	1.300
87	7.500	2.500	1.300	88	7.500	4.500	1.300
89	7.500	6.500	1.300	90	7.500	8.500	1.300
91	7.500	10.500	1.300	92	7.500	12.500	1.300
93	7.500	14.500	1.300	94	7.500	16.500	1.300
95	7.500	18.500	1.300	96	7.500	20.500	1.300
97	10.000	0.000	0.000	98	10.000	0.500	0.000
99	10.000	2.500	0.000	100	10.000	4.500	0.000
101	10.000	6.500	0.000	102	10.000	8.500	0.000
103	10.000	10.500	0.000	104	10.000	12.500	0.000
105	10.000	14.500	0.000	106	10.000	16.500	0.000
107	10.000	18.500	0.000	108	10.000	20.500	0.000
109	10.000	0.000	1.300	110	10.000	0.500	1.300
111	10.000	2.500	1.300	112	10.000	4.500	1.300
113	10.000	6.500	1.300	114	10.000	8.500	1.300
115	10.000	10.500	1.300	116	10.000	12.500	1.300
117	10.000	14.500	1.300	118	10.000	16.500	1.300
119	10.000	18.500	1.300	120	10.000	20.500	1.300
121	12.500	0.000	0.000	122	12.500	0.500	0.000
123	12.500	2.500	0.000	124	12.500	4.500	0.000
125	12.500	6.500	0.000	126	12.500	8.500	0.000
127	12.500	10.500	0.000	128	12.500	12.500	0.000
129	12.500	14.500	0.000	130	12.500	16.500	0.000
131	12.500	18.500	0.000	132	12.500	20.500	0.000
133	12.500	0.000	1.300	134	12.500	0.500	1.300
135	12.500	2.500	1.300	136	12.500	4.500	1.300
137	12.500	6.500	1.300	138	12.500	8.500	1.300
139	12.500	10.500	1.300	140	12.500	12.500	1.300
141	12.500	14.500	1.300	142	12.500	16.500	1.300
143	12.500	18.500	1.300	144	12.500	20.500	1.300
145	15.000	0.000	0.000	146	15.000	0.500	0.000
147	15.000	2.500	0.000	148	15.000	4.500	0.000
149	15.000	6.500	0.000	150	15.000	8.500	0.000
151	15.000	10.500	0.000	152	15.000	12.500	0.000
153	15.000	14.500	0.000	154	15.000	16.500	0.000
155	15.000	18.500	0.000	156	15.000	20.500	0.000
157	15.000	0.000	1.300	158	15.000	0.500	1.300
159	15.000	2.500	1.300	160	15.000	4.500	1.300
161	15.000	6.500	1.300	162	15.000	8.500	1.300
163	15.000	10.500	1.300	164	15.000	12.500	1.300
165	15.000	14.500	1.300	166	15.000	16.500	1.300
167	15.000	18.500	1.300	168	15.000	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	2.500	22.500	0.000	172	2.500	22.500	1.300
173	5.000	22.500	0.000	174	5.000	22.500	1.300
175	7.500	22.500	0.000	176	7.500	22.500	1.300
177	10.000	22.500	0.000	178	10.000	22.500	1.300
179	12.500	22.500	0.000	180	12.500	22.500	1.300
181	15.000	22.500	0.000	182	15.000	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	2.500	24.500	0.000	186	2.500	24.500	1.300
187	5.000	24.500	0.000	188	5.000	24.500	1.300
189	7.500	24.500	0.000	190	7.500	24.500	1.300
191	10.000	24.500	0.000	192	10.000	24.500	1.300
193	12.500	24.500	0.000	194	12.500	24.500	1.300
195	15.000	24.500	0.000	196	15.000	24.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 247****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties**

Members 1-10, 16-25, 31-40, 46-55, 61-100, 106-129, 135-144, 150-177, 182-189,
194-201, 206-213, 218-225, 230-237, 242-249, 254-309, 312-315, 318-321,
324-327, 330-333, 336-339, 342-345, 348-373, 381-392 and 400-453

M	...	...	48.3x3.2	CHS	3.56	[S 355]		
A	4.53E-4		Ix	11.59E-8		Iy	11.59E-8	J 23.17E-8
E	205.0E6		G	78.85E6				

Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

M	...	...	Omega Transom	[]	E 210E6	G 78E6		
A	7.02E-4		Ix	36.1E-8		Iy	54.0E-8	J 72.21E-8

Member Loading**Members 2 and 17**

W1	PZ	-000.015	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.085	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.013	0.000	(kN,m)
W5	PX	-000.075	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 3 and 18

W1	PZ	-000.032	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.174	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.028	0.000	(kN,m)
W5	PX	-000.154	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 4 and 19

W1	PZ	-000.033	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.180	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.159	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 5 and 20

W1	PZ	-000.033	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.185	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.163	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 7 and 22

W1	PZ	-000.015	0.000	(kN,m)
W4	PZ	-000.085	0.000	(kN,m)

Members 8 and 23

W1	PZ	-000.032	0.000	(kN,m)
W4	PZ	-000.174	0.000	(kN,m)

Members 9 and 24

W1	PZ	-000.033	0.000	(kN,m)
W4	PZ	-000.180	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 248****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 10 and 25**

W1 PZ	-000.033	0.000	(kN, m)
W4 PZ	-000.185	0.000	(kN, m)

**Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341 and 346-347**

D1 PY	-000.035	0.025	(kN, m)
D1 PY	-000.035	1.275	(kN, m)

Members 32, 47, 92, 121 and 136

W1 PZ	-000.012	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.063	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.009	0.000	(kN, m)
W5 PX	-000.054	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 33, 48, 93, 122 and 137

W1 PZ	-000.024	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.020	0.000	(kN, m)
W5 PX	-000.112	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 34, 49, 94, 123 and 138

W1 PZ	-000.025	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.135	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.021	0.000	(kN, m)
W5 PX	-000.115	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 35, 50, 95, 124 and 139

W1 PZ	-000.026	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.139	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.119	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 37, 52, 97, 126 and 141

W1 PZ	-000.012	0.000	(kN, m)
W4 PZ	-000.063	0.000	(kN, m)

Members 38, 53, 98, 127 and 142

W1 PZ	-000.024	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)

Members 39, 54, 99, 128 and 143

W1 PZ	-000.025	0.000	(kN, m)
W4 PZ	-000.135	0.000	(kN, m)

Members 40, 55, 100, 129 and 144

W1 PZ	-000.026	0.000	(kN, m)
W4 PZ	-000.139	0.000	(kN, m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY	-000.159	0.025	(kN, m)
D1 PY	-000.159	2.475	(kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 249****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359, 361-371, 387-392 and 406-411

D1 PY -000.103 0.025 (kN,m)
D1 PY -000.103 2.475 (kN,m)

Members 170 and 182

W1 PZ -000.034 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.190 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.030 0.000 (kN,m)
W5 PX -000.168 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 171 and 183

W1 PZ -000.035 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.195 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.031 0.000 (kN,m)
W5 PX -000.173 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 172 and 184

W1 PZ -000.036 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.201 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.032 0.000 (kN,m)
W5 PX -000.177 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 173 and 185

W1 PZ -000.037 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.206 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.033 0.000 (kN,m)
W5 PX -000.181 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 174 and 186

W1 PZ -000.034 0.000 (kN,m)
W4 PZ -000.190 0.000 (kN,m)

Members 175 and 187

W1 PZ -000.035 0.000 (kN,m)
W4 PZ -000.195 0.000 (kN,m)

Members 176 and 188

W1 PZ -000.036 0.000 (kN,m)
W4 PZ -000.201 0.000 (kN,m)

Members 177 and 189

W1 PZ -000.037 0.000 (kN,m)
W4 PZ -000.206 0.000 (kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ -000.026 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.143 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.022 0.000 (kN,m)
W5 PX -000.122 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 250****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 195, 207, 219, 231 and 243**

W1 PZ	-000.027	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.147	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.125	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.028	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.151	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.129	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.028	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.154	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.024	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.026	0.000	(kN,m)
W4 PZ	-000.143	0.000	(kN,m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.027	0.000	(kN,m)
W4 PZ	-000.147	0.000	(kN,m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.028	0.000	(kN,m)
W4 PZ	-000.151	0.000	(kN,m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.028	0.000	(kN,m)
W4 PZ	-000.154	0.000	(kN,m)

Members 306 and 312

W1 PZ	-000.038	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.211	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.034	0.000	(kN,m)
W5 PX	-000.187	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 307 and 313

W1 PZ	-000.039	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.216	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.191	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 308 and 314

W1 PZ	-000.038	0.000	(kN,m)
W4 PZ	-000.211	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 251****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 309 and 315**

W1	PZ	-000.039	0.000	(kN,m)
W4	PZ	-000.216	0.000	(kN,m)

Members 318, 324, 330, 336 and 342

W1	PZ	-000.029	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.158	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.136	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1	PZ	-000.030	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.162	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.139	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1	PZ	-000.029	0.000	(kN,m)
W4	PZ	-000.158	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1	PZ	-000.030	0.000	(kN,m)
W4	PZ	-000.162	0.000	(kN,m)

Members 374-380

D1	PY	-000.580	0.025	(kN,m)
D1	PY	-000.477	1.275	(kN,m)
L2	PY	-002.109	0.025	(kN,m)
L4	PY	-002.109	1.275	(kN,m)
L6	PY	-002.812	0.025	(kN,m)
L8	PY	-002.812	1.275	(kN,m)
G2	PY	-004.218	0.025	(kN,m)
G4	PY	-004.218	1.275	(kN,m)

Member 381

D1	PY	-000.252	0.025	(kN,m)
D1	PY	-000.252	2.475	(kN,m)

Members 382-386

D1	PY	-000.196	0.025	(kN,m)
D1	PY	-000.196	2.475	(kN,m)

Members 393-399

D1	PY	-000.580	0.025	(kN,m)
D1	PY	-000.477	1.275	(kN,m)
L1	PY	-002.109	0.025	(kN,m)
L3	PY	-002.109	1.275	(kN,m)
L5	PY	-002.812	0.025	(kN,m)
L7	PY	-002.812	1.275	(kN,m)
G1	PY	-004.218	0.025	(kN,m)
G3	PY	-004.218	1.275	(kN,m)

Member 400

D1	PY	-000.252	0.025	(kN,m)
D1	PY	-000.252	2.475	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

Members 401-404

D1	PY	-000.196	0.025	(kN,m)
D1	PY	-000.196	2.475	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 252****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member 405**

D1 PY	-000.196	0.025	(kN,m)
D1 PY	-000.196	2.475	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
N1 PZ	-000.300	2.475	(kN,m)

Members 412 and 416

W1 PZ	-000.040	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.222	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.196	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Member 413

W1 PZ	-000.208	0.000	(kN,m)
W1 PZ	-000.212	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.836	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.855	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.052	0.000	(kN,m)
W2 PX	-000.053	2.000	(kN,m)
W5 PX	-000.276	0.000	(kN,m)
W5 PX	-000.282	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 414 and 418

W1 PZ	-000.040	0.000	(kN,m)
W4 PZ	-000.222	0.000	(kN,m)

Members 415 and 419

W1 PZ	-000.208	0.000	(kN,m)
W4 PZ	-000.836	0.000	(kN,m)
W1 PZ	-000.212	2.000	(kN,m)
W4 PZ	-000.855	2.000	(kN,m)

Member 417

W1 PZ	-000.212	0.000	(kN,m)
W1 PZ	-000.208	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.836	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.855	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.052	0.000	(kN,m)
W2 PX	-000.053	2.000	(kN,m)
W5 PX	-000.276	0.000	(kN,m)
W5 PX	-000.282	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 420, 424, 428, 432 and 436

W1 PZ	-000.031	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.166	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.026	0.000	(kN,m)
W5 PX	-000.142	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 253****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W8 PX -000.000 0.000 (kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ -000.198 0.000 (kN,m)

W1 PZ -000.202 2.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.779 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W3 PZ -000.455 2.000 (kN,m)

W4 PZ -000.797 2.000 (kN,m)

W6 PZ -000.000 2.000 (kN,m)

W2 PX -000.042 0.000 (kN,m)

W2 PX -000.043 2.000 (kN,m)

W5 PX -000.222 0.000 (kN,m)

W5 PX -000.227 2.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W7 PX -000.000 2.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

W8 PX -000.000 2.000 (kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ -000.031 0.000 (kN,m)

W4 PZ -000.166 0.000 (kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ -000.198 0.000 (kN,m)

W4 PZ -000.779 0.000 (kN,m)

W1 PZ -000.202 2.000 (kN,m)

W4 PZ -000.797 2.000 (kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Released	® Fixed
11	ROO ROO	12 ROO ROO	13 ROO ROO	14 ROO ROO
15	ROO ROO	26 ROO ROO	27 ROO ROO	28 ROO ROO
29	ROO ROO	30 ROO ROO	41 ROO ROO	42 ROO ROO
43	ROO ROO	44 ROO ROO	45 ROO ROO	56 ROO ROO
57	ROO ROO	58 ROO ROO	59 ROO ROO	60 ROO ROO
61	ROO ROO	62 ROO ROO	63 ROO ROO	64 ROO ROO
65	ROO ROO	66 ROO ROO	67 ROO ROO	68 ROO ROO
69	ROO ROO	70 ROO ROO	71 ROO ROO	72 ROO ROO
73	ROO ROO	74 ROO ROO	75 ROO ROO	76 ROO ROO
77	ROO ROO	78 ROO ROO	79 ROO ROO	80 ROO ROO
81	ROO ROO	82 ROO ROO	83 ROO ROO	84 ROO ROO
85	ROO ROO	86 ROO ROO	87 ROO ROO	88 ROO ROO
89	ROO ROO	90 ROO ROO	101 ROO ROO	102 ROO ROO
103	ROO ROO	104 ROO ROO	105 ROO ROO	106 ROO ROO
107	ROO ROO	108 ROO ROO	109 ROO ROO	110 ROO ROO
111	ROO ROO	112 ROO ROO	113 ROO ROO	114 ROO ROO
115	ROO ROO	116 ROO ROO	117 ROO ROO	118 ROO ROO
119	ROO ROO	130 ROO ROO	131 ROO ROO	132 ROO ROO
133	ROO ROO	134 ROO ROO	145 ROO ROO	146 ROO ROO
147	ROO ROO	148 ROO ROO	149 ROO ROO	150 ROO ROO
151	ROO ROO	152 ROO ROO	153 ROO ROO	154 ROO ROO
155	ROO ROO	156 ROO ROO	157 ROO ROO	158 ROO ROO
159	ROO ROO	160 ROO ROO	161 ROO ROO	162 ROO ROO
163	ROO ROO	164 ROO ROO	165 ROO ROO	166 ROO ROO
167	ROO ROO	168 ROO ROO	169 ROO ROO	178 ROO ROO
179	ROO ROO	180 ROO ROO	181 ROO ROO	190 ROO ROO
191	ROO ROO	192 ROO ROO	193 ROO ROO	202 ROO ROO
203	ROO ROO	204 ROO ROO	205 ROO ROO	214 ROO ROO
215	ROO ROO	216 ROO ROO	217 ROO ROO	226 ROO ROO
227	ROO ROO	228 ROO ROO	229 ROO ROO	238 ROO ROO
239	ROO ROO	240 ROO ROO	241 ROO ROO	250 ROO ROO
251	ROO ROO	252 ROO ROO	253 ROO ROO	254 ROO ROO
255	ROO ROO	256 ROO ROO	257 ROO ROO	258 ROO ROO
259	ROO ROO	260 ROO ROO	261 ROO ROO	262 ROO ROO
263	ROO ROO	264 ROO ROO	265 ROO ROO	266 ROO ROO
267	ROO ROO	268 ROO ROO	269 ROO ROO	270 ROO ROO
271	ROO ROO	272 ROO ROO	273 ROO ROO	274 ROO ROO
275	ROO ROO	276 ROO ROO	277 ROO ROO	278 ROO ROO
279	ROO ROO	280 ROO ROO	281 ROO ROO	282 ROO ROO

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 254****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

283	ROO	ROO	284	ROO	ROO	285	ROO	ROO	286	ROO	ROO
287	ROO	ROO	288	ROO	ROO	289	ROO	ROO	290	ROO	ROO
291	ROO	ROO	292	ROO	ROO	293	ROO	ROO	294	ROO	ROO
295	ROO	ROO	296	ROO	ROO	297	ROO	ROO	298	ROO	ROO
299	ROO	ROO	300	ROO	ROO	301	ROO	ROO	302	ROO	ROO
303	ROO	ROO	304	ROO	ROO	305	ROO	ROO	310	ROO	ROO
311	ROO	ROO	316	ROO	ROO	317	ROO	ROO	322	ROO	ROO
323	ROO	ROO	328	ROO	ROO	329	ROO	ROO	334	ROO	ROO
335	ROO	ROO	340	ROO	ROO	341	ROO	ROO	346	ROO	ROO
347	ROO	ROO	348	ROO	ROO	349	ROO	ROO	350	ROO	ROO
351	ROO	ROO	352	ROO	ROO	353	ROO	ROO	354	ROO	ROO
355	ROO	ROO	356	ROO	ROO	357	ROO	ROO	358	ROO	ROO
359	ROO	ROO	360	ROO	ROO	361	ROO	ROO	362	ROO	ROO
363	ROO	ROO	364	ROO	ROO	365	ROO	ROO	366	ROO	ROO
367	ROO	ROO	368	ROO	ROO	369	ROO	ROO	370	ROO	ROO
371	ROO	ROO	372	ROO	ROO	373	ROO	ROO	374	ROO	ROO
375	ROO	ROO	376	ROO	ROO	377	ROO	ROO	378	ROO	ROO
379	ROO	ROO	380	ROO	ROO	381	ROO	ROO	382	ROO	ROO
383	ROO	ROO	384	ROO	ROO	385	ROO	ROO	386	ROO	ROO
387	ROO	ROO	388	ROO	ROO	389	ROO	ROO	390	ROO	ROO
391	ROO	ROO	392	ROO	ROO	393	ROO	ROO	394	ROO	ROO
395	ROO	ROO	396	ROO	ROO	397	ROO	ROO	398	ROO	ROO
399	ROO	ROO	400	ROO	ROO	401	ROO	ROO	402	ROO	ROO
403	ROO	ROO	404	ROO	ROO	405	ROO	ROO	406	ROO	ROO
407	ROO	ROO	408	ROO	ROO	409	ROO	ROO	410	ROO	ROO
411	ROO	ROO	440	ROO	ROO	441	ROO	ROO	442	ROO	ROO
443	ROO	ROO	444	ROO	ROO	445	ROO	ROO	446	ROO	ROO
447	ROO	ROO	448	ROO	ROO	449	ROO	ROO	450	ROO	ROO
451	ROO	ROO	452	ROO	ROO	453	ROO	ROO			

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0087.100 0000.000 0104.050

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 255

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.34	0.34	-0.04	0.00	0.45	0.45
2	-2.97	-0.10	0.01	2.98	-0.04	0.00	0.13	0.14
3	-3.70	-0.31	-9.13	9.86	-0.05	0.00	0.00	0.05
4	-4.52	-0.43	-12.53	13.33	-0.01	-0.01	0.01	0.02
5	-5.33	-0.46	-8.94	10.42	0.05	-0.01	0.01	0.05
6	-5.99	-0.53	0.03	6.02	-0.01	0.00	0.01	0.01
7	-6.42	-0.63	-9.57	11.54	-0.05	0.00	0.00	0.05
8	-6.54	-0.74	-13.39	14.92	0.00	-0.01	0.00	0.01
9	-6.31	-0.84	-9.55	11.48	0.05	-0.01	-0.01	0.05
10	-5.70	-0.94	0.02	5.78	-0.01	-0.01	-0.01	0.02
11	-4.72	-1.03	-13.37	14.22	-0.08	-0.02	-0.02	0.08
12	-3.40	-1.12	-20.60	20.91	-0.02	-0.02	-0.02	0.04
13	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
14	0.00	-0.02	0.00	0.02	-0.03	0.00	0.01	0.03
15	-0.09	-0.12	-9.13	9.13	-0.05	0.00	0.00	0.05
16	0.06	-0.22	-12.53	12.53	-0.01	0.00	0.00	0.01
17	0.07	-0.31	-8.94	8.95	0.05	0.00	0.00	0.05
18	0.00	-0.40	0.00	0.40	-0.01	0.00	0.00	0.01
19	0.07	-0.48	-9.57	9.58	-0.05	0.00	0.00	0.05
20	0.07	-0.57	-13.39	13.40	0.00	0.00	0.00	0.01
21	0.08	-0.65	-9.55	9.57	0.05	0.00	0.00	0.05
22	0.00	-0.72	0.00	0.72	-0.02	0.00	0.00	0.02
23	0.10	-0.82	-13.37	13.39	-0.08	0.00	-0.01	0.08
24	0.17	-0.90	-20.60	20.62	-0.02	0.01	0.01	0.02
25	0.00	0.00	0.10	0.10	-0.01	0.00	0.43	0.43
26	-2.82	-0.03	0.01	2.82	-0.01	0.00	0.11	0.11
27	-3.55	0.16	-2.45	4.32	0.01	-0.01	0.00	0.01
28	-4.40	-0.27	0.01	4.41	-0.02	-0.01	0.01	0.03
29	-5.23	-0.38	-9.29	10.67	-0.04	-0.01	0.01	0.05
30	-5.92	-0.48	-12.67	13.99	0.01	-0.01	0.01	0.01
31	-6.37	-0.57	-9.16	11.17	0.05	-0.01	0.00	0.05
32	-6.51	-0.65	0.03	6.55	0.00	-0.02	0.00	0.02
33	-6.31	-0.75	-9.67	11.57	-0.05	-0.01	-0.01	0.05
34	-5.73	-0.87	-13.28	14.49	-0.01	-0.01	-0.01	0.01
35	-4.78	-1.07	-9.44	10.63	0.05	-0.02	-0.01	0.06
36	-3.48	-1.28	-0.01	3.71	-0.03	-0.03	-0.02	0.04
37	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.01
38	0.00	-0.03	0.00	0.03	-0.01	0.00	0.01	0.01
39	-0.09	-0.15	-2.45	2.45	0.01	0.00	0.00	0.01
40	0.00	-0.26	0.00	0.26	-0.02	0.01	0.00	0.02
41	0.07	-0.36	-9.29	9.30	-0.05	0.01	0.00	0.05
42	0.00	-0.47	-12.67	12.67	0.01	0.01	0.00	0.01
43	0.07	-0.56	-9.16	9.18	0.05	0.01	0.00	0.05
44	0.00	-0.65	0.00	0.65	0.00	0.01	0.00	0.01
45	0.08	-0.74	-9.67	9.70	-0.05	0.02	0.00	0.05
46	0.00	-0.82	-13.28	13.31	-0.01	0.02	0.00	0.02
47	0.10	-0.90	-9.44	9.48	0.05	0.02	0.00	0.06
48	0.00	-0.97	0.00	0.97	-0.03	0.02	0.01	0.04
49	0.00	0.00	0.25	0.25	-0.03	0.00	0.41	0.41
50	-2.70	-0.04	0.01	2.70	-0.03	0.00	0.10	0.11
51	-3.57	-0.16	-6.83	7.71	-0.03	0.00	0.00	0.03
52	-4.42	-0.28	-9.31	10.31	0.00	0.00	0.01	0.01
53	-5.24	-0.39	-6.68	8.51	0.03	0.00	0.01	0.03
54	-5.93	-0.50	0.03	5.95	0.00	0.00	0.00	0.00
55	-6.38	-0.61	-7.10	9.57	-0.04	0.00	0.00	0.04
56	-6.53	-0.71	-9.84	11.83	0.00	0.00	0.00	0.00
57	-6.33	-0.80	-7.03	9.49	0.04	0.00	0.00	0.04
58	-5.75	-0.89	0.03	5.81	-0.01	0.00	-0.01	0.01

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 256

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-4.79	-0.98	-10.91	11.96	-0.06	0.00	-0.01	0.06
60	-3.50	-1.06	-17.33	17.71	-0.02	0.00	-0.01	0.03
61	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
62	0.00	-0.03	0.00	0.03	-0.02	0.00	0.01	0.02
63	-0.09	-0.15	-6.83	6.83	-0.03	0.00	0.00	0.03
64	0.00	-0.26	-9.31	9.31	0.00	0.00	0.00	0.00
65	0.07	-0.37	-6.68	6.70	0.03	0.00	0.00	0.03
66	0.00	-0.48	0.00	0.48	0.00	0.00	0.00	0.00
67	0.07	-0.57	-7.10	7.12	-0.04	0.01	0.00	0.04
68	0.00	-0.67	-9.84	9.86	0.00	0.01	0.00	0.01
69	0.08	-0.76	-7.03	7.07	0.04	0.01	0.00	0.04
70	0.00	-0.84	0.00	0.84	-0.01	0.01	0.00	0.02
71	0.10	-0.92	-10.91	10.95	-0.06	0.01	0.00	0.06
72	0.00	-0.99	-17.32	17.35	-0.02	0.01	0.01	0.03
73	0.00	0.00	0.08	0.08	-0.01	0.00	0.40	0.40
74	-2.60	-0.04	0.01	2.60	-0.01	0.00	0.10	0.10
75	-3.59	-0.16	-1.84	4.04	0.00	0.00	0.00	0.00
76	-4.43	-0.28	0.02	4.44	-0.02	0.00	0.01	0.02
77	-5.26	-0.39	-7.08	8.82	-0.03	-0.01	0.01	0.04
78	-5.94	-0.50	-9.69	11.38	0.00	-0.01	0.01	0.01
79	-6.40	-0.61	-6.98	9.49	0.04	-0.01	0.00	0.04
80	-6.54	-0.71	0.03	6.58	0.00	-0.01	0.00	0.01
81	-6.34	-0.80	-7.25	9.67	-0.04	-0.01	0.00	0.04
82	-5.76	-0.89	-9.97	11.55	0.00	-0.01	-0.01	0.02
83	-4.81	-0.98	-6.95	8.51	0.04	-0.01	-0.01	0.04
84	-3.52	-1.06	0.01	3.67	-0.04	-0.02	-0.01	0.04
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
86	0.00	-0.03	0.00	0.03	-0.01	0.00	0.01	0.01
87	-0.09	-0.15	-1.84	1.85	0.00	0.00	0.00	0.00
88	0.00	-0.26	0.00	0.26	-0.02	0.00	0.00	0.02
89	0.07	-0.37	-7.08	7.09	-0.04	0.01	0.00	0.04
90	0.00	-0.47	-9.69	9.71	0.00	0.01	0.00	0.01
91	0.07	-0.57	-6.98	7.01	0.04	0.01	0.00	0.04
92	0.00	-0.67	0.00	0.67	0.00	0.01	0.00	0.01
93	0.08	-0.75	-7.25	7.29	-0.04	0.01	0.00	0.04
94	0.00	-0.84	-9.97	10.01	0.00	0.02	0.00	0.02
95	0.10	-0.91	-6.95	7.01	0.04	0.02	0.00	0.04
96	0.00	-0.99	0.00	0.99	-0.04	0.02	0.01	0.05
97	0.00	0.00	0.25	0.25	-0.03	0.00	0.39	0.39
98	-2.53	-0.04	0.00	2.53	-0.03	0.00	0.10	0.10
99	-3.60	-0.16	-6.83	7.73	-0.03	0.00	0.00	0.03
100	-4.44	-0.28	-9.31	10.32	0.00	0.00	0.01	0.01
101	-5.27	-0.39	-6.69	8.52	0.03	0.00	0.01	0.04
102	-5.95	-0.50	0.03	5.98	0.00	0.00	0.01	0.01
103	-6.41	-0.61	-7.11	9.59	-0.04	0.00	0.00	0.04
104	-6.55	-0.71	-9.85	11.86	0.00	0.00	0.00	0.00
105	-6.35	-0.80	-7.05	9.52	0.04	0.00	0.00	0.04
106	-5.77	-0.89	0.03	5.84	-0.01	0.00	-0.01	0.01
107	-4.82	-0.98	-10.72	11.80	-0.06	0.00	-0.01	0.06
108	-3.53	-1.06	-16.93	17.33	-0.02	0.01	-0.01	0.03
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.03	0.00	0.03	-0.02	0.00	0.01	0.02
111	-0.09	-0.15	-6.83	6.83	-0.03	0.00	0.00	0.03
112	0.00	-0.26	-9.31	9.32	0.00	0.00	0.00	0.00
113	0.07	-0.37	-6.69	6.70	0.03	0.00	0.00	0.03
114	0.00	-0.48	0.00	0.48	0.00	0.00	0.00	0.00
115	0.07	-0.57	-7.11	7.13	-0.04	0.00	0.00	0.04
116	0.00	-0.67	-9.85	9.88	0.00	0.00	0.00	0.01

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 257

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.08	-0.76	-7.05	7.09	0.04	0.01	0.00	0.04
118	0.00	-0.84	0.00	0.84	-0.01	0.01	0.00	0.01
119	0.10	-0.92	-10.72	10.76	-0.06	0.01	0.00	0.06
120	0.00	-0.99	-16.93	16.96	-0.02	0.01	0.01	0.03
121	0.00	0.00	0.08	0.08	-0.01	0.00	0.38	0.38
122	-2.49	-0.04	0.00	2.49	-0.01	0.00	0.10	0.10
123	-3.61	-0.16	-1.84	4.06	0.00	0.00	0.00	0.01
124	-4.44	-0.28	0.02	4.45	-0.02	-0.01	0.01	0.02
125	-5.27	-0.39	-7.08	8.83	-0.03	-0.01	0.01	0.04
126	-5.96	-0.50	-9.69	11.39	0.00	-0.01	0.01	0.01
127	-6.41	-0.61	-6.98	9.50	0.04	-0.01	0.00	0.04
128	-6.56	-0.71	0.03	6.60	0.00	-0.01	0.00	0.01
129	-6.36	-0.80	-7.26	9.68	-0.04	-0.02	0.00	0.04
130	-5.78	-0.89	-9.99	11.57	0.00	-0.02	-0.01	0.02
131	-4.83	-0.97	-6.97	8.53	0.04	-0.02	-0.01	0.04
132	-3.54	-1.05	0.01	3.69	-0.04	-0.02	-0.01	0.04
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
134	0.00	-0.03	0.00	0.03	-0.01	0.00	0.01	0.01
135	-0.09	-0.15	-1.84	1.85	0.00	0.00	0.00	0.00
136	0.00	-0.26	0.00	0.26	-0.02	0.00	0.00	0.02
137	0.07	-0.37	-7.08	7.09	-0.04	0.01	0.00	0.04
138	0.00	-0.47	-9.69	9.70	0.00	0.01	0.00	0.01
139	0.07	-0.57	-6.98	7.01	0.04	0.01	0.00	0.04
140	0.00	-0.66	0.00	0.66	0.00	0.01	0.00	0.01
141	0.08	-0.75	-7.26	7.30	-0.04	0.01	0.00	0.04
142	0.00	-0.83	-9.99	10.02	0.00	0.01	0.00	0.01
143	0.10	-0.91	-6.97	7.03	0.04	0.02	0.00	0.04
144	0.00	-0.98	0.00	0.98	-0.04	0.02	0.01	0.04
145	0.00	0.00	0.25	0.25	-0.03	0.00	0.37	0.37
146	-2.46	-0.03	0.00	2.46	-0.03	0.00	0.11	0.11
147	-3.62	-0.12	-6.80	7.70	-0.03	0.00	0.00	0.03
148	-4.45	-0.21	-9.33	10.34	0.00	0.00	0.01	0.01
149	-5.28	-0.30	-6.67	8.51	0.04	0.00	0.01	0.04
150	-5.96	-0.39	0.03	5.98	0.00	0.00	0.01	0.01
151	-6.42	-0.48	-7.14	9.61	-0.04	0.00	0.00	0.04
152	-6.56	-0.56	-9.97	11.95	0.00	0.01	0.00	0.01
153	-6.36	-0.64	-7.08	9.54	0.04	0.01	0.00	0.04
154	-5.78	-0.71	0.03	5.82	-0.01	0.01	-0.01	0.02
155	-4.83	-0.79	-10.99	12.03	-0.06	0.01	-0.01	0.06
156	-3.54	-0.86	-17.46	17.84	-0.02	0.01	-0.01	0.03
157	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
158	0.00	-0.02	0.00	0.02	-0.02	0.00	0.01	0.02
159	-0.09	-0.12	-6.80	6.80	-0.03	0.00	0.00	0.03
160	-0.03	-0.21	-9.33	9.33	0.00	0.00	0.00	0.00
161	0.07	-0.29	-6.67	6.67	0.04	0.00	0.00	0.04
162	0.00	-0.37	0.00	0.37	0.00	0.00	0.00	0.00
163	0.07	-0.45	-7.13	7.15	-0.04	0.00	0.00	0.04
164	-0.04	-0.53	-9.97	9.98	0.00	0.01	0.00	0.01
165	0.08	-0.61	-7.08	7.10	0.04	0.01	0.00	0.04
166	0.00	-0.68	0.00	0.68	-0.01	0.01	0.00	0.01
167	0.10	-0.75	-10.99	11.02	-0.06	0.01	0.00	0.06
168	-0.12	-0.82	-17.46	17.48	-0.02	0.01	0.01	0.03
169	-1.80	-1.20	-18.74	18.86	0.08	-0.02	-0.03	0.08
170	-1.83	-0.96	-18.74	18.85	0.07	0.01	-0.01	0.07
171	-1.91	-1.44	-18.07	18.22	-0.02	-0.02	-0.02	0.04
172	-1.83	-1.10	-18.07	18.19	-0.02	0.02	0.00	0.03
173	-1.92	-1.13	-17.60	17.74	0.07	0.00	-0.02	0.07
174	-1.83	-1.06	-17.60	17.73	0.06	0.01	0.00	0.07

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 258

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Date : 29 September 2010 / Ver. 2010.06

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-1.93	-1.13	-17.17	17.31	0.00	-0.02	-0.02	0.02
176	-1.84	-1.06	-17.17	17.30	-0.01	0.02	0.00	0.02
177	-1.93	-1.13	-16.99	17.14	0.06	0.01	-0.02	0.07
178	-1.84	-1.06	-17.00	17.13	0.06	0.01	0.00	0.06
179	-1.94	-1.13	-16.83	16.98	0.00	-0.02	-0.02	0.03
180	-1.84	-1.06	-16.83	16.97	-0.01	0.02	0.00	0.02
181	-1.95	-0.92	-16.87	17.01	0.07	0.01	-0.02	0.07
182	-1.83	-0.88	-16.87	17.00	0.07	0.01	0.00	0.07
183	-0.13	-1.24	-0.02	1.24	0.08	-0.02	-0.03	0.09
184	0.00	-1.16	0.00	1.16	0.07	0.01	-0.02	0.08
185	-0.17	-1.53	-0.34	1.58	0.08	-0.02	-0.02	0.09
186	-0.04	-1.28	-0.33	1.32	0.08	0.03	-0.01	0.08
187	-0.09	-1.18	-0.04	1.18	0.08	0.00	-0.01	0.08
188	0.00	-1.13	0.00	1.13	0.07	0.01	-0.01	0.07
189	-0.06	-1.18	-0.28	1.21	0.08	-0.02	-0.01	0.08
190	-0.03	-1.16	-0.27	1.19	0.07	0.02	-0.01	0.08
191	-0.04	-1.18	-0.04	1.18	0.08	0.01	-0.01	0.08
192	0.00	-1.11	0.00	1.11	0.07	0.01	-0.01	0.07
193	0.07	-1.17	-0.32	1.22	0.07	-0.02	-0.01	0.08
194	0.02	-1.15	-0.30	1.19	0.07	0.02	-0.01	0.07
195	0.11	-0.96	-0.02	0.97	0.08	0.01	-0.01	0.08
196	0.00	-0.93	0.00	0.93	0.07	0.01	-0.02	0.07

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	15.33C	0.00	-1.05	0.00	0.00	0.00		0.00	0.35
	2	15.33C	0.00	-1.05	0.00	-0.53	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	9.81C	0.00	-0.02	0.36	-0.08	-0.27	0.00	0.00	0.76
	3	9.81C	0.00	0.05	0.27	0.03	0.27	@ 0.000	@ 0.000	@ 0.424
3	3	6.07C	0.00	-0.18	0.27	0.02	-0.08	0.00	0.00	0.39
	4	6.07C	0.00	-0.02	0.09	-0.02	0.10	@ 0.000	@ 0.000	@ 1.475
4	4	5.59C	0.00	-0.17	0.08	0.01	0.11	0.00	0.00	0.42
	5	5.59C	0.00	-0.01	-0.10	-0.01	-0.09	@ 0.000	@ 0.000	@ 0.505
5	5	5.42C	0.00	-0.18	-0.11	0.01	0.28	0.00	0.00	0.94
	6	5.42C	0.00	-0.01	-0.29	-0.01	-0.30	@ 0.000	@ 0.000	@ 1.535
6	13	4.64C	0.00	0.07	-0.13	0.00	0.00	0.00	0.00	0.04
	14	4.64C	0.00	0.07	-0.13	0.04	-0.06	@ 0.000	@ 0.000	@ 0.290
7	14	4.50C	0.00	0.00	0.36	-0.01	-0.28	0.00	0.00	0.82
	15	4.50C	0.00	0.00	0.28	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
8	15	4.43C	0.00	0.00	0.26	0.00	-0.08	0.00	0.00	0.39
	16	4.43C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.475
9	16	4.28C	0.00	0.00	0.08	0.00	0.11	0.00	0.00	0.42
	17	4.28C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.505
10	17	4.05C	0.00	0.00	-0.11	0.00	0.28	0.00	0.00	0.94
	18	4.05C	0.00	0.00	-0.29	0.00	-0.30	@ 0.000	@ 0.000	@ 1.535

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Job Ref : B11323

Sheet : SD / 259

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	6.14T	0.00	-1.08	0.00	0.00	0.00		0.00	0.37
	26	6.14T	0.00	-1.08	0.00	-0.54	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	6.44T	0.00	-0.03	0.17	-0.06	-0.08	0.00	0.00	0.49
	27	6.44T	0.00	0.04	0.08	0.02	0.08	@ 0.000	@ 0.000	@ 0.748
18	27	5.31C	0.00	-0.18	0.07	0.02	0.10	0.00	0.00	0.35
	28	5.31C	0.00	-0.02	-0.10	-0.02	-0.11	@ 0.000	@ 0.000	@ 1.535
19	28	4.94C	0.00	-0.18	0.47	0.02	-0.29	0.00	0.00	0.84
	29	4.94C	0.00	-0.02	0.29	-0.02	0.28	@ 0.000	@ 0.000	@ 0.444
20	29	5.53C	0.00	-0.18	0.28	0.01	-0.08	0.00	0.00	0.40
	30	5.53C	0.00	-0.02	0.09	-0.02	0.10	@ 0.000	@ 0.000	@ 1.475
21	37	5.61C	0.00	0.05	-0.04	0.00	0.00	0.00	0.00	0.02
	38	5.61C	0.00	0.05	-0.04	0.03	-0.02	@ 0.000	@ 0.000	@ 0.290
22	38	5.37C	0.00	0.00	0.17	-0.01	-0.08	0.00	0.00	0.25
	39	5.37C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.555
23	39	5.14C	0.00	0.00	0.07	0.00	0.10	0.00	0.00	0.35
	40	5.14C	0.00	0.00	-0.10	0.00	-0.11	@ 0.000	@ 0.000	@ 1.535
24	40	4.92C	0.00	0.00	0.47	0.00	-0.29	0.00	0.00	0.84
	41	4.92C	0.00	0.00	0.29	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
25	41	4.76C	0.00	0.00	0.28	0.00	-0.08	0.00	0.00	0.40
	42	4.76C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.475
31	49	6.07C	0.00	-1.03	0.00	0.00	0.00		0.00	0.35
	50	6.07C	0.00	-1.03	0.00	-0.51	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	5.82C	0.00	-0.02	0.27	-0.05	-0.21	0.00	0.00	0.57
	51	5.82C	0.00	0.03	0.20	0.01	0.20	@ 0.000	@ 0.000	@ 0.424
33	51	5.58C	0.00	-0.14	0.20	0.03	-0.06	0.00	0.00	0.29
	52	5.58C	0.00	-0.02	0.07	-0.02	0.07	@ 0.000	@ 0.000	@ 1.475
34	52	5.34C	0.00	-0.14	0.06	0.02	0.08	0.00	0.00	0.30
	53	5.34C	0.00	-0.02	-0.07	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.505
35	53	5.11C	0.00	-0.14	-0.08	0.02	0.21	0.00	0.00	0.69
	54	5.11C	0.00	-0.02	-0.22	-0.02	-0.22	@ 0.000	@ 0.000	@ 1.535
36	61	5.71C	0.00	0.05	-0.09	0.00	0.00	0.00	0.00	0.03
	62	5.71C	0.00	0.05	-0.09	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
37	62	5.49C	0.00	0.00	0.27	-0.01	-0.21	0.00	0.00	0.61
	63	5.49C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
38	63	5.30C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.29
	64	5.30C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.475
39	64	5.06C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.30
	65	5.06C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505

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Job Ref : B11323

Sheet : SD / 260

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	4.76C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.69
	66	4.76C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
46	73	6.07C	0.00	-0.99	0.00	0.00	0.00		0.00	0.33
	74	6.07C	0.00	-0.99	0.00	-0.49	0.00		@ 0.000	@ 0.290
47	74	5.83C	0.00	-0.03	0.12	-0.05	-0.06	0.00	0.00	0.44
	75	5.83C	0.00	0.03	0.06	0.01	0.06	@ 0.000	@ 0.000	@ 0.788
48	75	5.59C	0.00	-0.13	0.05	0.02	0.07	0.00	0.00	0.26
	76	5.59C	0.00	-0.02	-0.08	-0.02	-0.08	@ 0.000	@ 0.000	@ 1.535
49	76	5.35C	0.00	-0.13	0.35	0.02	-0.22	0.00	0.00	0.64
	77	5.35C	0.00	-0.02	0.22	-0.02	0.22	@ 0.000	@ 0.000	@ 0.444
50	77	5.11C	0.00	-0.13	0.21	0.02	-0.06	0.00	0.00	0.30
	78	5.11C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
51	85	5.71C	0.00	0.05	-0.03	0.00	0.00	0.00	0.00	0.02
	86	5.71C	0.00	0.05	-0.03	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
52	86	5.47C	0.00	0.00	0.12	0.00	-0.06	0.00	0.00	0.18
	87	5.47C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
53	87	5.23C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.26
	88	5.23C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 1.535
54	88	5.02C	0.00	0.00	0.35	0.00	-0.22	0.00	0.00	0.64
	89	5.02C	0.00	0.00	0.22	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
55	89	4.83C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.30
	90	4.83C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
91	97	6.09C	0.00	-0.96	0.00	0.00	0.00		0.00	0.32
	98	6.09C	0.00	-0.96	0.00	-0.48	0.00		@ 0.000	@ 0.290
92	98	5.83C	0.00	-0.03	0.27	-0.04	-0.21	0.00	0.00	0.57
	99	5.83C	0.00	0.02	0.20	0.01	0.20	@ 0.000	@ 0.000	@ 0.424
93	99	5.59C	0.00	-0.13	0.20	0.02	-0.06	0.00	0.00	0.29
	100	5.59C	0.00	-0.02	0.07	-0.02	0.07	@ 0.000	@ 0.000	@ 1.475
94	100	5.35C	0.00	-0.13	0.06	0.02	0.08	0.00	0.00	0.30
	101	5.35C	0.00	-0.02	-0.07	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.505
95	101	5.11C	0.00	-0.14	-0.08	0.02	0.21	0.00	0.00	0.69
	102	5.11C	0.00	-0.02	-0.22	-0.02	-0.22	@ 0.000	@ 0.000	@ 1.535
96	109	5.71C	0.00	0.05	-0.09	0.00	0.00	0.00	0.00	0.03
	110	5.71C	0.00	0.05	-0.09	0.02	-0.05	@ 0.000	@ 0.000	@ 0.290
97	110	5.49C	0.00	0.00	0.27	0.00	-0.21	0.00	0.00	0.61
	111	5.49C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
98	111	5.31C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.29
	112	5.31C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.475

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 261

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	5.06C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.30
	113	5.06C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
100	113	4.76C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.69
	114	4.76C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
120	121	6.05C	0.00	-0.95	0.00	0.00	0.00		0.00	0.32
	122	6.05C	0.00	-0.95	0.00	-0.47	0.00		@ 0.000	@ 0.290
121	122	5.80C	0.00	-0.03	0.12	-0.04	-0.06	0.00	0.00	0.41
	123	5.80C	0.00	0.02	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 0.828
122	123	5.56C	0.00	-0.13	0.05	0.02	0.07	0.00	0.00	0.26
	124	5.56C	0.00	-0.02	-0.08	-0.02	-0.08	@ 0.000	@ 0.000	@ 1.535
123	124	5.33C	0.00	-0.13	0.35	0.02	-0.22	0.00	0.00	0.64
	125	5.33C	0.00	-0.02	0.22	-0.02	0.22	@ 0.000	@ 0.000	@ 0.444
124	125	5.09C	0.00	-0.13	0.21	0.02	-0.06	0.00	0.00	0.30
	126	5.09C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.495
125	133	5.69C	0.00	0.05	-0.03	0.00	0.00	0.00	0.00	0.02
	134	5.69C	0.00	0.05	-0.03	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
126	134	5.45C	0.00	0.00	0.12	0.00	-0.06	0.00	0.00	0.18
	135	5.45C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
127	135	5.21C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.26
	136	5.21C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 1.535
128	136	5.00C	0.00	0.00	0.35	0.00	-0.22	0.00	0.00	0.64
	137	5.00C	0.00	0.00	0.22	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
129	137	4.81C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.30
	138	4.81C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
135	145	4.62C	0.00	-0.86	0.00	0.00	0.00		0.00	0.29
	146	4.62C	0.00	-0.86	0.00	-0.43	0.00		@ 0.000	@ 0.290
136	146	4.47C	0.00	-0.02	0.27	-0.05	-0.20	0.00	0.00	0.56
	147	4.47C	0.00	0.03	0.20	0.01	0.20	@ 0.000	@ 0.000	@ 0.424
137	147	4.33C	0.00	-0.13	0.20	0.02	-0.06	0.00	0.00	0.30
	148	4.33C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
138	148	4.19C	0.00	-0.13	0.06	0.02	0.08	0.00	0.00	0.31
	149	4.19C	0.00	-0.02	-0.07	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.505
139	149	4.06C	0.00	-0.13	-0.08	0.01	0.21	0.00	0.00	0.69
	150	4.06C	0.00	-0.01	-0.22	-0.01	-0.22	@ 0.000	@ 0.000	@ 1.535
140	157	4.36C	0.00	0.07	-0.09	0.00	0.00	0.00	0.00	0.03
	158	4.36C	0.00	0.07	-0.09	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
141	158	4.24C	0.00	0.01	0.27	-0.01	-0.21	0.00	0.00	0.61
	159	4.24C	0.00	0.01	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 262

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	4.16C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.30
	160	4.16C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
143	160	4.02C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.31
	161	4.02C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
144	161	3.82C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.69
	162	3.82C	0.00	0.00	-0.22	0.00	-0.22	@ 0.000	@ 0.000	@ 1.535
170	6	5.24C	0.00	-0.18	0.50	0.01	-0.32	0.00	0.00	0.97
	7	5.24C	0.00	-0.01	0.31	-0.01	0.30	@ 0.000	@ 0.000	@ 0.444
171	7	5.08T	0.00	-0.18	0.30	0.00	-0.09	0.00	0.00	0.43
	8	5.08T	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.495
172	8	5.89T	0.00	-0.17	0.09	0.00	0.12	0.00	0.00	0.45
	9	5.89T	0.00	0.00	-0.11	0.00	-0.10	@ 0.000	@ 0.000	@ 0.505
173	9	5.94T	0.00	-0.17	-0.11	-0.01	0.31	0.00	0.00	1.05
	10	5.94T	0.00	0.01	-0.32	0.01	-0.33	@ 0.000	@ 0.000	@ 1.535
174	18	3.89C	0.00	0.00	0.50	0.00	-0.32	0.00	0.00	0.97
	19	3.89C	0.00	0.00	0.31	0.00	0.30	@ 0.000	@ 0.000	@ 0.444
175	19	3.81C	0.00	0.00	0.30	0.00	-0.09	0.00	0.00	0.43
	20	3.81C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.475
176	20	3.65C	0.00	0.00	0.09	0.00	0.12	0.00	0.00	0.45
	21	3.65C	0.00	0.00	-0.11	0.00	-0.10	@ 0.000	@ 0.000	@ 0.505
177	21	3.39C	0.00	0.00	-0.11	0.00	0.31	0.00	0.00	1.06
	22	3.39C	0.00	0.00	-0.32	0.00	-0.33	@ 0.000	@ 0.000	@ 1.535
182	30	8.00C	0.00	-0.18	0.10	0.01	0.10	0.00	0.00	0.40
	31	8.00C	0.00	-0.01	-0.09	-0.01	-0.08	@ 0.000	@ 0.000	@ 0.505
183	31	9.75C	0.00	-0.18	-0.10	0.00	0.29	0.00	0.00	0.94
	32	9.75C	0.00	0.00	-0.30	0.00	-0.31	@ 0.000	@ 0.000	@ 1.535
184	32	10.81C	0.00	-0.17	0.52	0.00	-0.33	0.00	0.00	0.99
	33	10.81C	0.00	0.00	0.32	0.00	0.31	@ 0.000	@ 0.000	@ 0.444
185	33	11.16C	0.00	-0.17	0.31	-0.01	-0.09	0.00	0.00	0.43
	34	11.16C	0.00	0.01	0.10	0.01	0.11	@ 0.000	@ 0.000	@ 1.495
186	42	4.52C	0.00	0.00	0.10	0.00	0.10	0.00	0.00	0.40
	43	4.52C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.525
187	43	4.23C	0.00	0.00	-0.10	0.00	0.29	0.00	0.00	0.94
	44	4.23C	0.00	0.00	-0.30	0.00	-0.31	@ 0.000	@ 0.000	@ 1.535
188	44	4.00C	0.00	0.00	0.52	0.00	-0.33	0.00	0.00	0.99
	45	4.00C	0.00	0.00	0.32	0.00	0.31	@ 0.000	@ 0.000	@ 0.444
189	45	3.82C	0.00	0.00	0.31	0.00	-0.09	0.00	0.00	0.43
	46	3.82C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.495

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 263

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	4.88C	0.00	-0.13	0.37	0.01	-0.24	0.00	0.00	0.72
	55	4.88C	0.00	-0.01	0.23	-0.01	0.22	@ 0.000	@ 0.000	@ 0.444
195	55	4.64C	0.00	-0.13	0.22	0.00	-0.07	0.00	0.00	0.32
	56	4.64C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.495
196	56	4.41C	0.00	-0.12	0.07	-0.01	0.08	0.00	0.00	0.32
	57	4.41C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
197	57	4.18C	0.00	-0.12	-0.08	-0.01	0.22	0.00	0.00	0.78
	58	4.18C	0.00	0.01	-0.23	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
198	66	4.52C	0.00	0.00	0.37	0.00	-0.24	0.00	0.00	0.72
	67	4.52C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
199	67	4.33C	0.00	0.00	0.22	0.00	-0.07	0.00	0.00	0.32
	68	4.33C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.495
200	68	4.08C	0.00	0.00	0.07	0.00	0.08	0.00	0.00	0.32
	69	4.08C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
201	69	3.77C	0.00	0.00	-0.08	0.00	0.23	0.00	0.00	0.79
	70	3.77C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
206	78	4.88C	0.00	-0.13	0.07	0.01	0.08	0.00	0.00	0.31
	79	4.88C	0.00	-0.01	-0.07	-0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
207	79	4.64C	0.00	-0.13	-0.08	0.00	0.22	0.00	0.00	0.72
	80	4.64C	0.00	-0.01	-0.23	-0.01	-0.23	@ 0.000	@ 0.000	@ 1.535
208	80	4.41C	0.00	-0.12	0.39	-0.01	-0.24	0.00	0.00	0.74
	81	4.41C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
209	81	4.18C	0.00	-0.12	0.23	-0.01	-0.07	0.00	0.00	0.32
	82	4.18C	0.00	0.01	0.08	0.01	0.08	@ 0.000	@ 0.000	@ 1.475
210	90	4.59C	0.00	0.00	0.07	0.00	0.08	0.00	0.00	0.31
	91	4.59C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
211	91	4.28C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.72
	92	4.28C	0.00	0.00	-0.23	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
212	92	4.03C	0.00	0.00	0.39	0.00	-0.24	0.00	0.00	0.74
	93	4.03C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
213	93	3.85C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.32
	94	3.85C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
218	102	4.88C	0.00	-0.13	0.37	0.01	-0.24	0.00	0.00	0.72
	103	4.88C	0.00	-0.01	0.23	-0.01	0.22	@ 0.000	@ 0.000	@ 0.444
219	103	4.65C	0.00	-0.13	0.22	0.01	-0.07	0.00	0.00	0.32
	104	4.65C	0.00	-0.01	0.08	-0.01	0.08	@ 0.000	@ 0.000	@ 1.495
220	104	4.41C	0.00	-0.12	0.07	-0.01	0.08	0.00	0.00	0.32
	105	4.41C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.505

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 264

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	4.18C	0.00	-0.12	-0.08	-0.01	0.22	0.00	0.00	0.78
	106	4.18C	0.00	0.01	-0.23	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
222	114	4.52C	0.00	0.00	0.37	0.00	-0.24	0.00	0.00	0.72
	115	4.52C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
223	115	4.33C	0.00	0.00	0.22	0.00	-0.07	0.00	0.00	0.32
	116	4.33C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.495
224	116	4.09C	0.00	0.00	0.07	0.00	0.08	0.00	0.00	0.32
	117	4.09C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
225	117	3.77C	0.00	0.00	-0.08	0.00	0.23	0.00	0.00	0.78
	118	3.77C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
230	126	4.86C	0.00	-0.13	0.07	0.01	0.08	0.00	0.00	0.31
	127	4.86C	0.00	-0.01	-0.07	-0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
231	127	4.62C	0.00	-0.13	-0.08	0.01	0.22	0.00	0.00	0.72
	128	4.62C	0.00	-0.01	-0.23	-0.01	-0.23	@ 0.000	@ 0.000	@ 1.535
232	128	4.39C	0.00	-0.12	0.39	-0.01	-0.24	0.00	0.00	0.74
	129	4.39C	0.00	0.01	0.24	0.01	0.23	@ 0.000	@ 0.000	@ 0.444
233	129	4.16C	0.00	-0.12	0.23	-0.01	-0.07	0.00	0.00	0.32
	130	4.16C	0.00	0.01	0.08	0.01	0.08	@ 0.000	@ 0.000	@ 1.475
234	138	4.57C	0.00	0.00	0.07	0.00	0.08	0.00	0.00	0.31
	139	4.57C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
235	139	4.26C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.72
	140	4.26C	0.00	0.00	-0.23	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
236	140	4.02C	0.00	0.00	0.39	0.00	-0.24	0.00	0.00	0.74
	141	4.02C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
237	141	3.83C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.32
	142	3.83C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
242	150	3.92C	0.00	-0.13	0.37	-0.01	-0.24	0.00	0.00	0.73
	151	3.92C	0.00	0.01	0.23	-0.01	0.22	@ 0.000	@ 0.000	@ 0.444
243	151	3.79C	0.00	-0.13	0.23	0.01	-0.07	0.00	0.00	0.33
	152	3.79C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.495
244	152	3.66C	0.00	-0.12	0.07	-0.01	0.09	0.00	0.00	0.33
	153	3.66C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
245	153	3.52C	0.00	-0.12	-0.08	-0.01	0.22	0.00	0.00	0.79
	154	3.52C	0.00	0.01	-0.24	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
246	162	3.68C	0.00	0.00	0.37	0.00	-0.24	0.00	0.00	0.73
	163	3.68C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
247	163	3.60C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.33
	164	3.60C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.495

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Job Ref : B11323

Sheet : SD / 265

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)										
Member No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	3.46C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.33
	165	3.46C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
249	165	3.25C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.79
	166	3.25C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
306	10	5.22T	0.00	-0.17	0.63	-0.02	-0.43	0.00	0.00	1.32
	11	5.22T	0.00	0.01	0.42	0.01	0.41	@ 0.000	@ 0.000	@ 0.444
307	11	3.96C	0.00	-0.17	0.41	-0.02	-0.18	0.00	0.00	0.70
	12	3.96C	0.00	0.02	0.20	0.02	0.21	@ 0.000	@ 0.000	@ 1.515
308	22	3.26C	0.00	0.00	0.63	0.00	-0.43	0.00	0.00	1.32
	23	3.26C	0.00	0.00	0.42	0.00	0.41	@ 0.000	@ 0.000	@ 0.444
309	23	3.25C	0.00	0.01	0.41	0.00	-0.18	0.00	0.00	0.70
	24	3.25C	0.00	0.01	0.20	0.01	0.21	@ 0.000	@ 0.000	@ 1.515
312	34	10.76C	0.00	-0.17	0.11	-0.02	0.11	0.00	0.00	0.43
	35	10.76C	0.00	0.02	-0.10	0.02	-0.09	@ 0.000	@ 0.000	@ 0.505
313	35	9.59C	0.00	-0.16	-0.11	-0.03	0.31	0.00	0.00	1.13
	36	9.59C	0.00	0.03	-0.32	0.03	-0.34	@ 0.000	@ 0.000	@ 1.535
314	46	3.58C	0.00	0.00	0.11	0.00	0.11	0.00	0.00	0.43
	47	3.58C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.505
315	47	3.25C	0.00	0.00	-0.11	0.00	0.31	0.00	0.00	1.13
	48	3.25C	0.00	0.00	-0.32	0.00	-0.34	@ 0.000	@ 0.000	@ 1.535
318	58	3.95C	0.00	-0.11	0.50	-0.02	-0.35	0.00	0.00	1.07
	59	3.95C	0.00	0.02	0.34	0.02	0.33	@ 0.000	@ 0.000	@ 0.444
319	59	3.73C	0.00	-0.11	0.34	-0.03	-0.17	0.00	0.00	0.59
	60	3.73C	0.00	0.03	0.18	0.03	0.18	@ 0.000	@ 0.000	@ 1.535
320	70	3.56C	0.00	0.00	0.50	0.00	-0.35	0.00	0.00	1.07
	71	3.56C	0.00	0.00	0.34	0.00	0.33	@ 0.000	@ 0.000	@ 0.444
321	71	3.45C	0.00	0.00	0.34	0.00	-0.17	0.00	0.00	0.58
	72	3.45C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 1.535
324	82	3.95C	0.00	-0.11	0.08	-0.02	0.09	0.00	0.00	0.34
	83	3.95C	0.00	0.02	-0.08	0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
325	83	3.72C	0.00	-0.11	-0.09	-0.03	0.23	0.00	0.00	0.91
	84	3.72C	0.00	0.03	-0.25	0.03	-0.26	@ 0.000	@ 0.000	@ 1.515
326	94	3.60C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.34
	95	3.60C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
327	95	3.28C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.91
	96	3.28C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.515
330	106	3.95C	0.00	-0.11	0.50	-0.02	-0.35	0.00	0.00	1.05
	107	3.95C	0.00	0.02	0.34	0.02	0.33	@ 0.000	@ 0.000	@ 0.444

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Job Ref : B11323

Sheet : SD / 266

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Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	3.72C	0.00	-0.11	0.33	-0.03	-0.16	0.00	0.00	0.57
	108	3.72C	0.00	0.03	0.17	0.03	0.18	@ 0.000	@ 0.000	@ 1.535
332	118	3.56C	0.00	0.00	0.50	0.00	-0.35	0.00	0.00	1.05
	119	3.56C	0.00	0.00	0.34	0.00	0.33	@ 0.000	@ 0.000	@ 0.444
333	119	3.45C	0.00	0.00	0.33	0.00	-0.16	0.00	0.00	0.57
	120	3.45C	0.00	0.00	0.17	0.00	0.18	@ 0.000	@ 0.000	@ 1.535
336	130	3.94C	0.00	-0.11	0.08	-0.02	0.09	0.00	0.00	0.34
	131	3.94C	0.00	0.02	-0.08	0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
337	131	3.71C	0.00	-0.11	-0.09	-0.03	0.23	0.00	0.00	0.90
	132	3.71C	0.00	0.03	-0.25	0.03	-0.26	@ 0.000	@ 0.000	@ 1.515
338	142	3.58C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.34
	143	3.58C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
339	143	3.27C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.90
	144	3.27C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.515
342	154	3.39C	0.00	-0.11	0.50	-0.02	-0.36	0.00	0.00	1.08
	155	3.39C	0.00	0.02	0.35	0.02	0.33	@ 0.000	@ 0.000	@ 0.444
343	155	3.25C	0.00	-0.11	0.34	-0.03	-0.17	0.00	0.00	0.61
	156	3.25C	0.00	0.03	0.18	0.03	0.19	@ 0.000	@ 0.000	@ 1.535
344	166	3.14C	0.00	0.00	0.50	0.00	-0.36	0.00	0.00	1.08
	167	3.14C	0.00	0.00	0.35	0.00	0.33	@ 0.000	@ 0.000	@ 0.444
345	167	3.14C	0.00	0.00	0.34	0.00	-0.17	0.00	0.00	0.61
	168	3.14C	0.00	0.00	0.18	0.01	0.19	@ 0.000	@ 0.000	@ 1.535
412	12	3.63C	0.00	-0.17	0.19	-0.03	0.05	0.00	0.01	0.46
	169	3.63C	0.00	0.03	-0.03	0.02	0.01	@ 0.000	@ 0.000	@ 0.768
413	169	1.88C	0.00	-0.25	0.27	-0.03	0.57	0.00	0.00	1.54
	183	1.88C	0.00	0.31	-1.42	0.03	-0.57	@ 0.000	@ 0.000	@ 0.429
414	24	3.14C	0.00	-0.06	0.19	0.06	0.05	0.00		0.45
	170	3.14C	0.00	-0.06	-0.03	-0.07	-0.01	@ 0.000		@ 0.768
415	170	1.84C	0.00	0.05	0.26	-0.05	0.58	0.00		1.56
	184	1.84C	0.00	0.05	-1.43	0.05	-0.58	@ 0.000		@ 1.571
416	36	7.65C	0.00	-0.16	0.85	-0.03	-0.62	0.00	0.00	1.80
	171	7.65C	0.00	0.03	0.63	0.03	0.63	@ 0.000	@ 0.000	@ 1.555
417	171	4.16C	0.00	-0.24	0.26	-0.04	0.59	0.00	0.00	1.79
	185	4.16C	0.00	0.32	-1.43	0.04	-0.56	@ 0.000	@ 0.000	@ 0.449
418	48	3.12C	0.00	-0.06	0.85	0.06	-0.62	0.00	0.00	1.79
	172	3.12C	0.00	-0.06	0.63	-0.06	0.63	@ 0.000	@ 0.000	@ 1.576
419	172	1.91C	0.00	0.05	0.25	-0.06	0.60	0.00		1.80
	186	1.91C	0.00	0.05	-1.44	0.05	-0.57	@ 0.000		@ 0.449

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Sheet : SD / 267

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	3.50C	0.00	-0.10	0.20	-0.04	-0.02	0.00	0.00	0.43
	173	3.50C	0.00	0.04	0.04	0.04	0.05	@ 0.000	@ 0.000	@ 1.253
421	173	2.02C	0.00	-0.17	0.24	-0.05	0.54	0.00	0.00	1.48
	187	2.02C	0.00	0.28	-1.33	0.05	-0.53	@ 0.000	@ 0.000	@ 0.429
422	72	3.27C	0.00	-0.06	0.20	0.06	-0.02	0.00		0.42
	174	3.27C	0.00	-0.06	0.03	-0.06	0.05	@ 0.000		@ 1.252
423	174	1.91C	0.00	0.06	0.24	-0.06	0.54	0.00	0.00	1.49
	188	1.91C	0.00	0.06	-1.34	0.05	-0.54	@ 0.000	@ 0.000	@ 0.429
424	84	3.49C	0.00	-0.11	0.75	-0.04	-0.58	0.00	0.00	1.71
	175	3.49C	0.00	0.04	0.59	0.04	0.60	@ 0.000	@ 0.000	@ 1.555
425	175	2.01C	0.00	-0.18	0.23	-0.05	0.57	0.00	0.00	1.71
	189	2.01C	0.00	0.27	-1.35	0.05	-0.54	@ 0.000	@ 0.000	@ 0.449
426	96	3.14C	0.00	-0.06	0.75	0.06	-0.58	0.00		1.70
	176	3.14C	0.00	-0.06	0.59	-0.06	0.60	@ 0.000		@ 1.555
427	176	1.92C	0.00	0.05	0.22	-0.06	0.57	0.00	0.00	1.72
	190	1.92C	0.00	0.05	-1.36	0.05	-0.54	@ 0.000	@ 0.000	@ 0.449
428	108	3.50C	0.00	-0.10	0.19	-0.04	-0.01	0.00	0.00	0.40
	177	3.50C	0.00	0.04	0.03	0.04	0.05	@ 0.000	@ 0.000	@ 1.212
429	177	2.01C	0.00	-0.17	0.26	-0.05	0.52	0.00	0.00	1.43
	191	2.01C	0.00	0.28	-1.31	0.05	-0.52	@ 0.000	@ 0.000	@ 0.429
430	120	3.27C	0.00	-0.06	0.19	0.06	-0.01	0.00	0.00	0.39
	178	3.27C	0.00	-0.06	0.03	-0.06	0.04	@ 0.000	@ 0.000	@ 1.212
431	178	1.91C	0.00	0.06	0.26	-0.06	0.53	0.00		1.44
	192	1.91C	0.00	0.06	-1.32	0.05	-0.52	@ 0.000		@ 0.429
432	132	3.49C	0.00	-0.10	0.74	-0.04	-0.57	0.00	0.00	1.68
	179	3.49C	0.00	0.04	0.58	0.04	0.59	@ 0.000	@ 0.000	@ 1.555
433	179	2.01C	0.00	-0.17	0.24	-0.05	0.56	0.00	0.00	1.67
	193	2.01C	0.00	0.28	-1.34	0.05	-0.53	@ 0.000	@ 0.000	@ 0.449
434	144	3.13C	0.00	-0.06	0.74	0.06	-0.57	0.00	0.00	1.67
	180	3.13C	0.00	-0.06	0.58	-0.06	0.58	@ 0.000	@ 0.000	@ 1.555
435	180	1.91C	0.00	0.06	0.23	-0.06	0.56	0.00		1.68
	194	1.91C	0.00	0.06	-1.34	0.05	-0.53	@ 0.000		@ 0.449
436	156	3.12C	0.00	-0.11	0.18	-0.04	0.01	0.00	0.00	0.39
	181	3.12C	0.00	0.04	0.01	0.03	0.03	@ 0.000	@ 0.000	@ 1.071
437	181	1.82C	0.00	-0.18	0.27	-0.05	0.51	0.00	0.00	1.40
	195	1.82C	0.00	0.27	-1.31	0.05	-0.51	@ 0.000	@ 0.000	@ 0.429
438	168	3.06C	0.00	-0.06	0.17	0.06	0.01	0.00	0.00	0.38
	182	3.06C	0.00	-0.06	0.01	-0.06	0.03	@ 0.000	@ 0.000	@ 1.071

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	1.80C	0.00	0.05	0.26	-0.06	0.52	0.00		1.41
	196	1.80C	0.00	0.05	-1.31	0.05	-0.52	@ 0.000		@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.961	15.335	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.059	0.000	-0.235
3	0.000	0.000	0.000	0.070	0.000	0.000
4	0.000	0.000	0.000	0.013	0.000	-0.023
5	0.000	0.000	0.000	-0.069	0.000	-0.019
6	0.000	0.000	0.000	0.011	0.000	-0.014
7	0.000	0.000	0.000	0.079	0.000	0.000
9	0.000	0.000	0.000	-0.074	0.000	0.014
10	0.000	0.000	0.000	0.022	0.000	0.025
11	0.000	0.000	0.000	0.118	0.000	0.036
12	0.000	0.000	0.000	0.033	0.000	0.041
13	-0.073	4.637	-0.127	0.000	0.000	0.000
14	0.068	0.000	0.816	0.039	0.000	-0.027
15	0.000	0.000	0.000	0.073	0.000	0.000
16	0.000	0.000	0.000	0.013	0.000	0.000
17	0.000	0.000	0.000	-0.069	0.000	0.000
18	-2.384	0.000	1.536	0.011	0.000	0.000
19	0.000	0.000	0.000	0.080	0.000	0.000
21	0.000	0.000	0.000	-0.074	0.000	0.000
22	-2.622	0.000	1.866	0.024	0.000	0.000
23	0.000	0.000	0.000	0.118	0.000	0.000
24	0.000	0.000	0.000	0.033	0.000	-0.016
25	1.117	-6.139	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.018	0.000	-0.192
27	0.000	0.000	0.000	-0.011	0.000	0.000
28	0.000	0.000	0.000	0.036	0.000	-0.018
29	0.000	0.000	0.000	0.068	0.000	-0.015
30	0.000	0.000	0.000	-0.014	0.000	-0.011
31	0.000	0.000	0.000	-0.072	0.000	0.000
33	0.000	0.000	0.000	0.070	0.000	0.000
34	0.000	0.000	0.000	0.000	0.000	0.018
35	0.000	0.000	0.000	-0.079	0.000	0.026
36	0.000	0.000	0.000	0.048	0.000	0.029
37	-0.052	5.612	-0.038	0.000	0.000	0.000
38	0.049	0.000	0.361	0.012	0.000	-0.019
39	0.000	0.000	0.000	-0.010	0.000	0.000
40	-1.279	0.000	1.106	0.036	0.000	0.000
41	0.000	0.000	0.000	0.069	0.000	0.000
42	0.000	0.000	0.000	-0.014	0.000	0.000
43	0.000	0.000	0.000	-0.073	0.000	0.000
44	-1.431	0.000	1.585	0.000	0.000	0.000
45	0.000	0.000	0.000	0.071	0.000	0.000
46	0.000	0.000	0.000	0.010	0.000	0.000
47	0.000	0.000	0.000	-0.080	0.000	0.000
48	-4.420	0.000	2.333	0.048	0.000	-0.015
49	1.006	6.074	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.044	0.000	-0.186
51	0.000	0.000	0.000	0.051	0.000	0.000

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
52	0.000	0.000	0.000	0.000	0.000	-0.014
53	0.000	0.000	0.000	-0.052	0.000	-0.011
55	0.000	0.000	0.000	0.053	0.000	0.000
57	0.000	0.000	0.000	-0.057	0.000	0.000
58	0.000	0.000	0.000	0.019	0.000	0.013
59	0.000	0.000	0.000	0.092	0.000	0.018
60	0.000	0.000	0.000	0.037	0.000	0.020
61	-0.051	5.709	-0.094	0.000	0.000	0.000
62	0.048	0.000	0.607	0.029	0.000	-0.019
63	0.000	0.000	0.000	0.052	0.000	0.000
65	0.000	0.000	0.000	-0.052	0.000	0.000
66	0.987	0.000	1.155	0.000	0.000	0.000
67	0.000	0.000	0.000	0.054	0.000	0.000
69	0.000	0.000	0.000	-0.056	0.000	0.000
70	1.142	0.000	1.453	0.019	0.000	0.000
71	0.000	0.000	0.000	0.093	0.000	0.000
72	0.000	0.000	0.000	0.037	0.000	-0.019
73	0.967	6.075	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.014	0.000	-0.181
76	0.000	0.000	0.000	0.028	0.000	-0.016
77	0.000	0.000	0.000	0.053	0.000	-0.014
78	0.000	0.000	0.000	0.000	0.000	-0.011
79	0.000	0.000	0.000	-0.054	0.000	0.000
81	0.000	0.000	0.000	0.055	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.014
83	0.000	0.000	0.000	-0.058	0.000	0.021
84	0.000	0.000	0.000	0.060	0.000	0.024
85	-0.050	5.711	-0.029	0.000	0.000	0.000
86	0.047	0.000	0.269	0.000	0.000	-0.018
88	-0.023	0.000	0.840	0.028	0.000	0.000
89	0.000	0.000	0.000	0.053	0.000	0.000
91	0.000	0.000	0.000	-0.054	0.000	0.000
92	-0.023	0.000	1.200	0.000	0.000	0.000
93	0.000	0.000	0.000	0.055	0.000	0.000
95	0.000	0.000	0.000	-0.058	0.000	0.000
96	0.218	0.000	2.025	0.060	0.000	-0.018
97	0.938	6.089	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.044	0.000	-0.177
99	0.000	0.000	0.000	0.051	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	-0.016
101	0.000	0.000	0.000	-0.052	0.000	-0.014
102	0.000	0.000	0.000	0.000	0.000	-0.011
103	0.000	0.000	0.000	0.054	0.000	0.000
105	0.000	0.000	0.000	-0.057	0.000	0.000
106	0.000	0.000	0.000	0.018	0.000	0.014
107	0.000	0.000	0.000	0.091	0.000	0.021
108	0.000	0.000	0.000	0.035	0.000	0.024
109	-0.049	5.710	-0.094	0.000	0.000	0.000
110	0.046	0.000	0.607	0.029	0.000	-0.018
111	0.000	0.000	0.000	0.052	0.000	0.000
113	0.000	0.000	0.000	-0.052	0.000	0.000
114	-0.023	0.000	1.149	0.000	0.000	0.000
115	0.000	0.000	0.000	0.054	0.000	0.000
117	0.000	0.000	0.000	-0.056	0.000	0.000
118	-0.022	0.000	1.434	0.018	0.000	0.000
119	0.000	0.000	0.000	0.091	0.000	0.000
120	0.000	0.000	0.000	0.035	0.000	-0.018
121	0.923	6.050	0.000	0.000	0.000	0.000

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 270

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
122	0.000	0.000	0.000	0.014	0.000	-0.173
124	0.000	0.000	0.000	0.028	0.000	-0.016
125	0.000	0.000	0.000	0.053	0.000	-0.015
126	0.000	0.000	0.000	0.000	0.000	-0.011
127	0.000	0.000	0.000	-0.054	0.000	0.000
129	0.000	0.000	0.000	0.055	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.013
131	0.000	0.000	0.000	-0.058	0.000	0.020
132	0.000	0.000	0.000	0.058	0.000	0.023
133	-0.047	5.689	-0.029	0.000	0.000	0.000
134	0.044	0.000	0.269	0.000	0.000	-0.017
136	1.286	0.000	0.835	0.028	0.000	0.000
137	0.000	0.000	0.000	0.053	0.000	0.000
139	0.000	0.000	0.000	-0.054	0.000	0.000
140	1.439	0.000	1.195	0.000	0.000	0.000
141	0.000	0.000	0.000	0.055	0.000	0.000
143	0.000	0.000	0.000	-0.058	0.000	0.000
144	4.273	0.000	1.971	0.058	0.000	-0.019
145	0.842	4.618	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.044	0.000	-0.200
147	0.000	0.000	0.000	0.051	0.000	0.000
148	0.000	0.000	0.000	0.000	0.000	-0.021
149	0.000	0.000	0.000	-0.054	0.000	-0.018
150	0.000	0.000	0.000	0.000	0.000	-0.014
151	0.000	0.000	0.000	0.055	0.000	0.000
153	0.000	0.000	0.000	-0.060	0.000	0.000
154	0.000	0.000	0.000	0.018	0.000	0.015
155	0.000	0.000	0.000	0.095	0.000	0.023
156	0.000	0.000	0.000	0.031	0.000	0.025
157	-0.065	4.356	-0.094	0.000	0.000	0.000
158	0.060	0.000	0.614	0.029	0.000	-0.024
159	0.000	0.000	0.000	0.053	0.000	0.000
161	0.000	0.000	0.000	-0.054	0.000	0.000
162	1.395	0.000	1.154	0.000	0.000	0.000
163	0.000	0.000	0.000	0.056	0.000	0.000
165	0.000	0.000	0.000	-0.060	0.000	0.000
166	1.480	0.000	1.453	0.019	0.000	0.000
167	0.000	0.000	0.000	0.095	0.000	0.000
168	0.000	0.000	0.000	0.031	0.000	-0.023
169	0.000	0.000	0.000	-0.117	0.000	0.051
170	0.000	0.000	0.000	-0.113	0.000	0.000
171	0.000	0.000	0.000	0.025	0.000	0.037
172	0.000	0.000	0.000	0.031	0.000	0.000
173	0.000	0.000	0.000	-0.100	0.000	0.028
174	0.000	0.000	0.000	-0.097	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.033
176	0.000	0.000	0.000	0.010	0.000	0.000
177	0.000	0.000	0.000	-0.098	0.000	0.033
178	0.000	0.000	0.000	-0.095	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.032
180	0.000	0.000	0.000	0.010	0.000	0.000
181	0.000	0.000	0.000	-0.105	0.000	0.037
182	0.000	0.000	0.000	-0.100	0.000	0.000
183	0.000	0.000	0.000	-0.120	0.000	0.048
184	1.706	0.000	3.826	-0.112	0.000	0.039
185	0.000	0.000	0.000	-0.126	0.000	0.029
186	0.000	0.000	0.000	-0.118	0.000	0.026
187	0.000	0.000	0.000	-0.118	0.000	0.016

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 271

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	R _x →(kN)	R _y ↑(kN)	R _z ↗(kN)	M _x →(kN.m)	M _y ↑(kN.m)	M _z ↗(kN.m)
188	2.666	0.000	5.905	-0.110	0.000	0.023
189	0.000	0.000	0.000	-0.116	0.000	0.024
190	0.000	0.000	0.000	-0.108	0.000	0.025
191	0.000	0.000	0.000	-0.114	0.000	0.024
192	1.523	0.000	5.751	-0.106	0.000	0.025
193	0.000	0.000	0.000	-0.114	0.000	0.022
194	0.000	0.000	0.000	-0.106	0.000	0.023
195	0.000	0.000	0.000	-0.115	0.000	0.026
196	-0.911	0.000	3.463	-0.107	0.000	0.029
Total	13.618	78.157	46.274	-0.358	0.000	-0.806

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L1	Live Load
Load Group L2	Live Load
Load Group L3	Live Load
Load Group L4	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.075	2	2.500	0.075
3	4.500	0.075	4	6.500	0.075	5	8.500	0.075
6	10.500	0.075	7	12.500	0.075	8	14.500	0.075
9	16.500	0.075	10	18.500	0.075	11	20.500	0.075
12	22.500	0.646	13	24.500	1.016			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.005	3	0.005	4	0.005
5	0.005	6	0.005	7	0.005	8	0.005
9	0.005	10	0.005	11	0.005	12	0.005
13	0.000	14	0.003	15	0.003	16	0.003
17	0.003	18	0.003	19	0.003	20	0.003
21	0.003	22	0.003	23	0.003	24	0.003
25	0.000	26	0.007	27	0.007	28	0.007
29	0.007	30	0.007	31	0.007	32	0.007
33	0.007	34	0.007	35	0.007	36	0.007
37	0.000	38	0.006	39	0.006	40	0.006
41	0.006	42	0.006	43	0.006	44	0.006
45	0.006	46	0.006	47	0.006	48	0.006
49	0.000	50	0.006	51	0.006	52	0.006
53	0.006	54	0.006	55	0.006	56	0.006
57	0.006	58	0.006	59	0.006	60	0.006
61	0.000	62	0.006	63	0.006	64	0.006
65	0.006	66	0.006	67	0.006	68	0.006
69	0.006	70	0.006	71	0.006	72	0.006
73	0.000	74	0.006	75	0.006	76	0.006
77	0.006	78	0.006	79	0.006	80	0.006
81	0.006	82	0.006	83	0.006	84	0.006
85	0.000	86	0.006	87	0.006	88	0.006
89	0.006	90	0.006	91	0.006	92	0.006
93	0.006	94	0.006	95	0.006	96	0.006
97	0.000	98	0.006	99	0.006	100	0.006
101	0.006	102	0.006	103	0.006	104	0.006
105	0.006	106	0.006	107	0.006	108	0.006
109	0.000	110	0.006	111	0.006	112	0.006
113	0.006	114	0.006	115	0.006	116	0.006
117	0.006	118	0.006	119	0.006	120	0.006
121	0.000	122	0.006	123	0.006	124	0.006

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 273

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125	0.006	126	0.006	127	0.006	128	0.006
129	0.006	130	0.006	131	0.006	132	0.006
133	0.000	134	0.006	135	0.006	136	0.006
137	0.006	138	0.006	139	0.006	140	0.006
141	0.006	142	0.006	143	0.006	144	0.006
145	0.000	146	0.003	147	0.003	148	0.003
149	0.003	150	0.003	151	0.003	152	0.003
153	0.003	154	0.003	155	0.003	156	0.003
157	0.000	158	0.003	159	0.003	160	0.003
161	0.003	162	0.003	163	0.003	164	0.003
165	0.003	166	0.003	167	0.003	168	0.003
169	0.047	170	0.041	171	0.052	172	0.043
173	0.051	174	0.043	175	0.051	176	0.043
177	0.051	178	0.043	179	0.051	180	0.043
181	0.046	182	0.041	183	0.074	184	0.067
185	0.078	186	0.070	187	0.077	188	0.070
189	0.077	190	0.070	191	0.077	192	0.070
193	0.077	194	0.070	195	0.072	196	0.067

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 N1

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L1 + 0.25 L3 + 1.00 W4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 W2

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L1 + 0.25 L3 + 1.00 W5

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	2.500	0.000	0.000	26	2.500	0.500	0.000
27	2.500	2.500	0.000	28	2.500	4.500	0.000
29	2.500	6.500	0.000	30	2.500	8.500	0.000
31	2.500	10.500	0.000	32	2.500	12.500	0.000
33	2.500	14.500	0.000	34	2.500	16.500	0.000
35	2.500	18.500	0.000	36	2.500	20.500	0.000
37	2.500	0.000	1.300	38	2.500	0.500	1.300
39	2.500	2.500	1.300	40	2.500	4.500	1.300
41	2.500	6.500	1.300	42	2.500	8.500	1.300
43	2.500	10.500	1.300	44	2.500	12.500	1.300
45	2.500	14.500	1.300	46	2.500	16.500	1.300
47	2.500	18.500	1.300	48	2.500	20.500	1.300
49	5.000	0.000	0.000	50	5.000	0.500	0.000
51	5.000	2.500	0.000	52	5.000	4.500	0.000
53	5.000	6.500	0.000	54	5.000	8.500	0.000
55	5.000	10.500	0.000	56	5.000	12.500	0.000
57	5.000	14.500	0.000	58	5.000	16.500	0.000
59	5.000	18.500	0.000	60	5.000	20.500	0.000
61	5.000	0.000	1.300	62	5.000	0.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 274****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	5.000	2.500	1.300	64	5.000	4.500	1.300
65	5.000	6.500	1.300	66	5.000	8.500	1.300
67	5.000	10.500	1.300	68	5.000	12.500	1.300
69	5.000	14.500	1.300	70	5.000	16.500	1.300
71	5.000	18.500	1.300	72	5.000	20.500	1.300
73	7.500	0.000	0.000	74	7.500	0.500	0.000
75	7.500	2.500	0.000	76	7.500	4.500	0.000
77	7.500	6.500	0.000	78	7.500	8.500	0.000
79	7.500	10.500	0.000	80	7.500	12.500	0.000
81	7.500	14.500	0.000	82	7.500	16.500	0.000
83	7.500	18.500	0.000	84	7.500	20.500	0.000
85	7.500	0.000	1.300	86	7.500	0.500	1.300
87	7.500	2.500	1.300	88	7.500	4.500	1.300
89	7.500	6.500	1.300	90	7.500	8.500	1.300
91	7.500	10.500	1.300	92	7.500	12.500	1.300
93	7.500	14.500	1.300	94	7.500	16.500	1.300
95	7.500	18.500	1.300	96	7.500	20.500	1.300
97	10.000	0.000	0.000	98	10.000	0.500	0.000
99	10.000	2.500	0.000	100	10.000	4.500	0.000
101	10.000	6.500	0.000	102	10.000	8.500	0.000
103	10.000	10.500	0.000	104	10.000	12.500	0.000
105	10.000	14.500	0.000	106	10.000	16.500	0.000
107	10.000	18.500	0.000	108	10.000	20.500	0.000
109	10.000	0.000	1.300	110	10.000	0.500	1.300
111	10.000	2.500	1.300	112	10.000	4.500	1.300
113	10.000	6.500	1.300	114	10.000	8.500	1.300
115	10.000	10.500	1.300	116	10.000	12.500	1.300
117	10.000	14.500	1.300	118	10.000	16.500	1.300
119	10.000	18.500	1.300	120	10.000	20.500	1.300
121	12.500	0.000	0.000	122	12.500	0.500	0.000
123	12.500	2.500	0.000	124	12.500	4.500	0.000
125	12.500	6.500	0.000	126	12.500	8.500	0.000
127	12.500	10.500	0.000	128	12.500	12.500	0.000
129	12.500	14.500	0.000	130	12.500	16.500	0.000
131	12.500	18.500	0.000	132	12.500	20.500	0.000
133	12.500	0.000	1.300	134	12.500	0.500	1.300
135	12.500	2.500	1.300	136	12.500	4.500	1.300
137	12.500	6.500	1.300	138	12.500	8.500	1.300
139	12.500	10.500	1.300	140	12.500	12.500	1.300
141	12.500	14.500	1.300	142	12.500	16.500	1.300
143	12.500	18.500	1.300	144	12.500	20.500	1.300
145	15.000	0.000	0.000	146	15.000	0.500	0.000
147	15.000	2.500	0.000	148	15.000	4.500	0.000
149	15.000	6.500	0.000	150	15.000	8.500	0.000
151	15.000	10.500	0.000	152	15.000	12.500	0.000
153	15.000	14.500	0.000	154	15.000	16.500	0.000
155	15.000	18.500	0.000	156	15.000	20.500	0.000
157	15.000	0.000	1.300	158	15.000	0.500	1.300
159	15.000	2.500	1.300	160	15.000	4.500	1.300
161	15.000	6.500	1.300	162	15.000	8.500	1.300
163	15.000	10.500	1.300	164	15.000	12.500	1.300
165	15.000	14.500	1.300	166	15.000	16.500	1.300
167	15.000	18.500	1.300	168	15.000	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	2.500	22.500	0.000	172	2.500	22.500	1.300
173	5.000	22.500	0.000	174	5.000	22.500	1.300
175	7.500	22.500	0.000	176	7.500	22.500	1.300
177	10.000	22.500	0.000	178	10.000	22.500	1.300
179	12.500	22.500	0.000	180	12.500	22.500	1.300
181	15.000	22.500	0.000	182	15.000	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	2.500	24.500	0.000	186	2.500	24.500	1.300
187	5.000	24.500	0.000	188	5.000	24.500	1.300
189	7.500	24.500	0.000	190	7.500	24.500	1.300
191	10.000	24.500	0.000	192	10.000	24.500	1.300
193	12.500	24.500	0.000	194	12.500	24.500	1.300
195	15.000	24.500	0.000	196	15.000	24.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 275****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties**

Members 1-10, 16-25, 31-40, 46-55, 61-100, 106-129, 135-144, 150-177, 182-189,
194-201, 206-213, 218-225, 230-237, 242-249, 254-309, 312-315, 318-321,
324-327, 330-333, 336-339, 342-345, 348-373, 381-392 and 400-453

M	...	...	48.3x3.2	CHS	3.56	[S 355]		
A	4.53E-4		Ix	11.59E-8		Iy	11.59E-8	J 23.17E-8
E	205.0E6		G	78.85E6				

Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

M	...	...	Omega Transom	[]	E 210E6	G 78E6		
A	7.02E-4		Ix	36.1E-8		Iy	54.0E-8	J 72.21E-8

Member Loading**Members 2 and 17**

W1	PZ	-000.015	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.085	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.013	0.000	(kN,m)
W5	PX	-000.075	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 3 and 18

W1	PZ	-000.032	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.174	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.028	0.000	(kN,m)
W5	PX	-000.154	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 4 and 19

W1	PZ	-000.033	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.180	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.159	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 5 and 20

W1	PZ	-000.033	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.185	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.163	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 7 and 22

W1	PZ	-000.015	0.000	(kN,m)
W4	PZ	-000.085	0.000	(kN,m)

Members 8 and 23

W1	PZ	-000.032	0.000	(kN,m)
W4	PZ	-000.174	0.000	(kN,m)

Members 9 and 24

W1	PZ	-000.033	0.000	(kN,m)
W4	PZ	-000.180	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 276****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 10 and 25**

W1 PZ	-000.033	0.000	(kN,m)
W4 PZ	-000.185	0.000	(kN,m)

**Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341 and 346-347**

D1 PY	-000.035	0.025	(kN,m)
D1 PY	-000.035	1.275	(kN,m)

Members 32, 47, 92, 121 and 136

W1 PZ	-000.012	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.063	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.009	0.000	(kN,m)
W5 PX	-000.054	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 33, 48, 93, 122 and 137

W1 PZ	-000.024	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.131	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.112	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 34, 49, 94, 123 and 138

W1 PZ	-000.025	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.135	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.021	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 35, 50, 95, 124 and 139

W1 PZ	-000.026	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.139	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.022	0.000	(kN,m)
W5 PX	-000.119	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 37, 52, 97, 126 and 141

W1 PZ	-000.012	0.000	(kN,m)
W4 PZ	-000.063	0.000	(kN,m)

Members 38, 53, 98, 127 and 142

W1 PZ	-000.024	0.000	(kN,m)
W4 PZ	-000.131	0.000	(kN,m)

Members 39, 54, 99, 128 and 143

W1 PZ	-000.025	0.000	(kN,m)
W4 PZ	-000.135	0.000	(kN,m)

Members 40, 55, 100, 129 and 144

W1 PZ	-000.026	0.000	(kN,m)
W4 PZ	-000.139	0.000	(kN,m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY	-000.159	0.025	(kN,m)
D1 PY	-000.159	2.475	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 277****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359, 361-371, 387-392 and 406-411

D1	PY	-000.103	0.025	(kN, m)
D1	PY	-000.103	2.475	(kN, m)

Members 170 and 182

W1	PZ	-000.034	0.000	(kN, m)
W3	PZ	-000.000	0.000	(kN, m)
W4	PZ	-000.190	0.000	(kN, m)
W6	PZ	-000.000	0.000	(kN, m)
W2	PX	-000.030	0.000	(kN, m)
W5	PX	-000.168	0.000	(kN, m)
W7	PX	-000.000	0.000	(kN, m)
W8	PX	-000.000	0.000	(kN, m)

Members 171 and 183

W1	PZ	-000.035	0.000	(kN, m)
W3	PZ	-000.000	0.000	(kN, m)
W4	PZ	-000.195	0.000	(kN, m)
W6	PZ	-000.000	0.000	(kN, m)
W2	PX	-000.031	0.000	(kN, m)
W5	PX	-000.173	0.000	(kN, m)
W7	PX	-000.000	0.000	(kN, m)
W8	PX	-000.000	0.000	(kN, m)

Members 172 and 184

W1	PZ	-000.036	0.000	(kN, m)
W3	PZ	-000.000	0.000	(kN, m)
W4	PZ	-000.201	0.000	(kN, m)
W6	PZ	-000.000	0.000	(kN, m)
W2	PX	-000.032	0.000	(kN, m)
W5	PX	-000.177	0.000	(kN, m)
W7	PX	-000.000	0.000	(kN, m)
W8	PX	-000.000	0.000	(kN, m)

Members 173 and 185

W1	PZ	-000.037	0.000	(kN, m)
W3	PZ	-000.000	0.000	(kN, m)
W4	PZ	-000.206	0.000	(kN, m)
W6	PZ	-000.000	0.000	(kN, m)
W2	PX	-000.033	0.000	(kN, m)
W5	PX	-000.181	0.000	(kN, m)
W7	PX	-000.000	0.000	(kN, m)
W8	PX	-000.000	0.000	(kN, m)

Members 174 and 186

W1	PZ	-000.034	0.000	(kN, m)
W4	PZ	-000.190	0.000	(kN, m)

Members 175 and 187

W1	PZ	-000.035	0.000	(kN, m)
W4	PZ	-000.195	0.000	(kN, m)

Members 176 and 188

W1	PZ	-000.036	0.000	(kN, m)
W4	PZ	-000.201	0.000	(kN, m)

Members 177 and 189

W1	PZ	-000.037	0.000	(kN, m)
W4	PZ	-000.206	0.000	(kN, m)

Members 194, 206, 218, 230 and 242

W1	PZ	-000.026	0.000	(kN, m)
W3	PZ	-000.000	0.000	(kN, m)
W4	PZ	-000.143	0.000	(kN, m)
W6	PZ	-000.000	0.000	(kN, m)
W2	PX	-000.022	0.000	(kN, m)
W5	PX	-000.122	0.000	(kN, m)
W7	PX	-000.000	0.000	(kN, m)
W8	PX	-000.000	0.000	(kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 278****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 195, 207, 219, 231 and 243**

W1 PZ	-000.027	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.147	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.125	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.028	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.151	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.129	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.028	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.154	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.024	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.026	0.000	(kN,m)
W4 PZ	-000.143	0.000	(kN,m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.027	0.000	(kN,m)
W4 PZ	-000.147	0.000	(kN,m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.028	0.000	(kN,m)
W4 PZ	-000.151	0.000	(kN,m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.028	0.000	(kN,m)
W4 PZ	-000.154	0.000	(kN,m)

Members 306 and 312

W1 PZ	-000.038	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.211	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.034	0.000	(kN,m)
W5 PX	-000.187	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 307 and 313

W1 PZ	-000.039	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.216	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.191	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 308 and 314

W1 PZ	-000.038	0.000	(kN,m)
W4 PZ	-000.211	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 279****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 309 and 315**

W1	PZ	-000.039	0.000	(kN,m)
W4	PZ	-000.216	0.000	(kN,m)

Members 318, 324, 330, 336 and 342

W1	PZ	-000.029	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.158	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.136	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1	PZ	-000.030	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.162	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.139	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1	PZ	-000.029	0.000	(kN,m)
W4	PZ	-000.158	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1	PZ	-000.030	0.000	(kN,m)
W4	PZ	-000.162	0.000	(kN,m)

Members 374-380

D1	PY	-000.580	0.025	(kN,m)
D1	PY	-000.477	1.275	(kN,m)
L2	PY	-002.109	0.025	(kN,m)
L4	PY	-002.109	1.275	(kN,m)
L6	PY	-002.812	0.025	(kN,m)
L8	PY	-002.812	1.275	(kN,m)
G2	PY	-004.218	0.025	(kN,m)
G4	PY	-004.218	1.275	(kN,m)

Member 381

D1	PY	-000.252	0.025	(kN,m)
D1	PY	-000.252	2.475	(kN,m)

Members 382-386

D1	PY	-000.196	0.025	(kN,m)
D1	PY	-000.196	2.475	(kN,m)

Members 393-399

D1	PY	-000.580	0.025	(kN,m)
D1	PY	-000.477	1.275	(kN,m)
L1	PY	-002.109	0.025	(kN,m)
L3	PY	-002.109	1.275	(kN,m)
L5	PY	-002.812	0.025	(kN,m)
L7	PY	-002.812	1.275	(kN,m)
G1	PY	-004.218	0.025	(kN,m)
G3	PY	-004.218	1.275	(kN,m)

Member 400

D1	PY	-000.252	0.025	(kN,m)
D1	PY	-000.252	2.475	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

Members 401-404

D1	PY	-000.196	0.025	(kN,m)
D1	PY	-000.196	2.475	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 280****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member 405**

D1 PY	-000.196	0.025	(kN,m)
D1 PY	-000.196	2.475	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
N1 PZ	-000.300	2.475	(kN,m)

Members 412 and 416

W1 PZ	-000.040	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.222	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.196	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Member 413

W1 PZ	-000.208	0.000	(kN,m)
W1 PZ	-000.212	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.836	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.855	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.052	0.000	(kN,m)
W2 PX	-000.053	2.000	(kN,m)
W5 PX	-000.276	0.000	(kN,m)
W5 PX	-000.282	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 414 and 418

W1 PZ	-000.040	0.000	(kN,m)
W4 PZ	-000.222	0.000	(kN,m)

Members 415 and 419

W1 PZ	-000.208	0.000	(kN,m)
W4 PZ	-000.836	0.000	(kN,m)
W1 PZ	-000.212	2.000	(kN,m)
W4 PZ	-000.855	2.000	(kN,m)

Member 417

W1 PZ	-000.212	0.000	(kN,m)
W1 PZ	-000.208	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.836	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.855	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.052	0.000	(kN,m)
W2 PX	-000.053	2.000	(kN,m)
W5 PX	-000.276	0.000	(kN,m)
W5 PX	-000.282	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 420, 424, 428, 432 and 436

W1 PZ	-000.031	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.166	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.026	0.000	(kN,m)
W5 PX	-000.142	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 281****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W8 PX -000.000 0.000 (kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ -000.198 0.000 (kN,m)

W1 PZ -000.202 2.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.779 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W3 PZ -000.455 2.000 (kN,m)

W4 PZ -000.797 2.000 (kN,m)

W6 PZ -000.000 2.000 (kN,m)

W2 PX -000.042 0.000 (kN,m)

W2 PX -000.043 2.000 (kN,m)

W5 PX -000.222 0.000 (kN,m)

W5 PX -000.227 2.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W7 PX -000.000 2.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

W8 PX -000.000 2.000 (kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ -000.031 0.000 (kN,m)

W4 PZ -000.166 0.000 (kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ -000.198 0.000 (kN,m)

W4 PZ -000.779 0.000 (kN,m)

W1 PZ -000.202 2.000 (kN,m)

W4 PZ -000.797 2.000 (kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Released	® Fixed
11	ROO ROO	12 ROO ROO	13 ROO ROO	14 ROO ROO
15	ROO ROO	26 ROO ROO	27 ROO ROO	28 ROO ROO
29	ROO ROO	30 ROO ROO	41 ROO ROO	42 ROO ROO
43	ROO ROO	44 ROO ROO	45 ROO ROO	56 ROO ROO
57	ROO ROO	58 ROO ROO	59 ROO ROO	60 ROO ROO
61	ROO ROO	62 ROO ROO	63 ROO ROO	64 ROO ROO
65	ROO ROO	66 ROO ROO	67 ROO ROO	68 ROO ROO
69	ROO ROO	70 ROO ROO	71 ROO ROO	72 ROO ROO
73	ROO ROO	74 ROO ROO	75 ROO ROO	76 ROO ROO
77	ROO ROO	78 ROO ROO	79 ROO ROO	80 ROO ROO
81	ROO ROO	82 ROO ROO	83 ROO ROO	84 ROO ROO
85	ROO ROO	86 ROO ROO	87 ROO ROO	88 ROO ROO
89	ROO ROO	90 ROO ROO	101 ROO ROO	102 ROO ROO
103	ROO ROO	104 ROO ROO	105 ROO ROO	106 ROO ROO
107	ROO ROO	108 ROO ROO	109 ROO ROO	110 ROO ROO
111	ROO ROO	112 ROO ROO	113 ROO ROO	114 ROO ROO
115	ROO ROO	116 ROO ROO	117 ROO ROO	118 ROO ROO
119	ROO ROO	130 ROO ROO	131 ROO ROO	132 ROO ROO
133	ROO ROO	134 ROO ROO	145 ROO ROO	146 ROO ROO
147	ROO ROO	148 ROO ROO	149 ROO ROO	150 ROO ROO
151	ROO ROO	152 ROO ROO	153 ROO ROO	154 ROO ROO
155	ROO ROO	156 ROO ROO	157 ROO ROO	158 ROO ROO
159	ROO ROO	160 ROO ROO	161 ROO ROO	162 ROO ROO
163	ROO ROO	164 ROO ROO	165 ROO ROO	166 ROO ROO
167	ROO ROO	168 ROO ROO	169 ROO ROO	178 ROO ROO
179	ROO ROO	180 ROO ROO	181 ROO ROO	190 ROO ROO
191	ROO ROO	192 ROO ROO	193 ROO ROO	202 ROO ROO
203	ROO ROO	204 ROO ROO	205 ROO ROO	214 ROO ROO
215	ROO ROO	216 ROO ROO	217 ROO ROO	226 ROO ROO
227	ROO ROO	228 ROO ROO	229 ROO ROO	238 ROO ROO
239	ROO ROO	240 ROO ROO	241 ROO ROO	250 ROO ROO
251	ROO ROO	252 ROO ROO	253 ROO ROO	254 ROO ROO
255	ROO ROO	256 ROO ROO	257 ROO ROO	258 ROO ROO
259	ROO ROO	260 ROO ROO	261 ROO ROO	262 ROO ROO
263	ROO ROO	264 ROO ROO	265 ROO ROO	266 ROO ROO
267	ROO ROO	268 ROO ROO	269 ROO ROO	270 ROO ROO
271	ROO ROO	272 ROO ROO	273 ROO ROO	274 ROO ROO
275	ROO ROO	276 ROO ROO	277 ROO ROO	278 ROO ROO
279	ROO ROO	280 ROO ROO	281 ROO ROO	282 ROO ROO

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 282****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

283	000	000
287	000	000
291	000	000
295	000	000
299	000	000
303	000	000
311	000	000
323	000	000
335	000	000
347	000	000
351	000	000
355	000	000
359	000	000
363	000	000
367	000	000
371	000	000
375	000	000
379	000	000
383	000	000
387	000	000
391	000	000
395	000	000
399	000	000
403	000	000
407	000	000
411	000	000
443	000	000
447	000	000
451	000	000
284	000	000
288	000	000
292	000	000
296	000	000
300	000	000
304	000	000
316	000	000
328	000	000
340	000	000
348	000	000
352	000	000
356	000	000
360	000	000
364	000	000
368	000	000
372	000	000
376	000	000
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384	000	000
388	000	000
392	000	000
396	000	000
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404	000	000
408	000	000
440	000	000
444	000	000
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305	000	000
317	000	000
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341	000	000
349	000	000
353	000	000
357	000	000
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365	000	000
369	000	000
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377	000	000
381	000	000
385	000	000
389	000	000
393	000	000
397	000	000
401	000	000
405	000	000
409	000	000
441	000	000
445	000	000
449	000	000
453	000	000
286	000	000
290	000	000
294	000	000
298	000	000
302	000	000
310	000	000
322	000	000
334	000	000
346	000	000
350	000	000
354	000	000
358	000	000
362	000	000
366	000	000
370	000	000
374	000	000
378	000	000
382	000	000
386	000	000
390	000	000
394	000	000
398	000	000
402	000	000
406	000	000
410	000	000
442	000	000
446	000	000
450	000	000

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0087.100 0000.000 0104.050

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 283

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.34	0.34	-0.04	0.00	0.45	0.45
2	-2.98	-0.10	0.01	2.99	-0.04	0.00	0.13	0.14
3	-3.70	-0.33	-9.22	9.94	-0.05	0.00	0.00	0.05
4	-4.52	-0.46	-12.65	13.44	-0.01	-0.01	0.01	0.02
5	-5.32	-0.56	-9.02	10.49	0.05	-0.01	0.01	0.05
6	-5.99	-0.69	0.03	6.03	-0.01	0.00	0.01	0.01
7	-6.41	-0.82	-9.65	11.62	-0.05	0.00	0.00	0.05
8	-6.53	-0.97	-13.51	15.04	0.00	-0.01	0.00	0.01
9	-6.30	-1.11	-9.63	11.57	0.05	-0.01	-0.01	0.05
10	-5.70	-1.24	0.02	5.83	-0.01	-0.01	-0.01	0.02
11	-4.72	-1.37	-13.48	14.35	-0.08	-0.02	-0.02	0.08
12	-3.40	-1.49	-20.78	21.11	-0.02	-0.02	-0.02	0.04
13	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
14	0.00	-0.03	0.00	0.03	-0.03	0.00	0.01	0.03
15	-0.09	-0.17	-9.22	9.22	-0.05	0.00	0.00	0.05
16	0.06	-0.30	-12.65	12.65	-0.01	0.00	0.00	0.01
17	0.07	-0.42	-9.02	9.03	0.05	0.00	0.00	0.05
18	0.00	-0.55	0.00	0.55	-0.01	0.00	0.00	0.01
19	0.07	-0.67	-9.65	9.67	-0.05	0.00	0.00	0.05
20	0.07	-0.78	-13.51	13.53	-0.01	0.00	0.00	0.01
21	0.08	-0.90	-9.63	9.68	0.05	0.00	0.00	0.05
22	0.00	-1.00	0.00	1.00	-0.02	0.00	0.00	0.02
23	0.10	-1.11	-13.48	13.53	-0.08	0.00	-0.01	0.08
24	0.17	-1.22	-20.78	20.82	-0.02	0.01	0.01	0.02
25	0.00	0.00	0.10	0.10	-0.01	0.00	0.43	0.43
26	-2.83	-0.04	0.01	2.83	-0.01	0.00	0.11	0.11
27	-3.55	-0.19	-2.47	4.33	0.01	-0.01	0.00	0.01
28	-4.40	-0.34	0.01	4.41	-0.02	-0.01	0.01	0.03
29	-5.22	-0.48	-9.36	10.73	-0.04	-0.01	0.01	0.05
30	-5.91	-0.61	-12.77	14.08	0.01	-0.01	0.01	0.02
31	-6.36	-0.73	-9.23	11.24	0.05	-0.01	0.00	0.05
32	-6.51	-0.85	0.03	6.56	0.00	-0.02	0.00	0.02
33	-6.30	-0.97	-9.74	11.64	-0.05	-0.01	-0.01	0.05
34	-5.72	-1.13	-13.38	14.60	-0.01	-0.01	-0.01	0.01
35	-4.77	-1.27	-9.51	10.71	0.05	-0.02	-0.01	0.06
36	-3.48	-1.42	-0.01	3.76	-0.03	-0.03	-0.02	0.05
37	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.01
38	0.00	-0.04	0.00	0.04	-0.01	0.00	0.01	0.01
39	-0.09	-0.19	-2.47	2.47	0.01	0.00	0.00	0.01
40	0.00	-0.33	0.00	0.33	-0.02	0.01	0.00	0.02
41	0.07	-0.47	-9.36	9.38	-0.05	0.01	0.00	0.05
42	0.00	-0.61	-12.77	12.78	0.01	0.01	0.00	0.01
43	0.08	-0.74	-9.23	9.26	0.05	0.01	0.00	0.05
44	0.00	-0.87	0.00	0.87	0.00	0.01	0.00	0.01
45	0.08	-0.99	-9.74	9.79	-0.05	0.02	0.00	0.05
46	0.00	-1.10	-13.38	13.43	-0.01	0.02	0.00	0.02
47	0.10	-1.21	-9.51	9.58	0.05	0.02	0.00	0.06
48	0.00	-1.32	0.00	1.32	-0.03	0.02	0.01	0.04
49	0.00	0.00	0.25	0.25	-0.03	0.00	0.41	0.42
50	-2.71	-0.04	0.01	2.71	-0.03	0.00	0.10	0.11
51	-3.58	-0.20	-6.89	7.77	-0.03	0.00	0.00	0.03
52	-4.41	-0.35	-9.39	10.38	0.00	0.00	0.01	0.01
53	-5.24	-0.50	-6.74	8.55	0.03	0.00	0.01	0.04
54	-5.93	-0.65	0.03	5.96	0.00	0.00	0.00	0.00
55	-6.38	-0.79	-7.16	9.62	-0.04	0.00	0.00	0.04
56	-6.52	-0.92	-9.92	11.91	0.00	0.00	0.00	0.00
57	-6.32	-1.05	-7.09	9.55	0.04	0.00	0.00	0.04
58	-5.74	-1.17	0.03	5.86	-0.01	0.00	-0.01	0.01

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 284

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-4.79	-1.29	-11.00	12.07	-0.06	0.00	-0.01	0.06
60	-3.50	-1.41	-17.46	17.86	-0.02	0.00	-0.01	0.03
61	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
62	0.00	-0.04	0.00	0.04	-0.02	0.00	0.01	0.02
63	-0.09	-0.19	-6.89	6.89	-0.03	0.00	0.00	0.03
64	0.00	-0.34	-9.39	9.40	0.00	0.00	0.00	0.00
65	0.07	-0.48	-6.74	6.76	0.03	0.00	0.00	0.03
66	0.00	-0.62	0.00	0.62	0.00	0.00	0.00	0.00
67	0.08	-0.75	-7.16	7.20	-0.04	0.01	0.00	0.04
68	0.00	-0.88	-9.92	9.96	0.00	0.01	0.00	0.01
69	0.08	-1.00	-7.09	7.16	0.04	0.01	0.00	0.04
70	0.00	-1.12	0.00	1.12	-0.01	0.01	0.00	0.02
71	0.10	-1.23	-11.00	11.07	-0.06	0.01	0.00	0.06
72	0.00	-1.34	-17.46	17.51	-0.02	0.01	0.01	0.03
73	0.00	0.00	0.08	0.08	-0.01	0.00	0.40	0.40
74	-2.61	-0.04	0.01	2.61	-0.01	0.00	0.10	0.10
75	-3.59	-0.20	-1.86	4.05	0.00	0.00	0.00	0.00
76	-4.43	-0.36	0.02	4.44	-0.02	0.00	0.01	0.02
77	-5.25	-0.50	-7.14	8.88	-0.04	-0.01	0.01	0.04
78	-5.94	-0.65	-9.78	11.46	0.00	-0.01	0.01	0.01
79	-6.39	-0.79	-7.04	9.54	0.04	-0.01	0.00	0.04
80	-6.54	-0.92	0.03	6.60	0.00	-0.01	0.00	0.01
81	-6.33	-1.05	-7.31	9.73	-0.04	-0.01	0.00	0.04
82	-5.75	-1.17	-10.05	11.64	0.00	-0.01	-0.01	0.02
83	-4.80	-1.29	-7.00	8.59	0.04	-0.01	-0.01	0.04
84	-3.52	-1.41	0.01	3.79	-0.04	-0.02	-0.01	0.04
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
86	0.00	-0.04	0.00	0.04	-0.01	0.00	0.01	0.01
87	-0.09	-0.19	-1.86	1.87	0.00	0.00	0.00	0.00
88	0.00	-0.34	0.00	0.34	-0.02	0.00	0.00	0.02
89	0.07	-0.48	-7.14	7.15	-0.04	0.01	0.00	0.04
90	0.00	-0.62	-9.78	9.80	0.00	0.01	0.00	0.01
91	0.08	-0.75	-7.04	7.08	0.04	0.01	0.00	0.04
92	0.00	-0.88	0.00	0.88	0.00	0.01	0.00	0.01
93	0.08	-1.00	-7.31	7.38	-0.04	0.01	0.00	0.04
94	0.00	-1.12	-10.05	10.11	0.00	0.02	0.00	0.02
95	0.10	-1.23	-7.00	7.11	0.04	0.02	0.00	0.04
96	0.00	-1.34	0.00	1.34	-0.04	0.02	0.01	0.05
97	0.00	0.00	0.25	0.25	-0.03	0.00	0.39	0.39
98	-2.54	-0.04	0.00	2.54	-0.03	0.00	0.10	0.10
99	-3.61	-0.20	-6.89	7.78	-0.03	0.00	0.00	0.03
100	-4.44	-0.36	-9.39	10.39	0.00	0.00	0.01	0.01
101	-5.26	-0.50	-6.74	8.57	0.03	0.00	0.01	0.04
102	-5.95	-0.65	0.03	5.98	0.00	0.00	0.01	0.01
103	-6.40	-0.79	-7.16	9.64	-0.04	0.00	0.00	0.04
104	-6.55	-0.92	-9.94	11.94	0.00	0.00	0.00	0.00
105	-6.34	-1.05	-7.10	9.58	0.04	0.00	0.00	0.04
106	-5.77	-1.18	0.03	5.88	-0.01	0.00	-0.01	0.01
107	-4.82	-1.29	-10.81	11.90	-0.06	0.00	-0.01	0.06
108	-3.53	-1.41	-17.07	17.48	-0.02	0.01	-0.01	0.03
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.04	0.00	0.04	-0.02	0.00	0.01	0.02
111	-0.09	-0.19	-6.89	6.90	-0.03	0.00	0.00	0.03
112	0.00	-0.34	-9.39	9.40	0.00	0.00	0.00	0.00
113	0.07	-0.48	-6.74	6.76	0.03	0.00	0.00	0.03
114	0.00	-0.62	0.00	0.62	0.00	0.00	0.00	0.00
115	0.08	-0.75	-7.16	7.20	-0.04	0.00	0.00	0.04
116	0.00	-0.88	-9.94	9.98	0.00	0.00	0.00	0.01

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 285

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.08	-1.00	-7.10	7.17	0.04	0.01	0.00	0.04
118	0.00	-1.12	0.00	1.12	-0.01	0.01	0.00	0.01
119	0.10	-1.23	-10.81	10.88	-0.06	0.01	0.00	0.06
120	0.00	-1.34	-17.07	17.12	-0.02	0.01	0.01	0.03
121	0.00	0.00	0.08	0.08	-0.01	0.00	0.38	0.38
122	-2.50	-0.04	0.00	2.50	-0.01	0.00	0.10	0.10
123	-3.62	-0.20	-1.86	4.07	0.00	0.00	0.00	0.01
124	-4.44	-0.35	0.02	4.46	-0.02	-0.01	0.01	0.02
125	-5.27	-0.50	-7.14	8.88	-0.04	-0.01	0.01	0.04
126	-5.95	-0.65	-9.78	11.47	0.00	-0.01	0.01	0.01
127	-6.41	-0.78	-7.04	9.55	0.04	-0.01	0.00	0.04
128	-6.55	-0.92	0.03	6.62	0.00	-0.01	0.00	0.01
129	-6.35	-1.05	-7.32	9.74	-0.04	-0.02	0.00	0.04
130	-5.77	-1.17	-10.07	11.66	0.00	-0.02	-0.01	0.02
131	-4.82	-1.29	-7.02	8.61	0.04	-0.02	-0.01	0.04
132	-3.53	-1.40	0.01	3.80	-0.04	-0.02	-0.01	0.05
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
134	0.00	-0.04	0.00	0.04	-0.01	0.00	0.01	0.01
135	-0.09	-0.19	-1.86	1.87	0.00	0.00	0.00	0.00
136	0.00	-0.34	0.00	0.34	-0.02	0.00	0.00	0.02
137	0.07	-0.48	-7.14	7.15	-0.04	0.01	0.00	0.04
138	0.00	-0.62	-9.78	9.80	0.00	0.01	0.00	0.01
139	0.08	-0.75	-7.04	7.08	0.04	0.01	0.00	0.04
140	0.00	-0.88	0.00	0.88	0.00	0.01	0.00	0.01
141	0.08	-1.00	-7.32	7.39	-0.04	0.01	0.00	0.04
142	0.00	-1.11	-10.07	10.13	0.00	0.01	0.00	0.01
143	0.10	-1.23	-7.02	7.13	0.04	0.02	0.00	0.04
144	0.00	-1.33	0.00	1.33	-0.04	0.02	0.01	0.04
145	0.00	0.00	0.25	0.25	-0.03	0.00	0.37	0.37
146	-2.47	-0.03	0.00	2.47	-0.03	0.00	0.11	0.11
147	-3.62	-0.16	-6.86	7.76	-0.03	0.00	0.00	0.03
148	-4.44	-0.29	-9.41	10.42	0.00	0.00	0.01	0.01
149	-5.27	-0.42	-6.72	8.55	0.04	0.00	0.01	0.04
150	-5.96	-0.54	0.03	5.98	0.00	0.00	0.01	0.01
151	-6.41	-0.66	-7.20	9.66	-0.04	0.00	0.00	0.04
152	-6.56	-0.77	-10.05	12.03	0.00	0.01	0.00	0.01
153	-6.35	-0.88	-7.14	9.59	0.04	0.01	0.00	0.04
154	-5.78	-0.99	0.03	5.86	-0.01	0.01	-0.01	0.02
155	-4.83	-1.10	-11.08	12.14	-0.06	0.01	-0.01	0.06
156	-3.54	-1.20	-17.61	18.00	-0.02	0.01	-0.01	0.03
157	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
158	0.00	-0.03	0.00	0.03	-0.02	0.00	0.01	0.02
159	-0.09	-0.16	-6.86	6.87	-0.04	0.00	0.00	0.04
160	-0.04	-0.28	-9.41	9.42	0.00	0.00	0.00	0.00
161	0.07	-0.40	-6.72	6.74	0.04	0.00	0.00	0.04
162	0.00	-0.52	0.00	0.52	0.00	0.00	0.00	0.00
163	0.07	-0.63	-7.20	7.22	-0.04	0.00	0.00	0.04
164	-0.04	-0.75	-10.05	10.08	0.00	0.01	0.00	0.01
165	0.08	-0.85	-7.14	7.19	0.04	0.01	0.00	0.04
166	0.00	-0.96	0.00	0.96	-0.01	0.01	0.00	0.01
167	0.10	-1.06	-11.08	11.13	-0.06	0.01	0.00	0.06
168	-0.12	-1.17	-17.61	17.65	-0.02	0.01	0.01	0.03
169	-1.80	-1.61	-18.89	19.04	0.08	-0.02	-0.03	0.08
170	-1.83	-1.32	-18.89	19.02	0.07	0.01	-0.01	0.08
171	-1.91	-1.56	-18.21	18.38	-0.02	-0.03	-0.02	0.04
172	-1.83	-1.43	-18.22	18.36	-0.02	0.03	0.00	0.03
173	-1.92	-1.52	-17.75	17.91	0.07	0.00	-0.02	0.07
174	-1.83	-1.45	-17.75	17.90	0.06	0.01	0.00	0.07

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Job Ref : B11323

Sheet : SD / 286

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Date : 29 September 2010 / Ver. 2010.06

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-1.93	-1.52	-17.31	17.48	0.00	-0.02	-0.02	0.02
176	-1.84	-1.45	-17.31	17.47	-0.01	0.02	0.00	0.02
177	-1.93	-1.52	-17.13	17.31	0.06	0.01	-0.02	0.07
178	-1.84	-1.45	-17.13	17.29	0.06	0.01	0.00	0.06
179	-1.94	-1.51	-16.97	17.15	0.00	-0.02	-0.02	0.03
180	-1.84	-1.44	-16.97	17.13	-0.01	0.02	0.00	0.02
181	-1.95	-1.31	-17.01	17.17	0.07	0.01	-0.02	0.07
182	-1.83	-1.27	-17.01	17.15	0.07	0.01	0.00	0.07
183	-0.13	-1.67	-0.02	1.67	0.08	-0.02	-0.03	0.09
184	0.00	-1.39	0.00	1.39	0.07	0.01	-0.02	0.07
185	-0.17	-1.66	-0.34	1.71	0.09	-0.02	-0.02	0.09
186	-0.04	-1.50	-0.32	1.54	0.08	0.03	-0.01	0.08
187	-0.09	-1.58	-0.04	1.59	0.08	0.00	-0.01	0.08
188	0.00	-1.52	0.00	1.52	0.07	0.01	-0.01	0.07
189	-0.06	-1.59	-0.28	1.61	0.08	-0.02	-0.01	0.08
190	-0.03	-1.52	-0.27	1.54	0.07	0.02	-0.01	0.07
191	-0.04	-1.58	-0.04	1.59	0.08	0.01	-0.01	0.08
192	0.00	-1.52	0.00	1.52	0.07	0.01	-0.01	0.07
193	0.07	-1.58	-0.32	1.61	0.08	-0.02	-0.01	0.08
194	0.02	-1.52	-0.30	1.55	0.07	0.02	-0.01	0.07
195	0.11	-1.37	-0.02	1.37	0.08	0.01	-0.01	0.08
196	0.00	-1.34	0.00	1.34	0.07	0.01	-0.02	0.07

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	15.92C	0.00	-1.06	0.00	0.00	0.00		0.00	0.36
	2	15.92C	0.00	-1.06	0.00	-0.53	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	10.39C	0.00	-0.02	0.36	-0.08	-0.28	0.00	0.00	0.76
	3	10.39C	0.00	0.06	0.27	0.03	0.27	@ 0.000	@ 0.000	@ 0.424
3	3	7.79C	0.00	-0.18	0.27	0.02	-0.08	0.00	0.00	0.39
	4	7.79C	0.00	-0.02	0.09	-0.02	0.10	@ 0.000	@ 0.000	@ 1.475
4	4	7.28C	0.00	-0.17	0.08	0.01	0.11	0.00	0.00	0.42
	5	7.28C	0.00	-0.01	-0.10	-0.01	-0.09	@ 0.000	@ 0.000	@ 0.505
5	5	7.12C	0.00	-0.18	-0.11	0.01	0.28	0.00	0.00	0.94
	6	7.12C	0.00	-0.01	-0.30	-0.01	-0.31	@ 0.000	@ 0.000	@ 1.535
6	13	6.24C	0.00	0.07	-0.13	0.00	0.00	0.00	0.00	0.04
	14	6.24C	0.00	0.07	-0.13	0.04	-0.06	@ 0.000	@ 0.000	@ 0.290
7	14	6.11C	0.00	0.00	0.37	-0.01	-0.29	0.00	0.00	0.83
	15	6.11C	0.00	0.00	0.28	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
8	15	6.04C	0.00	0.00	0.27	0.00	-0.08	0.00	0.00	0.40
	16	6.04C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.475
9	16	5.89C	0.00	0.00	0.08	0.00	0.11	0.00	0.00	0.42
	17	5.89C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.505
10	17	5.65C	0.00	0.00	-0.11	0.00	0.29	0.00	0.00	0.95
	18	5.65C	0.00	0.00	-0.30	0.00	-0.31	@ 0.000	@ 0.000	@ 1.535

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	7.47C	0.00	-1.09	0.00	0.00	0.00		0.00	0.37
	26	7.47C	0.00	-1.09	0.00	-0.54	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	7.18C	0.00	-0.03	0.17	-0.06	-0.08	0.00	0.00	0.49
	27	7.18C	0.00	0.04	0.08	0.02	0.08	@ 0.000	@ 0.000	@ 0.748
18	27	6.77C	0.00	-0.18	0.07	0.02	0.10	0.00	0.00	0.35
	28	6.77C	0.00	-0.02	-0.10	-0.02	-0.11	@ 0.000	@ 0.000	@ 1.535
19	28	6.41C	0.00	-0.18	0.47	0.02	-0.30	0.00	0.00	0.85
	29	6.41C	0.00	-0.02	0.29	-0.02	0.29	@ 0.000	@ 0.000	@ 0.444
20	29	6.56C	0.00	-0.18	0.28	0.01	-0.08	0.00	0.00	0.40
	30	6.56C	0.00	-0.02	0.09	-0.02	0.10	@ 0.000	@ 0.000	@ 1.475
21	37	7.17C	0.00	0.05	-0.04	0.00	0.00	0.00	0.00	0.02
	38	7.17C	0.00	0.05	-0.04	0.03	-0.02	@ 0.000	@ 0.000	@ 0.290
22	38	6.93C	0.00	0.00	0.17	-0.01	-0.08	0.00	0.00	0.25
	39	6.93C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.555
23	39	6.70C	0.00	0.00	0.07	0.00	0.10	0.00	0.00	0.35
	40	6.70C	0.00	0.00	-0.10	0.00	-0.11	@ 0.000	@ 0.000	@ 1.535
24	40	6.48C	0.00	0.00	0.47	0.00	-0.30	0.00	0.00	0.85
	41	6.48C	0.00	0.00	0.29	0.00	0.29	@ 0.000	@ 0.000	@ 0.444
25	41	6.32C	0.00	0.00	0.28	0.00	-0.08	0.00	0.00	0.40
	42	6.32C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.475
31	49	7.65C	0.00	-1.03	0.00	0.00	0.00		0.00	0.35
	50	7.65C	0.00	-1.03	0.00	-0.52	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	7.40C	0.00	-0.02	0.27	-0.05	-0.21	0.00	0.00	0.57
	51	7.40C	0.00	0.03	0.21	0.01	0.21	@ 0.000	@ 0.000	@ 0.424
33	51	7.16C	0.00	-0.14	0.20	0.03	-0.06	0.00	0.00	0.29
	52	7.16C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
34	52	6.92C	0.00	-0.14	0.06	0.02	0.08	0.00	0.00	0.30
	53	6.92C	0.00	-0.02	-0.07	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.505
35	53	6.69C	0.00	-0.14	-0.08	0.02	0.21	0.00	0.00	0.70
	54	6.69C	0.00	-0.02	-0.22	-0.02	-0.23	@ 0.000	@ 0.000	@ 1.535
36	61	7.29C	0.00	0.05	-0.10	0.00	0.00	0.00	0.00	0.03
	62	7.29C	0.00	0.05	-0.10	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
37	62	7.07C	0.00	0.00	0.28	-0.01	-0.22	0.00	0.00	0.62
	63	7.07C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
38	63	6.89C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.29
	64	6.89C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.475
39	64	6.64C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.30
	65	6.64C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	6.34C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.70
	66	6.34C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
46	73	7.66C	0.00	-0.99	0.00	0.00	0.00		0.00	0.34
	74	7.66C	0.00	-0.99	0.00	-0.50	0.00		@ 0.000	@ 0.290
47	74	7.41C	0.00	-0.02	0.12	-0.05	-0.06	0.00	0.00	0.44
	75	7.41C	0.00	0.03	0.06	0.01	0.06	@ 0.000	@ 0.000	@ 0.788
48	75	7.17C	0.00	-0.13	0.05	0.02	0.07	0.00	0.00	0.27
	76	7.17C	0.00	-0.02	-0.08	-0.02	-0.08	@ 0.000	@ 0.000	@ 1.535
49	76	6.93C	0.00	-0.13	0.36	0.02	-0.22	0.00	0.00	0.65
	77	6.93C	0.00	-0.02	0.22	-0.02	0.22	@ 0.000	@ 0.000	@ 0.444
50	77	6.69C	0.00	-0.13	0.21	0.02	-0.07	0.00	0.00	0.31
	78	6.69C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
51	85	7.29C	0.00	0.05	-0.03	0.00	0.00	0.00	0.00	0.02
	86	7.29C	0.00	0.05	-0.03	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
52	86	7.05C	0.00	0.00	0.13	0.00	-0.06	0.00	0.00	0.18
	87	7.05C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
53	87	6.81C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.27
	88	6.81C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 1.535
54	88	6.60C	0.00	0.00	0.36	0.00	-0.22	0.00	0.00	0.64
	89	6.60C	0.00	0.00	0.22	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
55	89	6.42C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.31
	90	6.42C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
91	97	7.67C	0.00	-0.96	0.00	0.00	0.00		0.00	0.33
	98	7.67C	0.00	-0.96	0.00	-0.48	0.00		@ 0.000	@ 0.290
92	98	7.41C	0.00	-0.03	0.27	-0.04	-0.21	0.00	0.00	0.57
	99	7.41C	0.00	0.03	0.21	0.01	0.21	@ 0.000	@ 0.000	@ 0.424
93	99	7.17C	0.00	-0.13	0.20	0.02	-0.06	0.00	0.00	0.29
	100	7.17C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
94	100	6.93C	0.00	-0.13	0.06	0.02	0.08	0.00	0.00	0.30
	101	6.93C	0.00	-0.02	-0.07	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.505
95	101	6.70C	0.00	-0.13	-0.08	0.02	0.21	0.00	0.00	0.70
	102	6.70C	0.00	-0.02	-0.22	-0.02	-0.23	@ 0.000	@ 0.000	@ 1.535
96	109	7.29C	0.00	0.05	-0.10	0.00	0.00	0.00	0.00	0.03
	110	7.29C	0.00	0.05	-0.10	0.02	-0.05	@ 0.000	@ 0.000	@ 0.290
97	110	7.07C	0.00	0.00	0.28	0.00	-0.22	0.00	0.00	0.62
	111	7.07C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
98	111	6.89C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.29
	112	6.89C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.475

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	6.65C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.30
	113	6.65C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
100	113	6.34C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.70
	114	6.34C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
120	121	7.63C	0.00	-0.95	0.00	0.00	0.00		0.00	0.32
	122	7.63C	0.00	-0.95	0.00	-0.47	0.00		@ 0.000	@ 0.290
121	122	7.38C	0.00	-0.03	0.12	-0.04	-0.06	0.00	0.00	0.41
	123	7.38C	0.00	0.02	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 0.828
122	123	7.14C	0.00	-0.13	0.05	0.02	0.07	0.00	0.00	0.27
	124	7.14C	0.00	-0.02	-0.08	-0.02	-0.08	@ 0.000	@ 0.000	@ 1.535
123	124	6.91C	0.00	-0.13	0.36	0.02	-0.22	0.00	0.00	0.65
	125	6.91C	0.00	-0.02	0.22	-0.02	0.22	@ 0.000	@ 0.000	@ 0.444
124	125	6.67C	0.00	-0.13	0.21	0.02	-0.07	0.00	0.00	0.31
	126	6.67C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.495
125	133	7.27C	0.00	0.05	-0.03	0.00	0.00	0.00	0.00	0.02
	134	7.27C	0.00	0.05	-0.03	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
126	134	7.03C	0.00	0.00	0.13	0.00	-0.06	0.00	0.00	0.18
	135	7.03C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
127	135	6.79C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.27
	136	6.79C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 1.535
128	136	6.58C	0.00	0.00	0.36	0.00	-0.22	0.00	0.00	0.64
	137	6.58C	0.00	0.00	0.22	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
129	137	6.40C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.31
	138	6.40C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
135	145	6.20C	0.00	-0.86	0.00	0.00	0.00		0.00	0.29
	146	6.20C	0.00	-0.86	0.00	-0.43	0.00		@ 0.000	@ 0.290
136	146	6.05C	0.00	-0.02	0.27	-0.05	-0.21	0.00	0.00	0.57
	147	6.05C	0.00	0.03	0.21	0.01	0.20	@ 0.000	@ 0.000	@ 0.424
137	147	5.91C	0.00	-0.13	0.20	0.02	-0.06	0.00	0.00	0.30
	148	5.91C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
138	148	5.78C	0.00	-0.13	0.06	0.02	0.08	0.00	0.00	0.31
	149	5.78C	0.00	-0.02	-0.07	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.505
139	149	5.64C	0.00	-0.13	-0.08	0.01	0.21	0.00	0.00	0.70
	150	5.64C	0.00	-0.01	-0.22	-0.01	-0.23	@ 0.000	@ 0.000	@ 1.535
140	157	5.94C	0.00	0.07	-0.09	0.00	0.00	0.00	0.00	0.03
	158	5.94C	0.00	0.07	-0.09	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
141	158	5.82C	0.00	0.01	0.27	-0.01	-0.21	0.00	0.00	0.62
	159	5.82C	0.00	0.01	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

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Job Ref : B11323

Sheet : SD / 290

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	5.74C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.30
	160	5.74C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
143	160	5.60C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.31
	161	5.60C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
144	161	5.40C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.70
	162	5.40C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
170	6	6.93C	0.00	-0.18	0.50	0.01	-0.32	0.00	0.00	0.98
	7	6.93C	0.00	-0.01	0.31	-0.01	0.30	@ 0.000	@ 0.000	@ 0.444
171	7	6.72C	0.00	-0.18	0.30	0.00	-0.09	0.00	0.00	0.44
	8	6.72C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.495
172	8	6.49C	0.00	-0.17	0.09	0.00	0.12	0.00	0.00	0.45
	9	6.49C	0.00	0.00	-0.11	0.00	-0.10	@ 0.000	@ 0.000	@ 0.505
173	9	6.23C	0.00	-0.17	-0.12	-0.01	0.31	0.00	0.00	1.06
	10	6.23C	0.00	0.01	-0.32	0.01	-0.34	@ 0.000	@ 0.000	@ 1.535
174	18	5.49C	0.00	0.00	0.50	0.00	-0.32	0.00	0.00	0.98
	19	5.49C	0.00	0.00	0.31	0.00	0.30	@ 0.000	@ 0.000	@ 0.444
175	19	5.41C	0.00	0.00	0.30	0.00	-0.09	0.00	0.00	0.44
	20	5.41C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.475
176	20	5.25C	0.00	0.00	0.09	0.00	0.12	0.00	0.00	0.45
	21	5.25C	0.00	0.00	-0.11	0.00	-0.10	@ 0.000	@ 0.000	@ 0.505
177	21	4.99C	0.00	0.00	-0.12	0.00	0.31	0.00	0.00	1.07
	22	4.99C	0.00	0.00	-0.32	0.00	-0.34	@ 0.000	@ 0.000	@ 1.535
182	30	8.49C	0.00	-0.18	0.10	0.01	0.10	0.00	0.00	0.40
	31	8.49C	0.00	-0.01	-0.09	-0.01	-0.09	@ 0.000	@ 0.000	@ 0.505
183	31	10.25C	0.00	-0.18	-0.10	0.00	0.29	0.00	0.00	0.95
	32	10.25C	0.00	0.00	-0.30	0.00	-0.31	@ 0.000	@ 0.000	@ 1.535
184	32	11.32C	0.00	-0.17	0.52	0.00	-0.33	0.00	0.00	1.00
	33	11.32C	0.00	0.00	0.32	0.00	0.31	@ 0.000	@ 0.000	@ 0.444
185	33	11.67C	0.00	-0.17	0.31	-0.01	-0.09	0.00	0.00	0.44
	34	11.67C	0.00	0.01	0.10	0.01	0.11	@ 0.000	@ 0.000	@ 1.495
186	42	6.09C	0.00	0.00	0.09	0.00	0.11	0.00	0.00	0.40
	43	6.09C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.525
187	43	5.79C	0.00	0.00	-0.10	0.00	0.29	0.00	0.00	0.95
	44	5.79C	0.00	0.00	-0.30	0.00	-0.31	@ 0.000	@ 0.000	@ 1.535
188	44	5.56C	0.00	0.00	0.52	0.00	-0.33	0.00	0.00	1.00
	45	5.56C	0.00	0.00	0.32	0.00	0.31	@ 0.000	@ 0.000	@ 0.444
189	45	5.39C	0.00	0.00	0.31	0.00	-0.09	0.00	0.00	0.43
	46	5.39C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.495

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Sheet : SD / 291

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	6.46C	0.00	-0.13	0.38	0.01	-0.24	0.00	0.00	0.73
	55	6.46C	0.00	-0.01	0.23	-0.01	0.23	@ 0.000	@ 0.000	@ 0.444
195	55	6.22C	0.00	-0.13	0.22	0.00	-0.07	0.00	0.00	0.32
	56	6.22C	0.00	0.00	0.08	-0.01	0.08	@ 0.000	@ 0.000	@ 1.495
196	56	5.99C	0.00	-0.12	0.07	-0.01	0.08	0.00	0.00	0.32
	57	5.99C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
197	57	5.76C	0.00	-0.12	-0.08	-0.01	0.23	0.00	0.00	0.79
	58	5.76C	0.00	0.01	-0.24	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
198	66	6.10C	0.00	0.00	0.38	0.00	-0.24	0.00	0.00	0.73
	67	6.10C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
199	67	5.91C	0.00	0.00	0.22	0.00	-0.07	0.00	0.00	0.32
	68	5.91C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.495
200	68	5.67C	0.00	0.00	0.07	0.00	0.08	0.00	0.00	0.32
	69	5.67C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
201	69	5.35C	0.00	0.00	-0.08	0.00	0.23	0.00	0.00	0.79
	70	5.35C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
206	78	6.46C	0.00	-0.13	0.07	0.01	0.08	0.00	0.00	0.31
	79	6.46C	0.00	-0.01	-0.07	-0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
207	79	6.22C	0.00	-0.13	-0.08	0.01	0.22	0.00	0.00	0.73
	80	6.22C	0.00	-0.01	-0.23	-0.01	-0.24	@ 0.000	@ 0.000	@ 1.535
208	80	5.99C	0.00	-0.12	0.39	-0.01	-0.24	0.00	0.00	0.75
	81	5.99C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
209	81	5.76C	0.00	-0.12	0.23	-0.01	-0.07	0.00	0.00	0.32
	82	5.76C	0.00	0.01	0.08	0.01	0.08	@ 0.000	@ 0.000	@ 1.475
210	90	6.17C	0.00	0.00	0.07	0.00	0.08	0.00	0.00	0.31
	91	6.17C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
211	91	5.86C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.73
	92	5.86C	0.00	0.00	-0.23	0.00	-0.24	@ 0.000	@ 0.000	@ 1.535
212	92	5.62C	0.00	0.00	0.39	0.00	-0.24	0.00	0.00	0.75
	93	5.62C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
213	93	5.43C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.32
	94	5.43C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
218	102	6.46C	0.00	-0.13	0.38	0.01	-0.24	0.00	0.00	0.73
	103	6.46C	0.00	-0.01	0.23	-0.01	0.23	@ 0.000	@ 0.000	@ 0.444
219	103	6.23C	0.00	-0.13	0.22	0.01	-0.07	0.00	0.00	0.32
	104	6.23C	0.00	-0.01	0.08	-0.01	0.08	@ 0.000	@ 0.000	@ 1.495
220	104	6.00C	0.00	-0.12	0.07	-0.01	0.08	0.00	0.00	0.32
	105	6.00C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.505

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	5.76C	0.00	-0.12	-0.08	-0.01	0.23	0.00	0.00	0.79
	106	5.76C	0.00	0.01	-0.24	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
222	114	6.10C	0.00	0.00	0.38	0.00	-0.24	0.00	0.00	0.73
	115	6.10C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
223	115	5.92C	0.00	0.00	0.22	0.00	-0.07	0.00	0.00	0.32
	116	5.92C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.495
224	116	5.67C	0.00	0.00	0.07	0.00	0.08	0.00	0.00	0.32
	117	5.67C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
225	117	5.36C	0.00	0.00	-0.08	0.00	0.23	0.00	0.00	0.79
	118	5.36C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
230	126	6.44C	0.00	-0.13	0.07	0.01	0.08	0.00	0.00	0.31
	127	6.44C	0.00	-0.01	-0.07	-0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
231	127	6.20C	0.00	-0.13	-0.08	0.01	0.22	0.00	0.00	0.73
	128	6.20C	0.00	-0.01	-0.23	-0.01	-0.24	@ 0.000	@ 0.000	@ 1.535
232	128	5.97C	0.00	-0.12	0.39	-0.01	-0.25	0.00	0.00	0.75
	129	5.97C	0.00	0.01	0.24	0.01	0.23	@ 0.000	@ 0.000	@ 0.444
233	129	5.75C	0.00	-0.12	0.23	-0.01	-0.07	0.00	0.00	0.32
	130	5.75C	0.00	0.01	0.08	0.01	0.08	@ 0.000	@ 0.000	@ 1.475
234	138	6.15C	0.00	0.00	0.07	0.00	0.08	0.00	0.00	0.31
	139	6.15C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
235	139	5.85C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.73
	140	5.85C	0.00	0.00	-0.23	0.00	-0.24	@ 0.000	@ 0.000	@ 1.535
236	140	5.60C	0.00	0.00	0.39	0.00	-0.24	0.00	0.00	0.75
	141	5.60C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
237	141	5.42C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.32
	142	5.42C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
242	150	5.51C	0.00	-0.13	0.38	-0.01	-0.24	0.00	0.00	0.74
	151	5.51C	0.00	0.01	0.23	-0.01	0.23	@ 0.000	@ 0.000	@ 0.444
243	151	5.37C	0.00	-0.13	0.23	0.01	-0.07	0.00	0.00	0.34
	152	5.37C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.495
244	152	5.24C	0.00	-0.12	0.07	-0.01	0.09	0.00	0.00	0.33
	153	5.24C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
245	153	5.10C	0.00	-0.12	-0.08	-0.01	0.23	0.00	0.00	0.80
	154	5.10C	0.00	0.01	-0.24	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
246	162	5.26C	0.00	0.00	0.38	0.00	-0.24	0.00	0.00	0.73
	163	5.26C	0.00	0.00	0.23	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
247	163	5.18C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.33
	164	5.18C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.495

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	5.04C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.33
	165	5.04C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
249	165	4.83C	0.00	0.00	-0.08	0.00	0.23	0.00	0.00	0.80
	166	4.83C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
306	10	5.95C	0.00	-0.17	0.63	-0.02	-0.44	0.00	0.00	1.33
	11	5.95C	0.00	0.01	0.42	0.01	0.41	@ 0.000	@ 0.000	@ 0.444
307	11	5.65C	0.00	-0.17	0.41	-0.02	-0.19	0.00	0.00	0.71
	12	5.65C	0.00	0.02	0.20	0.02	0.21	@ 0.000	@ 0.000	@ 1.515
308	22	4.85C	0.00	0.00	0.63	0.00	-0.43	0.00	0.00	1.33
	23	4.85C	0.00	0.00	0.42	0.00	0.41	@ 0.000	@ 0.000	@ 0.444
309	23	4.84C	0.00	0.01	0.41	0.00	-0.19	0.00	0.00	0.71
	24	4.84C	0.00	0.01	0.20	0.01	0.21	@ 0.000	@ 0.000	@ 1.515
312	34	11.28C	0.00	-0.17	0.11	-0.02	0.11	0.00	0.00	0.43
	35	11.28C	0.00	0.02	-0.10	0.02	-0.09	@ 0.000	@ 0.000	@ 0.505
313	35	10.11C	0.00	-0.16	-0.11	-0.03	0.31	0.00	0.00	1.13
	36	10.11C	0.00	0.03	-0.33	0.03	-0.34	@ 0.000	@ 0.000	@ 1.535
314	46	5.15C	0.00	0.00	0.11	0.00	0.11	0.00	0.00	0.44
	47	5.15C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.505
315	47	4.83C	0.00	0.00	-0.11	0.00	0.31	0.00	0.00	1.14
	48	4.83C	0.00	0.00	-0.33	0.00	-0.34	@ 0.000	@ 0.000	@ 1.535
318	58	5.54C	0.00	-0.11	0.50	-0.02	-0.36	0.00	0.00	1.08
	59	5.54C	0.00	0.02	0.35	0.02	0.34	@ 0.000	@ 0.000	@ 0.444
319	59	5.31C	0.00	-0.11	0.34	-0.03	-0.17	0.00	0.00	0.59
	60	5.31C	0.00	0.03	0.18	0.03	0.18	@ 0.000	@ 0.000	@ 1.535
320	70	5.14C	0.00	0.00	0.50	0.00	-0.36	0.00	0.00	1.08
	71	5.14C	0.00	0.00	0.35	0.00	0.34	@ 0.000	@ 0.000	@ 0.444
321	71	5.04C	0.00	0.00	0.34	0.00	-0.17	0.00	0.00	0.59
	72	5.04C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 1.535
324	82	5.53C	0.00	-0.11	0.07	-0.02	0.09	0.00	0.00	0.34
	83	5.53C	0.00	0.02	-0.08	0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
325	83	5.30C	0.00	-0.11	-0.09	-0.03	0.23	0.00	0.00	0.92
	84	5.30C	0.00	0.03	-0.25	0.03	-0.27	@ 0.000	@ 0.000	@ 1.515
326	94	5.18C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.34
	95	5.18C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
327	95	4.86C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.92
	96	4.86C	0.00	0.00	-0.25	0.00	-0.27	@ 0.000	@ 0.000	@ 1.515
330	106	5.53C	0.00	-0.11	0.50	-0.02	-0.35	0.00	0.00	1.06
	107	5.53C	0.00	0.02	0.34	0.02	0.33	@ 0.000	@ 0.000	@ 0.444

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 294

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	5.31C	0.00	-0.11	0.33	-0.03	-0.16	0.00	0.00	0.58
	108	5.31C	0.00	0.03	0.17	0.03	0.18	@ 0.000	@ 0.000	@ 1.535
332	118	5.14C	0.00	0.00	0.50	0.00	-0.35	0.00	0.00	1.06
	119	5.14C	0.00	0.00	0.34	0.00	0.33	@ 0.000	@ 0.000	@ 0.444
333	119	5.04C	0.00	0.00	0.33	0.00	-0.16	0.00	0.00	0.57
	120	5.04C	0.00	0.00	0.17	0.00	0.18	@ 0.000	@ 0.000	@ 1.535
336	130	5.52C	0.00	-0.11	0.07	-0.02	0.09	0.00	0.00	0.34
	131	5.52C	0.00	0.02	-0.08	0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
337	131	5.29C	0.00	-0.11	-0.09	-0.03	0.23	0.00	0.00	0.91
	132	5.29C	0.00	0.03	-0.25	0.03	-0.27	@ 0.000	@ 0.000	@ 1.515
338	142	5.17C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.34
	143	5.17C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
339	143	4.86C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.91
	144	4.86C	0.00	0.00	-0.25	0.00	-0.27	@ 0.000	@ 0.000	@ 1.515
342	154	4.97C	0.00	-0.11	0.51	-0.02	-0.36	0.00	0.00	1.09
	155	4.97C	0.00	0.02	0.35	0.02	0.34	@ 0.000	@ 0.000	@ 0.444
343	155	4.83C	0.00	-0.11	0.34	-0.03	-0.17	0.00	0.00	0.62
	156	4.83C	0.00	0.03	0.18	0.03	0.19	@ 0.000	@ 0.000	@ 1.535
344	166	4.72C	0.00	0.00	0.51	0.00	-0.36	0.00	0.00	1.09
	167	4.72C	0.00	0.00	0.35	0.00	0.34	@ 0.000	@ 0.000	@ 0.444
345	167	4.72C	0.00	0.00	0.34	0.00	-0.17	0.00	0.00	0.62
	168	4.72C	0.00	0.00	0.18	0.01	0.19	@ 0.000	@ 0.000	@ 1.535
412	12	5.33C	0.00	-0.17	0.19	-0.03	0.05	0.00	0.01	0.46
	169	5.33C	0.00	0.03	-0.03	0.02	0.01	@ 0.000	@ 0.000	@ 0.768
413	169	2.93C	0.00	-0.25	0.26	-0.03	0.57	0.00	0.00	1.56
	183	2.93C	0.00	0.31	-1.43	0.03	-0.57	@ 0.000	@ 0.000	@ 0.429
414	24	4.73C	0.00	-0.06	0.19	0.06	0.05	0.00		0.45
	170	4.73C	0.00	-0.06	-0.03	-0.07	-0.02	@ 0.000		@ 0.768
415	170	2.90C	0.00	0.05	0.25	-0.05	0.58	0.00		1.58
	184	2.89C	0.00	0.05	-1.44	0.05	-0.58	@ 0.000		@ 1.571
416	36	8.18C	0.00	-0.16	0.85	-0.03	-0.62	0.00	0.00	1.81
	171	8.18C	0.00	0.03	0.63	0.03	0.64	@ 0.000	@ 0.000	@ 1.555
417	171	4.69C	0.00	-0.24	0.26	-0.04	0.60	0.00		1.81
	185	4.69C	0.00	0.32	-1.44	0.04	-0.56	@ 0.000		@ 0.449
418	48	4.70C	0.00	-0.06	0.85	0.06	-0.62	0.00		1.81
	172	4.70C	0.00	-0.06	0.63	-0.06	0.64	@ 0.000		@ 1.576
419	172	2.97C	0.00	0.05	0.25	-0.06	0.60	0.00		1.81
	186	2.97C	0.00	0.05	-1.44	0.05	-0.57	@ 0.000		@ 0.449

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Sheet : SD / 295

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	5.08C	0.00	-0.10	0.20	-0.04	-0.02	0.00	0.00	0.43
	173	5.08C	0.00	0.04	0.04	0.04	0.06	@ 0.000	@ 0.000	@ 1.253
421	173	3.07C	0.00	-0.17	0.24	-0.05	0.54	0.00		1.50
	187	3.07C	0.00	0.28	-1.34	0.05	-0.54	@ 0.000		@ 0.429
422	72	4.86C	0.00	-0.06	0.20	0.06	-0.02	0.00		0.42
	174	4.86C	0.00	-0.06	0.04	-0.06	0.05	@ 0.000		@ 1.252
423	174	2.97C	0.00	0.06	0.23	-0.06	0.55	0.00	0.00	1.50
	188	2.97C	0.00	0.06	-1.35	0.05	-0.55	@ 0.000	@ 0.000	@ 0.429
424	84	5.07C	0.00	-0.11	0.76	-0.04	-0.58	0.00	0.00	1.73
	175	5.07C	0.00	0.04	0.59	0.04	0.60	@ 0.000	@ 0.000	@ 1.555
425	175	3.07C	0.00	-0.18	0.22	-0.05	0.57	0.00	0.00	1.73
	189	3.07C	0.00	0.27	-1.35	0.05	-0.54	@ 0.000	@ 0.000	@ 0.449
426	96	4.73C	0.00	-0.06	0.76	0.06	-0.58	0.00		1.72
	176	4.73C	0.00	-0.06	0.59	-0.06	0.60	@ 0.000		@ 1.555
427	176	2.98C	0.00	0.05	0.21	-0.06	0.58	0.00		1.73
	190	2.97C	0.00	0.05	-1.36	0.05	-0.55	@ 0.000		@ 0.449
428	108	5.08C	0.00	-0.10	0.19	-0.04	-0.01	0.00	0.00	0.41
	177	5.08C	0.00	0.04	0.03	0.04	0.05	@ 0.000	@ 0.000	@ 1.212
429	177	3.07C	0.00	-0.17	0.26	-0.05	0.52	0.00	0.00	1.44
	191	3.07C	0.00	0.28	-1.32	0.05	-0.52	@ 0.000	@ 0.000	@ 0.429
430	120	4.85C	0.00	-0.06	0.19	0.06	-0.01	0.00	0.00	0.40
	178	4.85C	0.00	-0.06	0.03	-0.06	0.05	@ 0.000	@ 0.000	@ 1.212
431	178	2.96C	0.00	0.06	0.25	-0.06	0.53	0.00		1.44
	192	2.96C	0.00	0.06	-1.33	0.05	-0.53	@ 0.000		@ 0.429
432	132	5.07C	0.00	-0.10	0.75	-0.04	-0.57	0.00	0.00	1.69
	179	5.07C	0.00	0.04	0.58	0.04	0.59	@ 0.000	@ 0.000	@ 1.555
433	179	3.06C	0.00	-0.17	0.24	-0.05	0.56	0.00		1.69
	193	3.06C	0.00	0.28	-1.34	0.05	-0.53	@ 0.000		@ 0.449
434	144	4.72C	0.00	-0.06	0.75	0.06	-0.57	0.00		1.68
	180	4.72C	0.00	-0.06	0.58	-0.06	0.59	@ 0.000		@ 1.555
435	180	2.97C	0.00	0.06	0.23	-0.06	0.57	0.00		1.69
	194	2.97C	0.00	0.06	-1.35	0.05	-0.54	@ 0.000		@ 0.449
436	156	4.70C	0.00	-0.11	0.18	-0.04	0.01	0.00	0.00	0.39
	181	4.70C	0.00	0.04	0.01	0.03	0.03	@ 0.000	@ 0.000	@ 1.071
437	181	2.88C	0.00	-0.18	0.27	-0.05	0.52	0.00		1.41
	195	2.88C	0.00	0.27	-1.31	0.05	-0.51	@ 0.000		@ 0.429
438	168	4.65C	0.00	-0.06	0.17	0.06	0.01	0.00	0.00	0.38
	182	4.65C	0.00	-0.06	0.01	-0.06	0.03	@ 0.000	@ 0.000	@ 1.071

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Job Ref : B11323

Sheet : SD / 296

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	2.86C	0.00	0.05	0.26	-0.06	0.52	0.00		1.41
	196	2.86C	0.00	0.05	-1.32	0.05	-0.52	@ 0.000		@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.961	15.925	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.060	0.000	-0.236
3	0.000	0.000	0.000	0.071	0.000	0.000
4	0.000	0.000	0.000	0.013	0.000	-0.023
5	0.000	0.000	0.000	-0.070	0.000	-0.019
6	0.000	0.000	0.000	0.011	0.000	-0.014
7	0.000	0.000	0.000	0.079	0.000	0.000
9	0.000	0.000	0.000	-0.074	0.000	0.014
10	0.000	0.000	0.000	0.023	0.000	0.025
11	0.000	0.000	0.000	0.119	0.000	0.036
12	0.000	0.000	0.000	0.033	0.000	0.041
13	-0.073	6.243	-0.128	0.000	0.000	0.000
14	0.068	0.000	0.817	0.039	0.000	-0.027
15	0.000	0.000	0.000	0.073	0.000	0.000
16	0.000	0.000	0.000	0.013	0.000	0.000
17	0.000	0.000	0.000	-0.070	0.000	0.000
18	-2.422	0.000	1.536	0.012	0.000	0.000
19	0.000	0.000	0.000	0.080	0.000	0.000
21	0.000	0.000	0.000	-0.075	0.000	0.000
22	-2.663	0.000	1.866	0.024	0.000	0.000
23	0.000	0.000	0.000	0.120	0.000	0.000
24	0.000	0.000	0.000	0.034	0.000	-0.016
25	1.119	7.474	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.018	0.000	-0.193
27	0.000	0.000	0.000	-0.011	0.000	0.000
28	0.000	0.000	0.000	0.036	0.000	-0.018
29	0.000	0.000	0.000	0.068	0.000	-0.015
30	0.000	0.000	0.000	-0.015	0.000	-0.011
31	0.000	0.000	0.000	-0.073	0.000	0.000
33	0.000	0.000	0.000	0.070	0.000	0.000
34	0.000	0.000	0.000	0.000	0.000	0.018
35	0.000	0.000	0.000	-0.080	0.000	0.025
36	0.000	0.000	0.000	0.048	0.000	0.029
37	-0.052	7.168	-0.038	0.000	0.000	0.000
38	0.049	0.000	0.362	0.012	0.000	-0.019
39	0.000	0.000	0.000	-0.010	0.000	0.000
40	-1.300	0.000	1.106	0.036	0.000	0.000
41	0.000	0.000	0.000	0.069	0.000	0.000
42	0.000	0.000	0.000	-0.014	0.000	0.000
43	0.000	0.000	0.000	-0.073	0.000	0.000
44	-1.453	0.000	1.585	0.000	0.000	0.000
45	0.000	0.000	0.000	0.071	0.000	0.000
47	0.000	0.000	0.000	-0.081	0.000	0.000
48	-4.489	0.000	2.334	0.048	0.000	-0.015
49	1.007	7.653	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.044	0.000	-0.187
51	0.000	0.000	0.000	0.051	0.000	0.000
52	0.000	0.000	0.000	0.000	0.000	-0.013

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
53	0.000	0.000	0.000	-0.053	0.000	-0.011
55	0.000	0.000	0.000	0.054	0.000	0.000
57	0.000	0.000	0.000	-0.057	0.000	0.000
58	0.000	0.000	0.000	0.019	0.000	0.013
59	0.000	0.000	0.000	0.093	0.000	0.018
60	0.000	0.000	0.000	0.037	0.000	0.020
61	-0.051	7.289	-0.095	0.000	0.000	0.000
62	0.049	0.000	0.608	0.029	0.000	-0.019
63	0.000	0.000	0.000	0.053	0.000	0.000
65	0.000	0.000	0.000	-0.052	0.000	0.000
66	1.001	0.000	1.156	0.000	0.000	0.000
67	0.000	0.000	0.000	0.054	0.000	0.000
69	0.000	0.000	0.000	-0.057	0.000	0.000
70	1.158	0.000	1.453	0.019	0.000	0.000
71	0.000	0.000	0.000	0.093	0.000	0.000
72	0.000	0.000	0.000	0.037	0.000	-0.019
73	0.968	7.656	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.014	0.000	-0.181
76	0.000	0.000	0.000	0.028	0.000	-0.016
77	0.000	0.000	0.000	0.053	0.000	-0.014
78	0.000	0.000	0.000	0.000	0.000	-0.011
79	0.000	0.000	0.000	-0.055	0.000	0.000
81	0.000	0.000	0.000	0.055	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.014
83	0.000	0.000	0.000	-0.059	0.000	0.021
84	0.000	0.000	0.000	0.060	0.000	0.024
85	-0.050	7.294	-0.029	0.000	0.000	0.000
86	0.047	0.000	0.270	0.000	0.000	-0.018
88	-0.023	0.000	0.840	0.029	0.000	0.000
89	0.000	0.000	0.000	0.054	0.000	0.000
91	0.000	0.000	0.000	-0.054	0.000	0.000
92	-0.023	0.000	1.200	0.000	0.000	0.000
93	0.000	0.000	0.000	0.055	0.000	0.000
95	0.000	0.000	0.000	-0.059	0.000	0.000
96	0.222	0.000	2.027	0.061	0.000	-0.018
97	0.939	7.672	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.044	0.000	-0.177
99	0.000	0.000	0.000	0.051	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	-0.016
101	0.000	0.000	0.000	-0.053	0.000	-0.014
102	0.000	0.000	0.000	0.000	0.000	-0.011
103	0.000	0.000	0.000	0.054	0.000	0.000
105	0.000	0.000	0.000	-0.057	0.000	0.000
106	0.000	0.000	0.000	0.018	0.000	0.014
107	0.000	0.000	0.000	0.091	0.000	0.021
108	0.000	0.000	0.000	0.035	0.000	0.024
109	-0.049	7.291	-0.095	0.000	0.000	0.000
110	0.046	0.000	0.608	0.029	0.000	-0.018
111	0.000	0.000	0.000	0.053	0.000	0.000
113	0.000	0.000	0.000	-0.052	0.000	0.000
114	-0.023	0.000	1.149	0.000	0.000	0.000
115	0.000	0.000	0.000	0.055	0.000	0.000
117	0.000	0.000	0.000	-0.057	0.000	0.000
118	-0.022	0.000	1.434	0.018	0.000	0.000
119	0.000	0.000	0.000	0.092	0.000	0.000
120	0.000	0.000	0.000	0.035	0.000	-0.018
121	0.925	7.631	0.000	0.000	0.000	0.000
122	0.000	0.000	0.000	0.014	0.000	-0.173

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 298

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
124	0.000	0.000	0.000	0.028	0.000	-0.016
125	0.000	0.000	0.000	0.053	0.000	-0.015
126	0.000	0.000	0.000	0.000	0.000	-0.011
127	0.000	0.000	0.000	-0.055	0.000	0.000
129	0.000	0.000	0.000	0.055	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.013
131	0.000	0.000	0.000	-0.059	0.000	0.020
132	0.000	0.000	0.000	0.058	0.000	0.023
133	-0.047	7.272	-0.029	0.000	0.000	0.000
134	0.044	0.000	0.270	0.000	0.000	-0.017
136	1.307	0.000	0.835	0.029	0.000	0.000
137	0.000	0.000	0.000	0.054	0.000	0.000
139	0.000	0.000	0.000	-0.054	0.000	0.000
140	1.462	0.000	1.195	0.000	0.000	0.000
141	0.000	0.000	0.000	0.056	0.000	0.000
143	0.000	0.000	0.000	-0.058	0.000	0.000
144	4.339	0.000	1.972	0.059	0.000	-0.019
145	0.843	6.201	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.045	0.000	-0.201
147	0.000	0.000	0.000	0.052	0.000	0.000
148	0.000	0.000	0.000	0.000	0.000	-0.020
149	0.000	0.000	0.000	-0.055	0.000	-0.018
150	0.000	0.000	0.000	0.000	0.000	-0.014
151	0.000	0.000	0.000	0.056	0.000	0.000
153	0.000	0.000	0.000	-0.060	0.000	0.000
154	0.000	0.000	0.000	0.018	0.000	0.015
155	0.000	0.000	0.000	0.095	0.000	0.023
156	0.000	0.000	0.000	0.031	0.000	0.025
157	-0.066	5.937	-0.095	0.000	0.000	0.000
158	0.061	0.000	0.614	0.029	0.000	-0.024
159	0.000	0.000	0.000	0.054	0.000	0.000
161	0.000	0.000	0.000	-0.054	0.000	0.000
162	1.419	0.000	1.154	0.000	0.000	0.000
163	0.000	0.000	0.000	0.056	0.000	0.000
165	0.000	0.000	0.000	-0.060	0.000	0.000
166	1.504	0.000	1.452	0.019	0.000	0.000
167	0.000	0.000	0.000	0.096	0.000	0.000
168	0.000	0.000	0.000	0.031	0.000	-0.023
169	0.000	0.000	0.000	-0.118	0.000	0.051
170	0.000	0.000	0.000	-0.114	0.000	0.000
171	0.000	0.000	0.000	0.026	0.000	0.037
172	0.000	0.000	0.000	0.031	0.000	0.000
173	0.000	0.000	0.000	-0.101	0.000	0.028
174	0.000	0.000	0.000	-0.099	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.033
176	0.000	0.000	0.000	0.013	0.000	0.000
177	0.000	0.000	0.000	-0.099	0.000	0.033
178	0.000	0.000	0.000	-0.096	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.032
180	0.000	0.000	0.000	0.013	0.000	0.000
181	0.000	0.000	0.000	-0.106	0.000	0.037
182	0.000	0.000	0.000	-0.101	0.000	0.000
183	0.000	0.000	0.000	-0.125	0.000	0.048
184	1.705	0.000	3.826	-0.108	0.000	0.039
185	0.000	0.000	0.000	-0.132	0.000	0.028
186	0.000	0.000	0.000	-0.115	0.000	0.026
187	0.000	0.000	0.000	-0.124	0.000	0.016
188	2.664	0.000	5.904	-0.107	0.000	0.023

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 299

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	R _x →(kN)	R _y ↑(kN)	R _z ↗(kN)	M _x →(kN.m)	M _y ↑(kN.m)	M _z ↗(kN.m)
189	0.000	0.000	0.000	-0.122	0.000	0.024
190	0.000	0.000	0.000	-0.105	0.000	0.025
191	0.000	0.000	0.000	-0.119	0.000	0.024
192	1.522	0.000	5.750	-0.103	0.000	0.025
193	0.000	0.000	0.000	-0.119	0.000	0.022
194	0.000	0.000	0.000	-0.102	0.000	0.023
195	0.000	0.000	0.000	-0.120	0.000	0.026
196	-0.912	0.000	3.462	-0.103	0.000	0.029
Total	13.618	100.301	46.274	-0.363	0.000	-0.812

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 300

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L5	Live Load
Load Group L6	Live Load
Load Group L7	Live Load
Load Group L8	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.075	2	2.500	0.075
3	4.500	0.075	4	6.500	0.075	5	8.500	0.075
6	10.500	0.075	7	12.500	0.075	8	14.500	0.075
9	16.500	0.075	10	18.500	0.075	11	20.500	0.075
12	22.500	0.768	13	24.500	1.262			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.005	3	0.005	4	0.005
5	0.005	6	0.005	7	0.005	8	0.005
9	0.005	10	0.005	11	0.005	12	0.005
13	0.000	14	0.003	15	0.003	16	0.003
17	0.003	18	0.003	19	0.003	20	0.003
21	0.003	22	0.003	23	0.003	24	0.003
25	0.000	26	0.007	27	0.007	28	0.007
29	0.007	30	0.007	31	0.007	32	0.007
33	0.007	34	0.007	35	0.007	36	0.007
37	0.000	38	0.006	39	0.006	40	0.006
41	0.006	42	0.006	43	0.006	44	0.006
45	0.006	46	0.006	47	0.006	48	0.006
49	0.000	50	0.006	51	0.006	52	0.006
53	0.006	54	0.006	55	0.006	56	0.006
57	0.006	58	0.006	59	0.006	60	0.006
61	0.000	62	0.006	63	0.006	64	0.006
65	0.006	66	0.006	67	0.006	68	0.006
69	0.006	70	0.006	71	0.006	72	0.006
73	0.000	74	0.006	75	0.006	76	0.006
77	0.006	78	0.006	79	0.006	80	0.006
81	0.006	82	0.006	83	0.006	84	0.006
85	0.000	86	0.006	87	0.006	88	0.006
89	0.006	90	0.006	91	0.006	92	0.006
93	0.006	94	0.006	95	0.006	96	0.006
97	0.000	98	0.006	99	0.006	100	0.006
101	0.006	102	0.006	103	0.006	104	0.006
105	0.006	106	0.006	107	0.006	108	0.006
109	0.000	110	0.006	111	0.006	112	0.006
113	0.006	114	0.006	115	0.006	116	0.006
117	0.006	118	0.006	119	0.006	120	0.006
121	0.000	122	0.006	123	0.006	124	0.006

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 301****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

125	0.006	126	0.006	127	0.006	128	0.006
129	0.006	130	0.006	131	0.006	132	0.006
133	0.000	134	0.006	135	0.006	136	0.006
137	0.006	138	0.006	139	0.006	140	0.006
141	0.006	142	0.006	143	0.006	144	0.006
145	0.000	146	0.003	147	0.003	148	0.003
149	0.003	150	0.003	151	0.003	152	0.003
153	0.003	154	0.003	155	0.003	156	0.003
157	0.000	158	0.003	159	0.003	160	0.003
161	0.003	162	0.003	163	0.003	164	0.003
165	0.003	166	0.003	167	0.003	168	0.003
169	0.056	170	0.050	171	0.061	172	0.052
173	0.059	174	0.052	175	0.059	176	0.052
177	0.059	178	0.052	179	0.059	180	0.052
181	0.055	182	0.050	183	0.091	184	0.085
185	0.096	186	0.087	187	0.095	188	0.087
189	0.095	190	0.087	191	0.095	192	0.087
193	0.095	194	0.087	195	0.090	196	0.085

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 N1

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L5 + 0.25 L7 + 1.00 W4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 W2

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L5 + 0.25 L7 + 1.00 W5

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	2.500	0.000	0.000	26	2.500	0.500	0.000
27	2.500	2.500	0.000	28	2.500	4.500	0.000
29	2.500	6.500	0.000	30	2.500	8.500	0.000
31	2.500	10.500	0.000	32	2.500	12.500	0.000
33	2.500	14.500	0.000	34	2.500	16.500	0.000
35	2.500	18.500	0.000	36	2.500	20.500	0.000
37	2.500	0.000	1.300	38	2.500	0.500	1.300
39	2.500	2.500	1.300	40	2.500	4.500	1.300
41	2.500	6.500	1.300	42	2.500	8.500	1.300
43	2.500	10.500	1.300	44	2.500	12.500	1.300
45	2.500	14.500	1.300	46	2.500	16.500	1.300
47	2.500	18.500	1.300	48	2.500	20.500	1.300
49	5.000	0.000	0.000	50	5.000	0.500	0.000
51	5.000	2.500	0.000	52	5.000	4.500	0.000
53	5.000	6.500	0.000	54	5.000	8.500	0.000
55	5.000	10.500	0.000	56	5.000	12.500	0.000
57	5.000	14.500	0.000	58	5.000	16.500	0.000
59	5.000	18.500	0.000	60	5.000	20.500	0.000
61	5.000	0.000	1.300	62	5.000	0.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 302****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	5.000	2.500	1.300	64	5.000	4.500	1.300
65	5.000	6.500	1.300	66	5.000	8.500	1.300
67	5.000	10.500	1.300	68	5.000	12.500	1.300
69	5.000	14.500	1.300	70	5.000	16.500	1.300
71	5.000	18.500	1.300	72	5.000	20.500	1.300
73	7.500	0.000	0.000	74	7.500	0.500	0.000
75	7.500	2.500	0.000	76	7.500	4.500	0.000
77	7.500	6.500	0.000	78	7.500	8.500	0.000
79	7.500	10.500	0.000	80	7.500	12.500	0.000
81	7.500	14.500	0.000	82	7.500	16.500	0.000
83	7.500	18.500	0.000	84	7.500	20.500	0.000
85	7.500	0.000	1.300	86	7.500	0.500	1.300
87	7.500	2.500	1.300	88	7.500	4.500	1.300
89	7.500	6.500	1.300	90	7.500	8.500	1.300
91	7.500	10.500	1.300	92	7.500	12.500	1.300
93	7.500	14.500	1.300	94	7.500	16.500	1.300
95	7.500	18.500	1.300	96	7.500	20.500	1.300
97	10.000	0.000	0.000	98	10.000	0.500	0.000
99	10.000	2.500	0.000	100	10.000	4.500	0.000
101	10.000	6.500	0.000	102	10.000	8.500	0.000
103	10.000	10.500	0.000	104	10.000	12.500	0.000
105	10.000	14.500	0.000	106	10.000	16.500	0.000
107	10.000	18.500	0.000	108	10.000	20.500	0.000
109	10.000	0.000	1.300	110	10.000	0.500	1.300
111	10.000	2.500	1.300	112	10.000	4.500	1.300
113	10.000	6.500	1.300	114	10.000	8.500	1.300
115	10.000	10.500	1.300	116	10.000	12.500	1.300
117	10.000	14.500	1.300	118	10.000	16.500	1.300
119	10.000	18.500	1.300	120	10.000	20.500	1.300
121	12.500	0.000	0.000	122	12.500	0.500	0.000
123	12.500	2.500	0.000	124	12.500	4.500	0.000
125	12.500	6.500	0.000	126	12.500	8.500	0.000
127	12.500	10.500	0.000	128	12.500	12.500	0.000
129	12.500	14.500	0.000	130	12.500	16.500	0.000
131	12.500	18.500	0.000	132	12.500	20.500	0.000
133	12.500	0.000	1.300	134	12.500	0.500	1.300
135	12.500	2.500	1.300	136	12.500	4.500	1.300
137	12.500	6.500	1.300	138	12.500	8.500	1.300
139	12.500	10.500	1.300	140	12.500	12.500	1.300
141	12.500	14.500	1.300	142	12.500	16.500	1.300
143	12.500	18.500	1.300	144	12.500	20.500	1.300
145	15.000	0.000	0.000	146	15.000	0.500	0.000
147	15.000	2.500	0.000	148	15.000	4.500	0.000
149	15.000	6.500	0.000	150	15.000	8.500	0.000
151	15.000	10.500	0.000	152	15.000	12.500	0.000
153	15.000	14.500	0.000	154	15.000	16.500	0.000
155	15.000	18.500	0.000	156	15.000	20.500	0.000
157	15.000	0.000	1.300	158	15.000	0.500	1.300
159	15.000	2.500	1.300	160	15.000	4.500	1.300
161	15.000	6.500	1.300	162	15.000	8.500	1.300
163	15.000	10.500	1.300	164	15.000	12.500	1.300
165	15.000	14.500	1.300	166	15.000	16.500	1.300
167	15.000	18.500	1.300	168	15.000	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	2.500	22.500	0.000	172	2.500	22.500	1.300
173	5.000	22.500	0.000	174	5.000	22.500	1.300
175	7.500	22.500	0.000	176	7.500	22.500	1.300
177	10.000	22.500	0.000	178	10.000	22.500	1.300
179	12.500	22.500	0.000	180	12.500	22.500	1.300
181	15.000	22.500	0.000	182	15.000	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	2.500	24.500	0.000	186	2.500	24.500	1.300
187	5.000	24.500	0.000	188	5.000	24.500	1.300
189	7.500	24.500	0.000	190	7.500	24.500	1.300
191	10.000	24.500	0.000	192	10.000	24.500	1.300
193	12.500	24.500	0.000	194	12.500	24.500	1.300
195	15.000	24.500	0.000	196	15.000	24.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 303****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties**

Members 1-10, 16-25, 31-40, 46-55, 61-100, 106-129, 135-144, 150-177, 182-189,
194-201, 206-213, 218-225, 230-237, 242-249, 254-309, 312-315, 318-321,
324-327, 330-333, 336-339, 342-345, 348-373, 381-392 and 400-453

M	...	...	48.3x3.2	CHS	3.56	[S 355]		
A	4.53E-4		Ix	11.59E-8		Iy	11.59E-8	J 23.17E-8
E	205.0E6		G	78.85E6				

Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

M	...	...	Omega Transom	[]	E 210E6	G 78E6		
A	7.02E-4		Ix	36.1E-8		Iy	54.0E-8	J 72.21E-8

Member Loading**Members 2 and 17**

W1	PZ	-000.015	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.085	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.013	0.000	(kN,m)
W5	PX	-000.075	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 3 and 18

W1	PZ	-000.032	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.174	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.028	0.000	(kN,m)
W5	PX	-000.154	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 4 and 19

W1	PZ	-000.033	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.180	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.159	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 5 and 20

W1	PZ	-000.033	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.185	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.163	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 7 and 22

W1	PZ	-000.015	0.000	(kN,m)
W4	PZ	-000.085	0.000	(kN,m)

Members 8 and 23

W1	PZ	-000.032	0.000	(kN,m)
W4	PZ	-000.174	0.000	(kN,m)

Members 9 and 24

W1	PZ	-000.033	0.000	(kN,m)
W4	PZ	-000.180	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 304****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 10 and 25**

W1 PZ	-000.033	0.000	(kN, m)
W4 PZ	-000.185	0.000	(kN, m)

**Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341 and 346-347**

D1 PY	-000.035	0.025	(kN, m)
D1 PY	-000.035	1.275	(kN, m)

Members 32, 47, 92, 121 and 136

W1 PZ	-000.012	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.063	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.009	0.000	(kN, m)
W5 PX	-000.054	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 33, 48, 93, 122 and 137

W1 PZ	-000.024	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.020	0.000	(kN, m)
W5 PX	-000.112	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 34, 49, 94, 123 and 138

W1 PZ	-000.025	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.135	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.021	0.000	(kN, m)
W5 PX	-000.115	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 35, 50, 95, 124 and 139

W1 PZ	-000.026	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.139	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.119	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 37, 52, 97, 126 and 141

W1 PZ	-000.012	0.000	(kN, m)
W4 PZ	-000.063	0.000	(kN, m)

Members 38, 53, 98, 127 and 142

W1 PZ	-000.024	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)

Members 39, 54, 99, 128 and 143

W1 PZ	-000.025	0.000	(kN, m)
W4 PZ	-000.135	0.000	(kN, m)

Members 40, 55, 100, 129 and 144

W1 PZ	-000.026	0.000	(kN, m)
W4 PZ	-000.139	0.000	(kN, m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY	-000.159	0.025	(kN, m)
D1 PY	-000.159	2.475	(kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 305****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359, 361-371, 387-392 and 406-411

D1 PY -000.103 0.025 (kN,m)
D1 PY -000.103 2.475 (kN,m)

Members 170 and 182

W1 PZ -000.034 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.190 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.030 0.000 (kN,m)
W5 PX -000.168 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 171 and 183

W1 PZ -000.035 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.195 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.031 0.000 (kN,m)
W5 PX -000.173 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 172 and 184

W1 PZ -000.036 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.201 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.032 0.000 (kN,m)
W5 PX -000.177 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 173 and 185

W1 PZ -000.037 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.206 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.033 0.000 (kN,m)
W5 PX -000.181 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 174 and 186

W1 PZ -000.034 0.000 (kN,m)
W4 PZ -000.190 0.000 (kN,m)

Members 175 and 187

W1 PZ -000.035 0.000 (kN,m)
W4 PZ -000.195 0.000 (kN,m)

Members 176 and 188

W1 PZ -000.036 0.000 (kN,m)
W4 PZ -000.201 0.000 (kN,m)

Members 177 and 189

W1 PZ -000.037 0.000 (kN,m)
W4 PZ -000.206 0.000 (kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ -000.026 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.143 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.022 0.000 (kN,m)
W5 PX -000.122 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 306****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 195, 207, 219, 231 and 243**

W1 PZ	-000.027	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.147	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.125	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.028	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.151	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.129	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.028	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.154	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.024	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.026	0.000	(kN,m)
W4 PZ	-000.143	0.000	(kN,m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.027	0.000	(kN,m)
W4 PZ	-000.147	0.000	(kN,m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.028	0.000	(kN,m)
W4 PZ	-000.151	0.000	(kN,m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.028	0.000	(kN,m)
W4 PZ	-000.154	0.000	(kN,m)

Members 306 and 312

W1 PZ	-000.038	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.211	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.034	0.000	(kN,m)
W5 PX	-000.187	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 307 and 313

W1 PZ	-000.039	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.216	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.191	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 308 and 314

W1 PZ	-000.038	0.000	(kN,m)
W4 PZ	-000.211	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 307****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 309 and 315**

W1	PZ	-000.039	0.000	(kN,m)
W4	PZ	-000.216	0.000	(kN,m)

Members 318, 324, 330, 336 and 342

W1	PZ	-000.029	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.158	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.136	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1	PZ	-000.030	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.162	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.139	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1	PZ	-000.029	0.000	(kN,m)
W4	PZ	-000.158	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1	PZ	-000.030	0.000	(kN,m)
W4	PZ	-000.162	0.000	(kN,m)

Members 374-380

D1	PY	-000.580	0.025	(kN,m)
D1	PY	-000.477	1.275	(kN,m)
L2	PY	-002.109	0.025	(kN,m)
L4	PY	-002.109	1.275	(kN,m)
L6	PY	-002.812	0.025	(kN,m)
L8	PY	-002.812	1.275	(kN,m)
G2	PY	-004.218	0.025	(kN,m)
G4	PY	-004.218	1.275	(kN,m)

Member 381

D1	PY	-000.252	0.025	(kN,m)
D1	PY	-000.252	2.475	(kN,m)

Members 382-386

D1	PY	-000.196	0.025	(kN,m)
D1	PY	-000.196	2.475	(kN,m)

Members 393-399

D1	PY	-000.580	0.025	(kN,m)
D1	PY	-000.477	1.275	(kN,m)
L1	PY	-002.109	0.025	(kN,m)
L3	PY	-002.109	1.275	(kN,m)
L5	PY	-002.812	0.025	(kN,m)
L7	PY	-002.812	1.275	(kN,m)
G1	PY	-004.218	0.025	(kN,m)
G3	PY	-004.218	1.275	(kN,m)

Member 400

D1	PY	-000.252	0.025	(kN,m)
D1	PY	-000.252	2.475	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

Members 401-404

D1	PY	-000.196	0.025	(kN,m)
D1	PY	-000.196	2.475	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 308****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member 405**

D1 PY	-000.196	0.025	(kN, m)
D1 PY	-000.196	2.475	(kN, m)
N1 PZ	-000.300	0.025	(kN, m)
N1 PZ	-000.300	2.475	(kN, m)

Members 412 and 416

W1 PZ	-000.040	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.222	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.035	0.000	(kN, m)
W5 PX	-000.196	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Member 413

W1 PZ	-000.208	0.000	(kN, m)
W1 PZ	-000.212	2.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.836	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W3 PZ	-000.000	2.000	(kN, m)
W4 PZ	-000.855	2.000	(kN, m)
W6 PZ	-000.000	2.000	(kN, m)
W2 PX	-000.052	0.000	(kN, m)
W2 PX	-000.053	2.000	(kN, m)
W5 PX	-000.276	0.000	(kN, m)
W5 PX	-000.282	2.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W7 PX	-000.000	2.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	2.000	(kN, m)

Members 414 and 418

W1 PZ	-000.040	0.000	(kN, m)
W4 PZ	-000.222	0.000	(kN, m)

Members 415 and 419

W1 PZ	-000.208	0.000	(kN, m)
W4 PZ	-000.836	0.000	(kN, m)
W1 PZ	-000.212	2.000	(kN, m)
W4 PZ	-000.855	2.000	(kN, m)

Member 417

W1 PZ	-000.212	0.000	(kN, m)
W1 PZ	-000.208	2.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.836	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W3 PZ	-000.000	2.000	(kN, m)
W4 PZ	-000.855	2.000	(kN, m)
W6 PZ	-000.000	2.000	(kN, m)
W2 PX	-000.052	0.000	(kN, m)
W2 PX	-000.053	2.000	(kN, m)
W5 PX	-000.276	0.000	(kN, m)
W5 PX	-000.282	2.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W7 PX	-000.000	2.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	2.000	(kN, m)

Members 420, 424, 428, 432 and 436

W1 PZ	-000.031	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.166	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.026	0.000	(kN, m)
W5 PX	-000.142	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 309****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W8 PX -000.000 0.000 (kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ -000.198 0.000 (kN,m)

W1 PZ -000.202 2.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.779 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W3 PZ -000.455 2.000 (kN,m)

W4 PZ -000.797 2.000 (kN,m)

W6 PZ -000.000 2.000 (kN,m)

W2 PX -000.042 0.000 (kN,m)

W2 PX -000.043 2.000 (kN,m)

W5 PX -000.222 0.000 (kN,m)

W5 PX -000.227 2.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W7 PX -000.000 2.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

W8 PX -000.000 2.000 (kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ -000.031 0.000 (kN,m)

W4 PZ -000.166 0.000 (kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ -000.198 0.000 (kN,m)

W4 PZ -000.779 0.000 (kN,m)

W1 PZ -000.202 2.000 (kN,m)

W4 PZ -000.797 2.000 (kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Released	® Fixed
11	ROO ROO	12 ROO ROO	13 ROO ROO	14 ROO ROO
15	ROO ROO	26 ROO ROO	27 ROO ROO	28 ROO ROO
29	ROO ROO	30 ROO ROO	41 ROO ROO	42 ROO ROO
43	ROO ROO	44 ROO ROO	45 ROO ROO	56 ROO ROO
57	ROO ROO	58 ROO ROO	59 ROO ROO	60 ROO ROO
61	ROO ROO	62 ROO ROO	63 ROO ROO	64 ROO ROO
65	ROO ROO	66 ROO ROO	67 ROO ROO	68 ROO ROO
69	ROO ROO	70 ROO ROO	71 ROO ROO	72 ROO ROO
73	ROO ROO	74 ROO ROO	75 ROO ROO	76 ROO ROO
77	ROO ROO	78 ROO ROO	79 ROO ROO	80 ROO ROO
81	ROO ROO	82 ROO ROO	83 ROO ROO	84 ROO ROO
85	ROO ROO	86 ROO ROO	87 ROO ROO	88 ROO ROO
89	ROO ROO	90 ROO ROO	101 ROO ROO	102 ROO ROO
103	ROO ROO	104 ROO ROO	105 ROO ROO	106 ROO ROO
107	ROO ROO	108 ROO ROO	109 ROO ROO	110 ROO ROO
111	ROO ROO	112 ROO ROO	113 ROO ROO	114 ROO ROO
115	ROO ROO	116 ROO ROO	117 ROO ROO	118 ROO ROO
119	ROO ROO	130 ROO ROO	131 ROO ROO	132 ROO ROO
133	ROO ROO	134 ROO ROO	145 ROO ROO	146 ROO ROO
147	ROO ROO	148 ROO ROO	149 ROO ROO	150 ROO ROO
151	ROO ROO	152 ROO ROO	153 ROO ROO	154 ROO ROO
155	ROO ROO	156 ROO ROO	157 ROO ROO	158 ROO ROO
159	ROO ROO	160 ROO ROO	161 ROO ROO	162 ROO ROO
163	ROO ROO	164 ROO ROO	165 ROO ROO	166 ROO ROO
167	ROO ROO	168 ROO ROO	169 ROO ROO	178 ROO ROO
179	ROO ROO	180 ROO ROO	181 ROO ROO	190 ROO ROO
191	ROO ROO	192 ROO ROO	193 ROO ROO	202 ROO ROO
203	ROO ROO	204 ROO ROO	205 ROO ROO	214 ROO ROO
215	ROO ROO	216 ROO ROO	217 ROO ROO	226 ROO ROO
227	ROO ROO	228 ROO ROO	229 ROO ROO	238 ROO ROO
239	ROO ROO	240 ROO ROO	241 ROO ROO	250 ROO ROO
251	ROO ROO	252 ROO ROO	253 ROO ROO	254 ROO ROO
255	ROO ROO	256 ROO ROO	257 ROO ROO	258 ROO ROO
259	ROO ROO	260 ROO ROO	261 ROO ROO	262 ROO ROO
263	ROO ROO	264 ROO ROO	265 ROO ROO	266 ROO ROO
267	ROO ROO	268 ROO ROO	269 ROO ROO	270 ROO ROO
271	ROO ROO	272 ROO ROO	273 ROO ROO	274 ROO ROO
275	ROO ROO	276 ROO ROO	277 ROO ROO	278 ROO ROO
279	ROO ROO	280 ROO ROO	281 ROO ROO	282 ROO ROO

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 310****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

283	ROO	ROO
287	ROO	ROO
291	ROO	ROO
295	ROO	ROO
299	ROO	ROO
303	ROO	ROO
311	ROO	ROO
323	ROO	ROO
335	ROO	ROO
347	ROO	ROO
351	ROO	ROO
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387	ROO	ROO
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372	ROO	ROO
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392	ROO	ROO
396	ROO	ROO
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408	ROO	ROO
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393	ROO	ROO
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401	ROO	ROO
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453	ROO	ROO
286	ROO	ROO
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298	ROO	ROO
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378	ROO	ROO
382	ROO	ROO
386	ROO	ROO
390	ROO	ROO
394	ROO	ROO
398	ROO	ROO
402	ROO	ROO
406	ROO	ROO
410	ROO	ROO
442	ROO	ROO
446	ROO	ROO
450	ROO	ROO

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0087.100 0000.000 0104.050

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 311

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.34	0.34	-0.04	0.00	0.45	0.45
2	-2.99	-0.10	0.01	2.99	-0.04	0.00	0.13	0.14
3	-3.71	-0.33	-9.25	9.97	-0.05	0.00	0.00	0.05
4	-4.52	-0.47	-12.69	13.48	-0.01	-0.01	0.01	0.02
5	-5.32	-0.64	-9.05	10.52	0.05	-0.01	0.01	0.05
6	-5.98	-0.80	0.03	6.04	-0.01	0.00	0.01	0.01
7	-6.41	-0.95	-9.68	11.65	-0.05	0.00	0.00	0.05
8	-6.53	-1.12	-13.55	15.08	-0.01	-0.01	0.00	0.01
9	-6.30	-1.28	-9.66	11.60	0.05	-0.01	-0.01	0.05
10	-5.69	-1.44	0.02	5.87	-0.01	-0.01	-0.01	0.02
11	-4.72	-1.59	-13.52	14.41	-0.08	-0.02	-0.02	0.08
12	-3.40	-1.74	-20.84	21.19	-0.02	-0.02	-0.02	0.04
13	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
14	0.00	-0.04	0.00	0.04	-0.03	0.00	0.01	0.03
15	-0.09	-0.20	-9.25	9.25	-0.05	0.00	0.00	0.05
16	0.06	-0.35	-12.69	12.69	-0.01	0.00	0.00	0.01
17	0.07	-0.50	-9.05	9.06	0.05	0.00	0.00	0.05
18	0.00	-0.64	0.00	0.64	-0.01	0.00	0.00	0.01
19	0.08	-0.79	-9.68	9.71	-0.05	0.00	0.00	0.05
20	0.07	-0.93	-13.55	13.58	-0.01	0.00	0.00	0.01
21	0.08	-1.06	-9.66	9.72	0.05	0.00	0.00	0.05
22	0.00	-1.19	0.00	1.19	-0.02	0.00	0.00	0.02
23	0.10	-1.33	-13.52	13.58	-0.08	0.00	-0.01	0.08
24	0.17	-1.46	-20.84	20.89	-0.02	0.01	0.01	0.02
25	0.00	0.00	0.10	0.10	-0.01	0.00	0.43	0.43
26	-2.84	-0.05	0.01	2.84	-0.01	0.00	0.11	0.11
27	-3.56	-0.22	-2.47	4.34	0.01	-0.01	0.00	0.01
28	-4.40	-0.39	0.01	4.42	-0.02	-0.01	0.01	0.03
29	-5.22	-0.55	-9.39	10.76	-0.04	-0.01	0.01	0.05
30	-5.91	-0.70	-12.80	14.12	0.01	-0.01	0.01	0.02
31	-6.36	-0.84	-9.26	11.26	0.05	-0.01	0.00	0.05
32	-6.51	-0.98	0.03	6.58	0.00	-0.02	0.00	0.02
33	-6.30	-1.13	-9.77	11.68	-0.05	-0.01	-0.01	0.05
34	-5.72	-1.30	-13.42	14.64	-0.01	-0.01	-0.01	0.01
35	-4.77	-1.47	-9.53	10.76	0.05	-0.02	-0.01	0.06
36	-3.48	-1.63	-0.01	3.85	-0.03	-0.03	-0.02	0.05
37	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.01
38	0.00	-0.04	0.00	0.04	-0.01	0.00	0.01	0.01
39	-0.09	-0.22	-2.47	2.48	0.01	0.00	0.00	0.01
40	0.00	-0.38	0.00	0.38	-0.02	0.01	0.00	0.02
41	0.07	-0.54	-9.39	9.40	-0.05	0.01	0.00	0.05
42	0.00	-0.70	-12.80	12.82	0.01	0.01	0.00	0.01
43	0.08	-0.86	-9.26	9.30	0.05	0.01	0.00	0.05
44	0.00	-1.01	0.00	1.01	0.00	0.01	0.00	0.01
45	0.08	-1.15	-9.77	9.83	-0.05	0.02	0.00	0.05
46	0.00	-1.29	-13.42	13.48	-0.01	0.02	0.00	0.02
47	0.10	-1.42	-9.53	9.64	0.05	0.02	0.00	0.06
48	0.00	-1.55	0.00	1.55	-0.03	0.02	0.01	0.04
49	0.00	0.00	0.25	0.25	-0.03	0.00	0.42	0.42
50	-2.71	-0.05	0.01	2.71	-0.03	0.00	0.10	0.11
51	-3.58	-0.23	-6.91	7.79	-0.03	0.00	0.00	0.03
52	-4.41	-0.41	-9.42	10.41	0.00	0.00	0.01	0.01
53	-5.24	-0.58	-6.76	8.57	0.03	0.00	0.01	0.04
54	-5.92	-0.74	0.03	5.97	0.00	0.00	0.00	0.00
55	-6.38	-0.91	-7.18	9.64	-0.04	0.00	0.00	0.04
56	-6.52	-1.06	-9.95	11.94	0.00	0.00	0.00	0.00
57	-6.32	-1.21	-7.11	9.59	0.04	0.00	0.00	0.04
58	-5.74	-1.36	0.03	5.90	-0.01	0.00	-0.01	0.01

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 312

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-4.79	-1.50	-11.03	12.12	-0.06	0.00	-0.01	0.06
60	-3.50	-1.64	-17.51	17.93	-0.02	0.00	-0.01	0.03
61	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
62	0.00	-0.04	0.00	0.04	-0.02	0.00	0.01	0.02
63	-0.09	-0.22	-6.91	6.92	-0.03	0.00	0.00	0.03
64	0.00	-0.39	-9.42	9.43	0.00	0.00	0.00	0.00
65	0.07	-0.56	-6.76	6.78	0.03	0.00	0.00	0.03
66	0.00	-0.72	0.00	0.72	0.00	0.00	0.00	0.00
67	0.08	-0.87	-7.18	7.23	-0.04	0.01	0.00	0.04
68	0.00	-1.02	-9.95	10.00	0.00	0.01	0.00	0.01
69	0.08	-1.17	-7.11	7.20	0.04	0.01	0.00	0.04
70	0.00	-1.31	0.00	1.31	-0.01	0.01	0.00	0.02
71	0.10	-1.44	-11.03	11.12	-0.06	0.01	0.00	0.06
72	0.00	-1.58	-17.51	17.58	-0.02	0.01	0.01	0.03
73	0.00	0.00	0.08	0.08	-0.01	0.00	0.40	0.40
74	-2.62	-0.05	0.01	2.62	-0.01	0.00	0.10	0.10
75	-3.60	-0.23	-1.86	4.06	0.00	0.00	0.00	0.00
76	-4.43	-0.41	0.02	4.45	-0.02	0.00	0.01	0.02
77	-5.25	-0.58	-7.16	8.90	-0.04	-0.01	0.01	0.04
78	-5.94	-0.74	-9.81	11.49	0.00	-0.01	0.01	0.01
79	-6.39	-0.91	-7.06	9.57	0.04	-0.01	0.00	0.04
80	-6.53	-1.06	0.03	6.62	0.00	-0.01	0.00	0.01
81	-6.33	-1.22	-7.33	9.76	-0.04	-0.01	0.00	0.04
82	-5.75	-1.36	-10.08	11.68	0.00	-0.01	-0.01	0.02
83	-4.80	-1.50	-7.02	8.64	0.04	-0.01	-0.01	0.04
84	-3.51	-1.64	0.01	3.88	-0.04	-0.02	-0.01	0.04
85	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.01
86	0.00	-0.04	0.00	0.04	-0.01	0.00	0.01	0.01
87	-0.09	-0.22	-1.86	1.88	0.00	0.00	0.00	0.00
88	0.00	-0.39	0.00	0.39	-0.02	0.00	0.00	0.02
89	0.07	-0.55	-7.16	7.18	-0.04	0.01	0.00	0.04
90	0.00	-0.72	-9.81	9.83	0.00	0.01	0.00	0.01
91	0.08	-0.87	-7.06	7.12	0.04	0.01	0.00	0.04
92	0.00	-1.02	0.00	1.02	0.00	0.01	0.00	0.01
93	0.08	-1.17	-7.33	7.42	-0.04	0.01	0.00	0.04
94	0.00	-1.31	-10.08	10.16	0.00	0.02	0.00	0.02
95	0.10	-1.44	-7.02	7.16	0.04	0.02	0.00	0.04
96	0.00	-1.57	0.00	1.57	-0.04	0.02	0.01	0.05
97	0.00	0.00	0.25	0.25	-0.03	0.00	0.39	0.39
98	-2.55	-0.05	0.00	2.55	-0.03	0.00	0.10	0.10
99	-3.61	-0.23	-6.91	7.80	-0.03	0.00	0.00	0.03
100	-4.44	-0.41	-9.42	10.42	0.00	0.00	0.01	0.01
101	-5.26	-0.58	-6.76	8.59	0.03	0.00	0.01	0.04
102	-5.95	-0.75	0.03	5.99	0.00	0.00	0.01	0.01
103	-6.40	-0.91	-7.18	9.66	-0.04	0.00	0.00	0.04
104	-6.54	-1.06	-9.96	11.97	0.00	0.00	0.00	0.00
105	-6.34	-1.22	-7.12	9.61	0.04	0.00	0.00	0.04
106	-5.76	-1.36	0.03	5.92	-0.01	0.00	-0.01	0.01
107	-4.81	-1.50	-10.83	11.95	-0.06	0.00	-0.01	0.06
108	-3.53	-1.64	-17.11	17.55	-0.02	0.01	-0.01	0.03
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.04	0.00	0.04	-0.02	0.00	0.01	0.02
111	-0.09	-0.22	-6.91	6.92	-0.03	0.00	0.00	0.03
112	0.00	-0.39	-9.42	9.43	0.00	0.00	0.00	0.00
113	0.07	-0.56	-6.76	6.78	0.03	0.00	0.00	0.03
114	0.00	-0.72	0.00	0.72	0.00	0.00	0.00	0.00
115	0.08	-0.87	-7.18	7.24	-0.04	0.00	0.00	0.04
116	0.00	-1.02	-9.96	10.02	0.00	0.00	0.00	0.01

James Crosbie Associates Ltd.

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37 Chorley New Road,

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Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 313

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.08	-1.17	-7.12	7.22	0.04	0.01	0.00	0.04
118	0.00	-1.31	0.00	1.31	-0.01	0.01	0.00	0.01
119	0.10	-1.44	-10.83	10.93	-0.06	0.01	0.00	0.06
120	0.00	-1.58	-17.11	17.18	-0.02	0.01	0.01	0.03
121	0.00	0.00	0.08	0.08	-0.01	0.00	0.38	0.38
122	-2.50	-0.05	0.00	2.50	-0.01	0.00	0.10	0.10
123	-3.62	-0.23	-1.86	4.07	0.00	0.00	0.00	0.01
124	-4.44	-0.40	0.02	4.46	-0.02	-0.01	0.01	0.02
125	-5.27	-0.58	-7.16	8.90	-0.04	-0.01	0.01	0.04
126	-5.95	-0.74	-9.80	11.49	0.00	-0.01	0.01	0.01
127	-6.40	-0.90	-7.06	9.57	0.04	-0.01	0.00	0.04
128	-6.55	-1.06	0.03	6.64	0.00	-0.01	0.00	0.01
129	-6.35	-1.21	-7.34	9.78	-0.04	-0.02	0.00	0.04
130	-5.77	-1.36	-10.09	11.70	0.00	-0.02	-0.01	0.02
131	-4.82	-1.50	-7.04	8.66	0.04	-0.02	-0.01	0.04
132	-3.53	-1.64	0.01	3.89	-0.04	-0.02	-0.01	0.05
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
134	0.00	-0.04	0.00	0.04	-0.01	0.00	0.01	0.01
135	-0.09	-0.22	-1.86	1.88	0.00	0.00	0.00	0.00
136	0.00	-0.39	0.00	0.39	-0.02	0.00	0.00	0.02
137	0.07	-0.55	-7.16	7.18	-0.04	0.01	0.00	0.04
138	0.00	-0.71	-9.80	9.83	0.00	0.01	0.00	0.01
139	0.08	-0.87	-7.06	7.11	0.04	0.01	0.00	0.04
140	0.00	-1.02	0.00	1.02	0.00	0.01	0.00	0.01
141	0.08	-1.16	-7.34	7.43	-0.04	0.01	0.00	0.04
142	0.00	-1.30	-10.09	10.18	0.00	0.01	0.00	0.01
143	0.10	-1.44	-7.04	7.18	0.04	0.02	0.00	0.04
144	0.00	-1.56	0.00	1.56	-0.04	0.02	0.01	0.04
145	0.00	0.00	0.26	0.26	-0.03	0.00	0.37	0.37
146	-2.48	-0.04	0.00	2.48	-0.03	0.00	0.11	0.11
147	-3.62	-0.19	-6.88	7.78	-0.03	0.00	0.00	0.03
148	-4.44	-0.34	-9.44	10.44	0.00	0.00	0.01	0.01
149	-5.27	-0.49	-6.74	8.57	0.04	0.00	0.01	0.04
150	-5.96	-0.63	0.03	5.99	0.00	0.00	0.01	0.01
151	-6.41	-0.77	-7.22	9.68	-0.04	0.00	0.00	0.04
152	-6.55	-0.91	-10.08	12.06	0.00	0.01	0.00	0.01
153	-6.35	-1.05	-7.16	9.62	0.04	0.01	0.00	0.04
154	-5.77	-1.18	0.03	5.89	-0.01	0.01	-0.01	0.02
155	-4.82	-1.31	-11.11	12.19	-0.06	0.01	-0.01	0.06
156	-3.54	-1.44	-17.66	18.07	-0.02	0.01	-0.01	0.03
157	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
158	0.00	-0.04	0.00	0.04	-0.02	0.00	0.01	0.02
159	-0.09	-0.19	-6.88	6.89	-0.04	0.00	0.00	0.04
160	-0.04	-0.33	-9.44	9.45	0.00	0.00	0.00	0.00
161	0.07	-0.48	-6.74	6.76	0.04	0.00	0.00	0.04
162	0.00	-0.62	0.00	0.62	0.00	0.00	0.00	0.00
163	0.08	-0.75	-7.22	7.26	-0.04	0.00	0.00	0.04
164	-0.04	-0.89	-10.08	10.12	0.00	0.01	0.00	0.01
165	0.08	-1.02	-7.16	7.23	0.04	0.01	0.00	0.04
166	0.00	-1.15	0.00	1.15	-0.01	0.01	0.00	0.01
167	0.10	-1.27	-11.11	11.19	-0.06	0.01	0.00	0.06
168	-0.12	-1.40	-17.66	17.71	-0.02	0.01	0.01	0.03
169	-1.80	-1.88	-18.94	19.12	0.08	-0.02	-0.03	0.08
170	-1.83	-1.58	-18.94	19.09	0.08	0.01	-0.01	0.08
171	-1.91	-1.79	-18.26	18.45	-0.02	-0.03	-0.02	0.04
172	-1.83	-1.68	-18.27	18.43	-0.02	0.03	0.00	0.03
173	-1.92	-1.77	-17.79	17.98	0.07	0.00	-0.02	0.07
174	-1.83	-1.70	-17.80	17.97	0.07	0.01	0.00	0.07

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Job Ref : B11323

Sheet : SD / 314

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Date : 29 September 2010 / Ver. 2010.06

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-1.93	-1.77	-17.36	17.55	0.01	-0.02	-0.02	0.03
176	-1.84	-1.70	-17.36	17.54	-0.01	0.02	0.00	0.02
177	-1.93	-1.77	-17.18	17.38	0.06	0.01	-0.02	0.07
178	-1.84	-1.70	-17.18	17.36	0.06	0.01	0.00	0.06
179	-1.94	-1.77	-17.01	17.22	0.01	-0.02	-0.02	0.03
180	-1.84	-1.70	-17.02	17.20	-0.01	0.02	0.00	0.02
181	-1.95	-1.56	-17.05	17.23	0.07	0.01	-0.02	0.07
182	-1.83	-1.52	-17.05	17.22	0.07	0.01	0.00	0.07
183	-0.13	-1.96	-0.02	1.96	0.08	-0.02	-0.03	0.09
184	0.00	-1.67	0.00	1.67	0.07	0.01	-0.02	0.07
185	-0.17	-1.88	-0.34	1.92	0.09	-0.02	-0.02	0.09
186	-0.04	-1.77	-0.32	1.80	0.07	0.03	-0.01	0.08
187	-0.09	-1.85	-0.04	1.86	0.08	0.00	-0.01	0.08
188	0.00	-1.79	0.00	1.79	0.07	0.01	-0.01	0.07
189	-0.06	-1.86	-0.28	1.88	0.08	-0.02	-0.01	0.08
190	-0.03	-1.79	-0.27	1.81	0.07	0.02	-0.01	0.07
191	-0.04	-1.85	-0.04	1.86	0.08	0.01	-0.01	0.08
192	0.00	-1.79	0.00	1.79	0.07	0.01	-0.01	0.07
193	0.07	-1.85	-0.32	1.88	0.08	-0.02	-0.01	0.08
194	0.02	-1.79	-0.30	1.81	0.07	0.02	-0.01	0.07
195	0.11	-1.64	-0.02	1.64	0.08	0.01	-0.01	0.08
196	0.00	-1.61	0.00	1.61	0.07	0.01	-0.02	0.07

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	16.12C	0.00	-1.06	0.00	0.00	0.00		0.00	0.36
	2	16.12C	0.00	-1.06	0.00	-0.53	0.00	@	0.000	@ 0.290
2	2	10.58C	0.00	-0.02	0.36	-0.08	-0.28	0.00	0.00	0.77
	3	10.58C	0.00	0.06	0.28	0.03	0.27	@ 0.000	@ 0.000	@ 0.424
3	3	8.94C	0.00	-0.18	0.27	0.02	-0.08	0.00	0.00	0.39
	4	8.94C	0.00	-0.02	0.09	-0.02	0.10	@ 0.000	@ 0.000	@ 1.475
4	4	8.41C	0.00	-0.17	0.08	0.01	0.11	0.00	0.00	0.42
	5	8.41C	0.00	-0.01	-0.10	-0.01	-0.09	@ 0.000	@ 0.000	@ 0.505
5	5	8.25C	0.00	-0.18	-0.11	0.01	0.29	0.00	0.00	0.95
	6	8.25C	0.00	-0.01	-0.30	-0.01	-0.31	@ 0.000	@ 0.000	@ 1.535
6	13	7.31C	0.00	0.07	-0.13	0.00	0.00	0.00	0.00	0.04
	14	7.31C	0.00	0.07	-0.13	0.04	-0.06	@ 0.000	@ 0.000	@ 0.290
7	14	7.18C	0.00	0.00	0.37	-0.01	-0.29	0.00	0.00	0.83
	15	7.18C	0.00	0.00	0.28	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
8	15	7.11C	0.00	0.00	0.27	0.00	-0.08	0.00	0.00	0.40
	16	7.11C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.475
9	16	6.96C	0.00	0.00	0.08	0.00	0.11	0.00	0.00	0.42
	17	6.96C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.505
10	17	6.72C	0.00	0.00	-0.11	0.00	0.29	0.00	0.00	0.95
	18	6.72C	0.00	0.00	-0.30	0.00	-0.31	@ 0.000	@ 0.000	@ 1.535

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	8.45C	0.00	-1.09	0.00	0.00	0.00		0.00	0.37
	26	8.45C	0.00	-1.09	0.00	-0.54	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	8.15C	0.00	-0.03	0.17	-0.06	-0.08	0.00	0.00	0.49
	27	8.15C	0.00	0.04	0.08	0.02	0.08	@ 0.000	@ 0.000	@ 0.748
18	27	7.75C	0.00	-0.18	0.07	0.02	0.10	0.00	0.00	0.35
	28	7.75C	0.00	-0.02	-0.10	-0.02	-0.11	@ 0.000	@ 0.000	@ 1.535
19	28	7.39C	0.00	-0.18	0.47	0.02	-0.30	0.00	0.00	0.85
	29	7.39C	0.00	-0.02	0.29	-0.02	0.29	@ 0.000	@ 0.000	@ 0.444
20	29	7.53C	0.00	-0.18	0.28	0.01	-0.09	0.00	0.00	0.40
	30	7.53C	0.00	-0.02	0.09	-0.02	0.10	@ 0.000	@ 0.000	@ 1.475
21	37	8.21C	0.00	0.05	-0.04	0.00	0.00	0.00	0.00	0.02
	38	8.21C	0.00	0.05	-0.04	0.03	-0.02	@ 0.000	@ 0.000	@ 0.290
22	38	7.97C	0.00	0.00	0.17	-0.01	-0.08	0.00	0.00	0.25
	39	7.97C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.555
23	39	7.74C	0.00	0.00	0.07	0.00	0.10	0.00	0.00	0.35
	40	7.74C	0.00	0.00	-0.10	0.00	-0.11	@ 0.000	@ 0.000	@ 1.535
24	40	7.52C	0.00	0.00	0.47	0.00	-0.30	0.00	0.00	0.85
	41	7.52C	0.00	0.00	0.29	0.00	0.29	@ 0.000	@ 0.000	@ 0.444
25	41	7.36C	0.00	0.00	0.28	0.00	-0.08	0.00	0.00	0.40
	42	7.36C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.475
31	49	8.71C	0.00	-1.04	0.00	0.00	0.00		0.00	0.35
	50	8.71C	0.00	-1.04	0.00	-0.52	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	8.45C	0.00	-0.02	0.27	-0.05	-0.21	0.00	0.00	0.57
	51	8.45C	0.00	0.03	0.21	0.01	0.21	@ 0.000	@ 0.000	@ 0.424
33	51	8.21C	0.00	-0.14	0.20	0.03	-0.06	0.00	0.00	0.29
	52	8.21C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
34	52	7.98C	0.00	-0.14	0.06	0.02	0.08	0.00	0.00	0.31
	53	7.98C	0.00	-0.02	-0.07	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.505
35	53	7.74C	0.00	-0.14	-0.08	0.02	0.21	0.00	0.00	0.70
	54	7.74C	0.00	-0.02	-0.22	-0.02	-0.23	@ 0.000	@ 0.000	@ 1.535
36	61	8.34C	0.00	0.05	-0.10	0.00	0.00	0.00	0.00	0.03
	62	8.34C	0.00	0.05	-0.10	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
37	62	8.12C	0.00	0.00	0.28	-0.01	-0.22	0.00	0.00	0.62
	63	8.12C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
38	63	7.94C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.29
	64	7.94C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.475
39	64	7.70C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.31
	65	7.70C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	7.39C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.70
	66	7.39C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
46	73	8.71C	0.00	-1.00	0.00	0.00	0.00		0.00	0.34
	74	8.71C	0.00	-1.00	0.00	-0.50	0.00		@ 0.000	@ 0.290
47	74	8.46C	0.00	-0.02	0.12	-0.05	-0.06	0.00	0.00	0.44
	75	8.46C	0.00	0.03	0.06	0.01	0.06	@ 0.000	@ 0.000	@ 0.788
48	75	8.22C	0.00	-0.13	0.05	0.02	0.07	0.00	0.00	0.27
	76	8.22C	0.00	-0.02	-0.08	-0.02	-0.08	@ 0.000	@ 0.000	@ 1.535
49	76	7.98C	0.00	-0.13	0.36	0.02	-0.22	0.00	0.00	0.65
	77	7.98C	0.00	-0.02	0.22	-0.02	0.22	@ 0.000	@ 0.000	@ 0.444
50	77	7.75C	0.00	-0.13	0.21	0.02	-0.07	0.00	0.00	0.31
	78	7.75C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
51	85	8.35C	0.00	0.05	-0.03	0.00	0.00	0.00	0.00	0.02
	86	8.35C	0.00	0.05	-0.03	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
52	86	8.11C	0.00	0.00	0.13	0.00	-0.06	0.00	0.00	0.18
	87	8.11C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
53	87	7.87C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.27
	88	7.87C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 1.535
54	88	7.66C	0.00	0.00	0.36	0.00	-0.22	0.00	0.00	0.65
	89	7.66C	0.00	0.00	0.22	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
55	89	7.48C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.31
	90	7.48C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
91	97	8.73C	0.00	-0.97	0.00	0.00	0.00		0.00	0.33
	98	8.73C	0.00	-0.97	0.00	-0.48	0.00		@ 0.000	@ 0.290
92	98	8.47C	0.00	-0.03	0.27	-0.04	-0.21	0.00	0.00	0.57
	99	8.47C	0.00	0.03	0.21	0.01	0.21	@ 0.000	@ 0.000	@ 0.424
93	99	8.23C	0.00	-0.13	0.20	0.02	-0.06	0.00	0.00	0.29
	100	8.23C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
94	100	7.99C	0.00	-0.13	0.06	0.02	0.08	0.00	0.00	0.31
	101	7.99C	0.00	-0.02	-0.07	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.505
95	101	7.75C	0.00	-0.13	-0.08	0.02	0.21	0.00	0.00	0.70
	102	7.75C	0.00	-0.02	-0.22	-0.02	-0.23	@ 0.000	@ 0.000	@ 1.535
96	109	8.35C	0.00	0.05	-0.10	0.00	0.00	0.00	0.00	0.03
	110	8.35C	0.00	0.05	-0.10	0.02	-0.05	@ 0.000	@ 0.000	@ 0.290
97	110	8.13C	0.00	0.00	0.28	0.00	-0.22	0.00	0.00	0.62
	111	8.13C	0.00	0.00	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
98	111	7.95C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.29
	112	7.95C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	7.70C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.31
	113	7.70C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
100	113	7.40C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.70
	114	7.40C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
120	121	8.69C	0.00	-0.95	0.00	0.00	0.00		0.00	0.32
	122	8.69C	0.00	-0.95	0.00	-0.48	0.00		@ 0.000	@ 0.290
121	122	8.44C	0.00	-0.03	0.12	-0.04	-0.06	0.00	0.00	0.41
	123	8.44C	0.00	0.02	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 0.828
122	123	8.20C	0.00	-0.13	0.05	0.02	0.07	0.00	0.00	0.27
	124	8.20C	0.00	-0.02	-0.08	-0.02	-0.08	@ 0.000	@ 0.000	@ 1.535
123	124	7.96C	0.00	-0.13	0.36	0.02	-0.22	0.00	0.00	0.65
	125	7.96C	0.00	-0.02	0.22	-0.02	0.22	@ 0.000	@ 0.000	@ 0.444
124	125	7.73C	0.00	-0.13	0.21	0.02	-0.07	0.00	0.00	0.31
	126	7.73C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.495
125	133	8.33C	0.00	0.05	-0.03	0.00	0.00	0.00	0.00	0.02
	134	8.33C	0.00	0.05	-0.03	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
126	134	8.09C	0.00	0.00	0.13	0.00	-0.06	0.00	0.00	0.18
	135	8.09C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
127	135	7.84C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.27
	136	7.84C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 1.535
128	136	7.64C	0.00	0.00	0.36	0.00	-0.22	0.00	0.00	0.65
	137	7.64C	0.00	0.00	0.22	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
129	137	7.46C	0.00	0.00	0.21	0.00	-0.06	0.00	0.00	0.31
	138	7.46C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
135	145	7.26C	0.00	-0.86	0.00	0.00	0.00		0.00	0.29
	146	7.26C	0.00	-0.86	0.00	-0.43	0.00		@ 0.000	@ 0.290
136	146	7.10C	0.00	-0.02	0.27	-0.05	-0.21	0.00	0.00	0.57
	147	7.10C	0.00	0.03	0.21	0.01	0.20	@ 0.000	@ 0.000	@ 0.424
137	147	6.97C	0.00	-0.13	0.20	0.02	-0.06	0.00	0.00	0.30
	148	6.97C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
138	148	6.83C	0.00	-0.13	0.06	0.02	0.08	0.00	0.00	0.31
	149	6.83C	0.00	-0.02	-0.07	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.505
139	149	6.70C	0.00	-0.13	-0.08	0.01	0.21	0.00	0.00	0.70
	150	6.70C	0.00	-0.01	-0.22	-0.01	-0.23	@ 0.000	@ 0.000	@ 1.535
140	157	6.99C	0.00	0.07	-0.10	0.00	0.00	0.00	0.00	0.03
	158	6.99C	0.00	0.07	-0.10	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
141	158	6.88C	0.00	0.01	0.27	-0.01	-0.21	0.00	0.00	0.62
	159	6.88C	0.00	0.01	0.21	0.00	0.21	@ 0.000	@ 0.000	@ 0.444

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 318

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	6.80C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.30
	160	6.80C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
143	160	6.66C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.31
	161	6.66C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
144	161	6.45C	0.00	0.00	-0.08	0.00	0.21	0.00	0.00	0.70
	162	6.45C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
170	6	8.06C	0.00	-0.18	0.50	0.01	-0.32	0.00	0.00	0.98
	7	8.06C	0.00	-0.01	0.31	-0.01	0.30	@ 0.000	@ 0.000	@ 0.444
171	7	7.85C	0.00	-0.18	0.30	0.00	-0.09	0.00	0.00	0.44
	8	7.85C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.495
172	8	7.62C	0.00	-0.17	0.09	0.00	0.12	0.00	0.00	0.46
	9	7.62C	0.00	0.00	-0.11	0.00	-0.10	@ 0.000	@ 0.000	@ 0.505
173	9	7.36C	0.00	-0.17	-0.12	-0.01	0.31	0.00	0.00	1.06
	10	7.36C	0.00	0.01	-0.32	0.01	-0.34	@ 0.000	@ 0.000	@ 1.535
174	18	6.56C	0.00	0.00	0.50	0.00	-0.32	0.00	0.00	0.98
	19	6.56C	0.00	0.00	0.31	0.00	0.30	@ 0.000	@ 0.000	@ 0.444
175	19	6.48C	0.00	0.00	0.30	0.00	-0.09	0.00	0.00	0.44
	20	6.48C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.475
176	20	6.31C	0.00	0.00	0.09	0.00	0.12	0.00	0.00	0.46
	21	6.31C	0.00	0.00	-0.11	0.00	-0.10	@ 0.000	@ 0.000	@ 0.505
177	21	6.05C	0.00	0.00	-0.12	0.00	0.31	0.00	0.00	1.07
	22	6.05C	0.00	0.00	-0.32	0.00	-0.34	@ 0.000	@ 0.000	@ 1.535
182	30	8.66C	0.00	-0.18	0.09	0.01	0.10	0.00	0.00	0.40
	31	8.66C	0.00	-0.01	-0.10	-0.01	-0.09	@ 0.000	@ 0.000	@ 0.505
183	31	10.42C	0.00	-0.18	-0.10	0.00	0.29	0.00	0.00	0.95
	32	10.42C	0.00	0.00	-0.30	0.00	-0.31	@ 0.000	@ 0.000	@ 1.535
184	32	11.49C	0.00	-0.17	0.52	0.00	-0.33	0.00	0.00	1.00
	33	11.49C	0.00	0.00	0.32	0.00	0.31	@ 0.000	@ 0.000	@ 0.444
185	33	11.84C	0.00	-0.17	0.31	-0.01	-0.09	0.00	0.00	0.44
	34	11.84C	0.00	0.01	0.10	0.01	0.11	@ 0.000	@ 0.000	@ 1.495
186	42	7.13C	0.00	0.00	0.09	0.00	0.11	0.00	0.00	0.41
	43	7.13C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.525
187	43	6.84C	0.00	0.00	-0.10	0.00	0.29	0.00	0.00	0.95
	44	6.84C	0.00	0.00	-0.30	0.00	-0.31	@ 0.000	@ 0.000	@ 1.535
188	44	6.61C	0.00	0.00	0.52	0.00	-0.33	0.00	0.00	1.00
	45	6.61C	0.00	0.00	0.32	0.00	0.31	@ 0.000	@ 0.000	@ 0.444
189	45	6.44C	0.00	0.00	0.31	0.00	-0.09	0.00	0.00	0.43
	46	6.44C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.495

James Crosbie Associates Ltd.

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Job Ref : B11323

Sheet : SD / 319

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	7.51C	0.00	-0.13	0.38	0.01	-0.24	0.00	0.00	0.73
	55	7.51C	0.00	-0.01	0.23	-0.01	0.23	@ 0.000	@ 0.000	@ 0.444
195	55	7.28C	0.00	-0.13	0.22	0.00	-0.07	0.00	0.00	0.32
	56	7.28C	0.00	0.00	0.08	-0.01	0.08	@ 0.000	@ 0.000	@ 1.495
196	56	7.05C	0.00	-0.12	0.07	-0.01	0.08	0.00	0.00	0.32
	57	7.05C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
197	57	6.82C	0.00	-0.12	-0.08	-0.01	0.23	0.00	0.00	0.79
	58	6.82C	0.00	0.01	-0.24	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
198	66	7.15C	0.00	0.00	0.38	0.00	-0.24	0.00	0.00	0.73
	67	7.15C	0.00	0.00	0.23	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
199	67	6.97C	0.00	0.00	0.22	0.00	-0.07	0.00	0.00	0.32
	68	6.97C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.495
200	68	6.72C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.32
	69	6.72C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
201	69	6.41C	0.00	0.00	-0.08	0.00	0.23	0.00	0.00	0.79
	70	6.41C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
206	78	7.51C	0.00	-0.13	0.07	0.01	0.08	0.00	0.00	0.31
	79	7.51C	0.00	-0.01	-0.08	-0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
207	79	7.28C	0.00	-0.13	-0.08	0.01	0.22	0.00	0.00	0.73
	80	7.28C	0.00	-0.01	-0.23	-0.01	-0.24	@ 0.000	@ 0.000	@ 1.535
208	80	7.04C	0.00	-0.12	0.39	-0.01	-0.25	0.00	0.00	0.75
	81	7.04C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
209	81	6.81C	0.00	-0.12	0.23	-0.01	-0.07	0.00	0.00	0.32
	82	6.81C	0.00	0.01	0.08	0.01	0.08	@ 0.000	@ 0.000	@ 1.475
210	90	7.23C	0.00	0.00	0.07	0.00	0.08	0.00	0.00	0.32
	91	7.23C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
211	91	6.92C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.73
	92	6.92C	0.00	0.00	-0.23	0.00	-0.24	@ 0.000	@ 0.000	@ 1.535
212	92	6.67C	0.00	0.00	0.39	0.00	-0.25	0.00	0.00	0.75
	93	6.67C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
213	93	6.49C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.32
	94	6.49C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
218	102	7.52C	0.00	-0.13	0.38	0.01	-0.24	0.00	0.00	0.73
	103	7.52C	0.00	-0.01	0.23	-0.01	0.23	@ 0.000	@ 0.000	@ 0.444
219	103	7.28C	0.00	-0.13	0.22	0.01	-0.07	0.00	0.00	0.32
	104	7.28C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.495
220	104	7.05C	0.00	-0.12	0.07	-0.01	0.08	0.00	0.00	0.32
	105	7.05C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.505

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Job Ref : B11323

Sheet : SD / 320

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	6.82C	0.00	-0.12	-0.08	-0.01	0.23	0.00	0.00	0.79
	106	6.82C	0.00	0.01	-0.24	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
222	114	7.15C	0.00	0.00	0.38	0.00	-0.24	0.00	0.00	0.73
	115	7.15C	0.00	0.00	0.23	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
223	115	6.97C	0.00	0.00	0.22	0.00	-0.07	0.00	0.00	0.32
	116	6.97C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.495
224	116	6.72C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.33
	117	6.72C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
225	117	6.41C	0.00	0.00	-0.08	0.00	0.23	0.00	0.00	0.79
	118	6.41C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
230	126	7.49C	0.00	-0.13	0.07	0.01	0.08	0.00	0.00	0.32
	127	7.49C	0.00	-0.01	-0.08	-0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
231	127	7.26C	0.00	-0.13	-0.08	0.01	0.22	0.00	0.00	0.73
	128	7.26C	0.00	-0.01	-0.23	-0.01	-0.24	@ 0.000	@ 0.000	@ 1.535
232	128	7.03C	0.00	-0.12	0.39	-0.01	-0.25	0.00	0.00	0.75
	129	7.03C	0.00	0.01	0.24	0.01	0.23	@ 0.000	@ 0.000	@ 0.444
233	129	6.80C	0.00	-0.12	0.23	-0.01	-0.07	0.00	0.00	0.33
	130	6.80C	0.00	0.01	0.08	0.01	0.08	@ 0.000	@ 0.000	@ 1.475
234	138	7.21C	0.00	0.00	0.07	0.00	0.08	0.00	0.00	0.32
	139	7.21C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
235	139	6.90C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.73
	140	6.90C	0.00	0.00	-0.23	0.00	-0.24	@ 0.000	@ 0.000	@ 1.535
236	140	6.66C	0.00	0.00	0.39	0.00	-0.25	0.00	0.00	0.75
	141	6.66C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
237	141	6.48C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.32
	142	6.48C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
242	150	6.56C	0.00	-0.13	0.38	-0.01	-0.24	0.00	0.00	0.74
	151	6.56C	0.00	0.01	0.23	-0.01	0.23	@ 0.000	@ 0.000	@ 0.444
243	151	6.43C	0.00	-0.13	0.23	0.01	-0.07	0.00	0.00	0.34
	152	6.43C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.495
244	152	6.29C	0.00	-0.12	0.07	-0.01	0.09	0.00	0.00	0.33
	153	6.29C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
245	153	6.16C	0.00	-0.12	-0.08	-0.01	0.23	0.00	0.00	0.80
	154	6.16C	0.00	0.01	-0.24	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
246	162	6.32C	0.00	0.00	0.38	0.00	-0.24	0.00	0.00	0.74
	163	6.32C	0.00	0.00	0.23	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
247	163	6.24C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.33
	164	6.24C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.495

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Job Ref : B11323

Sheet : SD / 321

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	6.10C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.33
	165	6.10C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
249	165	5.88C	0.00	0.00	-0.08	0.00	0.23	0.00	0.00	0.80
	166	5.88C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
306	10	7.08C	0.00	-0.17	0.63	-0.02	-0.44	0.00	0.00	1.33
	11	7.08C	0.00	0.01	0.42	0.01	0.41	@ 0.000	@ 0.000	@ 0.444
307	11	6.79C	0.00	-0.17	0.41	-0.02	-0.19	0.00	0.00	0.71
	12	6.79C	0.00	0.02	0.20	0.02	0.21	@ 0.000	@ 0.000	@ 1.515
308	22	5.92C	0.00	0.00	0.63	0.00	-0.44	0.00	0.00	1.33
	23	5.92C	0.00	0.00	0.42	0.00	0.41	@ 0.000	@ 0.000	@ 0.444
309	23	5.91C	0.00	0.01	0.41	0.00	-0.19	0.00	0.00	0.71
	24	5.91C	0.00	0.01	0.20	0.01	0.21	@ 0.000	@ 0.000	@ 1.515
312	34	11.45C	0.00	-0.17	0.11	-0.02	0.11	0.00	0.00	0.43
	35	11.45C	0.00	0.02	-0.10	0.02	-0.09	@ 0.000	@ 0.000	@ 0.505
313	35	10.28C	0.00	-0.16	-0.11	-0.03	0.31	0.00	0.00	1.14
	36	10.28C	0.00	0.03	-0.33	0.03	-0.34	@ 0.000	@ 0.000	@ 1.535
314	46	6.20C	0.00	0.00	0.11	0.00	0.11	0.00	0.00	0.44
	47	6.20C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.505
315	47	5.88C	0.00	0.00	-0.11	0.00	0.31	0.00	0.00	1.14
	48	5.88C	0.00	0.00	-0.33	0.00	-0.34	@ 0.000	@ 0.000	@ 1.535
318	58	6.59C	0.00	-0.11	0.50	-0.02	-0.36	0.00	0.00	1.08
	59	6.59C	0.00	0.02	0.35	0.02	0.34	@ 0.000	@ 0.000	@ 0.444
319	59	6.36C	0.00	-0.11	0.34	-0.03	-0.17	0.00	0.00	0.59
	60	6.36C	0.00	0.03	0.18	0.03	0.19	@ 0.000	@ 0.000	@ 1.535
320	70	6.20C	0.00	0.00	0.50	0.00	-0.36	0.00	0.00	1.08
	71	6.20C	0.00	0.00	0.35	0.00	0.34	@ 0.000	@ 0.000	@ 0.444
321	71	6.10C	0.00	0.00	0.34	0.00	-0.17	0.00	0.00	0.59
	72	6.10C	0.00	0.00	0.18	0.00	0.19	@ 0.000	@ 0.000	@ 1.535
324	82	6.58C	0.00	-0.11	0.07	-0.02	0.09	0.00	0.00	0.34
	83	6.58C	0.00	0.02	-0.08	0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
325	83	6.36C	0.00	-0.11	-0.09	-0.03	0.23	0.00	0.00	0.92
	84	6.36C	0.00	0.03	-0.25	0.03	-0.27	@ 0.000	@ 0.000	@ 1.515
326	94	6.24C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.34
	95	6.24C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
327	95	5.92C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.92
	96	5.92C	0.00	0.00	-0.25	0.00	-0.27	@ 0.000	@ 0.000	@ 1.515
330	106	6.59C	0.00	-0.11	0.50	-0.02	-0.35	0.00	0.00	1.07
	107	6.59C	0.00	0.02	0.34	0.02	0.33	@ 0.000	@ 0.000	@ 0.444

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 322

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	6.36C	0.00	-0.11	0.33	-0.03	-0.16	0.00	0.00	0.58
	108	6.36C	0.00	0.03	0.17	0.03	0.18	@ 0.000	@ 0.000	@ 1.535
332	118	6.20C	0.00	0.00	0.50	0.00	-0.35	0.00	0.00	1.06
	119	6.20C	0.00	0.00	0.34	0.00	0.33	@ 0.000	@ 0.000	@ 0.444
333	119	6.09C	0.00	0.00	0.33	0.00	-0.16	0.00	0.00	0.58
	120	6.09C	0.00	0.00	0.17	0.00	0.18	@ 0.000	@ 0.000	@ 1.535
336	130	6.57C	0.00	-0.11	0.07	-0.02	0.09	0.00	0.00	0.34
	131	6.57C	0.00	0.02	-0.08	0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
337	131	6.35C	0.00	-0.11	-0.09	-0.03	0.23	0.00	0.00	0.91
	132	6.35C	0.00	0.03	-0.25	0.03	-0.27	@ 0.000	@ 0.000	@ 1.515
338	142	6.23C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.34
	143	6.23C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
339	143	5.91C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.91
	144	5.91C	0.00	0.00	-0.25	0.00	-0.27	@ 0.000	@ 0.000	@ 1.515
342	154	6.02C	0.00	-0.11	0.51	-0.02	-0.36	0.00	0.00	1.09
	155	6.02C	0.00	0.02	0.35	0.02	0.34	@ 0.000	@ 0.000	@ 0.444
343	155	5.89C	0.00	-0.11	0.34	-0.03	-0.17	0.00	0.00	0.62
	156	5.89C	0.00	0.03	0.18	0.03	0.19	@ 0.000	@ 0.000	@ 1.535
344	166	5.78C	0.00	0.00	0.51	0.00	-0.36	0.00	0.00	1.09
	167	5.78C	0.00	0.00	0.35	0.00	0.34	@ 0.000	@ 0.000	@ 0.444
345	167	5.78C	0.00	0.00	0.34	0.00	-0.17	0.00	0.00	0.62
	168	5.78C	0.00	0.00	0.18	0.01	0.19	@ 0.000	@ 0.000	@ 1.535
412	12	6.46C	0.00	-0.17	0.19	-0.03	0.05	0.00	0.01	0.46
	169	6.46C	0.00	0.03	-0.03	0.02	0.01	@ 0.000	@ 0.000	@ 0.768
413	169	3.63C	0.00	-0.25	0.26	-0.03	0.58	0.00		1.57
	183	3.63C	0.00	0.31	-1.43	0.03	-0.57	@ 0.000		@ 0.429
414	24	5.80C	0.00	-0.06	0.19	0.06	0.05	0.00		0.46
	170	5.80C	0.00	-0.06	-0.03	-0.07	-0.02	@ 0.000		@ 0.768
415	170	3.60C	0.00	0.05	0.25	-0.05	0.58	0.00		1.59
	184	3.60C	0.00	0.05	-1.44	0.05	-0.59	@ 0.000		@ 1.571
416	36	8.35C	0.00	-0.16	0.86	-0.03	-0.63	0.00	0.00	1.82
	171	8.35C	0.00	0.03	0.63	0.03	0.64	@ 0.000	@ 0.000	@ 1.555
417	171	4.87C	0.00	-0.24	0.25	-0.04	0.60	0.00		1.82
	185	4.87C	0.00	0.32	-1.44	0.04	-0.56	@ 0.000		@ 0.449
418	48	5.75C	0.00	-0.06	0.86	0.06	-0.63	0.00		1.81
	172	5.75C	0.00	-0.06	0.63	-0.06	0.64	@ 0.000		@ 1.576
419	172	3.67C	0.00	0.05	0.24	-0.06	0.61	0.00		1.81
	186	3.67C	0.00	0.05	-1.45	0.05	-0.58	@ 0.000		@ 0.449

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Job Ref : B11323

Sheet : SD / 323

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	6.14C	0.00	-0.10	0.20	-0.04	-0.02	0.00	0.00	0.43
	173	6.14C	0.00	0.04	0.04	0.04	0.06	@ 0.000	@ 0.000	@ 1.253
421	173	3.77C	0.00	-0.17	0.24	-0.05	0.54	0.00		1.50
	187	3.77C	0.00	0.28	-1.34	0.05	-0.54	@ 0.000		@ 0.429
422	72	5.92C	0.00	-0.06	0.20	0.06	-0.02	0.00		0.43
	174	5.92C	0.00	-0.06	0.04	-0.06	0.05	@ 0.000		@ 1.252
423	174	3.67C	0.00	0.06	0.23	-0.06	0.55	0.00	0.00	1.50
	188	3.67C	0.00	0.06	-1.35	0.05	-0.55	@ 0.000	@ 0.000	@ 0.429
424	84	6.13C	0.00	-0.11	0.76	-0.04	-0.59	0.00	0.00	1.73
	175	6.13C	0.00	0.04	0.60	0.04	0.60	@ 0.000	@ 0.000	@ 1.555
425	175	3.77C	0.00	-0.18	0.22	-0.05	0.57	0.00		1.74
	189	3.77C	0.00	0.27	-1.35	0.05	-0.54	@ 0.000		@ 0.449
426	96	5.78C	0.00	-0.06	0.76	0.06	-0.59	0.00		1.72
	176	5.78C	0.00	-0.06	0.59	-0.06	0.60	@ 0.000		@ 1.555
427	176	3.68C	0.00	0.05	0.21	-0.06	0.58	0.00		1.73
	190	3.68C	0.00	0.05	-1.36	0.05	-0.55	@ 0.000		@ 0.449
428	108	6.13C	0.00	-0.10	0.19	-0.04	-0.01	0.00	0.00	0.41
	177	6.13C	0.00	0.04	0.03	0.04	0.05	@ 0.000	@ 0.000	@ 1.232
429	177	3.77C	0.00	-0.17	0.26	-0.05	0.52	0.00	0.00	1.45
	191	3.77C	0.00	0.28	-1.32	0.05	-0.52	@ 0.000	@ 0.000	@ 0.429
430	120	5.91C	0.00	-0.06	0.19	0.06	-0.01	0.00	0.00	0.40
	178	5.91C	0.00	-0.06	0.03	-0.06	0.05	@ 0.000	@ 0.000	@ 1.212
431	178	3.67C	0.00	0.06	0.25	-0.06	0.53	0.00		1.44
	192	3.67C	0.00	0.06	-1.33	0.05	-0.53	@ 0.000		@ 0.429
432	132	6.12C	0.00	-0.10	0.75	-0.04	-0.58	0.00	0.00	1.69
	179	6.12C	0.00	0.04	0.58	0.04	0.59	@ 0.000	@ 0.000	@ 1.555
433	179	3.77C	0.00	-0.17	0.23	-0.05	0.56	0.00		1.70
	193	3.77C	0.00	0.28	-1.34	0.05	-0.53	@ 0.000		@ 0.449
434	144	5.77C	0.00	-0.06	0.75	0.06	-0.57	0.00		1.69
	180	5.77C	0.00	-0.06	0.58	-0.06	0.59	@ 0.000		@ 1.555
435	180	3.68C	0.00	0.06	0.22	-0.06	0.57	0.00		1.69
	194	3.67C	0.00	0.06	-1.35	0.05	-0.54	@ 0.000		@ 0.449
436	156	5.76C	0.00	-0.11	0.18	-0.04	0.01	0.00	0.00	0.40
	181	5.76C	0.00	0.04	0.01	0.03	0.03	@ 0.000	@ 0.000	@ 1.071
437	181	3.58C	0.00	-0.18	0.27	-0.05	0.52	0.00		1.42
	195	3.58C	0.00	0.27	-1.31	0.05	-0.51	@ 0.000		@ 0.429
438	168	5.70C	0.00	-0.06	0.17	0.06	0.01	0.00	0.00	0.38
	182	5.70C	0.00	-0.06	0.01	-0.06	0.03	@ 0.000	@ 0.000	@ 1.071

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Job Ref : B11323

Sheet : SD / 324

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	3.56C	0.00	0.05	0.25	-0.06	0.52	0.00		1.42
	196	3.56C	0.00	0.05	-1.32	0.05	-0.52	@ 0.000		@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.961	16.122	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.060	0.000	-0.236
3	0.000	0.000	0.000	0.071	0.000	0.000
4	0.000	0.000	0.000	0.013	0.000	-0.023
5	0.000	0.000	0.000	-0.070	0.000	-0.019
6	0.000	0.000	0.000	0.011	0.000	-0.014
7	0.000	0.000	0.000	0.080	0.000	0.000
9	0.000	0.000	0.000	-0.075	0.000	0.014
10	0.000	0.000	0.000	0.023	0.000	0.025
11	0.000	0.000	0.000	0.119	0.000	0.036
12	0.000	0.000	0.000	0.034	0.000	0.040
13	-0.073	7.315	-0.129	0.000	0.000	0.000
14	0.068	0.000	0.817	0.039	0.000	-0.027
15	0.000	0.000	0.000	0.074	0.000	0.000
16	0.000	0.000	0.000	0.013	0.000	0.000
17	0.000	0.000	0.000	-0.070	0.000	0.000
18	-2.435	0.000	1.537	0.012	0.000	0.000
19	0.000	0.000	0.000	0.081	0.000	0.000
21	0.000	0.000	0.000	-0.075	0.000	0.000
22	-2.676	0.000	1.866	0.024	0.000	0.000
23	0.000	0.000	0.000	0.120	0.000	0.000
24	0.000	0.000	0.000	0.034	0.000	-0.016
25	1.120	8.447	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.018	0.000	-0.193
27	0.000	0.000	0.000	-0.011	0.000	0.000
28	0.000	0.000	0.000	0.036	0.000	-0.018
29	0.000	0.000	0.000	0.068	0.000	-0.015
30	0.000	0.000	0.000	-0.015	0.000	-0.011
31	0.000	0.000	0.000	-0.073	0.000	0.000
33	0.000	0.000	0.000	0.070	0.000	0.000
34	0.000	0.000	0.000	0.000	0.000	0.018
35	0.000	0.000	0.000	-0.081	0.000	0.025
36	0.000	0.000	0.000	0.048	0.000	0.029
37	-0.052	8.205	-0.038	0.000	0.000	0.000
38	0.049	0.000	0.362	0.012	0.000	-0.019
39	0.000	0.000	0.000	-0.010	0.000	0.000
40	-1.306	0.000	1.107	0.036	0.000	0.000
41	0.000	0.000	0.000	0.069	0.000	0.000
42	0.000	0.000	0.000	-0.014	0.000	0.000
43	0.000	0.000	0.000	-0.074	0.000	0.000
44	-1.460	0.000	1.585	0.000	0.000	0.000
45	0.000	0.000	0.000	0.071	0.000	0.000
47	0.000	0.000	0.000	-0.081	0.000	0.000
48	-4.512	0.000	2.334	0.048	0.000	-0.015
49	1.008	8.706	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.045	0.000	-0.187
51	0.000	0.000	0.000	0.051	0.000	0.000
52	0.000	0.000	0.000	0.000	0.000	-0.013

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Job Ref : B11323

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
53	0.000	0.000	0.000	-0.053	0.000	-0.011
55	0.000	0.000	0.000	0.054	0.000	0.000
57	0.000	0.000	0.000	-0.057	0.000	0.000
58	0.000	0.000	0.000	0.019	0.000	0.013
59	0.000	0.000	0.000	0.093	0.000	0.018
60	0.000	0.000	0.000	0.037	0.000	0.020
61	-0.051	8.343	-0.095	0.000	0.000	0.000
62	0.049	0.000	0.608	0.029	0.000	-0.019
63	0.000	0.000	0.000	0.053	0.000	0.000
65	0.000	0.000	0.000	-0.052	0.000	0.000
66	1.006	0.000	1.156	0.000	0.000	0.000
67	0.000	0.000	0.000	0.054	0.000	0.000
69	0.000	0.000	0.000	-0.057	0.000	0.000
70	1.163	0.000	1.453	0.019	0.000	0.000
71	0.000	0.000	0.000	0.094	0.000	0.000
72	0.000	0.000	0.000	0.037	0.000	-0.019
73	0.968	8.710	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.014	0.000	-0.181
76	0.000	0.000	0.000	0.028	0.000	-0.016
77	0.000	0.000	0.000	0.054	0.000	-0.014
78	0.000	0.000	0.000	0.000	0.000	-0.011
79	0.000	0.000	0.000	-0.055	0.000	0.000
81	0.000	0.000	0.000	0.055	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.014
83	0.000	0.000	0.000	-0.059	0.000	0.021
84	0.000	0.000	0.000	0.061	0.000	0.024
85	-0.050	8.349	-0.029	0.000	0.000	0.000
86	0.047	0.000	0.270	0.000	0.000	-0.018
88	-0.023	0.000	0.840	0.029	0.000	0.000
89	0.000	0.000	0.000	0.054	0.000	0.000
91	0.000	0.000	0.000	-0.054	0.000	0.000
92	-0.023	0.000	1.200	0.000	0.000	0.000
93	0.000	0.000	0.000	0.056	0.000	0.000
95	0.000	0.000	0.000	-0.059	0.000	0.000
96	0.223	0.000	2.027	0.061	0.000	-0.018
97	0.940	8.727	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.045	0.000	-0.177
99	0.000	0.000	0.000	0.051	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	-0.016
101	0.000	0.000	0.000	-0.053	0.000	-0.014
102	0.000	0.000	0.000	0.000	0.000	-0.011
103	0.000	0.000	0.000	0.054	0.000	0.000
105	0.000	0.000	0.000	-0.058	0.000	0.000
106	0.000	0.000	0.000	0.018	0.000	0.014
107	0.000	0.000	0.000	0.091	0.000	0.021
108	0.000	0.000	0.000	0.035	0.000	0.024
109	-0.049	8.345	-0.095	0.000	0.000	0.000
110	0.046	0.000	0.608	0.029	0.000	-0.018
111	0.000	0.000	0.000	0.053	0.000	0.000
113	0.000	0.000	0.000	-0.053	0.000	0.000
114	-0.023	0.000	1.149	0.000	0.000	0.000
115	0.000	0.000	0.000	0.055	0.000	0.000
117	0.000	0.000	0.000	-0.057	0.000	0.000
118	-0.022	0.000	1.433	0.018	0.000	0.000
119	0.000	0.000	0.000	0.092	0.000	0.000
120	0.000	0.000	0.000	0.035	0.000	-0.018
121	0.925	8.685	0.000	0.000	0.000	0.000
122	0.000	0.000	0.000	0.014	0.000	-0.173

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Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
124	0.000	0.000	0.000	0.028	0.000	-0.016
125	0.000	0.000	0.000	0.054	0.000	-0.015
126	0.000	0.000	0.000	0.000	0.000	-0.011
127	0.000	0.000	0.000	-0.055	0.000	0.000
129	0.000	0.000	0.000	0.055	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.013
131	0.000	0.000	0.000	-0.059	0.000	0.020
132	0.000	0.000	0.000	0.058	0.000	0.023
133	-0.047	8.327	-0.029	0.000	0.000	0.000
134	0.044	0.000	0.270	0.000	0.000	-0.017
136	1.315	0.000	0.835	0.029	0.000	0.000
137	0.000	0.000	0.000	0.054	0.000	0.000
139	0.000	0.000	0.000	-0.054	0.000	0.000
140	1.470	0.000	1.195	0.000	0.000	0.000
141	0.000	0.000	0.000	0.056	0.000	0.000
143	0.000	0.000	0.000	-0.059	0.000	0.000
144	4.361	0.000	1.972	0.059	0.000	-0.019
145	0.843	7.256	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.045	0.000	-0.201
147	0.000	0.000	0.000	0.052	0.000	0.000
148	0.000	0.000	0.000	0.000	0.000	-0.020
149	0.000	0.000	0.000	-0.055	0.000	-0.018
150	0.000	0.000	0.000	0.000	0.000	-0.014
151	0.000	0.000	0.000	0.056	0.000	0.000
153	0.000	0.000	0.000	-0.061	0.000	0.000
154	0.000	0.000	0.000	0.019	0.000	0.015
155	0.000	0.000	0.000	0.096	0.000	0.023
156	0.000	0.000	0.000	0.031	0.000	0.025
157	-0.066	6.991	-0.095	0.000	0.000	0.000
158	0.061	0.000	0.615	0.029	0.000	-0.024
159	0.000	0.000	0.000	0.054	0.000	0.000
161	0.000	0.000	0.000	-0.055	0.000	0.000
162	1.428	0.000	1.154	0.000	0.000	0.000
163	0.000	0.000	0.000	0.056	0.000	0.000
165	0.000	0.000	0.000	-0.060	0.000	0.000
166	1.512	0.000	1.452	0.019	0.000	0.000
167	0.000	0.000	0.000	0.096	0.000	0.000
168	0.000	0.000	0.000	0.031	0.000	-0.023
169	0.000	0.000	0.000	-0.118	0.000	0.051
170	0.000	0.000	0.000	-0.114	0.000	0.000
171	0.000	0.000	0.000	0.026	0.000	0.037
172	0.000	0.000	0.000	0.030	0.000	0.000
173	0.000	0.000	0.000	-0.101	0.000	0.028
174	0.000	0.000	0.000	-0.099	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.033
176	0.000	0.000	0.000	0.015	0.000	0.000
177	0.000	0.000	0.000	-0.099	0.000	0.033
178	0.000	0.000	0.000	-0.096	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.032
180	0.000	0.000	0.000	0.015	0.000	0.000
181	0.000	0.000	0.000	-0.106	0.000	0.037
182	0.000	0.000	0.000	-0.102	0.000	0.000
183	0.000	0.000	0.000	-0.127	0.000	0.048
184	1.705	0.000	3.826	-0.107	0.000	0.039
185	0.000	0.000	0.000	-0.134	0.000	0.028
186	0.000	0.000	0.000	-0.114	0.000	0.026
187	0.000	0.000	0.000	-0.125	0.000	0.016
188	2.664	0.000	5.904	-0.106	0.000	0.023

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 327

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	R _x →(kN)	R _y ↑(kN)	R _z ↗(kN)	M _x →(kN.m)	M _y ↑(kN.m)	M _z ↗(kN.m)
189	0.000	0.000	0.000	-0.123	0.000	0.024
190	0.000	0.000	0.000	-0.104	0.000	0.025
191	0.000	0.000	0.000	-0.121	0.000	0.024
192	1.521	0.000	5.750	-0.102	0.000	0.025
193	0.000	0.000	0.000	-0.121	0.000	0.022
194	0.000	0.000	0.000	-0.101	0.000	0.023
195	0.000	0.000	0.000	-0.122	0.000	0.026
196	-0.912	0.000	3.462	-0.102	0.000	0.029
Total	13.618	115.064	46.274	-0.365	0.000	-0.814

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	
Load Group G1	Live Load
Load Group G2	Live Load
Load Group G3	Live Load
Load Group G4	Live Load

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 W1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.075	2	2.500	0.075
3	4.500	0.075	4	6.500	0.075	5	8.500	0.075
6	10.500	0.075	7	12.500	0.075	8	14.500	0.075
9	16.500	0.075	10	18.500	0.075	11	20.500	0.075
12	22.500	1.016	13	24.500	1.757			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.005	3	0.005	4	0.005
5	0.005	6	0.005	7	0.005	8	0.005
9	0.005	10	0.005	11	0.005	12	0.005
13	0.000	14	0.003	15	0.003	16	0.003
17	0.003	18	0.003	19	0.003	20	0.003
21	0.003	22	0.003	23	0.003	24	0.003
25	0.000	26	0.007	27	0.007	28	0.007
29	0.007	30	0.007	31	0.007	32	0.007
33	0.007	34	0.007	35	0.007	36	0.007
37	0.000	38	0.006	39	0.006	40	0.006
41	0.006	42	0.006	43	0.006	44	0.006
45	0.006	46	0.006	47	0.006	48	0.006
49	0.000	50	0.006	51	0.006	52	0.006
53	0.006	54	0.006	55	0.006	56	0.006
57	0.006	58	0.006	59	0.006	60	0.006
61	0.000	62	0.006	63	0.006	64	0.006
65	0.006	66	0.006	67	0.006	68	0.006
69	0.006	70	0.006	71	0.006	72	0.006
73	0.000	74	0.006	75	0.006	76	0.006
77	0.006	78	0.006	79	0.006	80	0.006
81	0.006	82	0.006	83	0.006	84	0.006
85	0.000	86	0.006	87	0.006	88	0.006
89	0.006	90	0.006	91	0.006	92	0.006
93	0.006	94	0.006	95	0.006	96	0.006
97	0.000	98	0.006	99	0.006	100	0.006
101	0.006	102	0.006	103	0.006	104	0.006
105	0.006	106	0.006	107	0.006	108	0.006
109	0.000	110	0.006	111	0.006	112	0.006
113	0.006	114	0.006	115	0.006	116	0.006
117	0.006	118	0.006	119	0.006	120	0.006
121	0.000	122	0.006	123	0.006	124	0.006

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

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125	0.006	126	0.006	127	0.006	128	0.006
129	0.006	130	0.006	131	0.006	132	0.006
133	0.000	134	0.006	135	0.006	136	0.006
137	0.006	138	0.006	139	0.006	140	0.006
141	0.006	142	0.006	143	0.006	144	0.006
145	0.000	146	0.003	147	0.003	148	0.003
149	0.003	150	0.003	151	0.003	152	0.003
153	0.003	154	0.003	155	0.003	156	0.003
157	0.000	158	0.003	159	0.003	160	0.003
161	0.003	162	0.003	163	0.003	164	0.003
165	0.003	166	0.003	167	0.003	168	0.003
169	0.074	170	0.067	171	0.078	172	0.070
173	0.077	174	0.070	175	0.077	176	0.070
177	0.077	178	0.070	179	0.077	180	0.070
181	0.072	182	0.067	183	0.126	184	0.120
185	0.131	186	0.123	187	0.130	188	0.123
189	0.130	190	0.123	191	0.130	192	0.123
193	0.130	194	0.123	195	0.125	196	0.120

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 1.00 N1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W4 + 0.50 G1 + 0.50 G3

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W2 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W5 + 0.50 G1 + 0.50 G3

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	2.500	0.000	0.000	26	2.500	0.500	0.000
27	2.500	2.500	0.000	28	2.500	4.500	0.000
29	2.500	6.500	0.000	30	2.500	8.500	0.000
31	2.500	10.500	0.000	32	2.500	12.500	0.000
33	2.500	14.500	0.000	34	2.500	16.500	0.000
35	2.500	18.500	0.000	36	2.500	20.500	0.000
37	2.500	0.000	1.300	38	2.500	0.500	1.300
39	2.500	2.500	1.300	40	2.500	4.500	1.300
41	2.500	6.500	1.300	42	2.500	8.500	1.300
43	2.500	10.500	1.300	44	2.500	12.500	1.300
45	2.500	14.500	1.300	46	2.500	16.500	1.300
47	2.500	18.500	1.300	48	2.500	20.500	1.300
49	5.000	0.000	0.000	50	5.000	0.500	0.000
51	5.000	2.500	0.000	52	5.000	4.500	0.000
53	5.000	6.500	0.000	54	5.000	8.500	0.000
55	5.000	10.500	0.000	56	5.000	12.500	0.000
57	5.000	14.500	0.000	58	5.000	16.500	0.000
59	5.000	18.500	0.000	60	5.000	20.500	0.000
61	5.000	0.000	1.300	62	5.000	0.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 330****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	5.000	2.500	1.300	64	5.000	4.500	1.300
65	5.000	6.500	1.300	66	5.000	8.500	1.300
67	5.000	10.500	1.300	68	5.000	12.500	1.300
69	5.000	14.500	1.300	70	5.000	16.500	1.300
71	5.000	18.500	1.300	72	5.000	20.500	1.300
73	7.500	0.000	0.000	74	7.500	0.500	0.000
75	7.500	2.500	0.000	76	7.500	4.500	0.000
77	7.500	6.500	0.000	78	7.500	8.500	0.000
79	7.500	10.500	0.000	80	7.500	12.500	0.000
81	7.500	14.500	0.000	82	7.500	16.500	0.000
83	7.500	18.500	0.000	84	7.500	20.500	0.000
85	7.500	0.000	1.300	86	7.500	0.500	1.300
87	7.500	2.500	1.300	88	7.500	4.500	1.300
89	7.500	6.500	1.300	90	7.500	8.500	1.300
91	7.500	10.500	1.300	92	7.500	12.500	1.300
93	7.500	14.500	1.300	94	7.500	16.500	1.300
95	7.500	18.500	1.300	96	7.500	20.500	1.300
97	10.000	0.000	0.000	98	10.000	0.500	0.000
99	10.000	2.500	0.000	100	10.000	4.500	0.000
101	10.000	6.500	0.000	102	10.000	8.500	0.000
103	10.000	10.500	0.000	104	10.000	12.500	0.000
105	10.000	14.500	0.000	106	10.000	16.500	0.000
107	10.000	18.500	0.000	108	10.000	20.500	0.000
109	10.000	0.000	1.300	110	10.000	0.500	1.300
111	10.000	2.500	1.300	112	10.000	4.500	1.300
113	10.000	6.500	1.300	114	10.000	8.500	1.300
115	10.000	10.500	1.300	116	10.000	12.500	1.300
117	10.000	14.500	1.300	118	10.000	16.500	1.300
119	10.000	18.500	1.300	120	10.000	20.500	1.300
121	12.500	0.000	0.000	122	12.500	0.500	0.000
123	12.500	2.500	0.000	124	12.500	4.500	0.000
125	12.500	6.500	0.000	126	12.500	8.500	0.000
127	12.500	10.500	0.000	128	12.500	12.500	0.000
129	12.500	14.500	0.000	130	12.500	16.500	0.000
131	12.500	18.500	0.000	132	12.500	20.500	0.000
133	12.500	0.000	1.300	134	12.500	0.500	1.300
135	12.500	2.500	1.300	136	12.500	4.500	1.300
137	12.500	6.500	1.300	138	12.500	8.500	1.300
139	12.500	10.500	1.300	140	12.500	12.500	1.300
141	12.500	14.500	1.300	142	12.500	16.500	1.300
143	12.500	18.500	1.300	144	12.500	20.500	1.300
145	15.000	0.000	0.000	146	15.000	0.500	0.000
147	15.000	2.500	0.000	148	15.000	4.500	0.000
149	15.000	6.500	0.000	150	15.000	8.500	0.000
151	15.000	10.500	0.000	152	15.000	12.500	0.000
153	15.000	14.500	0.000	154	15.000	16.500	0.000
155	15.000	18.500	0.000	156	15.000	20.500	0.000
157	15.000	0.000	1.300	158	15.000	0.500	1.300
159	15.000	2.500	1.300	160	15.000	4.500	1.300
161	15.000	6.500	1.300	162	15.000	8.500	1.300
163	15.000	10.500	1.300	164	15.000	12.500	1.300
165	15.000	14.500	1.300	166	15.000	16.500	1.300
167	15.000	18.500	1.300	168	15.000	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	2.500	22.500	0.000	172	2.500	22.500	1.300
173	5.000	22.500	0.000	174	5.000	22.500	1.300
175	7.500	22.500	0.000	176	7.500	22.500	1.300
177	10.000	22.500	0.000	178	10.000	22.500	1.300
179	12.500	22.500	0.000	180	12.500	22.500	1.300
181	15.000	22.500	0.000	182	15.000	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	2.500	24.500	0.000	186	2.500	24.500	1.300
187	5.000	24.500	0.000	188	5.000	24.500	1.300
189	7.500	24.500	0.000	190	7.500	24.500	1.300
191	10.000	24.500	0.000	192	10.000	24.500	1.300
193	12.500	24.500	0.000	194	12.500	24.500	1.300
195	15.000	24.500	0.000	196	15.000	24.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 331****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties**

Members 1-10, 16-25, 31-40, 46-55, 61-100, 106-129, 135-144, 150-177, 182-189,
194-201, 206-213, 218-225, 230-237, 242-249, 254-309, 312-315, 318-321,
324-327, 330-333, 336-339, 342-345, 348-373, 381-392 and 400-453

M	...	...	48.3x3.2	CHS	3.56	[S 355]		
A	4.53E-4		Ix	11.59E-8		Iy	11.59E-8	J 23.17E-8
E	205.0E6		G	78.85E6				

Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

M	...	...	Omega Transom	[]	E 210E6	G 78E6		
A	7.02E-4		Ix	36.1E-8		Iy	54.0E-8	J 72.21E-8

Member Loading**Members 2 and 17**

W1	PZ	-000.015	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.085	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.013	0.000	(kN,m)
W5	PX	-000.075	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 3 and 18

W1	PZ	-000.032	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.174	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.028	0.000	(kN,m)
W5	PX	-000.154	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 4 and 19

W1	PZ	-000.033	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.180	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.159	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 5 and 20

W1	PZ	-000.033	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.185	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.163	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 7 and 22

W1	PZ	-000.015	0.000	(kN,m)
W4	PZ	-000.085	0.000	(kN,m)

Members 8 and 23

W1	PZ	-000.032	0.000	(kN,m)
W4	PZ	-000.174	0.000	(kN,m)

Members 9 and 24

W1	PZ	-000.033	0.000	(kN,m)
W4	PZ	-000.180	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 332****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 10 and 25**

W1 PZ	-000.033	0.000	(kN, m)
W4 PZ	-000.185	0.000	(kN, m)

**Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341 and 346-347**

D1 PY	-000.035	0.025	(kN, m)
D1 PY	-000.035	1.275	(kN, m)

Members 32, 47, 92, 121 and 136

W1 PZ	-000.012	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.063	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.009	0.000	(kN, m)
W5 PX	-000.054	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 33, 48, 93, 122 and 137

W1 PZ	-000.024	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.020	0.000	(kN, m)
W5 PX	-000.112	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 34, 49, 94, 123 and 138

W1 PZ	-000.025	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.135	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.021	0.000	(kN, m)
W5 PX	-000.115	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 35, 50, 95, 124 and 139

W1 PZ	-000.026	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.139	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.119	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 37, 52, 97, 126 and 141

W1 PZ	-000.012	0.000	(kN, m)
W4 PZ	-000.063	0.000	(kN, m)

Members 38, 53, 98, 127 and 142

W1 PZ	-000.024	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)

Members 39, 54, 99, 128 and 143

W1 PZ	-000.025	0.000	(kN, m)
W4 PZ	-000.135	0.000	(kN, m)

Members 40, 55, 100, 129 and 144

W1 PZ	-000.026	0.000	(kN, m)
W4 PZ	-000.139	0.000	(kN, m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY	-000.159	0.025	(kN, m)
D1 PY	-000.159	2.475	(kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 333****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359, 361-371, 387-392 and 406-411

D1 PY -000.103 0.025 (kN,m)
D1 PY -000.103 2.475 (kN,m)

Members 170 and 182

W1 PZ -000.034 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.190 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.030 0.000 (kN,m)
W5 PX -000.168 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 171 and 183

W1 PZ -000.035 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.195 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.031 0.000 (kN,m)
W5 PX -000.173 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 172 and 184

W1 PZ -000.036 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.201 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.032 0.000 (kN,m)
W5 PX -000.177 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 173 and 185

W1 PZ -000.037 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.206 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.033 0.000 (kN,m)
W5 PX -000.181 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 174 and 186

W1 PZ -000.034 0.000 (kN,m)
W4 PZ -000.190 0.000 (kN,m)

Members 175 and 187

W1 PZ -000.035 0.000 (kN,m)
W4 PZ -000.195 0.000 (kN,m)

Members 176 and 188

W1 PZ -000.036 0.000 (kN,m)
W4 PZ -000.201 0.000 (kN,m)

Members 177 and 189

W1 PZ -000.037 0.000 (kN,m)
W4 PZ -000.206 0.000 (kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ -000.026 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.143 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.022 0.000 (kN,m)
W5 PX -000.122 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 334****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 195, 207, 219, 231 and 243**

W1 PZ	-000.027	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.147	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.125	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.028	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.151	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.129	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.028	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.154	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.024	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.026	0.000	(kN,m)
W4 PZ	-000.143	0.000	(kN,m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.027	0.000	(kN,m)
W4 PZ	-000.147	0.000	(kN,m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.028	0.000	(kN,m)
W4 PZ	-000.151	0.000	(kN,m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.028	0.000	(kN,m)
W4 PZ	-000.154	0.000	(kN,m)

Members 306 and 312

W1 PZ	-000.038	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.211	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.034	0.000	(kN,m)
W5 PX	-000.187	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 307 and 313

W1 PZ	-000.039	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.216	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.191	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 308 and 314

W1 PZ	-000.038	0.000	(kN,m)
W4 PZ	-000.211	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 335****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 309 and 315**

W1	PZ	-000.039	0.000	(kN,m)
W4	PZ	-000.216	0.000	(kN,m)

Members 318, 324, 330, 336 and 342

W1	PZ	-000.029	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.158	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.136	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1	PZ	-000.030	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.162	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.139	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1	PZ	-000.029	0.000	(kN,m)
W4	PZ	-000.158	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1	PZ	-000.030	0.000	(kN,m)
W4	PZ	-000.162	0.000	(kN,m)

Members 374-380

D1	PY	-000.580	0.025	(kN,m)
D1	PY	-000.477	1.275	(kN,m)
L2	PY	-002.109	0.025	(kN,m)
L4	PY	-002.109	1.275	(kN,m)
L6	PY	-002.812	0.025	(kN,m)
L8	PY	-002.812	1.275	(kN,m)
G2	PY	-004.218	0.025	(kN,m)
G4	PY	-004.218	1.275	(kN,m)

Member 381

D1	PY	-000.252	0.025	(kN,m)
D1	PY	-000.252	2.475	(kN,m)

Members 382-386

D1	PY	-000.196	0.025	(kN,m)
D1	PY	-000.196	2.475	(kN,m)

Members 393-399

D1	PY	-000.580	0.025	(kN,m)
D1	PY	-000.477	1.275	(kN,m)
L1	PY	-002.109	0.025	(kN,m)
L3	PY	-002.109	1.275	(kN,m)
L5	PY	-002.812	0.025	(kN,m)
L7	PY	-002.812	1.275	(kN,m)
G1	PY	-004.218	0.025	(kN,m)
G3	PY	-004.218	1.275	(kN,m)

Member 400

D1	PY	-000.252	0.025	(kN,m)
D1	PY	-000.252	2.475	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

Members 401-404

D1	PY	-000.196	0.025	(kN,m)
D1	PY	-000.196	2.475	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

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D1 PY	-000.196	0.025	(kN,m)
D1 PY	-000.196	2.475	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
N1 PZ	-000.300	2.475	(kN,m)

Members 412 and 416

W1 PZ	-000.040	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.222	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.196	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Member 413

W1 PZ	-000.208	0.000	(kN,m)
W1 PZ	-000.212	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.836	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.855	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.052	0.000	(kN,m)
W2 PX	-000.053	2.000	(kN,m)
W5 PX	-000.276	0.000	(kN,m)
W5 PX	-000.282	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 414 and 418

W1 PZ	-000.040	0.000	(kN,m)
W4 PZ	-000.222	0.000	(kN,m)

Members 415 and 419

W1 PZ	-000.208	0.000	(kN,m)
W4 PZ	-000.836	0.000	(kN,m)
W1 PZ	-000.212	2.000	(kN,m)
W4 PZ	-000.855	2.000	(kN,m)

Member 417

W1 PZ	-000.212	0.000	(kN,m)
W1 PZ	-000.208	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.836	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.855	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.052	0.000	(kN,m)
W2 PX	-000.053	2.000	(kN,m)
W5 PX	-000.276	0.000	(kN,m)
W5 PX	-000.282	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 420, 424, 428, 432 and 436

W1 PZ	-000.031	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.166	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.026	0.000	(kN,m)
W5 PX	-000.142	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 337****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W8 PX -000.000 0.000 (kN,m)

Members 421, 425, 429, 433 and 437

W1 PZ -000.198 0.000 (kN,m)

W1 PZ -000.202 2.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.779 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W3 PZ -000.455 2.000 (kN,m)

W4 PZ -000.797 2.000 (kN,m)

W6 PZ -000.000 2.000 (kN,m)

W2 PX -000.042 0.000 (kN,m)

W2 PX -000.043 2.000 (kN,m)

W5 PX -000.222 0.000 (kN,m)

W5 PX -000.227 2.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W7 PX -000.000 2.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

W8 PX -000.000 2.000 (kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ -000.031 0.000 (kN,m)

W4 PZ -000.166 0.000 (kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ -000.198 0.000 (kN,m)

W4 PZ -000.779 0.000 (kN,m)

W1 PZ -000.202 2.000 (kN,m)

W4 PZ -000.797 2.000 (kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Released	® Fixed
11	ROO ROO	12 ROO ROO	13 ROO ROO	14 ROO ROO
15	ROO ROO	26 ROO ROO	27 ROO ROO	28 ROO ROO
29	ROO ROO	30 ROO ROO	41 ROO ROO	42 ROO ROO
43	ROO ROO	44 ROO ROO	45 ROO ROO	56 ROO ROO
57	ROO ROO	58 ROO ROO	59 ROO ROO	60 ROO ROO
61	ROO ROO	62 ROO ROO	63 ROO ROO	64 ROO ROO
65	ROO ROO	66 ROO ROO	67 ROO ROO	68 ROO ROO
69	ROO ROO	70 ROO ROO	71 ROO ROO	72 ROO ROO
73	ROO ROO	74 ROO ROO	75 ROO ROO	76 ROO ROO
77	ROO ROO	78 ROO ROO	79 ROO ROO	80 ROO ROO
81	ROO ROO	82 ROO ROO	83 ROO ROO	84 ROO ROO
85	ROO ROO	86 ROO ROO	87 ROO ROO	88 ROO ROO
89	ROO ROO	90 ROO ROO	101 ROO ROO	102 ROO ROO
103	ROO ROO	104 ROO ROO	105 ROO ROO	106 ROO ROO
107	ROO ROO	108 ROO ROO	109 ROO ROO	110 ROO ROO
111	ROO ROO	112 ROO ROO	113 ROO ROO	114 ROO ROO
115	ROO ROO	116 ROO ROO	117 ROO ROO	118 ROO ROO
119	ROO ROO	130 ROO ROO	131 ROO ROO	132 ROO ROO
133	ROO ROO	134 ROO ROO	145 ROO ROO	146 ROO ROO
147	ROO ROO	148 ROO ROO	149 ROO ROO	150 ROO ROO
151	ROO ROO	152 ROO ROO	153 ROO ROO	154 ROO ROO
155	ROO ROO	156 ROO ROO	157 ROO ROO	158 ROO ROO
159	ROO ROO	160 ROO ROO	161 ROO ROO	162 ROO ROO
163	ROO ROO	164 ROO ROO	165 ROO ROO	166 ROO ROO
167	ROO ROO	168 ROO ROO	169 ROO ROO	178 ROO ROO
179	ROO ROO	180 ROO ROO	181 ROO ROO	190 ROO ROO
191	ROO ROO	192 ROO ROO	193 ROO ROO	202 ROO ROO
203	ROO ROO	204 ROO ROO	205 ROO ROO	214 ROO ROO
215	ROO ROO	216 ROO ROO	217 ROO ROO	226 ROO ROO
227	ROO ROO	228 ROO ROO	229 ROO ROO	238 ROO ROO
239	ROO ROO	240 ROO ROO	241 ROO ROO	250 ROO ROO
251	ROO ROO	252 ROO ROO	253 ROO ROO	254 ROO ROO
255	ROO ROO	256 ROO ROO	257 ROO ROO	258 ROO ROO
259	ROO ROO	260 ROO ROO	261 ROO ROO	262 ROO ROO
263	ROO ROO	264 ROO ROO	265 ROO ROO	266 ROO ROO
267	ROO ROO	268 ROO ROO	269 ROO ROO	270 ROO ROO
271	ROO ROO	272 ROO ROO	273 ROO ROO	274 ROO ROO
275	ROO ROO	276 ROO ROO	277 ROO ROO	278 ROO ROO
279	ROO ROO	280 ROO ROO	281 ROO ROO	282 ROO ROO

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 338****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

283	ROO	ROO
287	ROO	ROO
291	ROO	ROO
295	ROO	ROO
299	ROO	ROO
303	ROO	ROO
311	ROO	ROO
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302	ROO	ROO
310	ROO	ROO
322	ROO	ROO
334	ROO	ROO
346	ROO	ROO
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354	ROO	ROO
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362	ROO	ROO
366	ROO	ROO
370	ROO	ROO
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378	ROO	ROO
382	ROO	ROO
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398	ROO	ROO
402	ROO	ROO
406	ROO	ROO
410	ROO	ROO
442	ROO	ROO
446	ROO	ROO
450	ROO	ROO

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0087.100 0000.000 0104.050

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 339

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.35	0.35	-0.04	0.00	0.45	0.46
2	-3.02	-0.11	0.01	3.02	-0.04	0.00	0.13	0.14
3	-3.72	-0.37	-9.48	10.19	-0.05	0.00	0.00	0.05
4	-4.52	-0.58	-13.02	13.79	-0.01	-0.01	0.01	0.02
5	-5.31	-0.80	-9.27	10.72	0.05	-0.01	0.01	0.05
6	-5.97	-1.01	0.03	6.05	-0.01	0.00	0.01	0.01
7	-6.39	-1.21	-9.91	11.85	-0.05	0.00	0.00	0.05
8	-6.51	-1.42	-13.88	15.40	-0.01	-0.01	0.00	0.01
9	-6.28	-1.64	-9.88	11.83	0.05	-0.01	-0.01	0.05
10	-5.68	-1.84	0.02	5.97	-0.02	-0.01	-0.01	0.02
11	-4.71	-2.04	-13.83	14.75	-0.08	-0.01	-0.02	0.08
12	-3.39	-2.24	-21.33	21.72	-0.02	-0.02	-0.02	0.04
13	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.02
14	0.00	-0.05	0.00	0.05	-0.03	0.00	0.01	0.03
15	-0.09	-0.25	-9.48	9.49	-0.05	0.00	0.00	0.05
16	0.07	-0.45	-13.02	13.02	-0.01	0.00	0.00	0.01
17	0.07	-0.65	-9.27	9.29	0.05	0.00	0.00	0.05
18	0.00	-0.84	0.00	0.84	-0.01	0.00	0.00	0.01
19	0.08	-1.03	-9.91	9.96	-0.05	0.00	0.00	0.05
20	0.08	-1.21	-13.88	13.93	-0.01	0.00	0.00	0.01
21	0.08	-1.40	-9.88	9.98	0.05	0.00	0.00	0.05
22	0.00	-1.57	0.00	1.57	-0.02	0.00	0.00	0.02
23	0.10	-1.75	-13.83	13.94	-0.08	0.00	-0.01	0.08
24	0.18	-1.93	-21.33	21.42	-0.02	0.01	0.01	0.03
25	0.00	0.00	0.11	0.11	-0.01	0.00	0.44	0.44
26	-2.87	-0.06	0.01	2.87	-0.01	0.00	0.11	0.11
27	-3.57	-0.27	-2.52	4.38	0.01	-0.01	0.00	0.01
28	-4.40	-0.48	0.01	4.42	-0.02	-0.01	0.01	0.03
29	-5.21	-0.68	-9.59	10.94	-0.05	-0.01	0.01	0.05
30	-5.89	-0.88	-13.08	14.37	0.01	-0.01	0.01	0.02
31	-6.34	-1.06	-9.45	11.43	0.05	-0.02	0.00	0.05
32	-6.49	-1.25	0.03	6.61	0.00	-0.02	0.00	0.02
33	-6.28	-1.43	-9.97	11.87	-0.05	-0.01	-0.01	0.05
34	-5.71	-1.65	-13.70	14.93	-0.01	-0.01	-0.01	0.01
35	-4.76	-1.86	-9.72	10.98	0.05	-0.03	-0.01	0.06
36	-3.48	-2.07	-0.01	4.05	-0.03	-0.03	-0.02	0.05
37	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.01
38	0.00	-0.06	0.00	0.06	-0.01	0.00	0.01	0.01
39	-0.09	-0.27	-2.52	2.54	0.01	0.00	0.00	0.01
40	0.00	-0.48	0.00	0.48	-0.02	0.01	0.00	0.02
41	0.07	-0.69	-9.59	9.62	-0.05	0.01	0.00	0.05
42	0.00	-0.89	-13.08	13.11	0.01	0.01	0.00	0.01
43	0.08	-1.09	-9.45	9.52	0.05	0.01	0.00	0.05
44	0.00	-1.29	0.00	1.29	0.00	0.01	0.00	0.01
45	0.08	-1.47	-9.97	10.08	-0.05	0.02	0.00	0.05
46	0.00	-1.66	-13.70	13.80	-0.01	0.02	0.00	0.02
47	0.10	-1.84	-9.72	9.89	0.05	0.02	0.00	0.06
48	0.00	-2.01	0.00	2.01	-0.03	0.02	0.01	0.04
49	0.00	0.00	0.26	0.26	-0.03	0.00	0.42	0.42
50	-2.74	-0.06	0.01	2.74	-0.03	0.00	0.10	0.11
51	-3.59	-0.29	-7.08	7.94	-0.03	0.00	0.00	0.03
52	-4.41	-0.51	-9.64	10.62	0.00	0.00	0.01	0.01
53	-5.23	-0.72	-6.92	8.70	0.04	0.00	0.01	0.04
54	-5.91	-0.94	0.03	5.98	0.00	0.00	0.00	0.00
55	-6.36	-1.14	-7.34	9.77	-0.04	0.00	0.00	0.04
56	-6.50	-1.35	-10.18	12.15	0.00	0.00	0.00	0.00
57	-6.30	-1.54	-7.26	9.74	0.04	0.00	0.00	0.04
58	-5.73	-1.74	0.03	5.98	-0.01	0.00	-0.01	0.01

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

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Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 340

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-4.78	-1.92	-11.26	12.38	-0.06	0.00	-0.01	0.06
60	-3.49	-2.10	-17.88	18.34	-0.02	0.00	-0.01	0.03
61	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
62	0.00	-0.06	0.00	0.06	-0.02	0.00	0.01	0.02
63	-0.09	-0.28	-7.08	7.08	-0.04	0.00	0.00	0.04
64	0.00	-0.49	-9.64	9.66	0.00	0.00	0.00	0.00
65	0.07	-0.71	-6.92	6.95	0.04	0.00	0.00	0.04
66	0.00	-0.91	0.00	0.91	0.00	0.00	0.00	0.00
67	0.08	-1.11	-7.34	7.42	-0.04	0.01	0.00	0.04
68	0.00	-1.31	-10.18	10.26	0.00	0.01	0.00	0.01
69	0.08	-1.50	-7.26	7.41	0.04	0.01	0.00	0.04
70	0.00	-1.68	0.00	1.68	-0.01	0.01	0.00	0.02
71	0.10	-1.86	-11.26	11.41	-0.06	0.01	0.00	0.06
72	0.00	-2.04	-17.88	18.00	-0.03	0.01	0.01	0.03
73	0.00	0.00	0.08	0.08	-0.01	0.00	0.40	0.40
74	-2.64	-0.06	0.01	2.65	-0.01	0.00	0.10	0.10
75	-3.61	-0.29	-1.90	4.09	0.00	0.00	0.00	0.00
76	-4.43	-0.51	0.02	4.45	-0.02	0.00	0.01	0.02
77	-5.24	-0.73	-7.33	9.04	-0.04	-0.01	0.01	0.04
78	-5.92	-0.94	-10.04	11.69	0.00	-0.01	0.01	0.01
79	-6.37	-1.15	-7.22	9.70	0.04	-0.01	0.00	0.04
80	-6.52	-1.35	0.03	6.65	0.00	-0.01	0.00	0.01
81	-6.31	-1.54	-7.49	9.92	-0.04	-0.01	0.00	0.04
82	-5.74	-1.74	-10.30	11.92	0.00	-0.01	-0.01	0.02
83	-4.79	-1.92	-7.16	8.83	0.04	-0.02	-0.01	0.04
84	-3.51	-2.11	0.01	4.09	-0.04	-0.02	-0.01	0.05
85	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.01
86	0.00	-0.06	0.00	0.06	-0.01	0.00	0.01	0.01
87	-0.09	-0.28	-1.90	1.92	0.00	0.00	0.00	0.00
88	0.00	-0.49	0.00	0.49	-0.02	0.00	0.00	0.02
89	0.07	-0.70	-7.33	7.36	-0.04	0.01	0.00	0.04
90	0.00	-0.91	-10.04	10.08	0.00	0.01	0.00	0.01
91	0.08	-1.11	-7.22	7.31	0.04	0.01	0.00	0.04
92	0.00	-1.31	0.00	1.31	0.00	0.01	0.00	0.01
93	0.08	-1.50	-7.49	7.64	-0.04	0.01	0.00	0.04
94	0.00	-1.68	-10.30	10.44	0.00	0.02	0.00	0.02
95	0.10	-1.86	-7.16	7.40	0.04	0.02	0.00	0.04
96	0.00	-2.03	0.00	2.03	-0.04	0.02	0.01	0.05
97	0.00	0.00	0.26	0.26	-0.03	0.00	0.39	0.39
98	-2.57	-0.06	0.01	2.57	-0.03	0.00	0.10	0.10
99	-3.62	-0.29	-7.08	7.96	-0.03	0.00	0.00	0.03
100	-4.43	-0.51	-9.65	10.63	0.00	0.00	0.01	0.01
101	-5.25	-0.73	-6.92	8.71	0.04	0.00	0.01	0.04
102	-5.93	-0.94	0.03	6.00	0.00	0.00	0.01	0.01
103	-6.38	-1.15	-7.34	9.80	-0.04	0.00	0.00	0.04
104	-6.53	-1.35	-10.19	12.18	0.00	0.00	0.00	0.00
105	-6.32	-1.55	-7.28	9.76	0.04	0.00	0.00	0.04
106	-5.75	-1.74	0.03	6.01	-0.01	0.00	-0.01	0.01
107	-4.80	-1.92	-11.06	12.21	-0.06	0.00	-0.01	0.06
108	-3.52	-2.11	-17.48	17.95	-0.02	0.01	-0.01	0.03
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.06	0.00	0.06	-0.02	0.00	0.01	0.02
111	-0.09	-0.28	-7.08	7.08	-0.04	0.00	0.00	0.04
112	0.00	-0.49	-9.65	9.66	0.00	0.00	0.00	0.00
113	0.07	-0.71	-6.92	6.95	0.04	0.00	0.00	0.04
114	0.00	-0.91	0.00	0.91	0.00	0.00	0.00	0.00
115	0.08	-1.11	-7.34	7.43	-0.04	0.00	0.00	0.04
116	0.00	-1.31	-10.19	10.27	0.00	0.00	0.00	0.01

James Crosbie Associates Ltd.

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Job Ref : B11323

Sheet : SD / 341

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.08	-1.50	-7.28	7.43	0.04	0.01	0.00	0.04
118	0.00	-1.68	0.00	1.68	-0.01	0.01	0.00	0.01
119	0.10	-1.86	-11.06	11.22	-0.06	0.01	0.00	0.06
120	0.00	-2.04	-17.48	17.60	-0.02	0.01	0.01	0.03
121	0.00	0.00	0.08	0.08	-0.01	0.00	0.39	0.39
122	-2.53	-0.06	0.00	2.53	-0.01	0.00	0.10	0.10
123	-3.63	-0.29	-1.90	4.11	0.00	0.00	0.00	0.01
124	-4.44	-0.51	0.02	4.47	-0.02	-0.01	0.01	0.02
125	-5.26	-0.72	-7.32	9.05	-0.04	-0.01	0.01	0.04
126	-5.94	-0.94	-10.04	11.70	0.00	-0.01	0.01	0.01
127	-6.39	-1.14	-7.22	9.71	0.04	-0.01	0.00	0.04
128	-6.53	-1.34	0.03	6.67	0.00	-0.02	0.00	0.02
129	-6.33	-1.54	-7.50	9.93	-0.04	-0.02	0.00	0.04
130	-5.76	-1.73	-10.31	11.94	0.00	-0.02	-0.01	0.02
131	-4.81	-1.92	-7.18	8.85	0.04	-0.02	-0.01	0.05
132	-3.53	-2.10	0.01	4.11	-0.04	-0.02	-0.01	0.05
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
134	0.00	-0.06	0.00	0.06	-0.01	0.00	0.01	0.01
135	-0.09	-0.28	-1.90	1.92	0.00	0.00	0.00	0.00
136	0.00	-0.49	0.00	0.49	-0.02	0.00	0.00	0.02
137	0.07	-0.70	-7.32	7.36	-0.04	0.01	0.00	0.04
138	0.00	-0.91	-10.04	10.08	0.00	0.01	0.00	0.01
139	0.08	-1.11	-7.22	7.31	0.04	0.01	0.00	0.04
140	0.00	-1.30	0.00	1.30	0.00	0.01	0.00	0.01
141	0.08	-1.49	-7.50	7.64	-0.04	0.01	0.00	0.04
142	0.00	-1.68	-10.31	10.45	0.00	0.01	0.00	0.01
143	0.10	-1.86	-7.18	7.42	0.04	0.02	0.00	0.04
144	0.00	-2.03	0.00	2.03	-0.04	0.02	0.01	0.04
145	0.00	0.00	0.26	0.26	-0.03	0.00	0.37	0.38
146	-2.50	-0.05	0.00	2.51	-0.03	0.00	0.11	0.12
147	-3.63	-0.25	-7.05	7.94	-0.04	0.00	0.00	0.04
148	-4.44	-0.44	-9.68	10.66	0.00	0.00	0.01	0.01
149	-5.26	-0.64	-6.90	8.70	0.04	0.00	0.01	0.04
150	-5.94	-0.83	0.03	6.00	0.00	0.00	0.01	0.01
151	-6.39	-1.01	-7.38	9.81	-0.04	0.00	0.00	0.04
152	-6.54	-1.20	-10.32	12.28	0.00	0.01	0.00	0.01
153	-6.33	-1.38	-7.32	9.77	0.04	0.01	0.00	0.04
154	-5.76	-1.56	0.03	5.97	-0.01	0.01	-0.01	0.02
155	-4.82	-1.73	-11.36	12.46	-0.06	0.01	-0.01	0.07
156	-3.53	-1.90	-18.06	18.50	-0.02	0.01	-0.01	0.03
157	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
158	0.00	-0.05	0.00	0.05	-0.02	0.00	0.01	0.02
159	-0.09	-0.24	-7.05	7.06	-0.04	0.00	0.00	0.04
160	-0.04	-0.44	-9.68	9.69	0.00	0.00	0.00	0.00
161	0.07	-0.62	-6.90	6.93	0.04	0.00	0.00	0.04
162	0.00	-0.81	0.00	0.81	0.00	0.00	0.00	0.00
163	0.08	-0.99	-7.38	7.45	-0.04	0.00	0.00	0.04
164	-0.04	-1.17	-10.32	10.39	0.00	0.01	0.00	0.01
165	0.08	-1.35	-7.32	7.44	0.04	0.01	0.00	0.04
166	0.00	-1.52	0.00	1.52	-0.01	0.01	0.00	0.01
167	0.10	-1.69	-11.36	11.49	-0.06	0.01	0.00	0.07
168	-0.13	-1.87	-18.06	18.16	-0.02	0.01	0.01	0.03
169	-1.80	-2.43	-19.35	19.59	0.08	-0.02	-0.03	0.08
170	-1.83	-2.10	-19.36	19.56	0.08	0.01	-0.01	0.08
171	-1.91	-2.27	-18.67	18.90	-0.02	-0.03	-0.02	0.04
172	-1.83	-2.19	-18.67	18.89	-0.02	0.03	0.00	0.03
173	-1.92	-2.28	-18.19	18.43	0.07	0.00	-0.02	0.07
174	-1.83	-2.22	-18.19	18.42	0.07	0.01	0.00	0.07

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 342

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Date : 29 September 2010 / Ver. 2010.06

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-1.93	-2.28	-17.75	18.00	0.01	-0.02	-0.02	0.03
176	-1.84	-2.22	-17.75	17.98	-0.01	0.02	0.00	0.02
177	-1.93	-2.28	-17.56	17.82	0.07	0.01	-0.02	0.07
178	-1.84	-2.22	-17.57	17.80	0.07	0.01	0.00	0.07
179	-1.94	-2.28	-17.39	17.65	0.01	-0.02	-0.02	0.03
180	-1.84	-2.21	-17.40	17.63	-0.01	0.02	0.00	0.02
181	-1.95	-2.07	-17.43	17.66	0.07	0.01	-0.02	0.07
182	-1.83	-2.03	-17.43	17.64	0.07	0.01	0.00	0.07
183	-0.13	-2.53	-0.02	2.54	0.09	-0.02	-0.03	0.10
184	0.00	-2.22	0.00	2.22	0.06	0.01	-0.02	0.07
185	-0.17	-2.39	-0.34	2.42	0.10	-0.03	-0.02	0.10
186	-0.04	-2.31	-0.32	2.33	0.07	0.03	-0.01	0.08
187	-0.09	-2.39	-0.04	2.40	0.09	0.00	-0.01	0.09
188	0.00	-2.34	0.00	2.34	0.06	0.01	-0.01	0.07
189	-0.06	-2.40	-0.28	2.42	0.09	-0.02	-0.01	0.09
190	-0.03	-2.34	-0.27	2.35	0.06	0.02	-0.01	0.07
191	-0.04	-2.40	-0.04	2.40	0.09	0.01	-0.01	0.09
192	0.00	-2.34	0.00	2.34	0.06	0.01	-0.01	0.06
193	0.07	-2.39	-0.32	2.41	0.09	-0.02	-0.01	0.09
194	0.02	-2.33	-0.30	2.35	0.06	0.02	-0.01	0.06
195	0.11	-2.18	-0.02	2.18	0.09	0.01	-0.01	0.09
196	0.00	-2.15	0.00	2.15	0.06	0.01	-0.02	0.06

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	17.69C	0.00	-1.07	0.00	0.00	0.00		0.00	0.36
	2	17.69C	0.00	-1.07	0.00	-0.53	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	12.35C	0.00	-0.02	0.37	-0.08	-0.28	0.00	0.00	0.79
	3	12.35C	0.00	0.06	0.28	0.03	0.28	@ 0.000	@ 0.000	@ 0.424
3	3	11.24C	0.00	-0.18	0.27	0.02	-0.09	0.00	0.00	0.40
	4	11.24C	0.00	-0.02	0.10	-0.02	0.11	@ 0.000	@ 0.000	@ 1.475
4	4	10.67C	0.00	-0.17	0.07	0.01	0.11	0.00	0.00	0.43
	5	10.67C	0.00	-0.01	-0.11	-0.01	-0.10	@ 0.000	@ 0.000	@ 0.505
5	5	10.50C	0.00	-0.17	-0.12	0.01	0.29	0.00	0.00	0.97
	6	10.50C	0.00	-0.01	-0.30	-0.01	-0.31	@ 0.000	@ 0.000	@ 1.535
6	13	9.46C	0.00	0.07	-0.13	0.00	0.00	0.00	0.00	0.04
	14	9.46C	0.00	0.07	-0.13	0.04	-0.07	@ 0.000	@ 0.000	@ 0.290
7	14	9.32C	0.00	0.00	0.38	-0.01	-0.30	0.00	0.00	0.85
	15	9.32C	0.00	0.00	0.29	0.00	0.29	@ 0.000	@ 0.000	@ 0.444
8	15	9.25C	0.00	0.00	0.27	0.00	-0.08	0.00	0.00	0.41
	16	9.25C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.475
9	16	9.10C	0.00	0.00	0.08	0.00	0.11	0.00	0.00	0.43
	17	9.10C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.505
10	17	8.86C	0.00	0.00	-0.12	0.00	0.29	0.00	0.00	0.98
	18	8.86C	0.00	0.00	-0.30	0.00	-0.31	@ 0.000	@ 0.000	@ 1.535

James Crosbie Associates Ltd.

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	10.39C	0.00	-1.10	0.00	0.00	0.00		0.00	0.37
	26	10.39C	0.00	-1.10	0.00	-0.55	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	10.10C	0.00	-0.03	0.17	-0.06	-0.08	0.00	0.00	0.50
	27	10.10C	0.00	0.04	0.08	0.02	0.09	@ 0.000	@ 0.000	@ 0.748
18	27	9.70C	0.00	-0.18	0.07	0.02	0.10	0.00	0.00	0.36
	28	9.70C	0.00	-0.02	-0.10	-0.02	-0.11	@ 0.000	@ 0.000	@ 1.535
19	28	9.34C	0.00	-0.18	0.48	0.02	-0.30	0.00	0.00	0.87
	29	9.34C	0.00	-0.02	0.30	-0.02	0.29	@ 0.000	@ 0.000	@ 0.444
20	29	9.48C	0.00	-0.18	0.28	0.01	-0.09	0.00	0.00	0.41
	30	9.48C	0.00	-0.02	0.10	-0.02	0.11	@ 0.000	@ 0.000	@ 1.475
21	37	10.28C	0.00	0.05	-0.04	0.00	0.00	0.00	0.00	0.02
	38	10.28C	0.00	0.05	-0.04	0.03	-0.02	@ 0.000	@ 0.000	@ 0.290
22	38	10.04C	0.00	0.00	0.17	-0.01	-0.08	0.00	0.00	0.25
	39	10.04C	0.00	0.00	0.09	0.00	0.09	@ 0.000	@ 0.000	@ 1.555
23	39	9.81C	0.00	0.00	0.07	0.00	0.10	0.00	0.00	0.36
	40	9.81C	0.00	0.00	-0.10	0.00	-0.11	@ 0.000	@ 0.000	@ 1.535
24	40	9.60C	0.00	0.00	0.48	0.00	-0.30	0.00	0.00	0.87
	41	9.60C	0.00	0.00	0.30	0.00	0.29	@ 0.000	@ 0.000	@ 0.444
25	41	9.45C	0.00	0.00	0.28	0.00	-0.09	0.00	0.00	0.41
	42	9.45C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.475
31	49	10.81C	0.00	-1.05	0.00	0.00	0.00		0.00	0.35
	50	10.81C	0.00	-1.05	0.00	-0.52	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	10.55C	0.00	-0.02	0.27	-0.06	-0.21	0.00	0.00	0.59
	51	10.55C	0.00	0.03	0.21	0.01	0.21	@ 0.000	@ 0.000	@ 0.424
33	51	10.32C	0.00	-0.14	0.20	0.03	-0.06	0.00	0.00	0.30
	52	10.32C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
34	52	10.08C	0.00	-0.14	0.06	0.02	0.08	0.00	0.00	0.31
	53	10.08C	0.00	-0.02	-0.07	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.505
35	53	9.85C	0.00	-0.14	-0.09	0.02	0.22	0.00	0.00	0.72
	54	9.85C	0.00	-0.02	-0.22	-0.02	-0.23	@ 0.000	@ 0.000	@ 1.535
36	61	10.45C	0.00	0.05	-0.10	0.00	0.00	0.00	0.00	0.03
	62	10.45C	0.00	0.05	-0.10	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
37	62	10.23C	0.00	0.00	0.28	-0.01	-0.22	0.00	0.00	0.64
	63	10.23C	0.00	0.00	0.22	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
38	63	10.05C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.30
	64	10.05C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
39	64	9.81C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.31
	65	9.81C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	9.50C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.72
	66	9.50C	0.00	0.00	-0.23	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
46	73	10.82C	0.00	-1.01	0.00	0.00	0.00		0.00	0.34
	74	10.82C	0.00	-1.01	0.00	-0.50	0.00		@ 0.000	@ 0.290
47	74	10.57C	0.00	-0.02	0.12	-0.05	-0.06	0.00	0.00	0.45
	75	10.57C	0.00	0.03	0.06	0.01	0.06	@ 0.000	@ 0.000	@ 0.788
48	75	10.33C	0.00	-0.13	0.05	0.02	0.08	0.00	0.00	0.27
	76	10.33C	0.00	-0.02	-0.08	-0.02	-0.08	@ 0.000	@ 0.000	@ 1.535
49	76	10.09C	0.00	-0.13	0.36	0.02	-0.23	0.00	0.00	0.66
	77	10.09C	0.00	-0.02	0.23	-0.02	0.22	@ 0.000	@ 0.000	@ 0.444
50	77	9.86C	0.00	-0.13	0.21	0.02	-0.07	0.00	0.00	0.32
	78	9.86C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
51	85	10.46C	0.00	0.05	-0.03	0.00	0.00	0.00	0.00	0.02
	86	10.46C	0.00	0.05	-0.03	0.03	-0.01	@ 0.000	@ 0.000	@ 0.290
52	86	10.22C	0.00	0.00	0.13	0.00	-0.06	0.00	0.00	0.19
	87	10.22C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
53	87	9.98C	0.00	0.00	0.05	0.00	0.08	0.00	0.00	0.27
	88	9.98C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 1.535
54	88	9.77C	0.00	0.00	0.36	0.00	-0.23	0.00	0.00	0.66
	89	9.77C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
55	89	9.59C	0.00	0.00	0.21	0.00	-0.07	0.00	0.00	0.31
	90	9.59C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
91	97	10.84C	0.00	-0.98	0.00	0.00	0.00		0.00	0.33
	98	10.84C	0.00	-0.98	0.00	-0.49	0.00		@ 0.000	@ 0.290
92	98	10.58C	0.00	-0.03	0.28	-0.05	-0.21	0.00	0.00	0.59
	99	10.58C	0.00	0.03	0.21	0.01	0.21	@ 0.000	@ 0.000	@ 0.424
93	99	10.34C	0.00	-0.13	0.20	0.02	-0.06	0.00	0.00	0.30
	100	10.34C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
94	100	10.10C	0.00	-0.13	0.06	0.02	0.08	0.00	0.00	0.31
	101	10.10C	0.00	-0.02	-0.07	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.505
95	101	9.86C	0.00	-0.13	-0.09	0.02	0.22	0.00	0.00	0.72
	102	9.86C	0.00	-0.02	-0.22	-0.02	-0.23	@ 0.000	@ 0.000	@ 1.535
96	109	10.45C	0.00	0.05	-0.10	0.00	0.00	0.00	0.00	0.03
	110	10.45C	0.00	0.05	-0.10	0.02	-0.05	@ 0.000	@ 0.000	@ 0.290
97	110	10.23C	0.00	0.00	0.28	0.00	-0.22	0.00	0.00	0.64
	111	10.23C	0.00	0.00	0.22	0.00	0.21	@ 0.000	@ 0.000	@ 0.444
98	111	10.06C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.30
	112	10.06C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	9.81C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.31
	113	9.81C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
100	113	9.51C	0.00	0.00	-0.09	0.00	0.22	0.00	0.00	0.72
	114	9.51C	0.00	0.00	-0.23	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
120	121	10.79C	0.00	-0.96	0.00	0.00	0.00		0.00	0.32
	122	10.79C	0.00	-0.96	0.00	-0.48	0.00		@ 0.000	@ 0.290
121	122	10.54C	0.00	-0.03	0.12	-0.04	-0.06	0.00	0.00	0.42
	123	10.54C	0.00	0.02	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 0.808
122	123	10.31C	0.00	-0.13	0.05	0.02	0.08	0.00	0.00	0.27
	124	10.31C	0.00	-0.02	-0.08	-0.02	-0.08	@ 0.000	@ 0.000	@ 1.535
123	124	10.07C	0.00	-0.13	0.36	0.02	-0.23	0.00	0.00	0.66
	125	10.07C	0.00	-0.02	0.23	-0.02	0.22	@ 0.000	@ 0.000	@ 0.444
124	125	9.83C	0.00	-0.13	0.21	0.02	-0.07	0.00	0.00	0.32
	126	9.83C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.495
125	133	10.44C	0.00	0.05	-0.03	0.00	0.00	0.00	0.00	0.02
	134	10.44C	0.00	0.05	-0.03	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
126	134	10.20C	0.00	0.00	0.13	0.00	-0.06	0.00	0.00	0.19
	135	10.20C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.555
127	135	9.95C	0.00	0.00	0.05	0.00	0.08	0.00	0.00	0.27
	136	9.95C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 1.535
128	136	9.75C	0.00	0.00	0.36	0.00	-0.23	0.00	0.00	0.66
	137	9.75C	0.00	0.00	0.23	0.00	0.22	@ 0.000	@ 0.000	@ 0.444
129	137	9.57C	0.00	0.00	0.21	0.00	-0.07	0.00	0.00	0.31
	138	9.57C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
135	145	9.37C	0.00	-0.87	0.00	0.00	0.00		0.00	0.29
	146	9.37C	0.00	-0.87	0.00	-0.44	0.00		@ 0.000	@ 0.290
136	146	9.21C	0.00	-0.02	0.27	-0.05	-0.21	0.00	0.00	0.58
	147	9.21C	0.00	0.03	0.21	0.01	0.21	@ 0.000	@ 0.000	@ 0.424
137	147	9.08C	0.00	-0.13	0.20	0.02	-0.06	0.00	0.00	0.31
	148	9.08C	0.00	-0.02	0.07	-0.02	0.08	@ 0.000	@ 0.000	@ 1.475
138	148	8.94C	0.00	-0.13	0.06	0.02	0.08	0.00	0.00	0.32
	149	8.94C	0.00	-0.02	-0.08	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.505
139	149	8.80C	0.00	-0.13	-0.08	0.01	0.22	0.00	0.00	0.72
	150	8.80C	0.00	-0.01	-0.22	-0.01	-0.23	@ 0.000	@ 0.000	@ 1.535
140	157	9.10C	0.00	0.07	-0.10	0.00	0.00	0.00	0.00	0.03
	158	9.10C	0.00	0.07	-0.10	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
141	158	8.98C	0.00	0.01	0.28	-0.01	-0.22	0.00	0.00	0.63
	159	8.98C	0.00	0.01	0.22	0.00	0.21	@ 0.000	@ 0.000	@ 0.444

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 346

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	8.91C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.31
	160	8.91C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
143	160	8.77C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.32
	161	8.77C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
144	161	8.56C	0.00	0.00	-0.08	0.00	0.22	0.00	0.00	0.72
	162	8.56C	0.00	0.00	-0.22	0.00	-0.23	@ 0.000	@ 0.000	@ 1.535
170	6	10.31C	0.00	-0.18	0.51	0.01	-0.33	0.00	0.00	1.00
	7	10.31C	0.00	-0.01	0.32	-0.01	0.31	@ 0.000	@ 0.000	@ 0.444
171	7	10.10C	0.00	-0.18	0.30	0.00	-0.10	0.00	0.00	0.45
	8	10.10C	0.00	0.00	0.11	0.00	0.12	@ 0.000	@ 0.000	@ 1.495
172	8	9.87C	0.00	-0.17	0.09	0.00	0.12	0.00	0.00	0.47
	9	9.87C	0.00	0.00	-0.11	0.00	-0.10	@ 0.000	@ 0.000	@ 0.505
173	9	9.61C	0.00	-0.17	-0.12	-0.01	0.32	0.00	0.00	1.09
	10	9.61C	0.00	0.01	-0.33	0.01	-0.34	@ 0.000	@ 0.000	@ 1.535
174	18	8.70C	0.00	0.00	0.51	0.00	-0.33	0.00	0.00	1.00
	19	8.70C	0.00	0.00	0.32	0.00	0.31	@ 0.000	@ 0.000	@ 0.444
175	19	8.61C	0.00	0.00	0.30	0.00	-0.10	0.00	0.00	0.45
	20	8.61C	0.00	0.00	0.11	0.00	0.12	@ 0.000	@ 0.000	@ 1.475
176	20	8.44C	0.00	0.00	0.09	0.00	0.12	0.00	0.00	0.47
	21	8.44C	0.00	0.00	-0.11	0.00	-0.10	@ 0.000	@ 0.000	@ 0.505
177	21	8.18C	0.00	0.00	-0.13	0.00	0.32	0.00	0.00	1.09
	22	8.18C	0.00	0.00	-0.33	0.00	-0.35	@ 0.000	@ 0.000	@ 1.535
182	30	9.98C	0.00	-0.18	0.09	0.01	0.11	0.00	0.00	0.41
	31	9.98C	0.00	-0.01	-0.10	-0.01	-0.09	@ 0.000	@ 0.000	@ 0.505
183	31	11.76C	0.00	-0.18	-0.11	0.00	0.30	0.00	0.00	0.97
	32	11.76C	0.00	0.00	-0.31	0.00	-0.32	@ 0.000	@ 0.000	@ 1.535
184	32	12.84C	0.00	-0.17	0.53	0.00	-0.34	0.00	0.00	1.02
	33	12.84C	0.00	0.00	0.33	0.00	0.32	@ 0.000	@ 0.000	@ 0.444
185	33	13.21C	0.00	-0.17	0.31	-0.01	-0.10	0.00	0.00	0.45
	34	13.21C	0.00	0.01	0.11	0.01	0.12	@ 0.000	@ 0.000	@ 1.495
186	42	9.21C	0.00	0.00	0.09	0.00	0.11	0.00	0.00	0.41
	43	9.21C	0.00	0.00	-0.10	0.00	-0.09	@ 0.000	@ 0.000	@ 0.525
187	43	8.92C	0.00	0.00	-0.11	0.00	0.30	0.00	0.00	0.97
	44	8.92C	0.00	0.00	-0.31	0.00	-0.32	@ 0.000	@ 0.000	@ 1.535
188	44	8.69C	0.00	0.00	0.53	0.00	-0.34	0.00	0.00	1.02
	45	8.69C	0.00	0.00	0.33	0.00	0.32	@ 0.000	@ 0.000	@ 0.444
189	45	8.53C	0.00	0.00	0.31	0.00	-0.09	0.00	0.00	0.44
	46	8.53C	0.00	0.00	0.11	0.00	0.12	@ 0.000	@ 0.000	@ 1.495

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Job Ref : B11323

Sheet : SD / 347

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	9.61C	0.00	-0.13	0.38	0.01	-0.25	0.00	0.00	0.75
	55	9.61C	0.00	-0.01	0.24	-0.01	0.23	@ 0.000	@ 0.000	@ 0.444
195	55	9.38C	0.00	-0.13	0.23	0.00	-0.07	0.00	0.00	0.33
	56	9.38C	0.00	0.00	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.495
196	56	9.15C	0.00	-0.12	0.07	0.00	0.09	0.00	0.00	0.33
	57	9.15C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
197	57	8.93C	0.00	-0.12	-0.09	-0.01	0.23	0.00	0.00	0.81
	58	8.93C	0.00	0.01	-0.24	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
198	66	9.26C	0.00	0.00	0.38	0.00	-0.25	0.00	0.00	0.75
	67	9.26C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
199	67	9.08C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.33
	68	9.08C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.495
200	68	8.83C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.33
	69	8.83C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
201	69	8.52C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.81
	70	8.52C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
206	78	9.62C	0.00	-0.13	0.07	0.01	0.08	0.00	0.00	0.32
	79	9.62C	0.00	-0.01	-0.08	-0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
207	79	9.39C	0.00	-0.13	-0.09	0.01	0.23	0.00	0.00	0.75
	80	9.39C	0.00	-0.01	-0.23	-0.01	-0.24	@ 0.000	@ 0.000	@ 1.535
208	80	9.15C	0.00	-0.12	0.39	-0.01	-0.25	0.00	0.00	0.77
	81	9.15C	0.00	0.00	0.24	0.00	0.24	@ 0.000	@ 0.000	@ 0.444
209	81	8.92C	0.00	-0.12	0.23	-0.01	-0.07	0.00	0.00	0.33
	82	8.92C	0.00	0.01	0.08	0.01	0.09	@ 0.000	@ 0.000	@ 1.475
210	90	9.34C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.32
	91	9.34C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
211	91	9.03C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.75
	92	9.03C	0.00	0.00	-0.24	0.00	-0.24	@ 0.000	@ 0.000	@ 1.535
212	92	8.78C	0.00	0.00	0.39	0.00	-0.25	0.00	0.00	0.77
	93	8.78C	0.00	0.00	0.24	0.00	0.24	@ 0.000	@ 0.000	@ 0.444
213	93	8.60C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.33
	94	8.60C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.475
218	102	9.63C	0.00	-0.13	0.38	0.01	-0.25	0.00	0.00	0.75
	103	9.63C	0.00	-0.01	0.24	-0.01	0.23	@ 0.000	@ 0.000	@ 0.444
219	103	9.39C	0.00	-0.13	0.23	0.01	-0.07	0.00	0.00	0.33
	104	9.39C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.495
220	104	9.16C	0.00	-0.12	0.07	-0.01	0.09	0.00	0.00	0.33
	105	9.16C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.505

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Job Ref : B11323

Sheet : SD / 348

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	8.93C	0.00	-0.12	-0.09	-0.01	0.23	0.00	0.00	0.81
	106	8.93C	0.00	0.01	-0.24	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
222	114	9.26C	0.00	0.00	0.38	0.00	-0.25	0.00	0.00	0.75
	115	9.26C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
223	115	9.08C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.33
	116	9.08C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.495
224	116	8.83C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.33
	117	8.83C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
225	117	8.52C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.81
	118	8.52C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
230	126	9.60C	0.00	-0.13	0.07	0.01	0.08	0.00	0.00	0.32
	127	9.60C	0.00	-0.01	-0.08	-0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
231	127	9.37C	0.00	-0.13	-0.09	0.01	0.23	0.00	0.00	0.75
	128	9.37C	0.00	-0.01	-0.23	-0.01	-0.24	@ 0.000	@ 0.000	@ 1.535
232	128	9.14C	0.00	-0.12	0.39	-0.01	-0.25	0.00	0.00	0.77
	129	9.14C	0.00	0.01	0.24	0.01	0.24	@ 0.000	@ 0.000	@ 0.444
233	129	8.91C	0.00	-0.12	0.23	-0.01	-0.07	0.00	0.00	0.33
	130	8.91C	0.00	0.01	0.08	0.01	0.09	@ 0.000	@ 0.000	@ 1.475
234	138	9.32C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.32
	139	9.32C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
235	139	9.01C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.75
	140	9.01C	0.00	0.00	-0.24	0.00	-0.24	@ 0.000	@ 0.000	@ 1.535
236	140	8.77C	0.00	0.00	0.39	0.00	-0.25	0.00	0.00	0.77
	141	8.77C	0.00	0.00	0.24	0.00	0.24	@ 0.000	@ 0.000	@ 0.444
237	141	8.59C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.33
	142	8.59C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.475
242	150	8.67C	0.00	-0.13	0.38	-0.01	-0.25	0.00	0.00	0.75
	151	8.67C	0.00	0.01	0.24	0.01	0.23	@ 0.000	@ 0.000	@ 0.444
243	151	8.54C	0.00	-0.13	0.23	0.01	-0.07	0.00	0.00	0.35
	152	8.54C	0.00	-0.01	0.08	-0.01	0.09	@ 0.000	@ 0.000	@ 1.495
244	152	8.40C	0.00	-0.12	0.07	-0.01	0.09	0.00	0.00	0.34
	153	8.40C	0.00	0.01	-0.08	0.01	-0.07	@ 0.000	@ 0.000	@ 0.505
245	153	8.27C	0.00	-0.12	-0.09	-0.01	0.23	0.00	0.00	0.82
	154	8.27C	0.00	0.01	-0.24	0.01	-0.25	@ 0.000	@ 0.000	@ 1.535
246	162	8.42C	0.00	0.00	0.38	0.00	-0.25	0.00	0.00	0.75
	163	8.42C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
247	163	8.35C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.34
	164	8.35C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.495

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	8.21C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.34
	165	8.21C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.505
249	165	7.99C	0.00	0.00	-0.09	0.00	0.23	0.00	0.00	0.82
	166	7.99C	0.00	0.00	-0.24	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535
306	10	9.34C	0.00	-0.17	0.64	-0.02	-0.45	0.00		1.36
	11	9.34C	0.00	0.01	0.43	0.01	0.42	@ 0.000		@ 0.444
307	11	9.05C	0.00	-0.17	0.42	-0.02	-0.19	0.00		0.72
	12	9.05C	0.00	0.02	0.20	0.02	0.22	@ 0.000		@ 1.515
308	22	8.04C	0.00	0.00	0.64	0.00	-0.45	0.00		1.36
	23	8.04C	0.00	0.00	0.43	0.00	0.42	@ 0.000		@ 0.444
309	23	8.03C	0.00	0.01	0.42	0.00	-0.19	0.00		0.73
	24	8.03C	0.00	0.01	0.20	0.01	0.21	@ 0.000		@ 1.515
312	34	12.83C	0.00	-0.17	0.11	-0.02	0.12	0.00	0.00	0.44
	35	12.83C	0.00	0.02	-0.11	0.02	-0.09	@ 0.000	@ 0.000	@ 0.505
313	35	11.68C	0.00	-0.16	-0.12	-0.03	0.31	0.00	0.00	1.16
	36	11.68C	0.00	0.03	-0.33	0.03	-0.35	@ 0.000	@ 0.000	@ 1.535
314	46	8.30C	0.00	0.00	0.11	0.00	0.12	0.00	0.00	0.45
	47	8.30C	0.00	0.00	-0.11	0.00	-0.09	@ 0.000	@ 0.000	@ 0.505
315	47	7.98C	0.00	0.00	-0.12	0.00	0.31	0.00	0.00	1.16
	48	7.98C	0.00	0.00	-0.33	0.00	-0.35	@ 0.000	@ 0.000	@ 1.535
318	58	8.70C	0.00	-0.11	0.51	-0.02	-0.36	0.00	0.00	1.11
	59	8.70C	0.00	0.02	0.35	0.02	0.34	@ 0.000	@ 0.000	@ 0.444
319	59	8.47C	0.00	-0.11	0.34	-0.03	-0.17	0.00	0.00	0.60
	60	8.47C	0.00	0.03	0.18	0.03	0.19	@ 0.000	@ 0.000	@ 1.535
320	70	8.31C	0.00	0.00	0.51	0.00	-0.36	0.00	0.00	1.10
	71	8.31C	0.00	0.00	0.35	0.00	0.34	@ 0.000	@ 0.000	@ 0.444
321	71	8.21C	0.00	0.00	0.34	0.00	-0.17	0.00	0.00	0.60
	72	8.21C	0.00	0.00	0.18	0.00	0.19	@ 0.000	@ 0.000	@ 1.535
324	82	8.69C	0.00	-0.11	0.07	-0.02	0.09	0.00	0.00	0.35
	83	8.69C	0.00	0.02	-0.09	0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
325	83	8.46C	0.00	-0.11	-0.09	-0.03	0.24	0.00	0.00	0.94
	84	8.46C	0.00	0.03	-0.26	0.03	-0.27	@ 0.000	@ 0.000	@ 1.515
326	94	8.35C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.35
	95	8.35C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
327	95	8.03C	0.00	0.00	-0.09	0.00	0.24	0.00	0.00	0.94
	96	8.03C	0.00	0.00	-0.26	0.00	-0.27	@ 0.000	@ 0.000	@ 1.515
330	106	8.70C	0.00	-0.11	0.51	-0.02	-0.36	0.00	0.00	1.09
	107	8.70C	0.00	0.02	0.35	0.02	0.34	@ 0.000	@ 0.000	@ 0.444

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 350

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	8.47C	0.00	-0.11	0.34	-0.03	-0.17	0.00	0.00	0.59
	108	8.47C	0.00	0.03	0.18	0.03	0.18	@ 0.000	@ 0.000	@ 1.535
332	118	8.31C	0.00	0.00	0.51	0.00	-0.36	0.00	0.00	1.09
	119	8.31C	0.00	0.00	0.35	0.00	0.34	@ 0.000	@ 0.000	@ 0.444
333	119	8.21C	0.00	0.00	0.34	0.00	-0.17	0.00	0.00	0.59
	120	8.21C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 1.535
336	130	8.68C	0.00	-0.11	0.07	-0.02	0.09	0.00	0.00	0.35
	131	8.68C	0.00	0.02	-0.09	0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
337	131	8.45C	0.00	-0.11	-0.09	-0.03	0.24	0.00	0.00	0.93
	132	8.45C	0.00	0.03	-0.26	0.03	-0.27	@ 0.000	@ 0.000	@ 1.515
338	142	8.34C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.35
	143	8.34C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
339	143	8.02C	0.00	0.00	-0.09	0.00	0.24	0.00	0.00	0.93
	144	8.02C	0.00	0.00	-0.26	0.00	-0.27	@ 0.000	@ 0.000	@ 1.515
342	154	8.13C	0.00	-0.12	0.52	-0.02	-0.37	0.00	0.00	1.12
	155	8.13C	0.00	0.02	0.36	0.02	0.35	@ 0.000	@ 0.000	@ 0.444
343	155	8.00C	0.00	-0.11	0.35	-0.03	-0.18	0.00	0.00	0.64
	156	8.00C	0.00	0.03	0.19	0.03	0.19	@ 0.000	@ 0.000	@ 1.535
344	166	7.89C	0.00	0.00	0.51	0.00	-0.37	0.00	0.00	1.12
	167	7.89C	0.00	0.00	0.36	0.00	0.35	@ 0.000	@ 0.000	@ 0.444
345	167	7.90C	0.00	0.00	0.35	0.00	-0.18	0.00	0.00	0.63
	168	7.90C	0.00	0.00	0.19	0.01	0.19	@ 0.000	@ 0.000	@ 1.535
412	12	8.73C	0.00	-0.17	0.19	-0.03	0.06	0.00	0.00	0.47
	169	8.73C	0.00	0.03	-0.04	0.02	-0.01	@ 0.000	@ 0.000	@ 0.768
413	169	5.03C	0.00	-0.25	0.25	-0.03	0.59	0.00		1.61
	183	5.03C	0.00	0.31	-1.44	0.03	-0.58	@ 0.000		@ 0.429
414	24	7.92C	0.00	-0.06	0.19	0.06	0.06	0.00		0.47
	170	7.92C	0.00	-0.06	-0.04	-0.07	-0.02	@ 0.000		@ 0.747
415	170	5.01C	0.00	0.05	0.23	-0.05	0.60	0.00		1.66
	184	5.01C	0.00	0.05	-1.46	0.05	-0.60	@ 0.000		@ 1.571
416	36	9.75C	0.00	-0.16	0.87	-0.03	-0.64	0.00	0.00	1.86
	171	9.75C	0.00	0.03	0.65	0.03	0.66	@ 0.000	@ 0.000	@ 1.576
417	171	6.28C	0.00	-0.24	0.25	-0.04	0.61	0.00		1.87
	185	6.28C	0.00	0.32	-1.44	0.04	-0.57	@ 0.000		@ 0.449
418	48	7.86C	0.00	-0.06	0.87	0.06	-0.64	0.00		1.86
	172	7.86C	0.00	-0.06	0.65	-0.06	0.66	@ 0.000		@ 1.576
419	172	5.08C	0.00	0.05	0.23	-0.06	0.62	0.00		1.84
	186	5.08C	0.00	0.05	-1.46	0.05	-0.59	@ 0.000		@ 0.449

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Job Ref : B11323

Sheet : SD / 351

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	8.25C	0.00	-0.10	0.20	-0.04	-0.02	0.00	0.00	0.44
	173	8.25C	0.00	0.04	0.04	0.04	0.06	@ 0.000	@ 0.000	@ 1.252
421	173	5.18C	0.00	-0.17	0.23	-0.05	0.55	0.00		1.55
	187	5.18C	0.00	0.28	-1.35	0.05	-0.54	@ 0.000		@ 0.429
422	72	8.04C	0.00	-0.06	0.20	0.06	-0.02	0.00		0.44
	174	8.04C	0.00	-0.06	0.04	-0.06	0.06	@ 0.000		@ 1.252
423	174	5.08C	0.00	0.06	0.21	-0.06	0.57	0.00		1.54
	188	5.08C	0.00	0.06	-1.36	0.05	-0.57	@ 0.000		@ 1.571
424	84	8.24C	0.00	-0.11	0.77	-0.04	-0.60	0.00	0.00	1.77
	175	8.24C	0.00	0.04	0.61	0.04	0.62	@ 0.000	@ 0.000	@ 1.555
425	175	5.17C	0.00	-0.18	0.21	-0.05	0.58	0.00		1.79
	189	5.17C	0.00	0.27	-1.36	0.05	-0.55	@ 0.000		@ 0.449
426	96	7.90C	0.00	-0.06	0.77	0.06	-0.60	0.00		1.77
	176	7.90C	0.00	-0.06	0.61	-0.06	0.62	@ 0.000		@ 1.555
427	176	5.09C	0.00	0.05	0.20	-0.06	0.60	0.00		1.76
	190	5.09C	0.00	0.05	-1.38	0.05	-0.57	@ 0.000		@ 0.449
428	108	8.25C	0.00	-0.11	0.20	-0.04	-0.01	0.00	0.00	0.41
	177	8.25C	0.00	0.04	0.03	0.04	0.05	@ 0.000	@ 0.000	@ 1.232
429	177	5.18C	0.00	-0.17	0.25	-0.05	0.53	0.00	0.00	1.49
	191	5.18C	0.00	0.28	-1.33	0.05	-0.52	@ 0.000	@ 0.000	@ 0.429
430	120	8.03C	0.00	-0.06	0.20	0.06	-0.01	0.00	0.00	0.41
	178	8.03C	0.00	-0.06	0.03	-0.06	0.05	@ 0.000	@ 0.000	@ 1.232
431	178	5.07C	0.00	0.06	0.23	-0.06	0.55	0.00		1.49
	192	5.07C	0.00	0.06	-1.34	0.05	-0.55	@ 0.000		@ 1.571
432	132	8.23C	0.00	-0.10	0.76	-0.04	-0.59	0.00	0.00	1.73
	179	8.23C	0.00	0.04	0.60	0.04	0.60	@ 0.000	@ 0.000	@ 1.555
433	179	5.17C	0.00	-0.17	0.23	-0.05	0.57	0.00		1.75
	193	5.17C	0.00	0.28	-1.35	0.05	-0.53	@ 0.000		@ 0.449
434	144	7.89C	0.00	-0.06	0.76	0.06	-0.59	0.00		1.73
	180	7.89C	0.00	-0.06	0.60	-0.06	0.60	@ 0.000		@ 1.555
435	180	5.09C	0.00	0.06	0.21	-0.06	0.58	0.00		1.72
	194	5.08C	0.00	0.06	-1.37	0.05	-0.56	@ 0.000		@ 0.449
436	156	7.86C	0.00	-0.11	0.17	-0.04	0.01	0.00	0.00	0.40
	181	7.86C	0.00	0.04	0.02	0.03	0.03	@ 0.000	@ 0.000	@ 1.071
437	181	4.99C	0.00	-0.17	0.26	-0.05	0.52	0.00		1.46
	195	4.99C	0.00	0.27	-1.32	0.05	-0.52	@ 0.000		@ 0.429
438	168	7.82C	0.00	-0.06	0.17	0.06	0.01	0.00	0.00	0.40
	182	7.82C	0.00	-0.06	-0.01	-0.06	0.03	@ 0.000	@ 0.000	@ 1.071

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Job Ref : B11323

Sheet : SD / 352

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	4.97C	0.00	0.05	0.24	-0.06	0.54	0.00		1.48
	196	4.97C	0.00	0.05	-1.34	0.05	-0.54	@ 0.000		@ 1.571

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.962	17.695	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.062	0.000	-0.238
3	0.000	0.000	0.000	0.073	0.000	0.000
4	0.000	0.000	0.000	0.013	0.000	-0.022
5	0.000	0.000	0.000	-0.071	0.000	-0.019
6	0.000	0.000	0.000	0.011	0.000	-0.014
7	0.000	0.000	0.000	0.082	0.000	0.000
9	0.000	0.000	0.000	-0.076	0.000	0.014
10	0.000	0.000	0.000	0.024	0.000	0.025
11	0.000	0.000	0.000	0.122	0.000	0.036
12	0.000	0.000	0.000	0.035	0.000	0.040
13	-0.074	9.457	-0.132	0.000	0.000	0.000
14	0.069	0.000	0.820	0.040	0.000	-0.027
15	0.000	0.000	0.000	0.076	0.000	0.000
16	0.000	0.000	0.000	0.014	0.000	0.000
17	0.000	0.000	0.000	-0.072	0.000	0.000
18	-2.543	0.000	1.537	0.012	0.000	0.000
19	0.000	0.000	0.000	0.083	0.000	0.000
21	0.000	0.000	0.000	-0.077	0.000	0.000
22	-2.788	0.000	1.866	0.025	0.000	0.000
23	0.000	0.000	0.000	0.123	0.000	0.000
24	0.000	0.000	0.000	0.035	0.000	-0.016
25	1.125	10.393	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.019	0.000	-0.195
27	0.000	0.000	0.000	-0.011	0.000	0.000
28	0.000	0.000	0.000	0.037	0.000	-0.018
29	0.000	0.000	0.000	0.069	0.000	-0.015
30	0.000	0.000	0.000	-0.015	0.000	-0.011
31	0.000	0.000	0.000	-0.075	0.000	0.000
33	0.000	0.000	0.000	0.071	0.000	0.000
34	0.000	0.000	0.000	0.000	0.000	0.018
35	0.000	0.000	0.000	-0.083	0.000	0.025
36	0.000	0.000	0.000	0.049	0.000	0.029
37	-0.052	10.280	-0.039	0.000	0.000	0.000
38	0.050	0.000	0.362	0.012	0.000	-0.019
39	0.000	0.000	0.000	-0.010	0.000	0.000
40	-1.361	0.000	1.107	0.037	0.000	0.000
41	0.000	0.000	0.000	0.070	0.000	0.000
42	0.000	0.000	0.000	-0.015	0.000	0.000
43	0.000	0.000	0.000	-0.076	0.000	0.000
44	-1.520	0.000	1.584	0.000	0.000	0.000
45	0.000	0.000	0.000	0.072	0.000	0.000
47	0.000	0.000	0.000	-0.083	0.000	0.000
48	-4.699	0.000	2.337	0.049	0.000	-0.015
49	1.011	10.812	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.046	0.000	-0.189
51	0.000	0.000	0.000	0.053	0.000	0.000
52	0.000	0.000	0.000	0.000	0.000	-0.013

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Job Ref : B11323

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
53	0.000	0.000	0.000	-0.054	0.000	-0.011
55	0.000	0.000	0.000	0.055	0.000	0.000
57	0.000	0.000	0.000	-0.059	0.000	0.000
58	0.000	0.000	0.000	0.019	0.000	0.013
59	0.000	0.000	0.000	0.095	0.000	0.018
60	0.000	0.000	0.000	0.038	0.000	0.020
61	-0.052	10.450	-0.098	0.000	0.000	0.000
62	0.049	0.000	0.610	0.030	0.000	-0.019
63	0.000	0.000	0.000	0.054	0.000	0.000
65	0.000	0.000	0.000	-0.054	0.000	0.000
66	1.045	0.000	1.156	0.000	0.000	0.000
67	0.000	0.000	0.000	0.056	0.000	0.000
69	0.000	0.000	0.000	-0.058	0.000	0.000
70	1.209	0.000	1.452	0.020	0.000	0.000
71	0.000	0.000	0.000	0.096	0.000	0.000
72	0.000	0.000	0.000	0.038	0.000	-0.019
73	0.972	10.819	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.014	0.000	-0.183
76	0.000	0.000	0.000	0.029	0.000	-0.016
77	0.000	0.000	0.000	0.055	0.000	-0.014
78	0.000	0.000	0.000	0.000	0.000	-0.011
79	0.000	0.000	0.000	-0.056	0.000	0.000
81	0.000	0.000	0.000	0.056	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.014
83	0.000	0.000	0.000	-0.060	0.000	0.021
84	0.000	0.000	0.000	0.062	0.000	0.024
85	-0.050	10.459	-0.030	0.000	0.000	0.000
86	0.048	0.000	0.270	0.000	0.000	-0.018
88	-0.023	0.000	0.841	0.029	0.000	0.000
89	0.000	0.000	0.000	0.055	0.000	0.000
91	0.000	0.000	0.000	-0.056	0.000	0.000
92	-0.023	0.000	1.200	0.000	0.000	0.000
93	0.000	0.000	0.000	0.057	0.000	0.000
95	0.000	0.000	0.000	-0.060	0.000	0.000
96	0.232	0.000	2.032	0.062	0.000	-0.018
97	0.943	10.838	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.046	0.000	-0.179
99	0.000	0.000	0.000	0.053	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	-0.016
101	0.000	0.000	0.000	-0.054	0.000	-0.014
102	0.000	0.000	0.000	0.000	0.000	-0.011
103	0.000	0.000	0.000	0.056	0.000	0.000
105	0.000	0.000	0.000	-0.059	0.000	0.000
106	0.000	0.000	0.000	0.018	0.000	0.014
107	0.000	0.000	0.000	0.093	0.000	0.021
108	0.000	0.000	0.000	0.036	0.000	0.024
109	-0.049	10.454	-0.098	0.000	0.000	0.000
110	0.047	0.000	0.610	0.030	0.000	-0.018
111	0.000	0.000	0.000	0.054	0.000	0.000
113	0.000	0.000	0.000	-0.054	0.000	0.000
114	-0.023	0.000	1.149	0.000	0.000	0.000
115	0.000	0.000	0.000	0.056	0.000	0.000
117	0.000	0.000	0.000	-0.059	0.000	0.000
118	-0.022	0.000	1.432	0.019	0.000	0.000
119	0.000	0.000	0.000	0.094	0.000	0.000
120	0.000	0.000	0.000	0.036	0.000	-0.018
121	0.929	10.794	0.000	0.000	0.000	0.000
122	0.000	0.000	0.000	0.014	0.000	-0.175

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
124	0.000	0.000	0.000	0.029	0.000	-0.016
125	0.000	0.000	0.000	0.055	0.000	-0.014
126	0.000	0.000	0.000	0.000	0.000	-0.011
127	0.000	0.000	0.000	-0.056	0.000	0.000
129	0.000	0.000	0.000	0.056	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.013
131	0.000	0.000	0.000	-0.060	0.000	0.020
132	0.000	0.000	0.000	0.060	0.000	0.023
133	-0.047	10.437	-0.030	0.000	0.000	0.000
134	0.045	0.000	0.270	0.000	0.000	-0.017
136	1.375	0.000	0.835	0.029	0.000	0.000
137	0.000	0.000	0.000	0.055	0.000	0.000
139	0.000	0.000	0.000	-0.056	0.000	0.000
140	1.534	0.000	1.194	0.000	0.000	0.000
141	0.000	0.000	0.000	0.057	0.000	0.000
143	0.000	0.000	0.000	-0.060	0.000	0.000
144	4.542	0.000	1.975	0.060	0.000	-0.019
145	0.846	9.366	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.046	0.000	-0.203
147	0.000	0.000	0.000	0.053	0.000	0.000
148	0.000	0.000	0.000	0.000	0.000	-0.020
149	0.000	0.000	0.000	-0.056	0.000	-0.018
150	0.000	0.000	0.000	0.000	0.000	-0.014
151	0.000	0.000	0.000	0.057	0.000	0.000
153	0.000	0.000	0.000	-0.062	0.000	0.000
154	0.000	0.000	0.000	0.019	0.000	0.015
155	0.000	0.000	0.000	0.098	0.000	0.023
156	0.000	0.000	0.000	0.032	0.000	0.025
157	-0.066	9.100	-0.098	0.000	0.000	0.000
158	0.061	0.000	0.617	0.030	0.000	-0.024
159	0.000	0.000	0.000	0.055	0.000	0.000
161	0.000	0.000	0.000	-0.056	0.000	0.000
162	1.496	0.000	1.155	0.000	0.000	0.000
163	0.000	0.000	0.000	0.058	0.000	0.000
165	0.000	0.000	0.000	-0.062	0.000	0.000
166	1.579	0.000	1.452	0.019	0.000	0.000
167	0.000	0.000	0.000	0.098	0.000	0.000
168	0.000	0.000	0.000	0.032	0.000	-0.023
169	0.000	0.000	0.000	-0.119	0.000	0.051
170	0.000	0.000	0.000	-0.118	0.000	0.000
171	0.000	0.000	0.000	0.026	0.000	0.037
172	0.000	0.000	0.000	0.029	0.000	0.000
173	0.000	0.000	0.000	-0.102	0.000	0.028
174	0.000	0.000	0.000	-0.102	0.000	0.000
175	0.000	0.000	0.000	-0.013	0.000	0.033
176	0.000	0.000	0.000	0.019	0.000	0.000
177	0.000	0.000	0.000	-0.100	0.000	0.033
178	0.000	0.000	0.000	-0.100	0.000	0.000
179	0.000	0.000	0.000	-0.013	0.000	0.032
180	0.000	0.000	0.000	0.019	0.000	0.000
181	0.000	0.000	0.000	-0.107	0.000	0.037
182	0.000	0.000	0.000	-0.105	0.000	0.000
183	0.000	0.000	0.000	-0.141	0.000	0.048
184	1.702	0.000	3.827	-0.097	0.000	0.039
185	0.000	0.000	0.000	-0.149	0.000	0.028
186	0.000	0.000	0.000	-0.106	0.000	0.026
187	0.000	0.000	0.000	-0.139	0.000	0.016
188	2.660	0.000	5.900	-0.097	0.000	0.023

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 355

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	R _x →(kN)	R _y ↑(kN)	R _z ↗(kN)	M _x →(kN.m)	M _y ↑(kN.m)	M _z ↗(kN.m)
189	0.000	0.000	0.000	-0.138	0.000	0.024
190	0.000	0.000	0.000	-0.095	0.000	0.025
191	0.000	0.000	0.000	-0.135	0.000	0.024
192	1.517	0.000	5.748	-0.092	0.000	0.025
193	0.000	0.000	0.000	-0.135	0.000	0.022
194	0.000	0.000	0.000	-0.092	0.000	0.023
195	0.000	0.000	0.000	-0.136	0.000	0.026
196	-0.913	0.000	3.459	-0.093	0.000	0.029
Total	13.618	144.590	46.274	-0.379	0.000	-0.829

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Job Ref : B11323

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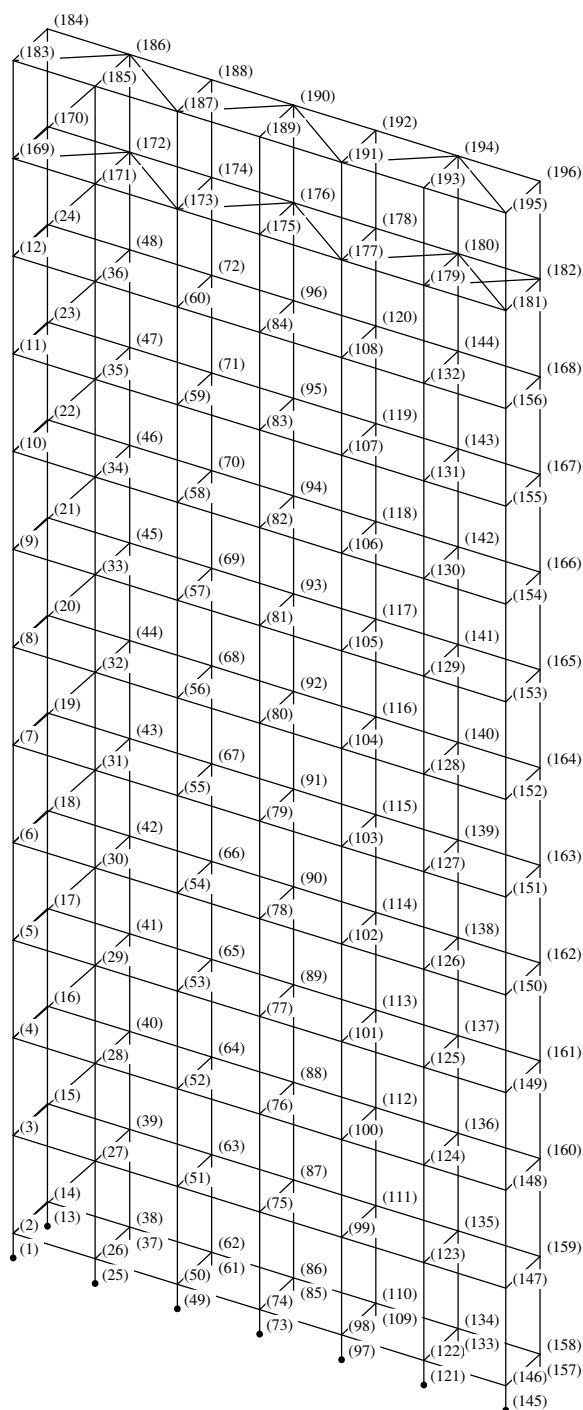
Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Facsimile 01204 363358



Section Size

48.3x3.2 CHS 3....

Omega Transom

Frame Geometry - (Last Zoom) - 3D Front View**Not to Scale**

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

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Job Ref : B11323

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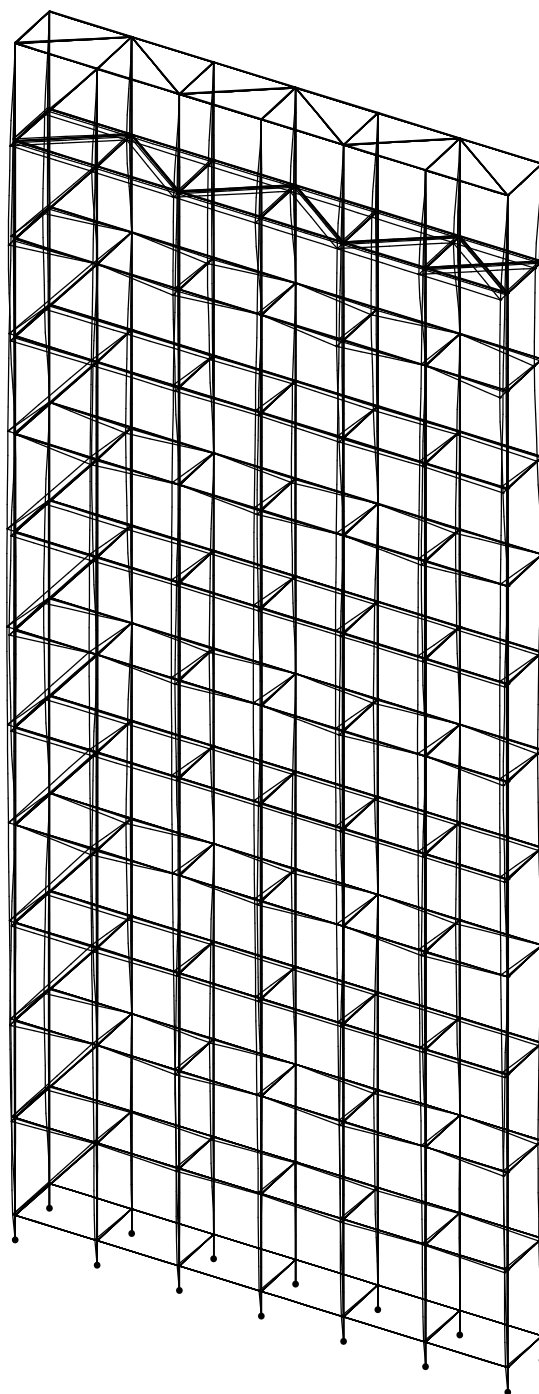
Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

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Section Size
48.3x3.2 CHS 3...
Omega Transom

Envelope (All Cases)

Deflected Shape - (Last Zoom) - 3D Front View

Not to Scale

20 Magnification

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Job Ref : B11323

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L1	Live Load
Load Group L2	Live Load
Load Group L3	Live Load
Load Group L4	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L1 + 0.25 L2 + 0.50 L3 + 0.25 L4
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L1 + 0.25 L2 + 0.50 L3 + 0.25 L4 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 0.50 L1 + 0.25 L2 + 0.50 L3 + 0.25 L4
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.065	2	2.500	0.065
3	4.500	0.065	4	6.500	0.065	5	8.500	0.065
6	10.500	0.065	7	12.500	0.065	8	14.500	0.065
9	16.500	0.065	10	18.500	0.065	11	20.500	0.065
12	22.500	0.349	13	24.500	0.480			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.004	3	0.004	4	0.004
5	0.004	6	0.004	7	0.004	8	0.004
9	0.004	10	0.004	11	0.004	12	0.004
13	0.000	14	0.003	15	0.003	16	0.003
17	0.003	18	0.003	19	0.003	20	0.003
21	0.003	22	0.003	23	0.003	24	0.003
25	0.000	26	0.007	27	0.007	28	0.007
29	0.007	30	0.007	31	0.007	32	0.007
33	0.007	34	0.007	35	0.007	36	0.007
37	0.000	38	0.005	39	0.005	40	0.005
41	0.005	42	0.005	43	0.005	44	0.005
45	0.005	46	0.005	47	0.005	48	0.005
49	0.000	50	0.005	51	0.005	52	0.005
53	0.005	54	0.005	55	0.005	56	0.005
57	0.005	58	0.005	59	0.005	60	0.005
61	0.000	62	0.005	63	0.005	64	0.005
65	0.005	66	0.005	67	0.005	68	0.005
69	0.005	70	0.005	71	0.005	72	0.005
73	0.000	74	0.005	75	0.005	76	0.005
77	0.005	78	0.005	79	0.005	80	0.005
81	0.005	82	0.005	83	0.005	84	0.005
85	0.000	86	0.005	87	0.005	88	0.005
89	0.005	90	0.005	91	0.005	92	0.005
93	0.005	94	0.005	95	0.005	96	0.005
97	0.000	98	0.005	99	0.005	100	0.005
101	0.005	102	0.005	103	0.005	104	0.005
105	0.005	106	0.005	107	0.005	108	0.005
109	0.000	110	0.005	111	0.005	112	0.005
113	0.005	114	0.005	115	0.005	116	0.005
117	0.005	118	0.005	119	0.005	120	0.005
121	0.000	122	0.005	123	0.005	124	0.005

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Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

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Date : 29 September 2010 / Ver. 2010.06

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125	0.005	126	0.005	127	0.005	128	0.005
129	0.005	130	0.005	131	0.005	132	0.005
133	0.000	134	0.005	135	0.005	136	0.005
137	0.005	138	0.005	139	0.005	140	0.005
141	0.005	142	0.005	143	0.005	144	0.005
145	0.000	146	0.003	147	0.003	148	0.003
149	0.003	150	0.003	151	0.003	152	0.003
153	0.003	154	0.003	155	0.003	156	0.003
157	0.000	158	0.003	159	0.003	160	0.003
161	0.003	162	0.003	163	0.003	164	0.003
165	0.003	166	0.003	167	0.003	168	0.003
169	0.026	170	0.021	171	0.030	172	0.023
173	0.028	174	0.023	175	0.028	176	0.023
177	0.028	178	0.023	179	0.028	180	0.023
181	0.024	182	0.021	183	0.035	184	0.030
185	0.039	186	0.032	187	0.038	188	0.032
189	0.038	190	0.032	191	0.038	192	0.032
193	0.038	194	0.032	195	0.034	196	0.030

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 0.50 L1 + 0.25 L2 + 0.50 L3 + 0.25 L4 + 1.00 N1

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.50 L1 + 0.25 L2 + 0.50 L3 + 0.25 L4 + 1.00 W2

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W5

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	1.800	0.000	0.000	26	1.800	0.500	0.000
27	1.800	2.500	0.000	28	1.800	4.500	0.000
29	1.800	6.500	0.000	30	1.800	8.500	0.000
31	1.800	10.500	0.000	32	1.800	12.500	0.000
33	1.800	14.500	0.000	34	1.800	16.500	0.000
35	1.800	18.500	0.000	36	1.800	20.500	0.000
37	1.800	0.000	1.300	38	1.800	0.500	1.300
39	1.800	2.500	1.300	40	1.800	4.500	1.300
41	1.800	6.500	1.300	42	1.800	8.500	1.300
43	1.800	10.500	1.300	44	1.800	12.500	1.300
45	1.800	14.500	1.300	46	1.800	16.500	1.300
47	1.800	18.500	1.300	48	1.800	20.500	1.300
49	3.600	0.000	0.000	50	3.600	0.500	0.000
51	3.600	2.500	0.000	52	3.600	4.500	0.000
53	3.600	6.500	0.000	54	3.600	8.500	0.000
55	3.600	10.500	0.000	56	3.600	12.500	0.000
57	3.600	14.500	0.000	58	3.600	16.500	0.000
59	3.600	18.500	0.000	60	3.600	20.500	0.000
61	3.600	0.000	1.300	62	3.600	0.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 370****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	3.600	2.500	1.300	64	3.600	4.500	1.300
65	3.600	6.500	1.300	66	3.600	8.500	1.300
67	3.600	10.500	1.300	68	3.600	12.500	1.300
69	3.600	14.500	1.300	70	3.600	16.500	1.300
71	3.600	18.500	1.300	72	3.600	20.500	1.300
73	5.400	0.000	0.000	74	5.400	0.500	0.000
75	5.400	2.500	0.000	76	5.400	4.500	0.000
77	5.400	6.500	0.000	78	5.400	8.500	0.000
79	5.400	10.500	0.000	80	5.400	12.500	0.000
81	5.400	14.500	0.000	82	5.400	16.500	0.000
83	5.400	18.500	0.000	84	5.400	20.500	0.000
85	5.400	0.000	1.300	86	5.400	0.500	1.300
87	5.400	2.500	1.300	88	5.400	4.500	1.300
89	5.400	6.500	1.300	90	5.400	8.500	1.300
91	5.400	10.500	1.300	92	5.400	12.500	1.300
93	5.400	14.500	1.300	94	5.400	16.500	1.300
95	5.400	18.500	1.300	96	5.400	20.500	1.300
97	7.200	0.000	0.000	98	7.200	0.500	0.000
99	7.200	2.500	0.000	100	7.200	4.500	0.000
101	7.200	6.500	0.000	102	7.200	8.500	0.000
103	7.200	10.500	0.000	104	7.200	12.500	0.000
105	7.200	14.500	0.000	106	7.200	16.500	0.000
107	7.200	18.500	0.000	108	7.200	20.500	0.000
109	7.200	0.000	1.300	110	7.200	0.500	1.300
111	7.200	2.500	1.300	112	7.200	4.500	1.300
113	7.200	6.500	1.300	114	7.200	8.500	1.300
115	7.200	10.500	1.300	116	7.200	12.500	1.300
117	7.200	14.500	1.300	118	7.200	16.500	1.300
119	7.200	18.500	1.300	120	7.200	20.500	1.300
121	9.000	0.000	0.000	122	9.000	0.500	0.000
123	9.000	2.500	0.000	124	9.000	4.500	0.000
125	9.000	6.500	0.000	126	9.000	8.500	0.000
127	9.000	10.500	0.000	128	9.000	12.500	0.000
129	9.000	14.500	0.000	130	9.000	16.500	0.000
131	9.000	18.500	0.000	132	9.000	20.500	0.000
133	9.000	0.000	1.300	134	9.000	0.500	1.300
135	9.000	2.500	1.300	136	9.000	4.500	1.300
137	9.000	6.500	1.300	138	9.000	8.500	1.300
139	9.000	10.500	1.300	140	9.000	12.500	1.300
141	9.000	14.500	1.300	142	9.000	16.500	1.300
143	9.000	18.500	1.300	144	9.000	20.500	1.300
145	10.800	0.000	0.000	146	10.800	0.500	0.000
147	10.800	2.500	0.000	148	10.800	4.500	0.000
149	10.800	6.500	0.000	150	10.800	8.500	0.000
151	10.800	10.500	0.000	152	10.800	12.500	0.000
153	10.800	14.500	0.000	154	10.800	16.500	0.000
155	10.800	18.500	0.000	156	10.800	20.500	0.000
157	10.800	0.000	1.300	158	10.800	0.500	1.300
159	10.800	2.500	1.300	160	10.800	4.500	1.300
161	10.800	6.500	1.300	162	10.800	8.500	1.300
163	10.800	10.500	1.300	164	10.800	12.500	1.300
165	10.800	14.500	1.300	166	10.800	16.500	1.300
167	10.800	18.500	1.300	168	10.800	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	1.800	22.500	0.000	172	1.800	22.500	1.300
173	3.600	22.500	0.000	174	3.600	22.500	1.300
175	5.400	22.500	0.000	176	5.400	22.500	1.300
177	7.200	22.500	0.000	178	7.200	22.500	1.300
179	9.000	22.500	0.000	180	9.000	22.500	1.300
181	10.800	22.500	0.000	182	10.800	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	1.800	24.500	0.000	186	1.800	24.500	1.300
187	3.600	24.500	0.000	188	3.600	24.500	1.300
189	5.400	24.500	0.000	190	5.400	24.500	1.300
191	7.200	24.500	0.000	192	7.200	24.500	1.300
193	9.000	24.500	0.000	194	9.000	24.500	1.300
195	10.800	24.500	0.000	196	10.800	24.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 371****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties**

Members 1-10, 16-25, 31-40, 46-55, 61-100, 106-129, 135-144, 150-177, 182-189,
194-201, 206-213, 218-225, 230-237, 242-249, 254-309, 312-315, 318-321,
324-327, 330-333, 336-339, 342-345, 348-373, 381-392 and 400-454

M	...	...	48.3x3.2	CHS	3.56	[S 355]		
A	4.53E-4		Ix	11.59E-8		Iy	11.59E-8	J 23.17E-8
E	205.0E6		G	78.85E6				

Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

M	...	...	Omega Transom	[]	E 210E6	G 78E6		
A	7.02E-4		Ix	36.1E-8		Iy	54.0E-8	J 72.21E-8

Member Loading**Members 2 and 17**

W1	PZ	-000.013	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.072	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.014	0.000	(kN,m)
W5	PX	-000.074	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 3 and 18

W1	PZ	-000.027	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.146	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.028	0.000	(kN,m)
W5	PX	-000.153	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 4 and 19

W1	PZ	-000.028	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.152	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.158	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 5 and 20

W1	PZ	-000.029	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.157	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.030	0.000	(kN,m)
W5	PX	-000.163	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 7 and 22

W1	PZ	-000.013	0.000	(kN,m)
W4	PZ	-000.072	0.000	(kN,m)

Members 8 and 23

W1	PZ	-000.027	0.000	(kN,m)
W4	PZ	-000.146	0.000	(kN,m)

Members 9 and 24

W1	PZ	-000.028	0.000	(kN,m)
W4	PZ	-000.152	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 372****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 10 and 25**

W1 PZ	-000.029	0.000	(kN,m)
W4 PZ	-000.157	0.000	(kN,m)

**Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341 and 346-347**

D1 PY	-000.035	0.025	(kN,m)
D1 PY	-000.035	1.275	(kN,m)

Members 32, 47, 92, 121 and 136

W1 PZ	-000.009	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.054	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.009	0.000	(kN,m)
W5 PX	-000.054	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 33, 48, 93, 122 and 137

W1 PZ	-000.020	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.111	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.112	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 34, 49, 94, 123 and 138

W1 PZ	-000.021	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.115	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.021	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 35, 50, 95, 124 and 139

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.118	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.022	0.000	(kN,m)
W5 PX	-000.119	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 37, 52, 97, 126 and 141

W1 PZ	-000.009	0.000	(kN,m)
W4 PZ	-000.054	0.000	(kN,m)

Members 38, 53, 98, 127 and 142

W1 PZ	-000.020	0.000	(kN,m)
W4 PZ	-000.111	0.000	(kN,m)

Members 39, 54, 99, 128 and 143

W1 PZ	-000.021	0.000	(kN,m)
W4 PZ	-000.115	0.000	(kN,m)

Members 40, 55, 100, 129 and 144

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.118	0.000	(kN,m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY	-000.143	0.025	(kN,m)
D1 PY	-000.143	1.775	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 373****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359, 361-371, 387-392 and 406-411

D1 PY -000.090 0.025 (kN,m)
D1 PY -000.090 1.775 (kN,m)

Members 170 and 182

W1 PZ -000.029 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.161 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.030 0.000 (kN,m)
W5 PX -000.167 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 171 and 183

W1 PZ -000.030 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.165 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.031 0.000 (kN,m)
W5 PX -000.172 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 172 and 184

W1 PZ -000.031 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.170 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.032 0.000 (kN,m)
W5 PX -000.176 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 173 and 185

W1 PZ -000.032 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.175 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.033 0.000 (kN,m)
W5 PX -000.181 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 174 and 186

W1 PZ -000.029 0.000 (kN,m)
W4 PZ -000.161 0.000 (kN,m)

Members 175 and 187

W1 PZ -000.030 0.000 (kN,m)
W4 PZ -000.165 0.000 (kN,m)

Members 176 and 188

W1 PZ -000.031 0.000 (kN,m)
W4 PZ -000.170 0.000 (kN,m)

Members 177 and 189

W1 PZ -000.032 0.000 (kN,m)
W4 PZ -000.175 0.000 (kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ -000.022 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.121 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.022 0.000 (kN,m)
W5 PX -000.122 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 374****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 195, 207, 219, 231 and 243**

W1 PZ	-000.023	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.125	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.125	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.023	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.128	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.129	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.024	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.131	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.024	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.121	0.000	(kN,m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.023	0.000	(kN,m)
W4 PZ	-000.125	0.000	(kN,m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.023	0.000	(kN,m)
W4 PZ	-000.128	0.000	(kN,m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.024	0.000	(kN,m)
W4 PZ	-000.131	0.000	(kN,m)

Members 306 and 312

W1 PZ	-000.033	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.179	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.034	0.000	(kN,m)
W5 PX	-000.186	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 307 and 313

W1 PZ	-000.034	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.184	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.190	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 308 and 314

W1 PZ	-000.033	0.000	(kN,m)
W4 PZ	-000.179	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 375****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 309 and 315**

W1	PZ	-000.034	0.000	(kN,m)
W4	PZ	-000.184	0.000	(kN,m)

Members 318, 324, 330, 336 and 342

W1	PZ	-000.025	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.135	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.136	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1	PZ	-000.025	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.138	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.139	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1	PZ	-000.025	0.000	(kN,m)
W4	PZ	-000.135	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1	PZ	-000.025	0.000	(kN,m)
W4	PZ	-000.138	0.000	(kN,m)

Members 374-380

D1	PY	-000.431	0.025	(kN,m)
D1	PY	-000.354	1.275	(kN,m)
L2	PY	-001.519	0.025	(kN,m)
L4	PY	-001.519	1.275	(kN,m)
L6	PY	-002.025	0.025	(kN,m)
L8	PY	-002.025	1.275	(kN,m)
G2	PY	-003.038	0.025	(kN,m)
G4	PY	-003.038	1.275	(kN,m)

Member 381

D1	PY	-000.211	0.025	(kN,m)
D1	PY	-000.211	1.775	(kN,m)

Members 382-386

D1	PY	-000.159	0.025	(kN,m)
D1	PY	-000.159	1.775	(kN,m)

Members 393-399

D1	PY	-000.431	0.025	(kN,m)
D1	PY	-000.354	1.275	(kN,m)
L1	PY	-001.519	0.025	(kN,m)
L3	PY	-001.519	1.275	(kN,m)
L5	PY	-002.025	0.025	(kN,m)
L7	PY	-002.025	1.275	(kN,m)
G1	PY	-003.038	0.025	(kN,m)
G3	PY	-003.038	1.275	(kN,m)

Member 400

D1	PY	-000.211	0.025	(kN,m)
D1	PY	-000.211	1.775	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

Members 401-404

D1	PY	-000.159	0.025	(kN,m)
D1	PY	-000.159	1.775	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 376****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member 405**

D1 PY	-000.159	0.025	(kN,m)
D1 PY	-000.159	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
N1 PZ	-000.300	1.775	(kN,m)

Members 412 and 416

W1 PZ	-000.034	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.195	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 413 and 417

W1 PZ	-000.156	0.000	(kN,m)
W1 PZ	-000.160	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.640	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.655	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.052	0.000	(kN,m)
W2 PX	-000.053	2.000	(kN,m)
W5 PX	-000.276	0.000	(kN,m)
W5 PX	-000.282	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 414 and 418

W1 PZ	-000.034	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)

Members 415 and 419

W1 PZ	-000.156	0.000	(kN,m)
W4 PZ	-000.072	0.000	(kN,m)
W1 PZ	-000.640	2.000	(kN,m)
W4 PZ	-000.655	2.000	(kN,m)

Members 420, 424, 428, 432 and 436

W1 PZ	-000.026	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.026	0.000	(kN,m)
W5 PX	-000.142	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 421, 425, 429 and 433

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.583	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.596	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.042	0.000	(kN,m)
W2 PX	-000.043	2.000	(kN,m)
W5 PX	-000.146	0.000	(kN,m)
W5 PX	-000.149	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 377****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W8 PX -000.000 2.000 (kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ -000.026 0.000 (kN,m)

W4 PZ -000.141 0.000 (kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ -000.146 0.000 (kN,m)

W4 PZ -000.583 0.000 (kN,m)

W1 PZ -000.149 2.000 (kN,m)

W4 PZ -000.596 2.000 (kN,m)

Member 437

W1 PZ -000.146 0.000 (kN,m)

W1 PZ -000.149 2.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.583 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W3 PZ -000.000 2.000 (kN,m)

W4 PZ -000.596 2.000 (kN,m)

W6 PZ -000.000 2.000 (kN,m)

W2 PX -000.042 0.000 (kN,m)

W2 PX -000.043 2.000 (kN,m)

W5 PX -000.222 0.000 (kN,m)

W5 PX -000.227 2.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W7 PX -000.000 2.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

W8 PX -000.000 2.000 (kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major			End 2 torsion-minor-major			O Relased			® Fixed			
11	ROO	ROO		12	ROO	ROO	13	ROO	ROO		14	ROO	ROO
15	ROO	ROO		26	ROO	ROO	27	ROO	ROO		28	ROO	ROO
29	ROO	ROO		30	ROO	ROO	41	ROO	ROO		42	ROO	ROO
43	ROO	ROO		44	ROO	ROO	45	ROO	ROO		56	ROO	ROO
57	ROO	ROO		58	ROO	ROO	59	ROO	ROO		60	ROO	ROO
61	ROO	ROO		62	ROO	ROO	63	ROO	ROO		64	ROO	ROO
65	ROO	ROO		66	ROO	ROO	67	ROO	ROO		68	ROO	ROO
69	ROO	ROO		70	ROO	ROO	71	ROO	ROO		72	ROO	ROO
73	ROO	ROO		74	ROO	ROO	75	ROO	ROO		76	ROO	ROO
77	ROO	ROO		78	ROO	ROO	79	ROO	ROO		80	ROO	ROO
81	ROO	ROO		82	ROO	ROO	83	ROO	ROO		84	ROO	ROO
85	ROO	ROO		86	ROO	ROO	87	ROO	ROO		88	ROO	ROO
89	ROO	ROO		90	ROO	ROO	101	ROO	ROO		102	ROO	ROO
103	ROO	ROO		104	ROO	ROO	105	ROO	ROO		106	ROO	ROO
107	ROO	ROO		108	ROO	ROO	109	ROO	ROO		110	ROO	ROO
111	ROO	ROO		112	ROO	ROO	113	ROO	ROO		114	ROO	ROO
115	ROO	ROO		116	ROO	ROO	117	ROO	ROO		118	ROO	ROO
119	ROO	ROO		130	ROO	ROO	131	ROO	ROO		132	ROO	ROO
133	ROO	ROO		134	ROO	ROO	145	ROO	ROO		146	ROO	ROO
147	ROO	ROO		148	ROO	ROO	149	ROO	ROO		150	ROO	ROO
151	ROO	ROO		152	ROO	ROO	153	ROO	ROO		154	ROO	ROO
155	ROO	ROO		156	ROO	ROO	157	ROO	ROO		158	ROO	ROO
159	ROO	ROO		160	ROO	ROO	161	ROO	ROO		162	ROO	ROO
163	ROO	ROO		164	ROO	ROO	165	ROO	ROO		166	ROO	ROO
167	ROO	ROO		168	ROO	ROO	169	ROO	ROO		178	ROO	ROO
179	ROO	ROO		180	ROO	ROO	181	ROO	ROO		190	ROO	ROO
191	ROO	ROO		192	ROO	ROO	193	ROO	ROO		202	ROO	ROO
203	ROO	ROO		204	ROO	ROO	205	ROO	ROO		214	ROO	ROO
215	ROO	ROO		216	ROO	ROO	217	ROO	ROO		226	ROO	ROO
227	ROO	ROO		228	ROO	ROO	229	ROO	ROO		238	ROO	ROO
239	ROO	ROO		240	ROO	ROO	241	ROO	ROO		250	ROO	ROO
251	ROO	ROO		252	ROO	ROO	253	ROO	ROO		254	ROO	ROO
255	ROO	ROO		256	ROO	ROO	257	ROO	ROO		258	ROO	ROO
259	ROO	ROO		260	ROO	ROO	261	ROO	ROO		262	ROO	ROO
263	ROO	ROO		264	ROO	ROO	265	ROO	ROO		266	ROO	ROO
267	ROO	ROO		268	ROO	ROO	269	ROO	ROO		270	ROO	ROO
271	ROO	ROO		272	ROO	ROO	273	ROO	ROO		274	ROO	ROO
275	ROO	ROO		276	ROO	ROO	277	ROO	ROO		278	ROO	ROO
279	ROO	ROO		280	ROO	ROO	281	ROO	ROO		282	ROO	ROO

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 378****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

283	ROO	ROO
287	ROO	ROO
291	ROO	ROO
295	ROO	ROO
299	ROO	ROO
303	ROO	ROO
311	ROO	ROO
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450	ROO	ROO
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Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0087.100 0000.000 0104.050

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 379

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.28	0.28	-0.03	0.00	0.42	0.42
2	-2.76	-0.12	0.01	2.77	-0.03	0.00	0.12	0.12
3	-3.75	-0.38	-7.61	8.50	-0.04	0.01	0.01	0.04
4	-5.05	-0.51	-10.46	11.63	-0.01	-0.01	0.02	0.03
5	-6.41	-0.54	-7.49	9.87	0.04	-0.01	0.02	0.04
6	-7.60	-0.49	0.04	7.62	-0.01	0.01	0.02	0.02
7	-8.46	-0.51	-8.07	11.70	-0.04	0.00	0.01	0.04
8	-8.85	-0.60	-11.31	14.37	0.00	-0.01	0.00	0.01
9	-8.69	-0.68	-8.14	11.93	0.04	-0.01	-0.01	0.04
10	-7.94	-0.76	0.05	7.98	0.01	-0.01	-0.02	0.02
11	-6.61	-0.83	-9.10	11.28	-0.05	-0.01	-0.03	0.06
12	-4.75	-0.90	-12.89	13.76	0.02	-0.02	-0.03	0.04
13	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
14	0.00	-0.02	0.00	0.02	-0.02	0.00	0.01	0.02
15	0.07	-0.10	-7.61	7.62	-0.04	0.00	0.00	0.04
16	0.06	-0.18	-10.46	10.47	-0.01	0.00	0.00	0.01
17	0.07	-0.25	-7.49	7.49	0.04	0.00	0.00	0.04
18	0.00	-0.32	0.00	0.32	-0.01	0.00	0.00	0.01
19	0.07	-0.39	-8.07	8.08	-0.04	0.00	0.00	0.04
20	0.07	-0.45	-11.31	11.32	0.00	0.00	0.00	0.01
21	0.07	-0.51	-8.14	8.16	0.04	-0.01	0.00	0.04
22	0.00	-0.57	0.00	0.57	0.01	-0.01	-0.01	0.01
23	0.11	-0.62	-9.10	9.12	-0.05	-0.01	-0.01	0.05
24	0.09	-0.68	-12.89	12.90	0.02	-0.01	0.01	0.02
25	0.00	0.00	0.09	0.09	-0.01	0.00	0.41	0.41
26	-2.66	0.05	0.01	2.66	-0.01	0.00	0.09	0.09
27	-3.65	0.30	-2.04	4.19	0.01	-0.01	0.01	0.01
28	-4.96	0.40	0.02	4.98	-0.02	-0.01	0.01	0.03
29	-6.34	0.39	-7.66	9.95	-0.04	-0.01	0.01	0.04
30	-7.55	-0.39	-10.35	12.82	0.01	-0.01	0.01	0.02
31	-8.42	-0.46	-7.55	11.32	0.04	-0.01	0.01	0.04
32	-8.83	-0.53	0.06	8.85	0.01	-0.01	0.00	0.01
33	-8.69	-0.59	-8.08	11.88	-0.04	0.00	-0.01	0.04
34	-7.96	-0.68	-11.06	13.64	0.00	0.00	-0.01	0.01
35	-6.65	-0.93	-8.09	10.51	0.04	-0.01	-0.02	0.05
36	-4.81	-1.17	0.02	4.95	-0.01	-0.01	-0.02	0.03
37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
38	0.00	-0.02	0.00	0.02	-0.01	0.00	0.01	0.01
39	0.07	-0.12	-2.04	2.05	0.01	0.00	0.00	0.01
40	0.00	-0.21	0.00	0.21	-0.02	0.00	0.00	0.02
41	0.07	-0.29	-7.66	7.66	-0.04	-0.01	0.00	0.04
42	0.00	-0.37	-10.35	10.36	0.01	-0.01	0.00	0.02
43	0.07	-0.45	-7.55	7.57	0.04	-0.01	0.00	0.04
44	0.00	-0.52	0.00	0.52	0.01	-0.01	0.00	0.01
45	0.07	-0.59	-8.08	8.10	-0.04	-0.01	0.00	0.04
46	0.00	-0.66	-11.06	11.08	0.00	-0.02	0.00	0.02
47	0.11	-0.71	-8.09	8.12	0.04	-0.02	0.00	0.05
48	0.00	-0.77	0.00	0.77	-0.01	-0.02	0.01	0.03
49	0.00	0.00	0.21	0.21	-0.02	0.00	0.40	0.40
50	-2.57	-0.03	0.00	2.57	-0.02	0.00	0.09	0.09
51	-3.66	-0.13	-5.67	6.75	-0.03	0.00	0.00	0.03
52	-4.97	-0.22	-7.70	9.17	0.00	0.00	0.01	0.01
53	-6.35	-0.32	-5.56	8.45	0.03	0.00	0.01	0.03
54	-7.56	-0.40	0.04	7.57	0.00	0.00	0.01	0.01
55	-8.43	-0.49	-5.92	10.32	-0.03	0.00	0.00	0.03
56	-8.84	-0.56	-8.17	12.06	0.00	0.00	0.00	0.00
57	-8.70	-0.64	-5.92	10.54	0.03	0.00	0.00	0.03
58	-7.97	-0.71	0.05	8.00	-0.01	0.00	-0.01	0.01

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 380

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-6.66	-0.77	-7.83	10.31	-0.04	0.00	-0.01	0.04
60	-4.82	-0.84	-11.77	12.75	-0.01	0.00	-0.01	0.02
61	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
62	0.00	-0.03	0.00	0.03	-0.02	0.00	0.01	0.02
63	0.07	-0.12	-5.67	5.67	-0.03	0.00	0.00	0.03
64	0.00	-0.21	-7.70	7.70	0.00	0.00	0.00	0.00
65	0.07	-0.30	-5.56	5.57	0.03	0.00	0.00	0.03
66	0.00	-0.38	0.00	0.38	0.00	0.00	0.00	0.00
67	0.07	-0.46	-5.92	5.94	-0.03	0.00	0.00	0.03
68	0.00	-0.54	-8.17	8.19	0.00	-0.01	0.00	0.01
69	0.07	-0.60	-5.92	5.95	0.03	-0.01	0.00	0.03
70	0.00	-0.67	0.00	0.67	-0.01	-0.01	0.00	0.01
71	0.11	-0.73	-7.83	7.87	-0.04	-0.01	0.00	0.04
72	0.00	-0.79	-11.77	11.80	-0.01	-0.01	0.01	0.02
73	0.00	0.00	0.07	0.07	-0.01	0.00	0.39	0.39
74	-2.50	-0.03	0.00	2.50	-0.01	0.00	0.09	0.09
75	-3.68	-0.13	-1.55	3.99	0.00	0.00	0.01	0.01
76	-4.98	-0.22	0.02	4.99	-0.01	0.00	0.01	0.02
77	-6.36	-0.32	-5.87	8.66	-0.03	0.00	0.01	0.03
78	-7.57	-0.40	-7.99	11.02	0.00	0.00	0.01	0.01
79	-8.44	-0.49	-5.80	10.25	0.03	0.00	0.01	0.03
80	-8.85	-0.57	0.06	8.87	0.00	-0.01	0.00	0.01
81	-8.71	-0.64	-6.11	10.66	-0.03	-0.01	0.00	0.03
82	-7.98	-0.71	-8.39	11.60	0.00	-0.01	-0.01	0.01
83	-6.67	-0.77	-5.97	8.98	0.03	-0.01	-0.01	0.04
84	-4.83	-0.84	0.02	4.90	-0.02	-0.01	-0.02	0.03
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	-0.03	0.00	0.03	0.00	0.00	0.01	0.01
87	0.07	-0.12	-1.55	1.56	0.00	0.00	0.00	0.00
88	0.00	-0.21	0.00	0.21	-0.02	0.00	0.00	0.02
89	0.07	-0.30	-5.87	5.88	-0.03	-0.01	0.00	0.03
90	0.00	-0.38	-7.99	8.00	0.00	-0.01	0.00	0.01
91	0.07	-0.46	-5.80	5.82	0.03	-0.01	0.00	0.03
92	0.00	-0.53	0.00	0.53	0.00	-0.01	0.00	0.01
93	0.07	-0.60	-6.11	6.14	-0.03	-0.01	0.00	0.03
94	0.00	-0.67	-8.39	8.42	0.00	-0.02	0.00	0.02
95	0.11	-0.73	-5.97	6.01	0.03	-0.02	0.00	0.04
96	0.00	-0.78	0.00	0.78	-0.02	-0.02	0.01	0.03
97	0.00	0.00	0.21	0.21	-0.02	0.00	0.38	0.38
98	-2.45	-0.03	0.00	2.45	-0.02	0.00	0.09	0.09
99	-3.69	-0.13	-5.67	6.77	-0.03	0.00	0.01	0.03
100	-4.99	-0.22	-7.70	9.18	0.00	0.00	0.01	0.01
101	-6.36	-0.32	-5.56	8.46	0.03	0.00	0.01	0.03
102	-7.58	-0.40	0.04	7.59	0.00	0.00	0.01	0.01
103	-8.45	-0.49	-5.92	10.33	-0.03	0.00	0.01	0.03
104	-8.86	-0.57	-8.17	12.07	0.00	0.00	0.00	0.00
105	-8.72	-0.64	-5.90	10.55	0.03	0.00	0.00	0.03
106	-7.99	-0.71	0.05	8.02	-0.01	0.00	-0.01	0.01
107	-6.68	-0.78	-8.25	10.64	-0.04	0.00	-0.01	0.05
108	-4.84	-0.84	-12.65	13.57	-0.01	0.00	-0.02	0.02
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.03	0.00	0.03	-0.02	0.00	0.01	0.02
111	0.07	-0.12	-5.67	5.67	-0.03	0.00	0.00	0.03
112	0.00	-0.21	-7.70	7.71	0.00	0.00	0.00	0.00
113	0.07	-0.30	-5.56	5.57	0.03	0.00	0.00	0.03
114	0.00	-0.38	0.00	0.38	0.00	0.00	0.00	0.00
115	0.07	-0.46	-5.92	5.94	-0.03	-0.01	0.00	0.03
116	0.00	-0.54	-8.17	8.19	0.00	-0.01	0.00	0.01

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Job Ref : B11323

Sheet : SD / 381

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.07	-0.61	-5.90	5.93	0.03	-0.01	0.00	0.03
118	0.00	-0.67	0.00	0.67	-0.01	-0.01	0.00	0.01
119	0.11	-0.73	-8.25	8.28	-0.04	-0.01	0.00	0.05
120	0.00	-0.79	-12.65	12.67	-0.01	-0.01	0.01	0.02
121	0.00	0.00	0.07	0.07	-0.01	0.00	0.37	0.37
122	-2.41	-0.03	0.00	2.41	-0.01	0.00	0.08	0.08
123	-3.69	-0.13	-1.55	4.01	0.00	0.00	0.01	0.01
124	-4.99	-0.22	0.02	5.00	-0.01	0.00	0.01	0.02
125	-6.37	-0.31	-5.87	8.66	-0.03	-0.01	0.01	0.03
126	-7.58	-0.40	-7.99	11.02	0.00	-0.01	0.01	0.01
127	-8.45	-0.48	-5.80	10.26	0.03	-0.01	0.01	0.03
128	-8.86	-0.56	0.06	8.88	0.00	-0.01	0.00	0.01
129	-8.72	-0.63	-6.08	10.65	-0.03	-0.01	0.00	0.03
130	-7.99	-0.70	-8.34	11.57	0.00	-0.01	-0.01	0.01
131	-6.68	-0.77	-5.89	8.94	0.03	-0.01	-0.01	0.04
132	-4.85	-0.83	0.02	4.92	-0.03	-0.01	-0.02	0.03
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.02	0.00	0.02	0.00	0.00	0.01	0.01
135	0.07	-0.12	-1.55	1.56	0.00	0.00	0.00	0.00
136	0.00	-0.21	0.00	0.21	-0.02	-0.01	0.00	0.02
137	0.07	-0.30	-5.87	5.87	-0.03	-0.01	0.00	0.03
138	0.00	-0.38	-7.99	8.00	0.00	-0.01	0.00	0.01
139	0.07	-0.46	-5.80	5.82	0.03	-0.01	0.00	0.03
140	0.00	-0.53	0.00	0.53	0.00	-0.01	0.00	0.01
141	0.07	-0.60	-6.08	6.11	-0.03	-0.02	0.00	0.03
142	0.00	-0.66	-8.34	8.36	0.00	-0.02	0.00	0.02
143	0.11	-0.72	-5.89	5.94	0.03	-0.02	0.00	0.04
144	0.00	-0.77	0.00	0.77	-0.03	-0.02	0.01	0.04
145	0.00	0.00	0.21	0.21	-0.02	0.00	0.36	0.36
146	-2.40	-0.02	0.00	2.40	-0.02	0.00	0.10	0.11
147	-3.70	-0.10	-5.73	6.82	-0.03	0.00	0.01	0.03
148	-5.00	-0.17	-7.86	9.32	0.00	0.00	0.02	0.02
149	-6.37	-0.24	-5.62	8.50	0.03	0.00	0.02	0.03
150	-7.58	-0.31	0.04	7.59	0.00	0.00	0.01	0.01
151	-8.46	-0.38	-6.02	10.39	-0.03	0.00	0.01	0.03
152	-8.87	-0.44	-8.41	12.22	0.00	0.00	0.00	0.00
153	-8.72	-0.50	-5.98	10.59	0.03	0.00	0.00	0.03
154	-8.00	-0.56	0.05	8.02	-0.01	0.00	-0.01	0.01
155	-6.68	-0.62	-9.11	11.31	-0.05	0.00	-0.02	0.05
156	-4.85	-0.67	-14.37	15.18	-0.02	0.00	-0.02	0.03
157	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
158	0.00	-0.02	0.00	0.02	-0.02	0.00	0.01	0.02
159	0.07	-0.09	-5.73	5.73	-0.03	0.00	0.00	0.03
160	-0.03	-0.16	-7.86	7.87	0.00	0.00	0.00	0.00
161	0.07	-0.23	-5.62	5.63	0.03	0.00	0.00	0.03
162	0.00	-0.30	0.00	0.30	0.00	0.00	0.00	0.00
163	0.07	-0.36	-6.02	6.03	-0.03	0.00	0.00	0.03
164	-0.04	-0.42	-8.41	8.42	0.00	-0.01	0.00	0.01
165	0.07	-0.48	-5.98	6.00	0.03	-0.01	0.00	0.03
166	0.00	-0.53	0.00	0.53	-0.01	-0.01	0.00	0.01
167	0.11	-0.59	-9.11	9.13	-0.05	-0.01	0.00	0.05
168	-0.11	-0.64	-14.37	14.38	-0.02	-0.01	0.01	0.02
169	-2.49	-0.96	-9.62	9.99	0.05	-0.02	-0.04	0.07
170	-2.34	-0.73	-9.62	9.93	0.05	-0.01	-0.01	0.05
171	-2.55	-1.36	-10.24	10.64	-0.02	0.02	-0.03	0.04
172	-2.35	-0.83	-10.25	10.54	-0.02	-0.02	0.00	0.03
173	-2.55	-0.89	-10.94	11.27	0.04	0.00	-0.02	0.05
174	-2.35	-0.84	-10.95	11.23	0.04	-0.01	0.00	0.04

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Job Ref : B11323

Sheet : SD / 382

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Date : 29 September 2010 / Ver. 2010.06

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-2.55	-0.89	-11.61	11.92	0.00	-0.01	-0.02	0.02
176	-2.35	-0.84	-11.61	11.87	0.00	-0.02	0.00	0.02
177	-2.55	-0.89	-12.32	12.61	0.05	0.00	-0.02	0.05
178	-2.35	-0.84	-12.32	12.57	0.05	-0.01	0.00	0.05
179	-2.56	-0.88	-13.01	13.29	0.00	-0.01	-0.02	0.03
180	-2.35	-0.83	-13.01	13.25	0.00	-0.02	0.00	0.03
181	-2.56	-0.72	-13.75	14.00	0.06	0.00	-0.03	0.06
182	-2.34	-0.69	-13.75	13.96	0.05	-0.01	0.00	0.05
183	-0.10	-0.99	-0.01	1.00	0.04	-0.02	-0.04	0.06
184	0.00	-0.77	0.00	0.77	0.04	-0.01	-0.03	0.05
185	-0.12	-1.45	-0.12	1.46	0.05	0.02	-0.02	0.06
186	-0.03	-0.86	-0.12	0.87	0.04	-0.02	-0.02	0.05
187	-0.06	-0.92	-0.03	0.93	0.05	0.00	-0.01	0.05
188	0.00	-0.87	0.00	0.87	0.05	-0.01	-0.01	0.05
189	-0.05	-0.92	-0.12	0.93	0.05	-0.01	-0.02	0.06
190	-0.02	-0.87	-0.11	0.88	0.05	-0.02	-0.02	0.06
191	-0.03	-0.92	-0.03	0.93	0.05	0.00	-0.01	0.06
192	0.00	-0.88	0.00	0.88	0.05	-0.01	-0.02	0.05
193	-0.03	-0.92	-0.13	0.92	0.06	-0.01	-0.01	0.06
194	-0.01	-0.87	-0.12	0.88	0.05	-0.03	-0.01	0.06
195	0.05	-0.75	-0.02	0.75	0.06	0.00	-0.02	0.06
196	0.00	-0.72	0.00	0.72	0.06	-0.01	-0.02	0.06

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	19.51C	0.00	-1.00	0.00	0.00	0.00		0.00	0.34
	2	19.51C	0.00	-1.00	0.00	-0.50	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	12.07C	0.00	-0.03	0.30	-0.06	-0.23	0.00	0.00	0.63
	3	12.07C	0.00	0.04	0.23	0.02	0.23	@ 0.000	@ 0.000	@ 0.424
3	3	6.17C	0.00	-0.18	0.22	0.03	-0.07	0.00	0.00	0.32
	4	6.17C	0.00	-0.03	0.08	-0.02	0.08	@ 0.000	@ 0.000	@ 1.495
4	4	4.53C	0.00	-0.18	0.07	0.02	0.09	0.00	0.00	0.35
	5	4.53C	0.00	-0.02	-0.08	-0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
5	5	4.42C	0.00	-0.18	-0.09	0.02	0.24	0.00	0.00	0.78
	6	4.42C	0.00	-0.02	-0.25	-0.02	-0.25	@ 0.000	@ 0.000	@ 1.535
6	13	3.74C	0.00	0.06	-0.11	0.00	0.00	0.00	0.00	0.04
	14	3.74C	0.00	0.06	-0.11	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
7	14	3.62C	0.00	0.00	0.31	-0.01	-0.24	0.00	0.00	0.68
	15	3.62C	0.00	0.00	0.23	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
8	15	3.55C	0.00	0.00	0.22	0.00	-0.07	0.00	0.00	0.33
	16	3.55C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
9	16	3.41C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.35
	17	3.41C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
10	17	3.21C	0.00	0.00	-0.09	0.00	0.24	0.00	0.00	0.79
	18	3.21C	0.00	0.00	-0.25	0.00	-0.25	@ 0.000	@ 0.000	@ 1.535

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	11.45T	0.00	-1.06	0.00	0.00	0.00		0.00	0.36
	26	11.45T	0.00	-1.06	0.00	-0.53	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	11.67T	0.00	-0.05	0.14	-0.04	-0.06	0.00	0.00	0.39
	27	11.67T	0.00	0.03	0.07	0.01	0.07	@ 0.000	@ 0.000	@ 0.788
18	27	4.87T	0.00	-0.19	0.06	0.03	0.08	0.00	0.00	0.29
	28	4.87T	0.00	-0.03	-0.08	-0.03	-0.09	@ 0.000	@ 0.000	@ 1.535
19	28	4.01C	0.00	-0.19	0.39	0.03	-0.24	0.00	0.00	0.69
	29	4.01C	0.00	-0.03	0.24	-0.03	0.24	@ 0.000	@ 0.000	@ 0.444
20	29	4.90C	0.00	-0.19	0.23	0.03	-0.07	0.00	0.00	0.32
	30	4.90C	0.00	-0.03	0.07	-0.03	0.08	@ 0.000	@ 0.000	@ 1.475
21	37	4.56C	0.00	0.04	-0.03	0.00	0.00	0.00	0.00	0.01
	38	4.56C	0.00	0.04	-0.03	0.02	-0.02	@ 0.000	@ 0.000	@ 0.290
22	38	4.34C	0.00	0.00	0.14	0.00	-0.07	0.00	0.00	0.20
	39	4.34C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.556
23	39	4.12C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.29
	40	4.12C	0.00	0.00	-0.09	0.00	-0.09	@ 0.000	@ 0.000	@ 1.535
24	40	3.94C	0.00	0.00	0.39	0.00	-0.24	0.00	0.00	0.69
	41	3.94C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
25	41	3.80C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.32
	42	3.80C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
31	49	4.91C	0.00	-1.02	0.00	0.00	0.00		0.00	0.34
	50	4.91C	0.00	-1.02	0.00	-0.51	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	4.68C	0.00	-0.04	0.22	-0.04	-0.17	0.00	0.00	0.47
	51	4.68C	0.00	0.02	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
33	51	4.47C	0.00	-0.15	0.17	0.04	-0.05	0.00	0.00	0.24
	52	4.47C	0.00	-0.04	0.06	-0.04	0.06	@ 0.000	@ 0.000	@ 1.475
34	52	4.27C	0.00	-0.15	0.06	0.04	0.06	0.00	0.00	0.25
	53	4.27C	0.00	-0.04	-0.06	-0.04	-0.05	@ 0.000	@ 0.000	@ 0.505
35	53	4.06C	0.00	-0.15	-0.06	0.03	0.18	0.00	0.00	0.57
	54	4.06C	0.00	-0.03	-0.18	-0.04	-0.19	@ 0.000	@ 0.000	@ 1.556
36	61	4.65C	0.00	0.04	-0.08	0.00	0.00	0.00	0.00	0.03
	62	4.65C	0.00	0.04	-0.08	0.02	-0.04	@ 0.000	@ 0.000	@ 0.290
37	62	4.45C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.51
	63	4.45C	0.00	0.00	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
38	63	4.28C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.24
	64	4.28C	0.00	0.00	0.05	0.00	0.06	@ 0.000	@ 0.000	@ 1.475
39	64	4.07C	0.00	0.00	0.06	0.00	0.06	0.00	0.00	0.25
	65	4.07C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	3.80C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.58
	66	3.80C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.556
46	73	4.93C	0.00	-0.99	0.00	0.00	0.00		0.00	0.33
	74	4.93C	0.00	-0.99	0.00	-0.49	0.00		@ 0.000	@ 0.290
47	74	4.71C	0.00	-0.04	0.10	-0.03	-0.05	0.00	0.00	0.36
	75	4.71C	0.00	0.02	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 0.848
48	75	4.49C	0.00	-0.15	0.05	0.04	0.06	0.00	0.00	0.22
	76	4.49C	0.00	-0.03	-0.06	-0.03	-0.07	@ 0.000	@ 0.000	@ 1.535
49	76	4.28C	0.00	-0.15	0.30	0.03	-0.19	0.00	0.00	0.53
	77	4.28C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
50	77	4.07C	0.00	-0.15	0.18	0.03	-0.05	0.00	0.00	0.25
	78	4.07C	0.00	-0.03	0.06	-0.03	0.06	@ 0.000	@ 0.000	@ 1.495
51	85	4.66C	0.00	0.04	-0.02	0.00	0.00	0.00	0.00	0.01
	86	4.66C	0.00	0.04	-0.02	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
52	86	4.44C	0.00	0.00	0.11	0.00	-0.05	0.00	0.00	0.15
	87	4.44C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.556
53	87	4.23C	0.00	0.00	0.05	0.00	0.06	0.00	0.00	0.22
	88	4.23C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 1.535
54	88	4.04C	0.00	0.00	0.30	0.00	-0.18	0.00	0.00	0.53
	89	4.04C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
55	89	3.87C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.25
	90	3.87C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.475
91	97	4.94C	0.00	-0.97	0.00	0.00	0.00		0.00	0.33
	98	4.94C	0.00	-0.97	0.00	-0.48	0.00		@ 0.000	@ 0.290
92	98	4.71C	0.00	-0.04	0.22	-0.03	-0.17	0.00	0.00	0.47
	99	4.71C	0.00	0.01	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
93	99	4.50C	0.00	-0.15	0.17	0.04	-0.05	0.00	0.00	0.24
	100	4.50C	0.00	-0.03	0.06	-0.03	0.06	@ 0.000	@ 0.000	@ 1.475
94	100	4.28C	0.00	-0.15	0.06	0.03	0.06	0.00	0.00	0.25
	101	4.28C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.505
95	101	4.07C	0.00	-0.15	-0.06	0.03	0.18	0.00	0.00	0.58
	102	4.07C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.535
96	109	4.66C	0.00	0.04	-0.08	0.00	0.00	0.00	0.00	0.03
	110	4.66C	0.00	0.04	-0.08	0.02	-0.04	@ 0.000	@ 0.000	@ 0.290
97	110	4.46C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.51
	111	4.46C	0.00	0.00	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
98	111	4.29C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.24
	112	4.29C	0.00	0.00	0.05	0.00	0.06	@ 0.000	@ 0.000	@ 1.475

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	4.07C	0.00	0.00	0.06	0.00	0.06	0.00	0.00	0.25
	113	4.07C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505
100	113	3.81C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.58
	114	3.81C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.535
120	121	4.88C	0.00	-0.96	0.00	0.00	0.00		0.00	0.32
	122	4.88C	0.00	-0.96	0.00	-0.48	0.00		@ 0.000	@ 0.290
121	122	4.65C	0.00	-0.04	0.10	-0.03	-0.05	0.00	0.00	0.34
	123	4.65C	0.00	0.01	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 0.889
122	123	4.44C	0.00	-0.15	0.05	0.03	0.06	0.00	0.00	0.22
	124	4.44C	0.00	-0.03	-0.06	-0.03	-0.07	@ 0.000	@ 0.000	@ 1.535
123	124	4.23C	0.00	-0.15	0.30	0.03	-0.18	0.00	0.00	0.53
	125	4.23C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
124	125	4.02C	0.00	-0.15	0.18	0.03	-0.05	0.00	0.00	0.25
	126	4.02C	0.00	-0.03	0.06	-0.03	0.06	@ 0.000	@ 0.000	@ 1.495
125	133	4.61C	0.00	0.04	-0.02	0.00	0.00	0.00	0.00	0.01
	134	4.61C	0.00	0.04	-0.02	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
126	134	4.40C	0.00	0.00	0.11	0.00	-0.05	0.00	0.00	0.15
	135	4.40C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.556
127	135	4.18C	0.00	0.00	0.05	0.00	0.06	0.00	0.00	0.22
	136	4.18C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 1.535
128	136	3.99C	0.00	0.00	0.30	0.00	-0.18	0.00	0.00	0.53
	137	3.99C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
129	137	3.83C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.25
	138	3.83C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.495
135	145	3.70C	0.00	-0.86	0.00	0.00	0.00		0.00	0.29
	146	3.70C	0.00	-0.86	0.00	-0.43	0.00		@ 0.000	@ 0.290
136	146	3.57C	0.00	-0.03	0.23	-0.04	-0.17	0.00	0.00	0.47
	147	3.57C	0.00	0.02	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
137	147	3.44C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.25
	148	3.44C	0.00	-0.03	0.06	-0.03	0.06	@ 0.000	@ 0.000	@ 1.475
138	148	3.32C	0.00	-0.14	0.05	0.03	0.07	0.00	0.00	0.26
	149	3.32C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.505
139	149	3.20C	0.00	-0.14	-0.06	0.02	0.18	0.00	0.00	0.58
	150	3.20C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.535
140	157	3.50C	0.00	0.06	-0.08	0.00	0.00	0.00	0.00	0.03
	158	3.50C	0.00	0.06	-0.08	0.03	-0.04	@ 0.000	@ 0.000	@ 0.290
141	158	3.39C	0.00	0.01	0.23	-0.01	-0.18	0.00	0.00	0.51
	159	3.39C	0.00	0.01	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.444

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 386

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	3.32C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.25
	160	3.32C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.475
143	160	3.19C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.26
	161	3.19C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
144	161	3.01C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.58
	162	3.01C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.535
170	6	5.59T	0.00	-0.18	0.42	0.01	-0.27	0.00	0.00	0.82
	7	5.59T	0.00	-0.01	0.26	-0.02	0.25	@ 0.000	@ 0.000	@ 0.444
171	7	7.56T	0.00	-0.18	0.25	0.01	-0.08	0.00	0.00	0.36
	8	7.56T	0.00	-0.01	0.09	-0.01	0.10	@ 0.000	@ 0.000	@ 1.495
172	8	8.55T	0.00	-0.17	0.08	0.00	0.10	0.00	0.00	0.37
	9	8.55T	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
173	9	8.54T	0.00	-0.17	-0.09	-0.01	0.26	0.00	0.00	0.86
	10	8.54T	0.00	0.01	-0.27	0.01	-0.28	@ 0.000	@ 0.000	@ 1.535
174	18	3.07C	0.00	0.00	0.42	0.00	-0.27	0.00	0.00	0.82
	19	3.07C	0.00	0.00	0.26	0.00	0.25	@ 0.000	@ 0.000	@ 0.444
175	19	2.99C	0.00	0.00	0.25	0.00	-0.08	0.00	0.00	0.37
	20	2.99C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.495
176	20	2.84C	0.00	0.00	0.08	0.00	0.10	0.00	0.00	0.37
	21	2.84C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
177	21	2.61C	0.00	0.00	-0.09	0.00	0.26	0.00	0.00	0.86
	22	2.61C	0.00	0.00	-0.27	0.00	-0.28	@ 0.000	@ 0.000	@ 1.535
182	30	8.30C	0.00	-0.19	0.09	0.02	0.08	0.00	0.00	0.32
	31	8.30C	0.00	-0.02	-0.08	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.525
183	31	10.73C	0.00	-0.18	-0.08	0.01	0.24	0.00	0.00	0.78
	32	10.73C	0.00	-0.01	-0.25	-0.01	-0.25	@ 0.000	@ 0.000	@ 1.556
184	32	12.23C	0.00	-0.18	0.43	0.00	-0.27	0.00	0.00	0.82
	33	12.23C	0.00	0.00	0.26	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
185	33	12.80C	0.00	-0.17	0.26	-0.02	-0.08	0.00	0.00	0.35
	34	12.80C	0.00	0.01	0.08	0.01	0.09	@ 0.000	@ 0.000	@ 1.495
186	42	3.59C	0.00	0.00	0.09	0.00	0.08	0.00	0.00	0.32
	43	3.59C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.525
187	43	3.34C	0.00	0.00	-0.08	0.00	0.24	0.00	0.00	0.78
	44	3.34C	0.00	0.00	-0.25	0.00	-0.25	@ 0.000	@ 0.000	@ 1.556
188	44	3.13C	0.00	0.00	0.43	0.00	-0.27	0.00	0.00	0.82
	45	3.13C	0.00	0.00	0.26	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
189	45	2.96C	0.00	0.00	0.26	0.00	-0.08	0.00	0.00	0.35
	46	2.96C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.495

James Crosbie Associates Ltd.

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Job Ref : B11323

Sheet : SD / 387

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	3.86C	0.00	-0.15	0.31	0.03	-0.20	0.00	0.00	0.60
	55	3.86C	0.00	-0.03	0.19	-0.03	0.19	@ 0.000	@ 0.000	@ 0.444
195	55	3.65C	0.00	-0.14	0.19	0.01	-0.06	0.00	0.00	0.26
	56	3.65C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.495
196	56	3.45C	0.00	-0.13	0.07	0.00	0.07	0.00	0.00	0.26
	57	3.45C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
197	57	3.25C	0.00	-0.11	-0.06	-0.02	0.19	0.00	0.00	0.63
	58	3.25C	0.00	0.02	-0.20	0.02	-0.20	@ 0.000	@ 0.000	@ 1.535
198	66	3.59C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.60
	67	3.59C	0.00	0.00	0.19	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
199	67	3.42C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.26
	68	3.42C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
200	68	3.20C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.26
	69	3.20C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
201	69	2.93C	0.00	0.00	-0.06	0.00	0.19	0.00	0.00	0.64
	70	2.93C	0.00	0.00	-0.20	0.00	-0.20	@ 0.000	@ 0.000	@ 1.535
206	78	3.86C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.25
	79	3.86C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.505
207	79	3.65C	0.00	-0.13	-0.06	0.01	0.18	0.00	0.00	0.60
	80	3.65C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.556
208	80	3.44C	0.00	-0.13	0.33	0.00	-0.20	0.00	0.00	0.62
	81	3.44C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
209	81	3.23C	0.00	-0.11	0.19	-0.02	-0.06	0.00	0.00	0.27
	82	3.23C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.495
210	90	3.65C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.25
	91	3.65C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505
211	91	3.38C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.60
	92	3.38C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.556
212	92	3.16C	0.00	0.00	0.33	0.00	-0.20	0.00	0.00	0.62
	93	3.16C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
213	93	2.99C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.27
	94	2.99C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
218	102	3.86C	0.00	-0.14	0.31	0.02	-0.20	0.00	0.00	0.60
	103	3.86C	0.00	-0.02	0.19	-0.02	0.19	@ 0.000	@ 0.000	@ 0.444
219	103	3.65C	0.00	-0.14	0.19	0.01	-0.06	0.00	0.00	0.26
	104	3.65C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.495
220	104	3.44C	0.00	-0.13	0.07	-0.01	0.07	0.00	0.00	0.26
	105	3.44C	0.00	0.01	-0.06	0.01	-0.06	@ 0.000	@ 0.000	@ 0.505

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Job Ref : B11323

Sheet : SD / 388

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	3.23C	0.00	-0.11	-0.06	-0.02	0.19	0.00	0.00	0.64
	106	3.23C	0.00	0.02	-0.20	0.02	-0.20	@ 0.000	@ 0.000	@ 1.535
222	114	3.59C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.60
	115	3.59C	0.00	0.00	0.19	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
223	115	3.43C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.26
	116	3.43C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
224	116	3.21C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.26
	117	3.21C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
225	117	2.93C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.64
	118	2.93C	0.00	0.00	-0.20	0.00	-0.20	@ 0.000	@ 0.000	@ 1.535
230	126	3.81C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.25
	127	3.81C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.505
231	127	3.61C	0.00	-0.13	-0.06	0.01	0.18	0.00	0.00	0.60
	128	3.61C	0.00	-0.01	-0.19	-0.01	-0.19	@ 0.000	@ 0.000	@ 1.556
232	128	3.40C	0.00	-0.12	0.33	-0.01	-0.20	0.00	0.00	0.62
	129	3.40C	0.00	0.01	0.20	0.01	0.19	@ 0.000	@ 0.000	@ 0.444
233	129	3.20C	0.00	-0.11	0.19	-0.02	-0.06	0.00	0.00	0.27
	130	3.20C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.495
234	138	3.61C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.25
	139	3.61C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505
235	139	3.35C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.60
	140	3.35C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.556
236	140	3.13C	0.00	0.00	0.33	0.00	-0.20	0.00	0.00	0.62
	141	3.13C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
237	141	2.97C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.26
	142	2.97C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
242	150	3.08C	0.00	-0.14	0.32	0.02	-0.20	0.00	0.00	0.62
	151	3.08C	0.00	-0.02	0.20	-0.02	0.19	@ 0.000	@ 0.000	@ 0.444
243	151	2.96C	0.00	-0.13	0.19	0.01	-0.06	0.00	0.00	0.28
	152	2.96C	0.00	-0.01	0.07	-0.01	0.07	@ 0.000	@ 0.000	@ 1.495
244	152	2.83C	0.00	-0.12	0.06	-0.01	0.07	0.00	0.00	0.28
	153	2.83C	0.00	0.01	-0.07	0.01	-0.06	@ 0.000	@ 0.000	@ 0.505
245	153	2.71C	0.00	-0.11	-0.07	-0.02	0.19	0.00	0.00	0.66
	154	2.71C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.535
246	162	2.88C	0.00	0.00	0.32	0.00	-0.20	0.00	0.00	0.61
	163	2.88C	0.00	0.00	0.19	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
247	163	2.81C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.28
	164	2.81C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.495

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	2.67C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.28
	165	2.67C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
249	165	2.49C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.66
	166	2.49C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.535
306	10	7.50T	0.00	-0.17	0.47	-0.02	-0.30	0.00	0.00	0.92
	11	7.50T	0.00	0.02	0.29	0.02	0.28	@ 0.000	@ 0.000	@ 0.444
307	11	5.40T	0.00	-0.16	0.29	-0.03	-0.09	0.00	0.00	0.42
	12	5.40T	0.00	0.03	0.10	0.03	0.11	@ 0.000	@ 0.000	@ 1.495
308	22	2.49C	0.00	0.00	0.47	0.00	-0.30	0.00	0.00	0.92
	23	2.49C	0.00	0.00	0.29	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
309	23	2.45C	0.00	0.00	0.29	0.01	-0.09	0.00	0.00	0.42
	24	2.45C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.495
312	34	12.39C	0.00	-0.16	0.10	-0.03	0.09	0.00	0.00	0.34
	35	12.39C	0.00	0.03	-0.08	0.02	-0.07	@ 0.000	@ 0.000	@ 0.525
313	35	10.95C	0.00	-0.15	-0.08	-0.04	0.26	0.00	0.00	0.87
	36	10.95C	0.00	0.04	-0.27	0.04	-0.28	@ 0.000	@ 0.000	@ 1.535
314	46	2.75C	0.00	0.00	0.10	0.00	0.09	0.00	0.00	0.34
	47	2.75C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.525
315	47	2.48C	0.00	0.00	-0.08	0.00	0.26	0.00	0.00	0.87
	48	2.48C	0.00	0.00	-0.27	0.00	-0.28	@ 0.000	@ 0.000	@ 1.535
318	58	3.04C	0.00	-0.10	0.39	-0.04	-0.26	0.00	0.00	0.78
	59	3.04C	0.00	0.03	0.25	0.03	0.24	@ 0.000	@ 0.000	@ 0.444
319	59	2.84C	0.00	-0.09	0.25	-0.05	-0.10	0.00	0.00	0.38
	60	2.84C	0.00	0.05	0.11	0.05	0.11	@ 0.000	@ 0.000	@ 1.515
320	70	2.74C	0.00	0.00	0.39	0.00	-0.26	0.00	0.00	0.78
	71	2.74C	0.00	0.00	0.25	0.00	0.24	@ 0.000	@ 0.000	@ 0.444
321	71	2.62C	0.00	0.00	0.25	0.00	-0.10	0.00	0.00	0.38
	72	2.62C	0.00	0.00	0.11	0.00	0.11	@ 0.000	@ 0.000	@ 1.515
324	82	3.02C	0.00	-0.10	0.07	-0.03	0.07	0.00	0.00	0.27
	83	3.02C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.505
325	83	2.82C	0.00	-0.09	-0.07	-0.05	0.20	0.00	0.00	0.72
	84	2.82C	0.00	0.05	-0.21	0.04	-0.22	@ 0.000	@ 0.000	@ 1.535
326	94	2.77C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.27
	95	2.77C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
327	95	2.50C	0.00	0.00	-0.07	0.00	0.20	0.00	0.00	0.72
	96	2.50C	0.00	0.00	-0.21	0.00	-0.22	@ 0.000	@ 0.000	@ 1.535
330	106	3.03C	0.00	-0.10	0.40	-0.03	-0.27	0.00	0.00	0.82
	107	3.03C	0.00	0.03	0.26	0.03	0.25	@ 0.000	@ 0.000	@ 0.444

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 390

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	2.82C	0.00	-0.09	0.26	-0.05	-0.11	0.00	0.00	0.42
	108	2.82C	0.00	0.05	0.12	0.04	0.13	@ 0.000	@ 0.000	@ 1.535
332	118	2.74C	0.00	0.00	0.40	0.00	-0.27	0.00	0.00	0.82
	119	2.74C	0.00	0.00	0.26	0.00	0.25	@ 0.000	@ 0.000	@ 0.444
333	119	2.62C	0.00	0.00	0.26	0.00	-0.11	0.00	0.00	0.41
	120	2.62C	0.00	0.00	0.12	0.00	0.13	@ 0.000	@ 0.000	@ 1.535
336	130	3.00C	0.00	-0.10	0.07	-0.03	0.07	0.00	0.00	0.28
	131	3.00C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.505
337	131	2.80C	0.00	-0.09	-0.07	-0.05	0.19	0.00	0.00	0.74
	132	2.80C	0.00	0.05	-0.21	0.05	-0.22	@ 0.000	@ 0.000	@ 1.515
338	142	2.75C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.28
	143	2.75C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
339	143	2.48C	0.00	0.00	-0.07	0.00	0.20	0.01	0.00	0.74
	144	2.48C	0.00	0.00	-0.21	0.01	-0.22	@ 0.000	@ 0.000	@ 1.515
342	154	2.58C	0.00	-0.11	0.42	-0.03	-0.30	0.00	0.00	0.90
	155	2.58C	0.00	0.03	0.29	0.03	0.28	@ 0.000	@ 0.000	@ 0.444
343	155	2.45C	0.00	-0.10	0.28	-0.04	-0.14	0.00	0.00	0.50
	156	2.45C	0.00	0.04	0.15	0.04	0.15	@ 0.000	@ 0.000	@ 1.535
344	166	2.38C	0.00	0.00	0.42	0.00	-0.30	0.00	0.00	0.90
	167	2.38C	0.00	0.00	0.29	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
345	167	2.35C	0.00	0.00	0.28	0.00	-0.14	0.00	0.00	0.50
	168	2.35C	0.00	0.00	0.15	0.01	0.15	@ 0.000	@ 0.000	@ 1.535
412	12	2.79C	0.00	-0.16	0.10	-0.04	0.10	0.00	0.00	0.40
	169	2.79C	0.00	0.03	-0.09	0.03	-0.08	@ 0.000	@ 0.000	@ 0.525
413	169	1.41C	0.00	-0.24	0.35	-0.03	0.29	0.00	0.00	0.80
	183	1.41C	0.00	0.32	-0.94	0.04	-0.29	@ 0.000	@ 0.000	@ 1.571
414	24	2.34C	0.00	-0.08	0.10	0.08	0.10	0.00		0.40
	170	2.34C	0.00	-0.08	-0.09	-0.09	-0.08	@ 0.000		@ 0.525
415	170	1.36C	0.00	0.06	-0.22	-0.07	0.29	0.00	0.00	0.81
	184	1.36C	0.00	0.06	-0.95	0.06	-0.29	@ 0.000	@ 0.000	@ 1.571
416	36	8.50C	0.00	-0.15	0.55	-0.05	-0.36	0.00	0.00	1.01
	171	8.50C	0.00	0.05	0.36	0.05	0.36	@ 0.000	@ 0.000	@ 1.576
417	171	4.41C	0.00	-0.22	0.31	-0.05	0.34	0.00	0.00	1.02
	185	4.41C	0.00	0.34	-0.98	0.06	-0.32	@ 0.000	@ 0.000	@ 0.449
418	48	2.33C	0.00	-0.08	0.55	0.08	-0.36	0.00	0.00	1.01
	172	2.33C	0.00	-0.08	0.36	-0.08	0.36	@ 0.000	@ 0.000	@ 1.576
419	172	1.42C	0.00	0.07	-0.26	-0.07	0.34	0.00	0.00	1.02
	186	1.42C	0.00	0.07	-0.99	0.07	-0.32	@ 0.000	@ 0.000	@ 0.449

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Sheet : SD / 391

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	2.63C	0.00	-0.08	0.13	-0.06	0.02	0.00	0.00	0.24
	173	2.63C	0.00	0.06	-0.01	0.06	0.01	@ 0.000	@ 0.000	@ 0.889
421	173	1.51C	0.00	-0.07	0.25	-0.07	0.33	0.00	0.00	0.91
	187	1.51C	0.00	0.22	-0.93	0.08	-0.33	@ 0.000	@ 0.000	@ 0.429
422	72	2.45C	0.00	-0.08	0.13	0.07	0.02	0.00	0.00	0.25
	174	2.45C	0.00	-0.08	-0.01	-0.08	-0.01	@ 0.000	@ 0.000	@ 1.540
423	174	1.42C	0.00	0.07	0.25	-0.08	0.34	0.00	0.00	0.91
	188	1.42C	0.00	0.07	-0.93	0.07	-0.33	@ 0.000	@ 0.000	@ 0.429
424	84	2.61C	0.00	-0.09	0.54	-0.06	-0.40	0.00	0.00	1.16
	175	2.61C	0.00	0.06	0.40	0.05	0.41	@ 0.000	@ 0.000	@ 1.556
425	175	1.50C	0.00	-0.08	0.21	-0.06	0.39	0.00	0.00	1.16
	189	1.50C	0.00	0.21	-0.97	0.07	-0.36	@ 0.000	@ 0.000	@ 0.449
426	96	2.35C	0.00	-0.08	0.54	0.08	-0.40	0.00	0.00	1.15
	176	2.35C	0.00	-0.08	0.40	-0.08	0.41	@ 0.000	@ 0.000	@ 1.556
427	176	1.43C	0.00	0.07	0.20	-0.07	0.39	0.00	0.00	1.17
	190	1.43C	0.00	0.07	-0.98	0.07	-0.37	@ 0.000	@ 0.000	@ 0.449
428	108	2.62C	0.00	-0.09	0.15	-0.06	0.00	0.00	0.00	0.28
	177	2.62C	0.00	0.06	0.01	0.06	0.02	@ 0.000	@ 0.000	@ 1.111
429	177	1.50C	0.00	-0.08	0.21	-0.07	0.38	0.00	0.00	1.03
	191	1.50C	0.00	0.22	-0.97	0.07	-0.37	@ 0.000	@ 0.000	@ 0.429
430	120	2.44C	0.00	-0.08	0.15	0.08	0.00	0.00	0.00	0.27
	178	2.44C	0.00	-0.08	0.01	-0.08	0.02	@ 0.000	@ 0.000	@ 1.111
431	178	1.42C	0.00	0.07	0.20	-0.08	0.38	0.00		1.04
	192	1.42C	0.00	0.07	-0.97	0.07	-0.38	@ 0.000		@ 0.429
432	132	2.60C	0.00	-0.08	0.59	-0.06	-0.44	0.00	0.00	1.30
	179	2.60C	0.00	0.06	0.45	0.06	0.46	@ 0.000	@ 0.000	@ 1.556
433	179	1.49C	0.00	-0.08	0.16	-0.07	0.43	0.00	0.00	1.30
	193	1.49C	0.00	0.22	-1.02	0.07	-0.41	@ 0.000	@ 0.000	@ 0.449
434	144	2.34C	0.00	-0.08	0.59	0.07	-0.44	0.00	0.00	1.29
	180	2.34C	0.00	-0.08	0.45	-0.08	0.45	@ 0.000	@ 0.000	@ 1.555
435	180	1.42C	0.00	0.07	0.16	-0.08	0.44	0.00		1.31
	194	1.42C	0.00	0.07	-1.02	0.07	-0.41	@ 0.000		@ 0.449
436	156	2.32C	0.00	-0.09	0.14	-0.05	0.01	0.00	0.00	0.32
	181	2.32C	0.00	0.05	0.01	0.05	0.02	@ 0.000	@ 0.000	@ 1.030
437	181	1.35C	0.00	-0.16	0.17	-0.06	0.42	0.00	0.00	1.14
	195	1.35C	0.00	0.29	-1.01	0.06	-0.41	@ 0.000	@ 0.000	@ 0.429
438	168	2.26C	0.00	-0.08	0.14	0.07	0.01	0.00	0.02	0.30
	182	2.26C	0.00	-0.08	0.01	-0.08	0.02	@ 0.000	@ 0.000	@ 1.030

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	1.33C	0.00	0.07	0.16	-0.07	0.42	0.00		1.15
	196	1.33C	0.00	0.07	-1.02	0.07	-0.42	@ 0.000		@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.891	19.510	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.049	0.000	-0.211
3	0.000	0.000	0.000	0.059	0.000	-0.016
4	0.000	0.000	0.000	0.017	0.000	-0.040
5	0.000	0.000	0.000	-0.057	0.000	-0.038
6	0.000	0.000	0.000	0.014	0.000	-0.031
7	0.000	0.000	0.000	0.066	0.000	-0.018
9	0.000	0.000	0.000	-0.061	0.000	0.016
10	0.000	0.000	0.000	-0.018	0.000	0.034
11	0.000	0.000	0.000	0.074	0.000	0.052
12	0.000	0.000	0.000	-0.031	0.000	0.061
13	-0.062	3.743	-0.106	0.000	0.000	0.000
14	0.057	0.000	0.687	0.032	0.000	-0.022
15	0.000	0.000	0.000	0.061	0.000	0.000
16	0.000	0.000	0.000	0.017	0.000	0.000
17	0.000	0.000	0.000	-0.057	0.000	0.000
18	-3.073	0.000	1.310	0.015	0.000	0.000
19	0.000	0.000	0.000	0.067	0.000	0.000
21	0.000	0.000	0.000	-0.062	0.000	0.000
22	-3.505	0.000	1.470	-0.018	0.000	0.000
23	0.000	0.000	0.000	0.075	0.000	0.013
24	0.000	0.000	0.000	-0.031	0.000	-0.017
25	1.120	-11.442	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.015	0.000	-0.166
27	0.000	0.000	0.000	-0.015	0.000	-0.014
28	0.000	0.000	0.000	0.029	0.000	-0.027
29	0.000	0.000	0.000	0.054	0.000	-0.025
30	0.000	0.000	0.000	-0.022	0.000	-0.019
31	0.000	0.000	0.000	-0.058	0.000	-0.011
32	0.000	0.000	0.000	-0.011	0.000	0.000
33	0.000	0.000	0.000	0.057	0.000	0.012
34	0.000	0.000	0.000	0.000	0.000	0.024
35	0.000	0.000	0.000	-0.064	0.000	0.036
36	0.000	0.000	0.000	0.023	0.000	0.043
37	-0.040	4.558	-0.032	0.000	0.000	0.000
38	0.037	0.000	0.305	0.000	0.000	-0.014
39	0.000	0.000	0.000	-0.015	0.000	0.000
40	-1.691	0.000	0.931	0.029	0.000	0.000
41	0.000	0.000	0.000	0.055	0.000	0.000
42	0.000	0.000	0.000	-0.022	0.000	0.000
43	0.000	0.000	0.000	-0.058	0.000	0.000
44	-1.908	0.000	1.336	-0.011	0.000	0.000
45	0.000	0.000	0.000	0.058	0.000	0.000
47	0.000	0.000	0.000	-0.064	0.000	0.000
48	-3.999	0.000	1.636	0.022	0.000	-0.016
49	1.001	4.913	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.036	0.000	-0.162
51	0.000	0.000	0.000	0.041	0.000	0.000

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
52	0.000	0.000	0.000	0.000	0.000	-0.016
53	0.000	0.000	0.000	-0.042	0.000	-0.014
54	0.000	0.000	0.000	0.000	0.000	-0.010
55	0.000	0.000	0.000	0.043	0.000	0.000
57	0.000	0.000	0.000	-0.046	0.000	0.000
58	0.000	0.000	0.000	0.000	0.000	0.015
59	0.000	0.000	0.000	0.061	0.000	0.022
60	0.000	0.000	0.000	0.016	0.000	0.024
61	-0.040	4.654	-0.078	0.000	0.000	0.000
62	0.038	0.000	0.512	0.024	0.000	-0.015
63	0.000	0.000	0.000	0.043	0.000	0.000
65	0.000	0.000	0.000	-0.042	0.000	0.000
66	1.240	0.000	0.986	0.000	0.000	0.000
67	0.000	0.000	0.000	0.044	0.000	0.000
69	0.000	0.000	0.000	-0.046	0.000	0.000
70	1.489	0.000	1.169	0.000	0.000	0.000
71	0.000	0.000	0.000	0.062	0.000	0.000
72	0.000	0.000	0.000	0.016	0.000	-0.021
73	0.971	4.927	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.012	0.000	-0.159
75	0.000	0.000	0.000	0.000	0.000	-0.013
76	0.000	0.000	0.000	0.023	0.000	-0.023
77	0.000	0.000	0.000	0.043	0.000	-0.022
78	0.000	0.000	0.000	0.000	0.000	-0.018
79	0.000	0.000	0.000	-0.044	0.000	-0.011
81	0.000	0.000	0.000	0.045	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.017
83	0.000	0.000	0.000	-0.048	0.000	0.027
84	0.000	0.000	0.000	0.033	0.000	0.032
85	-0.039	4.656	-0.025	0.000	0.000	0.000
86	0.037	0.000	0.230	0.000	0.000	-0.014
88	-0.021	0.000	0.716	0.023	0.000	0.000
89	0.000	0.000	0.000	0.043	0.000	0.000
91	0.000	0.000	0.000	-0.044	0.000	0.000
92	-0.020	0.000	1.023	0.000	0.000	0.000
93	0.000	0.000	0.000	0.045	0.000	0.000
95	0.000	0.000	0.000	-0.048	0.000	0.000
96	-0.641	0.000	1.533	0.033	0.000	-0.020
97	0.949	4.942	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.036	0.000	-0.156
99	0.000	0.000	0.000	0.041	0.000	-0.013
100	0.000	0.000	0.000	0.000	0.000	-0.023
101	0.000	0.000	0.000	-0.043	0.000	-0.022
102	0.000	0.000	0.000	0.000	0.000	-0.018
103	0.000	0.000	0.000	0.044	0.000	-0.011
105	0.000	0.000	0.000	-0.046	0.000	0.000
106	0.000	0.000	0.000	0.011	0.000	0.017
107	0.000	0.000	0.000	0.066	0.000	0.027
108	0.000	0.000	0.000	0.022	0.000	0.032
109	-0.039	4.657	-0.078	0.000	0.000	0.000
110	0.036	0.000	0.512	0.024	0.000	-0.014
111	0.000	0.000	0.000	0.043	0.000	0.000
113	0.000	0.000	0.000	-0.042	0.000	0.000
114	-0.020	0.000	0.976	0.000	0.000	0.000
115	0.000	0.000	0.000	0.044	0.000	0.000
117	0.000	0.000	0.000	-0.046	0.000	0.000
118	0.026	0.000	1.180	0.011	0.000	0.000
119	0.000	0.000	0.000	0.067	0.000	0.000

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
120	0.000	0.000	0.000	0.022	0.000	-0.020
121	0.941	4.876	0.000	0.000	0.000	0.000
122	0.000	0.000	0.000	0.012	0.000	-0.153
123	0.000	0.000	0.000	0.000	0.000	-0.014
124	0.000	0.000	0.000	0.023	0.000	-0.023
125	0.000	0.000	0.000	0.043	0.000	-0.022
126	0.000	0.000	0.000	0.000	0.000	-0.018
127	0.000	0.000	0.000	-0.044	0.000	-0.012
129	0.000	0.000	0.000	0.044	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.015
131	0.000	0.000	0.000	-0.048	0.000	0.024
132	0.000	0.000	0.000	0.041	0.000	0.030
133	-0.037	4.610	-0.025	0.000	0.000	0.000
134	0.034	0.000	0.230	0.000	0.000	-0.013
136	1.698	0.000	0.709	0.023	0.000	0.000
137	0.000	0.000	0.000	0.043	0.000	0.000
139	0.000	0.000	0.000	-0.044	0.000	0.000
140	1.909	0.000	1.013	0.000	0.000	0.000
141	0.000	0.000	0.000	0.045	0.000	0.000
143	0.000	0.000	0.000	-0.047	0.000	0.000
144	4.539	0.000	1.601	0.041	0.000	-0.021
145	0.846	3.702	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.037	0.000	-0.186
147	0.000	0.000	0.000	0.043	0.000	-0.015
148	0.000	0.000	0.000	0.000	0.000	-0.030
149	0.000	0.000	0.000	-0.045	0.000	-0.029
150	0.000	0.000	0.000	0.000	0.000	-0.024
151	0.000	0.000	0.000	0.046	0.000	-0.016
153	0.000	0.000	0.000	-0.050	0.000	0.000
154	0.000	0.000	0.000	0.014	0.000	0.019
155	0.000	0.000	0.000	0.077	0.000	0.031
156	0.000	0.000	0.000	0.024	0.000	0.036
157	-0.058	3.503	-0.079	0.000	0.000	0.000
158	0.052	0.000	0.521	0.024	0.000	-0.021
159	0.000	0.000	0.000	0.045	0.000	0.000
161	0.000	0.000	0.000	-0.045	0.000	0.000
162	1.830	0.000	0.983	0.000	0.000	0.000
163	0.000	0.000	0.000	0.047	0.000	0.000
165	0.000	0.000	0.000	-0.050	0.000	0.000
166	1.993	0.000	1.230	0.015	0.000	0.000
167	0.000	0.000	0.000	0.078	0.000	0.000
168	0.000	0.000	0.000	0.024	0.000	-0.027
169	0.000	0.000	0.000	-0.073	0.000	0.076
170	0.000	0.000	0.000	-0.069	0.000	0.013
171	0.000	0.000	0.000	0.027	0.000	0.052
172	0.000	0.000	0.000	0.031	0.000	0.000
173	0.000	0.000	0.000	-0.068	0.000	0.031
174	0.000	0.000	0.000	-0.065	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.042
177	0.000	0.000	0.000	-0.073	0.000	0.041
178	0.000	0.000	0.000	-0.070	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.039
181	0.000	0.000	0.000	-0.086	0.000	0.048
182	0.000	0.000	0.000	-0.081	0.000	0.000
183	0.000	0.000	0.000	-0.062	0.000	0.072
184	1.440	0.000	2.546	-0.056	0.000	0.050
185	0.000	0.000	0.000	-0.073	0.000	0.040
186	0.000	0.000	0.000	-0.067	0.000	0.031

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 395

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	R _x →(kN)	R _y ↑(kN)	R _z ↗(kN)	M _x →(kN.m)	M _y ↑(kN.m)	M _z ↗(kN.m)
187	0.000	0.000	0.000	-0.074	0.000	0.013
188	2.308	0.000	4.110	-0.068	0.000	0.025
189	0.000	0.000	0.000	-0.080	0.000	0.028
190	0.000	0.000	0.000	-0.074	0.000	0.028
191	0.000	0.000	0.000	-0.083	0.000	0.027
192	1.425	0.000	4.232	-0.077	0.000	0.028
193	0.000	0.000	0.000	-0.089	0.000	0.024
194	0.000	0.000	0.000	-0.083	0.000	0.025
195	0.000	0.000	0.000	-0.093	0.000	0.032
196	0.567	0.000	2.737	-0.088	0.000	0.034
Total	12.985	63.440	36.001	-0.333	0.000	-0.650

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L1	Live Load
Load Group L2	Live Load
Load Group L3	Live Load
Load Group L4	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.065	2	2.500	0.065
3	4.500	0.065	4	6.500	0.065	5	8.500	0.065
6	10.500	0.065	7	12.500	0.065	8	14.500	0.065
9	16.500	0.065	10	18.500	0.065	11	20.500	0.065
12	22.500	0.480	13	24.500	0.746			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.004	3	0.004	4	0.004
5	0.004	6	0.004	7	0.004	8	0.004
9	0.004	10	0.004	11	0.004	12	0.004
13	0.000	14	0.003	15	0.003	16	0.003
17	0.003	18	0.003	19	0.003	20	0.003
21	0.003	22	0.003	23	0.003	24	0.003
25	0.000	26	0.007	27	0.007	28	0.007
29	0.007	30	0.007	31	0.007	32	0.007
33	0.007	34	0.007	35	0.007	36	0.007
37	0.000	38	0.005	39	0.005	40	0.005
41	0.005	42	0.005	43	0.005	44	0.005
45	0.005	46	0.005	47	0.005	48	0.005
49	0.000	50	0.005	51	0.005	52	0.005
53	0.005	54	0.005	55	0.005	56	0.005
57	0.005	58	0.005	59	0.005	60	0.005
61	0.000	62	0.005	63	0.005	64	0.005
65	0.005	66	0.005	67	0.005	68	0.005
69	0.005	70	0.005	71	0.005	72	0.005
73	0.000	74	0.005	75	0.005	76	0.005
77	0.005	78	0.005	79	0.005	80	0.005
81	0.005	82	0.005	83	0.005	84	0.005
85	0.000	86	0.005	87	0.005	88	0.005
89	0.005	90	0.005	91	0.005	92	0.005
93	0.005	94	0.005	95	0.005	96	0.005
97	0.000	98	0.005	99	0.005	100	0.005
101	0.005	102	0.005	103	0.005	104	0.005
105	0.005	106	0.005	107	0.005	108	0.005
109	0.000	110	0.005	111	0.005	112	0.005
113	0.005	114	0.005	115	0.005	116	0.005
117	0.005	118	0.005	119	0.005	120	0.005
121	0.000	122	0.005	123	0.005	124	0.005

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 397****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

125	0.005	126	0.005	127	0.005	128	0.005
129	0.005	130	0.005	131	0.005	132	0.005
133	0.000	134	0.005	135	0.005	136	0.005
137	0.005	138	0.005	139	0.005	140	0.005
141	0.005	142	0.005	143	0.005	144	0.005
145	0.000	146	0.003	147	0.003	148	0.003
149	0.003	150	0.003	151	0.003	152	0.003
153	0.003	154	0.003	155	0.003	156	0.003
157	0.000	158	0.003	159	0.003	160	0.003
161	0.003	162	0.003	163	0.003	164	0.003
165	0.003	166	0.003	167	0.003	168	0.003
169	0.035	170	0.030	171	0.039	172	0.032
173	0.038	174	0.032	175	0.038	176	0.032
177	0.038	178	0.032	179	0.038	180	0.032
181	0.034	182	0.030	183	0.054	184	0.049
185	0.058	186	0.051	187	0.057	188	0.051
189	0.057	190	0.051	191	0.057	192	0.051
193	0.057	194	0.051	195	0.053	196	0.049

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 N1

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L1 + 0.25 L3 + 1.00 W4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 L1 + 0.50 L2 + 1.00 L3 + 0.50 L4 + 1.00 W2

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 0.25 L1 + 0.25 L3 + 1.00 W5

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	1.800	0.000	0.000	26	1.800	0.500	0.000
27	1.800	2.500	0.000	28	1.800	4.500	0.000
29	1.800	6.500	0.000	30	1.800	8.500	0.000
31	1.800	10.500	0.000	32	1.800	12.500	0.000
33	1.800	14.500	0.000	34	1.800	16.500	0.000
35	1.800	18.500	0.000	36	1.800	20.500	0.000
37	1.800	0.000	1.300	38	1.800	0.500	1.300
39	1.800	2.500	1.300	40	1.800	4.500	1.300
41	1.800	6.500	1.300	42	1.800	8.500	1.300
43	1.800	10.500	1.300	44	1.800	12.500	1.300
45	1.800	14.500	1.300	46	1.800	16.500	1.300
47	1.800	18.500	1.300	48	1.800	20.500	1.300
49	3.600	0.000	0.000	50	3.600	0.500	0.000
51	3.600	2.500	0.000	52	3.600	4.500	0.000
53	3.600	6.500	0.000	54	3.600	8.500	0.000
55	3.600	10.500	0.000	56	3.600	12.500	0.000
57	3.600	14.500	0.000	58	3.600	16.500	0.000
59	3.600	18.500	0.000	60	3.600	20.500	0.000
61	3.600	0.000	1.300	62	3.600	0.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 398****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	3.600	2.500	1.300	64	3.600	4.500	1.300
65	3.600	6.500	1.300	66	3.600	8.500	1.300
67	3.600	10.500	1.300	68	3.600	12.500	1.300
69	3.600	14.500	1.300	70	3.600	16.500	1.300
71	3.600	18.500	1.300	72	3.600	20.500	1.300
73	5.400	0.000	0.000	74	5.400	0.500	0.000
75	5.400	2.500	0.000	76	5.400	4.500	0.000
77	5.400	6.500	0.000	78	5.400	8.500	0.000
79	5.400	10.500	0.000	80	5.400	12.500	0.000
81	5.400	14.500	0.000	82	5.400	16.500	0.000
83	5.400	18.500	0.000	84	5.400	20.500	0.000
85	5.400	0.000	1.300	86	5.400	0.500	1.300
87	5.400	2.500	1.300	88	5.400	4.500	1.300
89	5.400	6.500	1.300	90	5.400	8.500	1.300
91	5.400	10.500	1.300	92	5.400	12.500	1.300
93	5.400	14.500	1.300	94	5.400	16.500	1.300
95	5.400	18.500	1.300	96	5.400	20.500	1.300
97	7.200	0.000	0.000	98	7.200	0.500	0.000
99	7.200	2.500	0.000	100	7.200	4.500	0.000
101	7.200	6.500	0.000	102	7.200	8.500	0.000
103	7.200	10.500	0.000	104	7.200	12.500	0.000
105	7.200	14.500	0.000	106	7.200	16.500	0.000
107	7.200	18.500	0.000	108	7.200	20.500	0.000
109	7.200	0.000	1.300	110	7.200	0.500	1.300
111	7.200	2.500	1.300	112	7.200	4.500	1.300
113	7.200	6.500	1.300	114	7.200	8.500	1.300
115	7.200	10.500	1.300	116	7.200	12.500	1.300
117	7.200	14.500	1.300	118	7.200	16.500	1.300
119	7.200	18.500	1.300	120	7.200	20.500	1.300
121	9.000	0.000	0.000	122	9.000	0.500	0.000
123	9.000	2.500	0.000	124	9.000	4.500	0.000
125	9.000	6.500	0.000	126	9.000	8.500	0.000
127	9.000	10.500	0.000	128	9.000	12.500	0.000
129	9.000	14.500	0.000	130	9.000	16.500	0.000
131	9.000	18.500	0.000	132	9.000	20.500	0.000
133	9.000	0.000	1.300	134	9.000	0.500	1.300
135	9.000	2.500	1.300	136	9.000	4.500	1.300
137	9.000	6.500	1.300	138	9.000	8.500	1.300
139	9.000	10.500	1.300	140	9.000	12.500	1.300
141	9.000	14.500	1.300	142	9.000	16.500	1.300
143	9.000	18.500	1.300	144	9.000	20.500	1.300
145	10.800	0.000	0.000	146	10.800	0.500	0.000
147	10.800	2.500	0.000	148	10.800	4.500	0.000
149	10.800	6.500	0.000	150	10.800	8.500	0.000
151	10.800	10.500	0.000	152	10.800	12.500	0.000
153	10.800	14.500	0.000	154	10.800	16.500	0.000
155	10.800	18.500	0.000	156	10.800	20.500	0.000
157	10.800	0.000	1.300	158	10.800	0.500	1.300
159	10.800	2.500	1.300	160	10.800	4.500	1.300
161	10.800	6.500	1.300	162	10.800	8.500	1.300
163	10.800	10.500	1.300	164	10.800	12.500	1.300
165	10.800	14.500	1.300	166	10.800	16.500	1.300
167	10.800	18.500	1.300	168	10.800	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	1.800	22.500	0.000	172	1.800	22.500	1.300
173	3.600	22.500	0.000	174	3.600	22.500	1.300
175	5.400	22.500	0.000	176	5.400	22.500	1.300
177	7.200	22.500	0.000	178	7.200	22.500	1.300
179	9.000	22.500	0.000	180	9.000	22.500	1.300
181	10.800	22.500	0.000	182	10.800	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	1.800	24.500	0.000	186	1.800	24.500	1.300
187	3.600	24.500	0.000	188	3.600	24.500	1.300
189	5.400	24.500	0.000	190	5.400	24.500	1.300
191	7.200	24.500	0.000	192	7.200	24.500	1.300
193	9.000	24.500	0.000	194	9.000	24.500	1.300
195	10.800	24.500	0.000	196	10.800	24.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 399****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties**

Members 1-10, 16-25, 31-40, 46-55, 61-100, 106-129, 135-144, 150-177, 182-189,
194-201, 206-213, 218-225, 230-237, 242-249, 254-309, 312-315, 318-321,
324-327, 330-333, 336-339, 342-345, 348-373, 381-392 and 400-454

M	...	...	48.3x3.2	CHS	3.56	[S 355]		
A	4.53E-4		Ix	11.59E-8		Iy	11.59E-8	J 23.17E-8
E	205.0E6		G	78.85E6				

Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

M	...	...	Omega Transom	[]	E 210E6	G 78E6		
A	7.02E-4		Ix	36.1E-8		Iy	54.0E-8	J 72.21E-8

Member Loading**Members 2 and 17**

W1	PZ	-000.013	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.072	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.014	0.000	(kN,m)
W5	PX	-000.074	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 3 and 18

W1	PZ	-000.027	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.146	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.028	0.000	(kN,m)
W5	PX	-000.153	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 4 and 19

W1	PZ	-000.028	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.152	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.158	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 5 and 20

W1	PZ	-000.029	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.157	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.030	0.000	(kN,m)
W5	PX	-000.163	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 7 and 22

W1	PZ	-000.013	0.000	(kN,m)
W4	PZ	-000.072	0.000	(kN,m)

Members 8 and 23

W1	PZ	-000.027	0.000	(kN,m)
W4	PZ	-000.146	0.000	(kN,m)

Members 9 and 24

W1	PZ	-000.028	0.000	(kN,m)
W4	PZ	-000.152	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 400****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 10 and 25**

W1 PZ	-000.029	0.000	(kN,m)
W4 PZ	-000.157	0.000	(kN,m)

**Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341 and 346-347**

D1 PY	-000.035	0.025	(kN,m)
D1 PY	-000.035	1.275	(kN,m)

Members 32, 47, 92, 121 and 136

W1 PZ	-000.009	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.054	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.009	0.000	(kN,m)
W5 PX	-000.054	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 33, 48, 93, 122 and 137

W1 PZ	-000.020	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.111	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.112	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 34, 49, 94, 123 and 138

W1 PZ	-000.021	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.115	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.021	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 35, 50, 95, 124 and 139

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.118	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.022	0.000	(kN,m)
W5 PX	-000.119	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 37, 52, 97, 126 and 141

W1 PZ	-000.009	0.000	(kN,m)
W4 PZ	-000.054	0.000	(kN,m)

Members 38, 53, 98, 127 and 142

W1 PZ	-000.020	0.000	(kN,m)
W4 PZ	-000.111	0.000	(kN,m)

Members 39, 54, 99, 128 and 143

W1 PZ	-000.021	0.000	(kN,m)
W4 PZ	-000.115	0.000	(kN,m)

Members 40, 55, 100, 129 and 144

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.118	0.000	(kN,m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY	-000.143	0.025	(kN,m)
D1 PY	-000.143	1.775	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 401****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359, 361-371, 387-392 and 406-411

D1 PY -000.090 0.025 (kN,m)
D1 PY -000.090 1.775 (kN,m)

Members 170 and 182

W1 PZ -000.029 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.161 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.030 0.000 (kN,m)
W5 PX -000.167 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 171 and 183

W1 PZ -000.030 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.165 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.031 0.000 (kN,m)
W5 PX -000.172 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 172 and 184

W1 PZ -000.031 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.170 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.032 0.000 (kN,m)
W5 PX -000.176 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 173 and 185

W1 PZ -000.032 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.175 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.033 0.000 (kN,m)
W5 PX -000.181 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 174 and 186

W1 PZ -000.029 0.000 (kN,m)
W4 PZ -000.161 0.000 (kN,m)

Members 175 and 187

W1 PZ -000.030 0.000 (kN,m)
W4 PZ -000.165 0.000 (kN,m)

Members 176 and 188

W1 PZ -000.031 0.000 (kN,m)
W4 PZ -000.170 0.000 (kN,m)

Members 177 and 189

W1 PZ -000.032 0.000 (kN,m)
W4 PZ -000.175 0.000 (kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ -000.022 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.121 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.022 0.000 (kN,m)
W5 PX -000.122 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 402****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 195, 207, 219, 231 and 243**

W1 PZ	-000.023	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.125	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.125	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.023	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.128	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.129	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.024	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.131	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.024	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.121	0.000	(kN,m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.023	0.000	(kN,m)
W4 PZ	-000.125	0.000	(kN,m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.023	0.000	(kN,m)
W4 PZ	-000.128	0.000	(kN,m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.024	0.000	(kN,m)
W4 PZ	-000.131	0.000	(kN,m)

Members 306 and 312

W1 PZ	-000.033	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.179	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.034	0.000	(kN,m)
W5 PX	-000.186	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 307 and 313

W1 PZ	-000.034	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.184	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.190	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 308 and 314

W1 PZ	-000.033	0.000	(kN,m)
W4 PZ	-000.179	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 403****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 309 and 315**

W1	PZ	-000.034	0.000	(kN,m)
W4	PZ	-000.184	0.000	(kN,m)

Members 318, 324, 330, 336 and 342

W1	PZ	-000.025	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.135	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.136	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1	PZ	-000.025	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.138	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.139	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1	PZ	-000.025	0.000	(kN,m)
W4	PZ	-000.135	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1	PZ	-000.025	0.000	(kN,m)
W4	PZ	-000.138	0.000	(kN,m)

Members 374-380

D1	PY	-000.431	0.025	(kN,m)
D1	PY	-000.354	1.275	(kN,m)
L2	PY	-001.519	0.025	(kN,m)
L4	PY	-001.519	1.275	(kN,m)
L6	PY	-002.025	0.025	(kN,m)
L8	PY	-002.025	1.275	(kN,m)
G2	PY	-003.038	0.025	(kN,m)
G4	PY	-003.038	1.275	(kN,m)

Member 381

D1	PY	-000.211	0.025	(kN,m)
D1	PY	-000.211	1.775	(kN,m)

Members 382-386

D1	PY	-000.159	0.025	(kN,m)
D1	PY	-000.159	1.775	(kN,m)

Members 393-399

D1	PY	-000.431	0.025	(kN,m)
D1	PY	-000.354	1.275	(kN,m)
L1	PY	-001.519	0.025	(kN,m)
L3	PY	-001.519	1.275	(kN,m)
L5	PY	-002.025	0.025	(kN,m)
L7	PY	-002.025	1.275	(kN,m)
G1	PY	-003.038	0.025	(kN,m)
G3	PY	-003.038	1.275	(kN,m)

Member 400

D1	PY	-000.211	0.025	(kN,m)
D1	PY	-000.211	1.775	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

Members 401-404

D1	PY	-000.159	0.025	(kN,m)
D1	PY	-000.159	1.775	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

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D1 PY	-000.159	0.025	(kN,m)
D1 PY	-000.159	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
N1 PZ	-000.300	1.775	(kN,m)

Members 412 and 416

W1 PZ	-000.034	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.195	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 413 and 417

W1 PZ	-000.156	0.000	(kN,m)
W1 PZ	-000.160	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.640	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.655	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.052	0.000	(kN,m)
W2 PX	-000.053	2.000	(kN,m)
W5 PX	-000.276	0.000	(kN,m)
W5 PX	-000.282	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 414 and 418

W1 PZ	-000.034	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)

Members 415 and 419

W1 PZ	-000.156	0.000	(kN,m)
W4 PZ	-000.072	0.000	(kN,m)
W1 PZ	-000.640	2.000	(kN,m)
W4 PZ	-000.655	2.000	(kN,m)

Members 420, 424, 428, 432 and 436

W1 PZ	-000.026	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.026	0.000	(kN,m)
W5 PX	-000.142	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 421, 425, 429 and 433

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.583	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.596	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.042	0.000	(kN,m)
W2 PX	-000.043	2.000	(kN,m)
W5 PX	-000.146	0.000	(kN,m)
W5 PX	-000.149	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 405****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W8 PX -000.000 2.000 (kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ -000.026 0.000 (kN,m)

W4 PZ -000.141 0.000 (kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ -000.146 0.000 (kN,m)

W4 PZ -000.583 0.000 (kN,m)

W1 PZ -000.149 2.000 (kN,m)

W4 PZ -000.596 2.000 (kN,m)

Member 437

W1 PZ -000.146 0.000 (kN,m)

W1 PZ -000.149 2.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.583 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W3 PZ -000.000 2.000 (kN,m)

W4 PZ -000.596 2.000 (kN,m)

W6 PZ -000.000 2.000 (kN,m)

W2 PX -000.042 0.000 (kN,m)

W2 PX -000.043 2.000 (kN,m)

W5 PX -000.222 0.000 (kN,m)

W5 PX -000.227 2.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W7 PX -000.000 2.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

W8 PX -000.000 2.000 (kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major			End 2 torsion-minor-major			O Relased			® Fixed			
11	ROO	ROO		12	ROO	ROO	13	ROO	ROO		14	ROO	ROO
15	ROO	ROO		26	ROO	ROO	27	ROO	ROO		28	ROO	ROO
29	ROO	ROO		30	ROO	ROO	41	ROO	ROO		42	ROO	ROO
43	ROO	ROO		44	ROO	ROO	45	ROO	ROO		56	ROO	ROO
57	ROO	ROO		58	ROO	ROO	59	ROO	ROO		60	ROO	ROO
61	ROO	ROO		62	ROO	ROO	63	ROO	ROO		64	ROO	ROO
65	ROO	ROO		66	ROO	ROO	67	ROO	ROO		68	ROO	ROO
69	ROO	ROO		70	ROO	ROO	71	ROO	ROO		72	ROO	ROO
73	ROO	ROO		74	ROO	ROO	75	ROO	ROO		76	ROO	ROO
77	ROO	ROO		78	ROO	ROO	79	ROO	ROO		80	ROO	ROO
81	ROO	ROO		82	ROO	ROO	83	ROO	ROO		84	ROO	ROO
85	ROO	ROO		86	ROO	ROO	87	ROO	ROO		88	ROO	ROO
89	ROO	ROO		90	ROO	ROO	101	ROO	ROO		102	ROO	ROO
103	ROO	ROO		104	ROO	ROO	105	ROO	ROO		106	ROO	ROO
107	ROO	ROO		108	ROO	ROO	109	ROO	ROO		110	ROO	ROO
111	ROO	ROO		112	ROO	ROO	113	ROO	ROO		114	ROO	ROO
115	ROO	ROO		116	ROO	ROO	117	ROO	ROO		118	ROO	ROO
119	ROO	ROO		130	ROO	ROO	131	ROO	ROO		132	ROO	ROO
133	ROO	ROO		134	ROO	ROO	145	ROO	ROO		146	ROO	ROO
147	ROO	ROO		148	ROO	ROO	149	ROO	ROO		150	ROO	ROO
151	ROO	ROO		152	ROO	ROO	153	ROO	ROO		154	ROO	ROO
155	ROO	ROO		156	ROO	ROO	157	ROO	ROO		158	ROO	ROO
159	ROO	ROO		160	ROO	ROO	161	ROO	ROO		162	ROO	ROO
163	ROO	ROO		164	ROO	ROO	165	ROO	ROO		166	ROO	ROO
167	ROO	ROO		168	ROO	ROO	169	ROO	ROO		178	ROO	ROO
179	ROO	ROO		180	ROO	ROO	181	ROO	ROO		190	ROO	ROO
191	ROO	ROO		192	ROO	ROO	193	ROO	ROO		202	ROO	ROO
203	ROO	ROO		204	ROO	ROO	205	ROO	ROO		214	ROO	ROO
215	ROO	ROO		216	ROO	ROO	217	ROO	ROO		226	ROO	ROO
227	ROO	ROO		228	ROO	ROO	229	ROO	ROO		238	ROO	ROO
239	ROO	ROO		240	ROO	ROO	241	ROO	ROO		250	ROO	ROO
251	ROO	ROO		252	ROO	ROO	253	ROO	ROO		254	ROO	ROO
255	ROO	ROO		256	ROO	ROO	257	ROO	ROO		258	ROO	ROO
259	ROO	ROO		260	ROO	ROO	261	ROO	ROO		262	ROO	ROO
263	ROO	ROO		264	ROO	ROO	265	ROO	ROO		266	ROO	ROO
267	ROO	ROO		268	ROO	ROO	269	ROO	ROO		270	ROO	ROO
271	ROO	ROO		272	ROO	ROO	273	ROO	ROO		274	ROO	ROO
275	ROO	ROO		276	ROO	ROO	277	ROO	ROO		278	ROO	ROO
279	ROO	ROO		280	ROO	ROO	281	ROO	ROO		282	ROO	ROO

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 406****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

283	ROO	ROO
287	ROO	ROO
291	ROO	ROO
295	ROO	ROO
299	ROO	ROO
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Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0087.100 0000.000 0104.050

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 407

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.28	0.28	-0.03	0.00	0.42	0.42
2	-2.77	-0.12	0.01	2.77	-0.03	0.00	0.12	0.12
3	-3.76	-0.39	-7.67	8.54	-0.04	0.01	0.01	0.04
4	-5.05	-0.54	-10.53	11.69	-0.01	-0.01	0.02	0.03
5	-6.40	-0.57	-7.54	9.90	0.04	-0.01	0.02	0.04
6	-7.59	-0.57	0.04	7.62	-0.01	0.01	0.02	0.02
7	-8.45	-0.65	-8.12	11.74	-0.04	0.00	0.01	0.04
8	-8.84	-0.76	-11.38	14.43	0.00	-0.01	0.00	0.01
9	-8.68	-0.87	-8.19	11.97	0.04	-0.01	-0.01	0.04
10	-7.94	-0.98	0.05	8.00	0.01	-0.01	-0.02	0.02
11	-6.61	-1.08	-9.16	11.34	-0.05	-0.01	-0.03	0.06
12	-4.75	-1.17	-12.97	13.86	0.02	-0.02	-0.03	0.04
13	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
14	0.00	-0.03	0.00	0.03	-0.02	0.00	0.01	0.02
15	0.07	-0.13	-7.67	7.67	-0.04	0.00	0.00	0.04
16	0.06	-0.23	-10.53	10.54	-0.01	0.00	0.00	0.01
17	0.07	-0.33	-7.54	7.54	0.04	0.00	0.00	0.04
18	0.00	-0.42	0.00	0.42	-0.01	0.00	0.00	0.01
19	0.07	-0.52	-8.12	8.13	-0.04	0.00	0.00	0.04
20	0.07	-0.61	-11.38	11.40	0.00	0.00	0.00	0.01
21	0.07	-0.69	-8.19	8.22	0.04	-0.01	0.00	0.04
22	0.00	-0.77	0.00	0.77	0.01	-0.01	-0.01	0.01
23	0.11	-0.85	-9.16	9.20	-0.05	-0.01	-0.01	0.05
24	0.09	-0.93	-12.97	13.00	0.02	-0.01	0.01	0.02
25	0.00	0.00	0.09	0.09	-0.01	0.00	0.41	0.41
26	-2.66	0.05	0.01	2.66	-0.01	0.00	0.09	0.09
27	-3.65	0.29	-2.06	4.20	0.01	-0.01	0.01	0.01
28	-4.96	0.39	0.02	4.97	-0.02	-0.01	0.01	0.03
29	-6.33	-0.39	-7.70	9.97	-0.04	-0.01	0.01	0.04
30	-7.54	-0.49	-10.41	12.86	0.01	-0.01	0.01	0.02
31	-8.42	-0.58	-7.59	11.35	0.04	-0.01	0.01	0.04
32	-8.83	-0.67	0.06	8.85	0.01	-0.01	0.00	0.01
33	-8.68	-0.76	-8.12	11.92	-0.04	0.00	-0.01	0.04
34	-7.96	-0.87	-11.12	13.70	0.00	0.00	-0.01	0.01
35	-6.64	-1.00	-8.13	10.54	0.04	-0.01	-0.02	0.05
36	-4.81	-1.25	0.02	4.97	-0.01	-0.02	-0.02	0.03
37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
38	0.00	-0.03	0.00	0.03	-0.01	0.00	0.01	0.01
39	0.07	-0.15	-2.06	2.06	0.01	0.00	0.00	0.01
40	0.00	-0.26	0.00	0.26	-0.02	0.00	0.00	0.02
41	0.07	-0.37	-7.70	7.71	-0.04	-0.01	0.00	0.04
42	0.00	-0.48	-10.41	10.42	0.01	-0.01	0.00	0.02
43	0.07	-0.58	-7.59	7.62	0.04	-0.01	0.00	0.04
44	0.00	-0.68	0.00	0.68	0.01	-0.01	0.00	0.01
45	0.07	-0.77	-8.12	8.16	-0.04	-0.01	0.00	0.04
46	0.00	-0.86	-11.12	11.15	0.00	-0.02	0.00	0.02
47	0.11	-0.94	-8.13	8.18	0.04	-0.02	0.00	0.05
48	0.00	-1.02	0.00	1.02	-0.01	-0.02	0.01	0.03
49	0.00	0.00	0.21	0.21	-0.02	0.00	0.40	0.40
50	-2.57	-0.04	0.01	2.58	-0.02	0.00	0.09	0.09
51	-3.67	-0.16	-5.70	6.78	-0.03	0.00	0.00	0.03
52	-4.97	-0.28	-7.75	9.21	0.00	0.00	0.01	0.01
53	-6.34	-0.39	-5.59	8.47	0.03	0.00	0.01	0.03
54	-7.55	-0.51	0.04	7.57	0.00	0.00	0.01	0.01
55	-8.43	-0.61	-5.96	10.34	-0.03	0.00	0.00	0.03
56	-8.84	-0.72	-8.22	12.09	0.00	0.00	0.00	0.00
57	-8.70	-0.82	-5.95	10.57	0.03	0.00	0.00	0.03
58	-7.97	-0.91	0.05	8.02	-0.01	0.00	-0.01	0.01

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 408

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-6.66	-1.00	-7.87	10.36	-0.04	0.00	-0.01	0.04
60	-4.82	-1.09	-11.83	12.82	-0.01	0.00	-0.01	0.02
61	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
62	0.00	-0.03	0.00	0.03	-0.02	0.00	0.01	0.02
63	0.07	-0.15	-5.70	5.71	-0.03	0.00	0.00	0.03
64	0.00	-0.27	-7.75	7.75	0.00	0.00	0.00	0.00
65	0.07	-0.38	-5.59	5.61	0.03	0.00	0.00	0.03
66	0.00	-0.49	0.00	0.49	0.00	0.00	0.00	0.00
67	0.07	-0.59	-5.96	5.99	-0.03	0.00	0.00	0.03
68	0.00	-0.69	-8.22	8.25	0.00	-0.01	0.00	0.01
69	0.07	-0.78	-5.95	6.00	0.03	-0.01	0.00	0.03
70	0.00	-0.87	0.00	0.87	-0.01	-0.01	0.00	0.01
71	0.11	-0.96	-7.87	7.93	-0.04	-0.01	0.00	0.04
72	0.00	-1.04	-11.83	11.88	-0.01	-0.01	0.01	0.02
73	0.00	0.00	0.07	0.07	-0.01	0.00	0.39	0.39
74	-2.51	-0.03	0.00	2.51	-0.01	0.00	0.09	0.09
75	-3.68	-0.16	-1.56	4.00	0.00	0.00	0.01	0.01
76	-4.98	-0.28	0.02	4.99	-0.02	0.00	0.01	0.02
77	-6.35	-0.40	-5.90	8.68	-0.03	0.00	0.01	0.03
78	-7.56	-0.51	-8.04	11.05	0.00	0.00	0.01	0.01
79	-8.44	-0.62	-5.83	10.28	0.03	-0.01	0.01	0.03
80	-8.85	-0.72	0.06	8.88	0.00	-0.01	0.00	0.01
81	-8.71	-0.82	-6.14	10.69	-0.03	-0.01	0.00	0.03
82	-7.98	-0.91	-8.44	11.65	0.00	-0.01	-0.01	0.01
83	-6.67	-1.00	-6.00	9.02	0.03	-0.01	-0.01	0.04
84	-4.83	-1.09	0.02	4.95	-0.02	-0.01	-0.02	0.03
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	-0.03	0.00	0.03	0.00	0.00	0.01	0.01
87	0.07	-0.15	-1.56	1.57	0.00	0.00	0.00	0.00
88	0.00	-0.27	0.00	0.27	-0.02	0.00	0.00	0.02
89	0.07	-0.38	-5.90	5.92	-0.03	-0.01	0.00	0.03
90	0.00	-0.49	-8.04	8.06	0.00	-0.01	0.00	0.01
91	0.07	-0.59	-5.83	5.86	0.03	-0.01	0.00	0.03
92	0.00	-0.69	0.00	0.69	0.00	-0.01	0.00	0.01
93	0.07	-0.78	-6.14	6.19	-0.03	-0.02	0.00	0.03
94	0.00	-0.87	-8.44	8.48	0.00	-0.02	0.00	0.02
95	0.11	-0.96	-6.00	6.08	0.03	-0.02	0.00	0.04
96	0.00	-1.03	0.00	1.03	-0.02	-0.02	0.01	0.03
97	0.00	0.00	0.21	0.21	-0.02	0.00	0.38	0.38
98	-2.45	-0.03	0.00	2.46	-0.02	0.00	0.09	0.09
99	-3.69	-0.16	-5.71	6.80	-0.03	0.00	0.01	0.03
100	-4.99	-0.28	-7.75	9.22	0.00	0.00	0.01	0.01
101	-6.36	-0.40	-5.60	8.48	0.03	0.00	0.01	0.03
102	-7.57	-0.51	0.04	7.59	0.00	0.00	0.01	0.01
103	-8.44	-0.62	-5.96	10.35	-0.03	0.00	0.01	0.03
104	-8.85	-0.72	-8.22	12.10	0.00	0.00	0.00	0.00
105	-8.71	-0.82	-5.94	10.57	0.03	0.00	0.00	0.03
106	-7.98	-0.91	0.05	8.04	-0.01	0.00	-0.01	0.01
107	-6.67	-1.00	-8.29	10.69	-0.04	0.00	-0.01	0.05
108	-4.84	-1.09	-12.71	13.65	-0.01	0.00	-0.02	0.02
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.03	0.00	0.03	-0.02	0.00	0.01	0.02
111	0.07	-0.15	-5.71	5.71	-0.03	0.00	0.00	0.03
112	0.00	-0.27	-7.75	7.75	0.00	0.00	0.00	0.00
113	0.07	-0.38	-5.60	5.61	0.03	0.00	0.00	0.03
114	0.00	-0.49	0.00	0.49	0.00	0.00	0.00	0.00
115	0.07	-0.59	-5.96	5.99	-0.03	-0.01	0.00	0.03
116	0.00	-0.69	-8.22	8.25	0.00	-0.01	0.00	0.01

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Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.07	-0.78	-5.94	5.99	0.03	-0.01	0.00	0.03
118	0.00	-0.87	0.00	0.87	-0.01	-0.01	0.00	0.01
119	0.11	-0.96	-8.29	8.35	-0.04	-0.01	0.00	0.05
120	0.00	-1.04	-12.71	12.75	-0.01	-0.01	0.01	0.02
121	0.00	0.00	0.07	0.07	-0.01	0.00	0.37	0.37
122	-2.42	-0.03	0.00	2.42	-0.01	0.00	0.08	0.08
123	-3.69	-0.16	-1.56	4.01	0.00	0.00	0.01	0.01
124	-4.99	-0.28	0.02	5.00	-0.02	0.00	0.01	0.02
125	-6.36	-0.39	-5.90	8.69	-0.03	-0.01	0.01	0.03
126	-7.57	-0.50	-8.04	11.06	0.00	-0.01	0.01	0.01
127	-8.45	-0.61	-5.83	10.28	0.03	-0.01	0.01	0.03
128	-8.86	-0.71	0.06	8.89	0.00	-0.01	0.00	0.01
129	-8.72	-0.81	-6.12	10.68	-0.03	-0.01	0.00	0.03
130	-7.99	-0.90	-8.38	11.62	0.00	-0.01	-0.01	0.01
131	-6.68	-0.99	-5.92	8.98	0.03	-0.01	-0.01	0.04
132	-4.84	-1.08	0.02	4.96	-0.03	-0.01	-0.02	0.03
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.03	0.00	0.03	0.00	0.00	0.01	0.01
135	0.07	-0.15	-1.56	1.57	0.00	0.00	0.00	0.00
136	0.00	-0.26	0.00	0.26	-0.02	-0.01	0.00	0.02
137	0.07	-0.38	-5.90	5.91	-0.03	-0.01	0.00	0.03
138	0.00	-0.48	-8.04	8.05	0.00	-0.01	0.00	0.01
139	0.07	-0.59	-5.83	5.86	0.03	-0.01	0.00	0.03
140	0.00	-0.68	0.00	0.68	0.00	-0.01	0.00	0.01
141	0.07	-0.78	-6.12	6.16	-0.03	-0.02	0.00	0.03
142	0.00	-0.86	-8.38	8.43	0.00	-0.02	0.00	0.02
143	0.11	-0.95	-5.92	6.00	0.03	-0.02	0.00	0.04
144	0.00	-1.03	0.00	1.03	-0.03	-0.02	0.01	0.04
145	0.00	0.00	0.21	0.21	-0.02	0.00	0.36	0.36
146	-2.41	-0.03	0.00	2.41	-0.02	0.00	0.10	0.11
147	-3.70	-0.13	-5.77	6.85	-0.03	0.00	0.01	0.03
148	-4.99	-0.23	-7.92	9.36	0.00	0.00	0.02	0.02
149	-6.37	-0.32	-5.66	8.52	0.03	0.00	0.02	0.03
150	-7.58	-0.42	0.04	7.59	0.00	0.00	0.01	0.01
151	-8.45	-0.51	-6.06	10.41	-0.03	0.00	0.01	0.03
152	-8.86	-0.59	-8.46	12.26	0.00	0.00	0.00	0.00
153	-8.72	-0.68	-6.02	10.62	0.03	0.00	0.00	0.03
154	-7.99	-0.76	0.05	8.03	-0.01	0.00	-0.01	0.01
155	-6.68	-0.84	-9.16	11.37	-0.05	0.00	-0.02	0.05
156	-4.85	-0.92	-14.46	15.27	-0.02	0.00	-0.02	0.03
157	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
158	0.00	-0.02	0.00	0.02	-0.02	0.00	0.01	0.02
159	0.07	-0.12	-5.77	5.77	-0.03	0.00	0.00	0.03
160	-0.03	-0.22	-7.92	7.92	0.00	0.00	0.00	0.00
161	0.07	-0.31	-5.66	5.67	0.03	0.00	0.00	0.03
162	0.00	-0.40	0.00	0.40	0.00	0.00	0.00	0.00
163	0.07	-0.49	-6.06	6.08	-0.03	-0.01	0.00	0.03
164	-0.04	-0.57	-8.46	8.48	0.00	-0.01	0.00	0.01
165	0.07	-0.66	-6.02	6.05	0.03	-0.01	0.00	0.03
166	0.00	-0.74	0.00	0.74	-0.01	-0.01	0.00	0.01
167	0.11	-0.81	-9.16	9.20	-0.05	-0.01	0.00	0.05
168	-0.12	-0.89	-14.46	14.48	-0.02	-0.01	0.01	0.02
169	-2.49	-1.26	-9.68	10.07	0.05	-0.02	-0.04	0.07
170	-2.34	-1.01	-9.68	10.01	0.05	-0.01	-0.01	0.05
171	-2.55	-1.44	-10.31	10.71	-0.02	0.02	-0.03	0.04
172	-2.35	-1.10	-10.31	10.63	-0.02	-0.02	0.00	0.03
173	-2.55	-1.17	-11.01	11.36	0.04	0.00	-0.02	0.05
174	-2.35	-1.11	-11.01	11.31	0.04	-0.01	0.00	0.04

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Sheet : SD / 410

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Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-2.55	-1.17	-11.67	12.01	0.00	-0.01	-0.02	0.02
176	-2.35	-1.11	-11.68	11.96	-0.01	-0.02	0.00	0.02
177	-2.55	-1.17	-12.39	12.71	0.05	0.00	-0.02	0.05
178	-2.35	-1.12	-12.39	12.66	0.05	-0.01	0.00	0.05
179	-2.56	-1.16	-13.08	13.38	0.00	-0.01	-0.02	0.03
180	-2.35	-1.11	-13.09	13.34	-0.01	-0.03	0.00	0.03
181	-2.56	-0.99	-13.82	14.09	0.06	0.00	-0.03	0.06
182	-2.34	-0.96	-13.82	14.05	0.05	-0.01	0.00	0.06
183	-0.10	-1.30	-0.01	1.31	0.04	-0.02	-0.04	0.06
184	0.00	-1.06	0.00	1.06	0.03	-0.01	-0.03	0.04
185	-0.12	-1.55	-0.12	1.56	0.05	0.02	-0.02	0.06
186	-0.03	-1.15	-0.12	1.16	0.04	-0.02	-0.02	0.05
187	-0.06	-1.22	-0.03	1.22	0.05	0.00	-0.01	0.05
188	0.00	-1.17	0.00	1.17	0.04	-0.01	-0.01	0.05
189	-0.05	-1.22	-0.12	1.22	0.05	-0.01	-0.02	0.06
190	-0.02	-1.17	-0.11	1.17	0.05	-0.02	-0.02	0.05
191	-0.03	-1.22	-0.03	1.22	0.06	0.00	-0.01	0.06
192	0.00	-1.17	0.00	1.17	0.05	-0.01	-0.02	0.05
193	-0.03	-1.21	-0.13	1.21	0.06	-0.01	-0.01	0.06
194	-0.01	-1.16	-0.12	1.16	0.05	-0.03	-0.01	0.06
195	0.05	-1.04	-0.02	1.04	0.06	0.00	-0.02	0.07
196	0.00	-1.01	0.00	1.01	0.06	-0.01	-0.02	0.06

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	19.99C	0.00	-1.00	0.00	0.00	0.00		0.00	0.34
	2	19.99C	0.00	-1.00	0.00	-0.50	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	12.49C	0.00	-0.03	0.30	-0.07	-0.23	0.00	0.00	0.64
	3	12.49C	0.00	0.04	0.23	0.02	0.23	@ 0.000	@ 0.000	@ 0.424
3	3	6.59C	0.00	-0.18	0.22	0.03	-0.07	0.00	0.00	0.33
	4	6.59C	0.00	-0.03	0.08	-0.02	0.09	@ 0.000	@ 0.000	@ 1.495
4	4	5.76C	0.00	-0.18	0.07	0.02	0.09	0.00	0.00	0.35
	5	5.76C	0.00	-0.02	-0.08	-0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
5	5	5.64C	0.00	-0.18	-0.09	0.02	0.24	0.00	0.00	0.79
	6	5.64C	0.00	-0.02	-0.25	-0.02	-0.26	@ 0.000	@ 0.000	@ 1.535
6	13	4.90C	0.00	0.06	-0.11	0.00	0.00		0.00	0.04
	14	4.90C	0.00	0.06	-0.11	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
7	14	4.77C	0.00	0.00	0.31	-0.01	-0.24	0.00	0.00	0.69
	15	4.77C	0.00	0.00	0.23	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
8	15	4.71C	0.00	0.00	0.22	0.00	-0.07	0.00	0.00	0.33
	16	4.71C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
9	16	4.57C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.35
	17	4.57C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
10	17	4.37C	0.00	0.00	-0.09	0.00	0.24	0.00	0.00	0.79
	18	4.37C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.535

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	11.08T	0.00	-1.06	0.00	0.00	0.00		0.00	0.36
	26	11.08T	0.00	-1.06	0.00	-0.53	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	11.35T	0.00	-0.05	0.14	-0.04	-0.06	0.00	0.00	0.39
	27	11.35T	0.00	0.03	0.07	0.01	0.07	@ 0.000	@ 0.000	@ 0.788
18	27	5.46C	0.00	-0.19	0.06	0.03	0.08	0.00	0.00	0.29
	28	5.46C	0.00	-0.03	-0.08	-0.03	-0.09	@ 0.000	@ 0.000	@ 1.535
19	28	5.07C	0.00	-0.19	0.39	0.03	-0.24	0.00	0.00	0.70
	29	5.07C	0.00	-0.03	0.24	-0.03	0.24	@ 0.000	@ 0.000	@ 0.444
20	29	5.25C	0.00	-0.19	0.23	0.03	-0.07	0.00	0.00	0.32
	30	5.25C	0.00	-0.03	0.08	-0.03	0.08	@ 0.000	@ 0.000	@ 1.475
21	37	5.68C	0.00	0.04	-0.03	0.00	0.00	0.00	0.00	0.01
	38	5.68C	0.00	0.04	-0.03	0.02	-0.02	@ 0.000	@ 0.000	@ 0.290
22	38	5.46C	0.00	0.00	0.14	0.00	-0.07	0.00	0.00	0.20
	39	5.46C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.555
23	39	5.25C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.29
	40	5.25C	0.00	0.00	-0.09	0.00	-0.09	@ 0.000	@ 0.000	@ 1.535
24	40	5.07C	0.00	0.00	0.39	0.00	-0.24	0.00	0.00	0.70
	41	5.07C	0.00	0.00	0.24	0.00	0.24	@ 0.000	@ 0.000	@ 0.444
25	41	4.92C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.32
	42	4.92C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
31	49	6.05C	0.00	-1.02	0.00	0.00	0.00		0.00	0.35
	50	6.05C	0.00	-1.02	0.00	-0.51	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	5.82C	0.00	-0.04	0.23	-0.04	-0.17	0.00	0.00	0.47
	51	5.82C	0.00	0.02	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
33	51	5.60C	0.00	-0.15	0.17	0.04	-0.05	0.00	0.00	0.24
	52	5.60C	0.00	-0.04	0.06	-0.04	0.06	@ 0.000	@ 0.000	@ 1.475
34	52	5.40C	0.00	-0.15	0.06	0.04	0.07	0.00	0.00	0.25
	53	5.40C	0.00	-0.04	-0.06	-0.04	-0.05	@ 0.000	@ 0.000	@ 0.505
35	53	5.20C	0.00	-0.15	-0.06	0.03	0.18	0.00	0.00	0.58
	54	5.20C	0.00	-0.03	-0.18	-0.04	-0.19	@ 0.000	@ 0.000	@ 1.555
36	61	5.79C	0.00	0.04	-0.08	0.00	0.00	0.00	0.00	0.03
	62	5.79C	0.00	0.04	-0.08	0.02	-0.04	@ 0.000	@ 0.000	@ 0.290
37	62	5.59C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.51
	63	5.59C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
38	63	5.42C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.24
	64	5.42C	0.00	0.00	0.05	0.00	0.06	@ 0.000	@ 0.000	@ 1.475
39	64	5.21C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.25
	65	5.21C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	4.94C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.58
	66	4.94C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.555
46	73	6.07C	0.00	-0.99	0.00	0.00	0.00		0.00	0.33
	74	6.07C	0.00	-0.99	0.00	-0.50	0.00		@ 0.000	@ 0.290
47	74	5.85C	0.00	-0.04	0.10	-0.03	-0.05	0.00	0.00	0.36
	75	5.85C	0.00	0.02	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 0.848
48	75	5.63C	0.00	-0.15	0.05	0.04	0.06	0.00	0.00	0.22
	76	5.63C	0.00	-0.03	-0.06	-0.03	-0.07	@ 0.000	@ 0.000	@ 1.535
49	76	5.42C	0.00	-0.15	0.30	0.03	-0.19	0.00	0.00	0.53
	77	5.42C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
50	77	5.21C	0.00	-0.15	0.18	0.03	-0.05	0.00	0.00	0.25
	78	5.21C	0.00	-0.03	0.06	-0.03	0.06	@ 0.000	@ 0.000	@ 1.495
51	85	5.80C	0.00	0.04	-0.02	0.00	0.00	0.00	0.00	0.01
	86	5.80C	0.00	0.04	-0.02	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
52	86	5.58C	0.00	0.00	0.11	0.00	-0.05	0.00	0.00	0.15
	87	5.58C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.555
53	87	5.37C	0.00	0.00	0.05	0.00	0.06	0.00	0.00	0.22
	88	5.37C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 1.535
54	88	5.18C	0.00	0.00	0.30	0.00	-0.19	0.00	0.00	0.53
	89	5.18C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
55	89	5.01C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.25
	90	5.01C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.475
91	97	6.08C	0.00	-0.97	0.00	0.00	0.00		0.00	0.33
	98	6.08C	0.00	-0.97	0.00	-0.49	0.00		@ 0.000	@ 0.290
92	98	5.85C	0.00	-0.04	0.23	-0.03	-0.17	0.00	0.00	0.47
	99	5.85C	0.00	0.01	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
93	99	5.64C	0.00	-0.15	0.17	0.04	-0.05	0.00	0.00	0.24
	100	5.64C	0.00	-0.03	0.06	-0.03	0.06	@ 0.000	@ 0.000	@ 1.475
94	100	5.42C	0.00	-0.15	0.06	0.03	0.07	0.00	0.00	0.25
	101	5.42C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.505
95	101	5.21C	0.00	-0.15	-0.06	0.03	0.18	0.00	0.00	0.58
	102	5.21C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.535
96	109	5.80C	0.00	0.04	-0.08	0.00	0.00	0.00	0.00	0.03
	110	5.80C	0.00	0.04	-0.08	0.02	-0.04	@ 0.000	@ 0.000	@ 0.290
97	110	5.60C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.51
	111	5.60C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
98	111	5.43C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.24
	112	5.43C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.475

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	5.21C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.25
	113	5.21C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505
100	113	4.95C	0.00	0.00	-0.06	0.00	0.18	0.00	0.00	0.58
	114	4.95C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.535
120	121	6.01C	0.00	-0.96	0.00	0.00	0.00		0.00	0.32
	122	6.01C	0.00	-0.96	0.00	-0.48	0.00		@ 0.000	@ 0.290
121	122	5.79C	0.00	-0.04	0.10	-0.03	-0.05	0.00	0.00	0.34
	123	5.79C	0.00	0.01	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 0.889
122	123	5.58C	0.00	-0.15	0.05	0.03	0.06	0.00	0.00	0.22
	124	5.58C	0.00	-0.03	-0.06	-0.03	-0.07	@ 0.000	@ 0.000	@ 1.535
123	124	5.37C	0.00	-0.15	0.30	0.03	-0.19	0.00	0.00	0.53
	125	5.37C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
124	125	5.16C	0.00	-0.15	0.18	0.03	-0.05	0.00	0.00	0.25
	126	5.16C	0.00	-0.03	0.06	-0.03	0.06	@ 0.000	@ 0.000	@ 1.495
125	133	5.75C	0.00	0.04	-0.02	0.00	0.00	0.00	0.00	0.01
	134	5.75C	0.00	0.04	-0.02	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
126	134	5.54C	0.00	0.00	0.11	0.00	-0.05	0.00	0.00	0.15
	135	5.54C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.555
127	135	5.32C	0.00	0.00	0.05	0.00	0.06	0.00	0.00	0.22
	136	5.32C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 1.535
128	136	5.13C	0.00	0.00	0.30	0.00	-0.19	0.00	0.00	0.53
	137	5.13C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
129	137	4.97C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.25
	138	4.97C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.495
135	145	4.84C	0.00	-0.86	0.00	0.00	0.00		0.00	0.29
	146	4.84C	0.00	-0.86	0.00	-0.43	0.00		@ 0.000	@ 0.290
136	146	4.71C	0.00	-0.03	0.23	-0.04	-0.17	0.00	0.00	0.48
	147	4.71C	0.00	0.02	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
137	147	4.58C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.25
	148	4.58C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.475
138	148	4.46C	0.00	-0.14	0.05	0.03	0.07	0.00	0.00	0.26
	149	4.46C	0.00	-0.03	-0.06	-0.03	-0.06	@ 0.000	@ 0.000	@ 0.505
139	149	4.34C	0.00	-0.14	-0.07	0.02	0.18	0.00	0.00	0.59
	150	4.34C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.535
140	157	4.64C	0.00	0.06	-0.08	0.00	0.00	0.00	0.00	0.03
	158	4.64C	0.00	0.06	-0.08	0.03	-0.04	@ 0.000	@ 0.000	@ 0.290
141	158	4.53C	0.00	0.01	0.23	-0.01	-0.18	0.00	0.00	0.52
	159	4.53C	0.00	0.01	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.444

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 414

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	4.46C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.25
	160	4.46C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.475
143	160	4.33C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.26
	161	4.33C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
144	161	4.15C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.59
	162	4.15C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.535
170	6	5.50C	0.00	-0.18	0.42	0.01	-0.27	0.00	0.00	0.82
	7	5.50C	0.00	-0.01	0.26	-0.02	0.25	@ 0.000	@ 0.000	@ 0.444
171	7	7.17T	0.00	-0.18	0.25	0.01	-0.08	0.00	0.00	0.37
	8	7.17T	0.00	-0.01	0.09	-0.01	0.10	@ 0.000	@ 0.000	@ 1.495
172	8	8.17T	0.00	-0.17	0.08	0.00	0.10	0.00	0.00	0.38
	9	8.17T	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
173	9	8.16T	0.00	-0.17	-0.09	-0.01	0.26	0.00	0.00	0.86
	10	8.16T	0.00	0.01	-0.27	0.01	-0.28	@ 0.000	@ 0.000	@ 1.535
174	18	4.22C	0.00	0.00	0.42	0.00	-0.27	0.00	0.00	0.82
	19	4.22C	0.00	0.00	0.26	0.00	0.25	@ 0.000	@ 0.000	@ 0.444
175	19	4.14C	0.00	0.00	0.25	0.00	-0.08	0.00	0.00	0.37
	20	4.14C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.495
176	20	3.99C	0.00	0.00	0.08	0.00	0.10	0.00	0.00	0.38
	21	3.99C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
177	21	3.76C	0.00	0.00	-0.09	0.00	0.26	0.00	0.00	0.87
	22	3.76C	0.00	0.00	-0.27	0.00	-0.28	@ 0.000	@ 0.000	@ 1.535
182	30	8.66C	0.00	-0.19	0.09	0.02	0.08	0.00	0.00	0.32
	31	8.66C	0.00	-0.02	-0.08	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.525
183	31	11.09C	0.00	-0.18	-0.08	0.01	0.24	0.00	0.00	0.78
	32	11.09C	0.00	-0.01	-0.25	-0.01	-0.25	@ 0.000	@ 0.000	@ 1.556
184	32	12.60C	0.00	-0.18	0.44	0.00	-0.27	0.00	0.00	0.83
	33	12.60C	0.00	0.00	0.27	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
185	33	13.17C	0.00	-0.17	0.26	-0.02	-0.08	0.00	0.00	0.35
	34	13.17C	0.00	0.01	0.08	0.01	0.09	@ 0.000	@ 0.000	@ 1.495
186	42	4.71C	0.00	0.00	0.09	0.00	0.08	0.00	0.00	0.32
	43	4.71C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.525
187	43	4.46C	0.00	0.00	-0.08	0.00	0.24	0.00	0.00	0.78
	44	4.46C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.555
188	44	4.26C	0.00	0.00	0.44	0.00	-0.27	0.00	0.00	0.83
	45	4.26C	0.00	0.00	0.27	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
189	45	4.10C	0.00	0.00	0.26	0.00	-0.08	0.00	0.00	0.35
	46	4.10C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.495

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Sheet : SD / 415

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	4.99C	0.00	-0.15	0.31	0.03	-0.20	0.00	0.00	0.61
	55	4.99C	0.00	-0.03	0.19	-0.03	0.19	@ 0.000	@ 0.000	@ 0.444
195	55	4.79C	0.00	-0.14	0.19	0.01	-0.06	0.00	0.00	0.26
	56	4.79C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.495
196	56	4.59C	0.00	-0.13	0.07	0.00	0.07	0.00	0.00	0.26
	57	4.59C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
197	57	4.38C	0.00	-0.11	-0.07	-0.02	0.19	0.00	0.00	0.64
	58	4.38C	0.00	0.02	-0.20	0.02	-0.20	@ 0.000	@ 0.000	@ 1.535
198	66	4.73C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.61
	67	4.73C	0.00	0.00	0.19	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
199	67	4.56C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.26
	68	4.56C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
200	68	4.34C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.26
	69	4.34C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
201	69	4.07C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.64
	70	4.07C	0.00	0.00	-0.20	0.00	-0.20	@ 0.000	@ 0.000	@ 1.535
206	78	5.00C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.25
	79	5.00C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.505
207	79	4.79C	0.00	-0.13	-0.07	0.01	0.18	0.00	0.00	0.60
	80	4.79C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.556
208	80	4.58C	0.00	-0.13	0.33	0.00	-0.21	0.00	0.00	0.63
	81	4.58C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
209	81	4.37C	0.00	-0.11	0.19	-0.02	-0.06	0.00	0.00	0.27
	82	4.37C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.495
210	90	4.79C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.25
	91	4.79C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505
211	91	4.52C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.60
	92	4.52C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.556
212	92	4.30C	0.00	0.00	0.33	0.00	-0.21	0.00	0.00	0.63
	93	4.30C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
213	93	4.14C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.27
	94	4.14C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
218	102	5.00C	0.00	-0.14	0.31	0.02	-0.20	0.00	0.00	0.61
	103	5.00C	0.00	-0.02	0.19	-0.02	0.19	@ 0.000	@ 0.000	@ 0.444
219	103	4.79C	0.00	-0.14	0.19	0.01	-0.06	0.00	0.00	0.26
	104	4.79C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.495
220	104	4.58C	0.00	-0.13	0.07	-0.01	0.07	0.00	0.00	0.26
	105	4.58C	0.00	0.01	-0.06	0.01	-0.06	@ 0.000	@ 0.000	@ 0.505

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Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 416

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	4.37C	0.00	-0.11	-0.07	-0.02	0.19	0.00	0.00	0.64
	106	4.37C	0.00	0.02	-0.20	0.02	-0.20	@ 0.000	@ 0.000	@ 1.535
222	114	4.73C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.61
	115	4.73C	0.00	0.00	0.19	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
223	115	4.56C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.26
	116	4.56C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
224	116	4.34C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.26
	117	4.34C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
225	117	4.07C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.65
	118	4.07C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.535
230	126	4.95C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.25
	127	4.95C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.505
231	127	4.75C	0.00	-0.13	-0.06	0.01	0.18	0.00	0.00	0.60
	128	4.75C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.556
232	128	4.54C	0.00	-0.12	0.33	-0.01	-0.21	0.00	0.00	0.62
	129	4.54C	0.00	0.01	0.20	0.01	0.19	@ 0.000	@ 0.000	@ 0.444
233	129	4.34C	0.00	-0.11	0.19	-0.02	-0.06	0.00	0.00	0.27
	130	4.34C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.495
234	138	4.75C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.25
	139	4.75C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505
235	139	4.49C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.60
	140	4.49C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.556
236	140	4.27C	0.00	0.00	0.33	0.00	-0.21	0.00	0.00	0.62
	141	4.27C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
237	141	4.11C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.27
	142	4.11C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
242	150	4.22C	0.00	-0.14	0.32	0.02	-0.20	0.00	0.00	0.62
	151	4.22C	0.00	-0.02	0.20	-0.02	0.19	@ 0.000	@ 0.000	@ 0.444
243	151	4.09C	0.00	-0.13	0.19	0.01	-0.06	0.00	0.00	0.28
	152	4.09C	0.00	-0.01	0.07	-0.01	0.07	@ 0.000	@ 0.000	@ 1.495
244	152	3.97C	0.00	-0.12	0.06	-0.01	0.07	0.00	0.00	0.28
	153	3.97C	0.00	0.01	-0.07	0.01	-0.06	@ 0.000	@ 0.000	@ 0.505
245	153	3.84C	0.00	-0.11	-0.07	-0.02	0.19	0.00	0.00	0.67
	154	3.84C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.535
246	162	4.02C	0.00	0.00	0.32	0.00	-0.20	0.00	0.00	0.62
	163	4.02C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
247	163	3.95C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.28
	164	3.95C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.495

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	3.81C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.28
	165	3.81C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
249	165	3.63C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.67
	166	3.63C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.535
306	10	7.12T	0.00	-0.17	0.47	-0.02	-0.30	0.00	0.00	0.92
	11	7.12T	0.00	0.02	0.29	0.02	0.28	@ 0.000	@ 0.000	@ 0.444
307	11	5.02T	0.00	-0.16	0.29	-0.03	-0.09	0.00	0.00	0.42
	12	5.02T	0.00	0.03	0.10	0.03	0.11	@ 0.000	@ 0.000	@ 1.495
308	22	3.63C	0.00	0.00	0.47	0.00	-0.30	0.00	0.00	0.92
	23	3.63C	0.00	0.00	0.29	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
309	23	3.60C	0.00	0.00	0.29	0.01	-0.09	0.00	0.00	0.42
	24	3.60C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.495
312	34	12.77C	0.00	-0.16	0.10	-0.03	0.09	0.00	0.00	0.34
	35	12.77C	0.00	0.03	-0.08	0.02	-0.07	@ 0.000	@ 0.000	@ 0.525
313	35	11.33C	0.00	-0.15	-0.08	-0.04	0.26	0.00	0.00	0.87
	36	11.33C	0.00	0.04	-0.27	0.04	-0.28	@ 0.000	@ 0.000	@ 1.535
314	46	3.89C	0.00	0.00	0.10	0.00	0.09	0.00	0.00	0.34
	47	3.89C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.525
315	47	3.62C	0.00	0.00	-0.08	0.00	0.26	0.00	0.00	0.87
	48	3.62C	0.00	0.00	-0.27	0.00	-0.28	@ 0.000	@ 0.000	@ 1.535
318	58	4.18C	0.00	-0.10	0.39	-0.03	-0.26	0.00	0.00	0.78
	59	4.18C	0.00	0.03	0.25	0.03	0.24	@ 0.000	@ 0.000	@ 0.444
319	59	3.97C	0.00	-0.09	0.25	-0.05	-0.10	0.00	0.00	0.39
	60	3.97C	0.00	0.05	0.11	0.05	0.12	@ 0.000	@ 0.000	@ 1.515
320	70	3.88C	0.00	0.00	0.39	0.00	-0.26	0.00	0.00	0.78
	71	3.88C	0.00	0.00	0.25	0.00	0.24	@ 0.000	@ 0.000	@ 0.444
321	71	3.76C	0.00	0.00	0.25	0.00	-0.10	0.00	0.00	0.39
	72	3.76C	0.00	0.00	0.11	0.00	0.12	@ 0.000	@ 0.000	@ 1.515
324	82	4.16C	0.00	-0.10	0.07	-0.03	0.07	0.00	0.00	0.28
	83	4.16C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.505
325	83	3.96C	0.00	-0.09	-0.07	-0.05	0.20	0.00	0.00	0.72
	84	3.96C	0.00	0.05	-0.21	0.04	-0.22	@ 0.000	@ 0.000	@ 1.535
326	94	3.91C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.28
	95	3.91C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
327	95	3.64C	0.00	0.00	-0.07	0.00	0.20	0.00	0.00	0.72
	96	3.64C	0.00	0.00	-0.21	0.00	-0.22	@ 0.000	@ 0.000	@ 1.535
330	106	4.17C	0.00	-0.10	0.40	-0.03	-0.27	0.00	0.00	0.82
	107	4.17C	0.00	0.03	0.26	0.03	0.26	@ 0.000	@ 0.000	@ 0.444

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 418

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	3.96C	0.00	-0.09	0.26	-0.05	-0.12	0.00	0.00	0.42
	108	3.96C	0.00	0.05	0.12	0.04	0.13	@ 0.000	@ 0.000	@ 1.535
332	118	3.88C	0.00	0.00	0.40	0.00	-0.27	0.00	0.00	0.82
	119	3.88C	0.00	0.00	0.26	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
333	119	3.76C	0.00	0.00	0.26	0.00	-0.11	0.00	0.00	0.42
	120	3.76C	0.00	0.00	0.12	0.00	0.13	@ 0.000	@ 0.000	@ 1.535
336	130	4.14C	0.00	-0.10	0.07	-0.03	0.07	0.00	0.00	0.28
	131	4.14C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.505
337	131	3.94C	0.00	-0.09	-0.07	-0.05	0.20	0.00	0.00	0.74
	132	3.94C	0.00	0.05	-0.21	0.05	-0.22	@ 0.000	@ 0.000	@ 1.515
338	142	3.89C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.28
	143	3.89C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
339	143	3.62C	0.00	0.00	-0.07	0.00	0.20	0.01	0.00	0.74
	144	3.62C	0.00	0.00	-0.21	0.01	-0.22	@ 0.000	@ 0.000	@ 1.515
342	154	3.72C	0.00	-0.11	0.42	-0.03	-0.30	0.00	0.00	0.90
	155	3.72C	0.00	0.03	0.29	0.03	0.28	@ 0.000	@ 0.000	@ 0.444
343	155	3.59C	0.00	-0.10	0.29	-0.04	-0.14	0.00	0.00	0.51
	156	3.59C	0.00	0.04	0.15	0.04	0.15	@ 0.000	@ 0.000	@ 1.535
344	166	3.52C	0.00	0.00	0.42	0.00	-0.30	0.00	0.00	0.90
	167	3.52C	0.00	0.00	0.29	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
345	167	3.49C	0.00	0.00	0.28	0.00	-0.14	0.00	0.00	0.50
	168	3.49C	0.00	0.00	0.15	0.01	0.15	@ 0.000	@ 0.000	@ 1.535
412	12	4.03C	0.00	-0.16	0.10	-0.04	0.10	0.00	0.00	0.40
	169	4.03C	0.00	0.03	-0.09	0.03	-0.08	@ 0.000	@ 0.000	@ 0.525
413	169	2.17C	0.00	-0.24	0.35	-0.03	0.29	0.00	0.00	0.79
	183	2.17C	0.00	0.32	-0.94	0.04	-0.29	@ 0.000	@ 0.000	@ 1.571
414	24	3.48C	0.00	-0.08	0.10	0.08	0.10	0.00		0.40
	170	3.48C	0.00	-0.08	-0.09	-0.09	-0.08	@ 0.000		@ 0.525
415	170	2.12C	0.00	0.06	-0.22	-0.07	0.29	0.00		0.83
	184	2.12C	0.00	0.06	-0.95	0.06	-0.30	@ 0.000		@ 1.571
416	36	8.89C	0.00	-0.15	0.55	-0.05	-0.36	0.00	0.00	1.02
	171	8.88C	0.00	0.05	0.36	0.05	0.37	@ 0.000	@ 0.000	@ 1.576
417	171	4.80C	0.00	-0.22	0.31	-0.05	0.34	0.00		1.03
	185	4.80C	0.00	0.34	-0.98	0.06	-0.32	@ 0.000		@ 0.449
418	48	3.47C	0.00	-0.08	0.55	0.08	-0.36	0.00	0.00	1.01
	172	3.47C	0.00	-0.08	0.36	-0.08	0.37	@ 0.000	@ 0.000	@ 1.576
419	172	2.18C	0.00	0.07	-0.26	-0.07	0.34	0.00		1.03
	186	2.18C	0.00	0.07	-0.99	0.07	-0.33	@ 0.000		@ 0.449

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Job Ref : B11323

Sheet : SD / 419

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	3.77C	0.00	-0.08	0.13	-0.06	0.02	0.00	0.00	0.25
	173	3.77C	0.00	0.06	0.01	0.06	0.01	@ 0.000	@ 0.000	@ 0.889
421	173	2.27C	0.00	-0.07	0.25	-0.07	0.33	0.00		0.91
	187	2.27C	0.00	0.22	-0.93	0.08	-0.33	@ 0.000		@ 0.429
422	72	3.59C	0.00	-0.08	0.13	0.07	0.02	0.00		0.25
	174	3.59C	0.00	-0.08	-0.01	-0.08	-0.01	@ 0.000		@ 1.540
423	174	2.18C	0.00	0.07	0.24	-0.08	0.34	0.00	0.00	0.91
	188	2.18C	0.00	0.07	-0.93	0.07	-0.34	@ 0.000	@ 0.000	@ 1.571
424	84	3.75C	0.00	-0.09	0.54	-0.06	-0.40	0.00	0.00	1.16
	175	3.75C	0.00	0.06	0.40	0.05	0.41	@ 0.000	@ 0.000	@ 1.556
425	175	2.26C	0.00	-0.08	0.21	-0.06	0.39	0.00	0.00	1.17
	189	2.26C	0.00	0.21	-0.97	0.07	-0.37	@ 0.000	@ 0.000	@ 0.449
426	96	3.49C	0.00	-0.08	0.54	0.08	-0.40	0.00	0.00	1.16
	176	3.49C	0.00	-0.08	0.40	-0.08	0.41	@ 0.000	@ 0.000	@ 1.555
427	176	2.19C	0.00	0.07	0.20	-0.07	0.39	0.00		1.17
	190	2.19C	0.00	0.07	-0.98	0.07	-0.37	@ 0.000		@ 0.449
428	108	3.76C	0.00	-0.09	0.15	-0.06	0.00	0.00	0.00	0.28
	177	3.76C	0.00	0.06	0.01	0.06	0.02	@ 0.000	@ 0.000	@ 1.111
429	177	2.26C	0.00	-0.08	0.21	-0.07	0.38	0.00		1.04
	191	2.26C	0.00	0.22	-0.97	0.07	-0.37	@ 0.000		@ 0.429
430	120	3.59C	0.00	-0.08	0.15	0.08	0.00	0.00	0.00	0.27
	178	3.59C	0.00	-0.08	0.01	-0.08	0.02	@ 0.000	@ 0.000	@ 1.111
431	178	2.18C	0.00	0.07	0.20	-0.08	0.38	0.00		1.04
	192	2.18C	0.00	0.07	-0.98	0.07	-0.38	@ 0.000		@ 0.429
432	132	3.74C	0.00	-0.08	0.59	-0.06	-0.44	0.00	0.00	1.31
	179	3.74C	0.00	0.06	0.45	0.06	0.46	@ 0.000	@ 0.000	@ 1.556
433	179	2.25C	0.00	-0.08	0.16	-0.07	0.43	0.00		1.31
	193	2.25C	0.00	0.22	-1.02	0.07	-0.41	@ 0.000		@ 0.449
434	144	3.48C	0.00	-0.08	0.59	0.07	-0.44	0.00	0.00	1.30
	180	3.48C	0.00	-0.08	0.45	-0.08	0.46	@ 0.000	@ 0.000	@ 1.555
435	180	2.18C	0.00	0.07	0.15	-0.08	0.44	0.00		1.31
	194	2.18C	0.00	0.07	-1.02	0.07	-0.42	@ 0.000		@ 0.449
436	156	3.46C	0.00	-0.09	0.14	-0.05	0.01	0.00	0.00	0.32
	181	3.46C	0.00	0.05	0.01	0.05	0.02	@ 0.000	@ 0.000	@ 1.030
437	181	2.11C	0.00	-0.16	0.17	-0.06	0.42	0.00	0.00	1.15
	195	2.11C	0.00	0.29	-1.01	0.06	-0.42	@ 0.000	@ 0.000	@ 0.429
438	168	3.41C	0.00	-0.08	0.14	0.07	0.01	0.00	0.02	0.31
	182	3.41C	0.00	-0.08	0.01	-0.08	0.02	@ 0.000	@ 0.000	@ 1.030

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Job Ref : B11323

Sheet : SD / 420

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	2.09C	0.00	0.07	0.16	-0.07	0.42	0.00		1.15
	196	2.09C	0.00	0.07	-1.02	0.07	-0.42	@ 0.000		@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.891	19.996	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.050	0.000	-0.211
3	0.000	0.000	0.000	0.059	0.000	-0.016
4	0.000	0.000	0.000	0.017	0.000	-0.040
5	0.000	0.000	0.000	-0.057	0.000	-0.038
6	0.000	0.000	0.000	0.014	0.000	-0.031
7	0.000	0.000	0.000	0.066	0.000	-0.018
9	0.000	0.000	0.000	-0.062	0.000	0.015
10	0.000	0.000	0.000	-0.018	0.000	0.034
11	0.000	0.000	0.000	0.075	0.000	0.052
12	0.000	0.000	0.000	-0.031	0.000	0.061
13	-0.062	4.901	-0.107	0.000	0.000	0.000
14	0.057	0.000	0.687	0.033	0.000	-0.023
15	0.000	0.000	0.000	0.061	0.000	0.000
16	0.000	0.000	0.000	0.017	0.000	0.000
17	0.000	0.000	0.000	-0.057	0.000	0.000
18	-3.106	0.000	1.310	0.015	0.000	0.000
19	0.000	0.000	0.000	0.067	0.000	0.000
21	0.000	0.000	0.000	-0.062	0.000	0.000
22	-3.540	0.000	1.471	-0.018	0.000	0.000
23	0.000	0.000	0.000	0.075	0.000	0.013
24	0.000	0.000	0.000	-0.031	0.000	-0.017
25	1.122	-11.071	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.016	0.000	-0.166
27	0.000	0.000	0.000	-0.015	0.000	-0.014
28	0.000	0.000	0.000	0.029	0.000	-0.027
29	0.000	0.000	0.000	0.054	0.000	-0.025
30	0.000	0.000	0.000	-0.022	0.000	-0.019
31	0.000	0.000	0.000	-0.059	0.000	-0.011
32	0.000	0.000	0.000	-0.011	0.000	0.000
33	0.000	0.000	0.000	0.057	0.000	0.012
34	0.000	0.000	0.000	0.000	0.000	0.024
35	0.000	0.000	0.000	-0.064	0.000	0.036
36	0.000	0.000	0.000	0.022	0.000	0.043
37	-0.040	5.680	-0.032	0.000	0.000	0.000
38	0.037	0.000	0.305	0.000	0.000	-0.015
39	0.000	0.000	0.000	-0.015	0.000	0.000
40	-1.710	0.000	0.931	0.029	0.000	0.000
41	0.000	0.000	0.000	0.055	0.000	0.000
42	0.000	0.000	0.000	-0.022	0.000	0.000
43	0.000	0.000	0.000	-0.059	0.000	0.000
44	-1.928	0.000	1.335	-0.011	0.000	0.000
45	0.000	0.000	0.000	0.058	0.000	0.000
47	0.000	0.000	0.000	-0.064	0.000	0.000
48	-4.039	0.000	1.636	0.022	0.000	-0.016
49	1.002	6.047	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.037	0.000	-0.162
51	0.000	0.000	0.000	0.042	0.000	0.000

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Job Ref : B11323

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
52	0.000	0.000	0.000	0.000	0.000	-0.016
53	0.000	0.000	0.000	-0.043	0.000	-0.014
54	0.000	0.000	0.000	0.000	0.000	-0.010
55	0.000	0.000	0.000	0.044	0.000	0.000
57	0.000	0.000	0.000	-0.046	0.000	0.000
58	0.000	0.000	0.000	0.000	0.000	0.015
59	0.000	0.000	0.000	0.062	0.000	0.022
60	0.000	0.000	0.000	0.016	0.000	0.024
61	-0.040	5.791	-0.079	0.000	0.000	0.000
62	0.038	0.000	0.512	0.024	0.000	-0.015
63	0.000	0.000	0.000	0.043	0.000	0.000
65	0.000	0.000	0.000	-0.042	0.000	0.000
66	1.252	0.000	0.986	0.000	0.000	0.000
67	0.000	0.000	0.000	0.044	0.000	0.000
69	0.000	0.000	0.000	-0.046	0.000	0.000
70	1.502	0.000	1.169	0.000	0.000	0.000
71	0.000	0.000	0.000	0.062	0.000	0.000
72	0.000	0.000	0.000	0.016	0.000	-0.021
73	0.972	6.067	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.012	0.000	-0.159
75	0.000	0.000	0.000	0.000	0.000	-0.013
76	0.000	0.000	0.000	0.023	0.000	-0.023
77	0.000	0.000	0.000	0.043	0.000	-0.022
78	0.000	0.000	0.000	0.000	0.000	-0.018
79	0.000	0.000	0.000	-0.044	0.000	-0.011
81	0.000	0.000	0.000	0.045	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.017
83	0.000	0.000	0.000	-0.048	0.000	0.027
84	0.000	0.000	0.000	0.033	0.000	0.032
85	-0.039	5.796	-0.025	0.000	0.000	0.000
86	0.037	0.000	0.230	0.000	0.000	-0.014
88	-0.021	0.000	0.717	0.023	0.000	0.000
89	0.000	0.000	0.000	0.043	0.000	0.000
91	0.000	0.000	0.000	-0.044	0.000	0.000
92	-0.020	0.000	1.023	0.000	0.000	0.000
93	0.000	0.000	0.000	0.045	0.000	0.000
95	0.000	0.000	0.000	-0.048	0.000	0.000
96	-0.648	0.000	1.534	0.033	0.000	-0.020
97	0.950	6.082	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.036	0.000	-0.157
99	0.000	0.000	0.000	0.042	0.000	-0.013
100	0.000	0.000	0.000	0.000	0.000	-0.023
101	0.000	0.000	0.000	-0.043	0.000	-0.022
102	0.000	0.000	0.000	0.000	0.000	-0.018
103	0.000	0.000	0.000	0.044	0.000	-0.011
105	0.000	0.000	0.000	-0.047	0.000	0.000
106	0.000	0.000	0.000	0.011	0.000	0.017
107	0.000	0.000	0.000	0.067	0.000	0.027
108	0.000	0.000	0.000	0.022	0.000	0.032
109	-0.039	5.796	-0.078	0.000	0.000	0.000
110	0.036	0.000	0.512	0.024	0.000	-0.014
111	0.000	0.000	0.000	0.043	0.000	0.000
113	0.000	0.000	0.000	-0.042	0.000	0.000
114	-0.020	0.000	0.976	0.000	0.000	0.000
115	0.000	0.000	0.000	0.044	0.000	0.000
117	0.000	0.000	0.000	-0.046	0.000	0.000
118	0.027	0.000	1.180	0.011	0.000	0.000
119	0.000	0.000	0.000	0.067	0.000	0.000

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Job Ref : B11323

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
120	0.000	0.000	0.000	0.022	0.000	-0.020
121	0.942	6.015	0.000	0.000	0.000	0.000
122	0.000	0.000	0.000	0.012	0.000	-0.153
123	0.000	0.000	0.000	0.000	0.000	-0.014
124	0.000	0.000	0.000	0.023	0.000	-0.023
125	0.000	0.000	0.000	0.043	0.000	-0.022
126	0.000	0.000	0.000	0.000	0.000	-0.018
127	0.000	0.000	0.000	-0.044	0.000	-0.012
129	0.000	0.000	0.000	0.045	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.015
131	0.000	0.000	0.000	-0.048	0.000	0.024
132	0.000	0.000	0.000	0.041	0.000	0.030
133	-0.037	5.750	-0.025	0.000	0.000	0.000
134	0.034	0.000	0.230	0.000	0.000	-0.013
136	1.718	0.000	0.709	0.023	0.000	0.000
137	0.000	0.000	0.000	0.043	0.000	0.000
139	0.000	0.000	0.000	-0.044	0.000	0.000
140	1.930	0.000	1.013	0.000	0.000	0.000
141	0.000	0.000	0.000	0.045	0.000	0.000
143	0.000	0.000	0.000	-0.048	0.000	0.000
144	4.585	0.000	1.602	0.042	0.000	-0.021
145	0.846	4.842	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.037	0.000	-0.187
147	0.000	0.000	0.000	0.043	0.000	-0.015
148	0.000	0.000	0.000	0.000	0.000	-0.030
149	0.000	0.000	0.000	-0.046	0.000	-0.029
150	0.000	0.000	0.000	0.000	0.000	-0.024
151	0.000	0.000	0.000	0.046	0.000	-0.016
153	0.000	0.000	0.000	-0.050	0.000	0.000
154	0.000	0.000	0.000	0.014	0.000	0.019
155	0.000	0.000	0.000	0.077	0.000	0.031
156	0.000	0.000	0.000	0.024	0.000	0.036
157	-0.058	4.642	-0.080	0.000	0.000	0.000
158	0.053	0.000	0.522	0.024	0.000	-0.021
159	0.000	0.000	0.000	0.045	0.000	0.000
161	0.000	0.000	0.000	-0.045	0.000	0.000
162	1.851	0.000	0.983	0.000	0.000	0.000
163	0.000	0.000	0.000	0.047	0.000	0.000
165	0.000	0.000	0.000	-0.050	0.000	0.000
166	2.015	0.000	1.230	0.015	0.000	0.000
167	0.000	0.000	0.000	0.078	0.000	0.000
168	0.000	0.000	0.000	0.024	0.000	-0.027
169	0.000	0.000	0.000	-0.073	0.000	0.076
170	0.000	0.000	0.000	-0.070	0.000	0.013
171	0.000	0.000	0.000	0.028	0.000	0.052
172	0.000	0.000	0.000	0.031	0.000	0.000
173	0.000	0.000	0.000	-0.068	0.000	0.031
174	0.000	0.000	0.000	-0.066	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.042
177	0.000	0.000	0.000	-0.073	0.000	0.041
178	0.000	0.000	0.000	-0.071	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.039
181	0.000	0.000	0.000	-0.086	0.000	0.048
182	0.000	0.000	0.000	-0.082	0.000	0.000
183	0.000	0.000	0.000	-0.065	0.000	0.072
184	1.440	0.000	2.547	-0.053	0.000	0.050
185	0.000	0.000	0.000	-0.077	0.000	0.040
186	0.000	0.000	0.000	-0.064	0.000	0.031

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 423

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	R _x →(kN)	R _y ↑(kN)	R _z ↗(kN)	M _x →(kN.m)	M _y ↑(kN.m)	M _z ↗(kN.m)
187	0.000	0.000	0.000	-0.078	0.000	0.013
188	2.308	0.000	4.110	-0.066	0.000	0.025
189	0.000	0.000	0.000	-0.083	0.000	0.028
190	0.000	0.000	0.000	-0.071	0.000	0.028
191	0.000	0.000	0.000	-0.087	0.000	0.027
192	1.423	0.000	4.231	-0.075	0.000	0.028
193	0.000	0.000	0.000	-0.093	0.000	0.024
194	0.000	0.000	0.000	-0.080	0.000	0.025
195	0.000	0.000	0.000	-0.097	0.000	0.032
196	0.566	0.000	2.737	-0.085	0.000	0.034
Total	12.985	79.389	36.001	-0.337	0.000	-0.653

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MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group L5	Live Load
Load Group L6	Live Load
Load Group L7	Live Load
Load Group L8	Live Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 W1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 N1
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 0.25 L5 + 0.25 L7 + 1.00 W4
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 L5 + 0.50 L6 + 1.00 L7 + 0.50 L8 + 1.00 W2
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 0.25 L5 + 0.25 L7 + 1.00 W5
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	1.800	0.000	0.000	26	1.800	0.500	0.000
27	1.800	2.500	0.000	28	1.800	4.500	0.000
29	1.800	6.500	0.000	30	1.800	8.500	0.000
31	1.800	10.500	0.000	32	1.800	12.500	0.000
33	1.800	14.500	0.000	34	1.800	16.500	0.000

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 425****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

35	1.800	18.500	0.000	36	1.800	20.500	0.000
37	1.800	0.000	1.300	38	1.800	0.500	1.300
39	1.800	2.500	1.300	40	1.800	4.500	1.300
41	1.800	6.500	1.300	42	1.800	8.500	1.300
43	1.800	10.500	1.300	44	1.800	12.500	1.300
45	1.800	14.500	1.300	46	1.800	16.500	1.300
47	1.800	18.500	1.300	48	1.800	20.500	1.300
49	3.600	0.000	0.000	50	3.600	0.500	0.000
51	3.600	2.500	0.000	52	3.600	4.500	0.000
53	3.600	6.500	0.000	54	3.600	8.500	0.000
55	3.600	10.500	0.000	56	3.600	12.500	0.000
57	3.600	14.500	0.000	58	3.600	16.500	0.000
59	3.600	18.500	0.000	60	3.600	20.500	0.000
61	3.600	0.000	1.300	62	3.600	0.500	1.300
63	3.600	2.500	1.300	64	3.600	4.500	1.300
65	3.600	6.500	1.300	66	3.600	8.500	1.300
67	3.600	10.500	1.300	68	3.600	12.500	1.300
69	3.600	14.500	1.300	70	3.600	16.500	1.300
71	3.600	18.500	1.300	72	3.600	20.500	1.300
73	5.400	0.000	0.000	74	5.400	0.500	0.000
75	5.400	2.500	0.000	76	5.400	4.500	0.000
77	5.400	6.500	0.000	78	5.400	8.500	0.000
79	5.400	10.500	0.000	80	5.400	12.500	0.000
81	5.400	14.500	0.000	82	5.400	16.500	0.000
83	5.400	18.500	0.000	84	5.400	20.500	0.000
85	5.400	0.000	1.300	86	5.400	0.500	1.300
87	5.400	2.500	1.300	88	5.400	4.500	1.300
89	5.400	6.500	1.300	90	5.400	8.500	1.300
91	5.400	10.500	1.300	92	5.400	12.500	1.300
93	5.400	14.500	1.300	94	5.400	16.500	1.300
95	5.400	18.500	1.300	96	5.400	20.500	1.300
97	7.200	0.000	0.000	98	7.200	0.500	0.000
99	7.200	2.500	0.000	100	7.200	4.500	0.000
101	7.200	6.500	0.000	102	7.200	8.500	0.000
103	7.200	10.500	0.000	104	7.200	12.500	0.000
105	7.200	14.500	0.000	106	7.200	16.500	0.000
107	7.200	18.500	0.000	108	7.200	20.500	0.000
109	7.200	0.000	1.300	110	7.200	0.500	1.300
111	7.200	2.500	1.300	112	7.200	4.500	1.300
113	7.200	6.500	1.300	114	7.200	8.500	1.300
115	7.200	10.500	1.300	116	7.200	12.500	1.300
117	7.200	14.500	1.300	118	7.200	16.500	1.300
119	7.200	18.500	1.300	120	7.200	20.500	1.300
121	9.000	0.000	0.000	122	9.000	0.500	0.000
123	9.000	2.500	0.000	124	9.000	4.500	0.000
125	9.000	6.500	0.000	126	9.000	8.500	0.000
127	9.000	10.500	0.000	128	9.000	12.500	0.000
129	9.000	14.500	0.000	130	9.000	16.500	0.000
131	9.000	18.500	0.000	132	9.000	20.500	0.000
133	9.000	0.000	1.300	134	9.000	0.500	1.300
135	9.000	2.500	1.300	136	9.000	4.500	1.300
137	9.000	6.500	1.300	138	9.000	8.500	1.300
139	9.000	10.500	1.300	140	9.000	12.500	1.300
141	9.000	14.500	1.300	142	9.000	16.500	1.300
143	9.000	18.500	1.300	144	9.000	20.500	1.300
145	10.800	0.000	0.000	146	10.800	0.500	0.000
147	10.800	2.500	0.000	148	10.800	4.500	0.000
149	10.800	6.500	0.000	150	10.800	8.500	0.000
151	10.800	10.500	0.000	152	10.800	12.500	0.000
153	10.800	14.500	0.000	154	10.800	16.500	0.000
155	10.800	18.500	0.000	156	10.800	20.500	0.000
157	10.800	0.000	1.300	158	10.800	0.500	1.300
159	10.800	2.500	1.300	160	10.800	4.500	1.300
161	10.800	6.500	1.300	162	10.800	8.500	1.300
163	10.800	10.500	1.300	164	10.800	12.500	1.300
165	10.800	14.500	1.300	166	10.800	16.500	1.300
167	10.800	18.500	1.300	168	10.800	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	1.800	22.500	0.000	172	1.800	22.500	1.300
173	3.600	22.500	0.000	174	3.600	22.500	1.300
175	5.400	22.500	0.000	176	5.400	22.500	1.300
177	7.200	22.500	0.000	178	7.200	22.500	1.300

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 426****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

179	9.000	22.500	0.000	180	9.000	22.500	1.300
181	10.800	22.500	0.000	182	10.800	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	1.800	24.500	0.000	186	1.800	24.500	1.300
187	3.600	24.500	0.000	188	3.600	24.500	1.300
189	5.400	24.500	0.000	190	5.400	24.500	1.300
191	7.200	24.500	0.000	192	7.200	24.500	1.300
193	9.000	24.500	0.000	194	9.000	24.500	1.300
195	10.800	24.500	0.000	196	10.800	24.500	1.300

Member Properties

Members 1-10, 16-25, 31-40, 46-55, 61-100, 106-129, 135-144, 150-177, 182-189,

194-201, 206-213, 218-225, 230-237, 242-249, 254-309, 312-315, 318-321,

324-327, 330-333, 336-339, 342-345, 348-373, 381-392 and 400-454

M 48.3x3.2 CHS 3.56 [S 355]

A 4.53E-4

Ix 11.59E-8

Iy 11.59E-8

J 23.17E-8

E 205.0E6

G 78.85E6

Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,

202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,

328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

M Omega Transom [] E 210E6 G 78E6

A 7.02E-4

Ix 36.1E-8

Iy 54.0E-8

J 72.21E-8

Member Loading**Members 2 and 17**

W1	PZ	-000.013	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.072	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.014	0.000	(kN,m)
W5	PX	-000.074	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 3 and 18

W1	PZ	-000.027	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.146	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.028	0.000	(kN,m)
W5	PX	-000.153	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 4 and 19

W1	PZ	-000.028	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.152	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.158	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 5 and 20

W1	PZ	-000.029	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.157	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.030	0.000	(kN,m)
W5	PX	-000.163	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 7 and 22

W1	PZ	-000.013	0.000	(kN,m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 427****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ -000.072 0.000 (kN,m)

Members 8 and 23

W1 PZ -000.027 0.000 (kN,m)

W4 PZ -000.146 0.000 (kN,m)

Members 9 and 24

W1 PZ -000.028 0.000 (kN,m)

W4 PZ -000.152 0.000 (kN,m)

Members 10 and 25

W1 PZ -000.029 0.000 (kN,m)

W4 PZ -000.157 0.000 (kN,m)

**Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341 and 346-347**

D1 PY -000.035 0.025 (kN,m)

D1 PY -000.035 1.275 (kN,m)

Members 32, 47, 92, 121 and 136

W1 PZ -000.009 0.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.054 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W2 PX -000.009 0.000 (kN,m)

W5 PX -000.054 0.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

Members 33, 48, 93, 122 and 137

W1 PZ -000.020 0.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.111 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W2 PX -000.020 0.000 (kN,m)

W5 PX -000.112 0.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

Members 34, 49, 94, 123 and 138

W1 PZ -000.021 0.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.115 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W2 PX -000.021 0.000 (kN,m)

W5 PX -000.115 0.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

Members 35, 50, 95, 124 and 139

W1 PZ -000.022 0.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.118 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W2 PX -000.022 0.000 (kN,m)

W5 PX -000.119 0.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

Members 37, 52, 97, 126 and 141

W1 PZ -000.009 0.000 (kN,m)

W4 PZ -000.054 0.000 (kN,m)

Members 38, 53, 98, 127 and 142

W1 PZ -000.020 0.000 (kN,m)

W4 PZ -000.111 0.000 (kN,m)

Members 39, 54, 99, 128 and 143

W1 PZ -000.021 0.000 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 428****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ -000.115 0.000 (kN,m)

Members 40, 55, 100, 129 and 144

W1 PZ -000.022 0.000 (kN,m)

W4 PZ -000.118 0.000 (kN,m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY -000.143 0.025 (kN,m)

D1 PY -000.143 1.775 (kN,m)

Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277, 279-289, 291-301, 349-359, 361-371, 387-392 and 406-411

D1 PY -000.090 0.025 (kN,m)

D1 PY -000.090 1.775 (kN,m)

Members 170 and 182

W1 PZ -000.029 0.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.161 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W2 PX -000.030 0.000 (kN,m)

W5 PX -000.167 0.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

Members 171 and 183

W1 PZ -000.030 0.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.165 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W2 PX -000.031 0.000 (kN,m)

W5 PX -000.172 0.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

Members 172 and 184

W1 PZ -000.031 0.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.170 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W2 PX -000.032 0.000 (kN,m)

W5 PX -000.176 0.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

Members 173 and 185

W1 PZ -000.032 0.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.175 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W2 PX -000.033 0.000 (kN,m)

W5 PX -000.181 0.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

Members 174 and 186

W1 PZ -000.029 0.000 (kN,m)

W4 PZ -000.161 0.000 (kN,m)

Members 175 and 187

W1 PZ -000.030 0.000 (kN,m)

W4 PZ -000.165 0.000 (kN,m)

Members 176 and 188

W1 PZ -000.031 0.000 (kN,m)

W4 PZ -000.170 0.000 (kN,m)

Members 177 and 189

W1 PZ -000.032 0.000 (kN,m)

W4 PZ -000.175 0.000 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 429****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 194, 206, 218, 230 and 242**

W1 PZ	-000.022	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.121	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.022	0.000	(kN, m)
W5 PX	-000.122	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 195, 207, 219, 231 and 243

W1 PZ	-000.023	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.125	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.023	0.000	(kN, m)
W5 PX	-000.125	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.023	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.128	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.023	0.000	(kN, m)
W5 PX	-000.129	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.024	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.024	0.000	(kN, m)
W5 PX	-000.132	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.022	0.000	(kN, m)
W4 PZ	-000.121	0.000	(kN, m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.023	0.000	(kN, m)
W4 PZ	-000.125	0.000	(kN, m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.023	0.000	(kN, m)
W4 PZ	-000.128	0.000	(kN, m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.024	0.000	(kN, m)
W4 PZ	-000.131	0.000	(kN, m)

Members 306 and 312

W1 PZ	-000.033	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.179	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.034	0.000	(kN, m)
W5 PX	-000.186	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 307 and 313

W1 PZ	-000.034	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 430****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W4 PZ	-000.184	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.035	0.000	(kN, m)
W5 PX	-000.190	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 308 and 314

W1 PZ	-000.033	0.000	(kN, m)
W4 PZ	-000.179	0.000	(kN, m)

Members 309 and 315

W1 PZ	-000.034	0.000	(kN, m)
W4 PZ	-000.184	0.000	(kN, m)

Members 318, 324, 330, 336 and 342

W1 PZ	-000.025	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.135	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.025	0.000	(kN, m)
W5 PX	-000.136	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 319, 325, 331, 337 and 343

W1 PZ	-000.025	0.000	(kN, m)
W3 PZ	-000.000	0.000	(kN, m)
W4 PZ	-000.138	0.000	(kN, m)
W6 PZ	-000.000	0.000	(kN, m)
W2 PX	-000.025	0.000	(kN, m)
W5 PX	-000.139	0.000	(kN, m)
W7 PX	-000.000	0.000	(kN, m)
W8 PX	-000.000	0.000	(kN, m)

Members 320, 326, 332, 338 and 344

W1 PZ	-000.025	0.000	(kN, m)
W4 PZ	-000.135	0.000	(kN, m)

Members 321, 327, 333, 339 and 345

W1 PZ	-000.025	0.000	(kN, m)
W4 PZ	-000.138	0.000	(kN, m)

Members 374-380

D1 PY	-000.431	0.025	(kN, m)
D1 PY	-000.354	1.275	(kN, m)
L2 PY	-001.519	0.025	(kN, m)
L4 PY	-001.519	1.275	(kN, m)
L6 PY	-002.025	0.025	(kN, m)
L8 PY	-002.025	1.275	(kN, m)
G2 PY	-003.038	0.025	(kN, m)
G4 PY	-003.038	1.275	(kN, m)

Member 381

D1 PY	-000.211	0.025	(kN, m)
D1 PY	-000.211	1.775	(kN, m)

Members 382-386

D1 PY	-000.159	0.025	(kN, m)
D1 PY	-000.159	1.775	(kN, m)

Members 393-399

D1 PY	-000.431	0.025	(kN, m)
D1 PY	-000.354	1.275	(kN, m)
L1 PY	-001.519	0.025	(kN, m)
L3 PY	-001.519	1.275	(kN, m)
L5 PY	-002.025	0.025	(kN, m)
L7 PY	-002.025	1.275	(kN, m)
G1 PY	-003.038	0.025	(kN, m)
G3 PY	-003.038	1.275	(kN, m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 431****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member 400**

D1 PY	-000.211	0.025	(kN,m)
D1 PY	-000.211	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)

Members 401-404

D1 PY	-000.159	0.025	(kN,m)
D1 PY	-000.159	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)

Member 405

D1 PY	-000.159	0.025	(kN,m)
D1 PY	-000.159	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
N1 PZ	-000.300	1.775	(kN,m)

Members 412 and 416

W1 PZ	-000.034	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.195	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 413 and 417

W1 PZ	-000.156	0.000	(kN,m)
W1 PZ	-000.160	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.640	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.655	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.052	0.000	(kN,m)
W2 PX	-000.053	2.000	(kN,m)
W5 PX	-000.276	0.000	(kN,m)
W5 PX	-000.282	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 414 and 418

W1 PZ	-000.034	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)

Members 415 and 419

W1 PZ	-000.156	0.000	(kN,m)
W4 PZ	-000.072	0.000	(kN,m)
W1 PZ	-000.640	2.000	(kN,m)
W4 PZ	-000.655	2.000	(kN,m)

Members 420, 424, 428, 432 and 436

W1 PZ	-000.026	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.026	0.000	(kN,m)
W5 PX	-000.142	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 421, 425, 429 and 433

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.583	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 432****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.596	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.042	0.000	(kN,m)
W2 PX	-000.043	2.000	(kN,m)
W5 PX	-000.146	0.000	(kN,m)
W5 PX	-000.149	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ	-000.026	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ	-000.146	0.000	(kN,m)
W4 PZ	-000.583	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W4 PZ	-000.596	2.000	(kN,m)

Member 437

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.583	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.596	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.042	0.000	(kN,m)
W2 PX	-000.043	2.000	(kN,m)
W5 PX	-000.222	0.000	(kN,m)
W5 PX	-000.227	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major	End 2 torsion-minor-major	O Relased	® Fixed
11	®®®	®®®	12	®®®
15	®®®	®®®	26	®®®
29	®®®	®®®	41	®®®
43	®®®	®®®	56	®®®
57	®®®	®®®	59	®®®
61	®®®	®®®	63	®®®
65	®®®	®®®	67	®®®
69	®®®	®®®	71	®®®
73	®®®	®®®	75	®®®
77	®®®	®®®	79	®®®
81	®®®	®®®	83	®®®
85	®®®	®®®	87	®®®
89	®®®	®®®	101	®®®
103	®®®	®®®	105	®®®
107	®®®	®®®	109	®®®
111	®®®	®®®	113	®®®
115	®®®	®®®	117	®®®
119	®®®	®®®	131	®®®
133	®®®	®®®	145	®®®
147	®®®	®®®	149	®®®
151	®®®	®®®	153	®®®
155	®®®	®®®	157	®®®
159	®®®	®®®	161	®®®
163	®®®	®®®	165	®®®
167	®®®	®®®	169	®®®
179	®®®	®®®	181	®®®
191	®®®	®®®	193	®®®
203	®®®	®®®	205	®®®
215	®®®	®®®	217	®®®
			226	®®®

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 433****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

227	ROO	ROO	228	ROO	ROO	229	ROO	ROO	238	ROO	ROO
239	ROO	ROO	240	ROO	ROO	241	ROO	ROO	250	ROO	ROO
251	ROO	ROO	252	ROO	ROO	253	ROO	ROO	254	ROO	ROO
255	ROO	ROO	256	ROO	ROO	257	ROO	ROO	258	ROO	ROO
259	ROO	ROO	260	ROO	ROO	261	ROO	ROO	262	ROO	ROO
263	ROO	ROO	264	ROO	ROO	265	ROO	ROO	266	ROO	ROO
267	ROO	ROO	268	ROO	ROO	269	ROO	ROO	270	ROO	ROO
271	ROO	ROO	272	ROO	ROO	273	ROO	ROO	274	ROO	ROO
275	ROO	ROO	276	ROO	ROO	277	ROO	ROO	278	ROO	ROO
279	ROO	ROO	280	ROO	ROO	281	ROO	ROO	282	ROO	ROO
283	ROO	ROO	284	ROO	ROO	285	ROO	ROO	286	ROO	ROO
287	ROO	ROO	288	ROO	ROO	289	ROO	ROO	290	ROO	ROO
291	ROO	ROO	292	ROO	ROO	293	ROO	ROO	294	ROO	ROO
295	ROO	ROO	296	ROO	ROO	297	ROO	ROO	298	ROO	ROO
299	ROO	ROO	300	ROO	ROO	301	ROO	ROO	302	ROO	ROO
303	ROO	ROO	304	ROO	ROO	305	ROO	ROO	310	ROO	ROO
311	ROO	ROO	316	ROO	ROO	317	ROO	ROO	322	ROO	ROO
323	ROO	ROO	328	ROO	ROO	329	ROO	ROO	334	ROO	ROO
335	ROO	ROO	340	ROO	ROO	341	ROO	ROO	346	ROO	ROO
347	ROO	ROO	348	ROO	ROO	349	ROO	ROO	350	ROO	ROO
351	ROO	ROO	352	ROO	ROO	353	ROO	ROO	354	ROO	ROO
355	ROO	ROO	356	ROO	ROO	357	ROO	ROO	358	ROO	ROO
359	ROO	ROO	360	ROO	ROO	361	ROO	ROO	362	ROO	ROO
363	ROO	ROO	364	ROO	ROO	365	ROO	ROO	366	ROO	ROO
367	ROO	ROO	368	ROO	ROO	369	ROO	ROO	370	ROO	ROO
371	ROO	ROO	372	ROO	ROO	373	ROO	ROO	374	ROO	ROO
375	ROO	ROO	376	ROO	ROO	377	ROO	ROO	378	ROO	ROO
379	ROO	ROO	380	ROO	ROO	381	ROO	ROO	382	ROO	ROO
383	ROO	ROO	384	ROO	ROO	385	ROO	ROO	386	ROO	ROO
387	ROO	ROO	388	ROO	ROO	389	ROO	ROO	390	ROO	ROO
391	ROO	ROO	392	ROO	ROO	393	ROO	ROO	394	ROO	ROO
395	ROO	ROO	396	ROO	ROO	397	ROO	ROO	398	ROO	ROO
399	ROO	ROO	400	ROO	ROO	401	ROO	ROO	402	ROO	ROO
403	ROO	ROO	404	ROO	ROO	405	ROO	ROO	406	ROO	ROO
407	ROO	ROO	408	ROO	ROO	409	ROO	ROO	410	ROO	ROO
411	ROO	ROO	440	ROO	ROO	441	ROO	ROO	442	ROO	ROO
443	ROO	ROO	444	ROO	ROO	445	ROO	ROO	446	ROO	ROO
447	ROO	ROO	448	ROO	ROO	449	ROO	ROO	450	ROO	ROO
451	ROO	ROO	452	ROO	ROO	453	ROO	ROO	454	ROO	ROO

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0087.100 0000.000 0104.050

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 434

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.28	0.28	-0.03	0.00	0.42	0.42
2	-2.77	-0.12	0.01	2.78	-0.03	0.00	0.12	0.12
3	-3.76	-0.40	-7.68	8.56	-0.04	0.01	0.01	0.04
4	-5.05	-0.54	-10.56	11.71	-0.01	-0.01	0.02	0.03
5	-6.40	-0.58	-7.55	9.92	0.04	0.01	0.02	0.04
6	-7.59	-0.65	0.04	7.62	-0.01	0.01	0.02	0.02
7	-8.45	-0.74	-8.13	11.75	-0.04	0.00	0.01	0.05
8	-8.84	-0.87	-11.40	14.46	0.00	-0.01	0.00	0.01
9	-8.68	-1.00	-8.21	11.99	0.04	-0.01	-0.01	0.04
10	-7.94	-1.12	0.05	8.01	0.01	-0.01	-0.02	0.02
11	-6.60	-1.24	-9.18	11.37	-0.05	-0.01	-0.03	0.06
12	-4.75	-1.35	-12.99	13.90	0.02	-0.01	-0.03	0.04
13	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
14	0.00	-0.03	0.00	0.03	-0.02	0.00	0.01	0.02
15	0.07	-0.15	-7.68	7.68	-0.04	0.00	0.00	0.04
16	0.06	-0.27	-10.56	10.56	-0.01	0.00	0.00	0.01
17	0.07	-0.38	-7.55	7.56	0.04	0.00	0.00	0.04
18	0.00	-0.50	0.00	0.50	-0.01	0.00	0.00	0.01
19	0.07	-0.60	-8.13	8.16	-0.04	0.00	0.00	0.04
20	0.07	-0.71	-11.40	11.43	0.00	0.00	0.00	0.01
21	0.07	-0.81	-8.21	8.25	0.04	-0.01	0.00	0.04
22	0.00	-0.91	0.00	0.91	0.01	-0.01	-0.01	0.01
23	0.11	-1.01	-9.18	9.23	-0.05	-0.01	-0.01	0.05
24	0.09	-1.10	-12.99	13.04	0.02	-0.01	0.01	0.02
25	0.00	0.00	0.09	0.09	-0.01	0.00	0.41	0.41
26	-2.67	0.04	0.01	2.67	-0.01	0.00	0.09	0.09
27	-3.65	0.29	-2.06	4.20	0.01	-0.01	0.01	0.01
28	-4.96	0.38	0.02	4.97	-0.02	-0.01	0.01	0.03
29	-6.33	-0.44	-7.71	9.99	-0.04	-0.01	0.01	0.04
30	-7.54	-0.55	-10.43	12.88	0.01	-0.01	0.01	0.02
31	-8.41	-0.66	-7.61	11.36	0.04	-0.01	0.01	0.04
32	-8.82	-0.77	0.06	8.86	0.01	-0.01	0.00	0.01
33	-8.68	-0.87	-8.14	11.93	-0.04	0.00	-0.01	0.04
34	-7.95	-1.00	-11.13	13.72	0.00	0.00	-0.01	0.01
35	-6.64	-1.14	-8.14	10.57	0.04	-0.01	-0.02	0.05
36	-4.81	-1.28	0.02	4.97	-0.01	-0.02	-0.02	0.03
37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
38	0.00	-0.03	0.00	0.03	-0.01	0.00	0.01	0.01
39	0.07	-0.17	-2.06	2.07	0.01	0.00	0.00	0.01
40	0.00	-0.30	0.00	0.30	-0.02	0.00	0.00	0.02
41	0.07	-0.42	-7.71	7.72	-0.04	-0.01	0.00	0.04
42	0.00	-0.55	-10.43	10.44	0.01	-0.01	0.00	0.02
43	0.07	-0.66	-7.61	7.64	0.04	-0.01	0.00	0.04
44	0.00	-0.78	0.00	0.78	0.01	-0.01	0.00	0.01
45	0.07	-0.88	-8.14	8.19	-0.04	-0.01	0.00	0.04
46	0.00	-0.99	-11.13	11.18	0.00	-0.02	0.00	0.02
47	0.11	-1.09	-8.14	8.21	0.04	-0.02	0.00	0.05
48	0.00	-1.18	0.00	1.18	-0.01	-0.02	0.01	0.03
49	0.00	0.00	0.21	0.21	-0.02	0.00	0.40	0.40
50	-2.58	-0.04	0.01	2.58	-0.02	0.00	0.09	0.09
51	-3.67	-0.18	-5.72	6.79	-0.03	0.00	0.00	0.03
52	-4.97	-0.31	-7.76	9.22	0.00	0.00	0.01	0.01
53	-6.34	-0.45	-5.61	8.48	0.03	0.00	0.01	0.03
54	-7.55	-0.58	0.04	7.57	0.00	0.00	0.01	0.01
55	-8.43	-0.70	-5.97	10.35	-0.03	0.00	0.00	0.03
56	-8.83	-0.82	-8.24	12.11	0.00	0.00	0.00	0.00
57	-8.69	-0.93	-5.96	10.58	0.03	0.00	0.00	0.03
58	-7.97	-1.04	0.05	8.03	-0.01	0.00	-0.01	0.01

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Job Ref : B11323

Sheet : SD / 435

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-6.66	-1.15	-7.89	10.38	-0.04	0.00	-0.01	0.04
60	-4.82	-1.25	-11.85	12.86	-0.01	0.00	-0.01	0.02
61	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
62	0.00	-0.04	0.00	0.04	-0.02	0.00	0.01	0.02
63	0.07	-0.17	-5.72	5.72	-0.03	0.00	0.00	0.03
64	0.00	-0.31	-7.76	7.77	0.00	0.00	0.00	0.00
65	0.07	-0.43	-5.61	5.62	0.03	0.00	0.00	0.03
66	0.00	-0.56	0.00	0.56	0.00	0.00	0.00	0.00
67	0.07	-0.68	-5.97	6.01	-0.03	0.00	0.00	0.03
68	0.00	-0.79	-8.24	8.27	0.00	-0.01	0.00	0.01
69	0.07	-0.90	-5.96	6.03	0.03	-0.01	0.00	0.03
70	0.00	-1.00	0.00	1.00	-0.01	-0.01	0.00	0.01
71	0.11	-1.11	-7.89	7.96	-0.04	-0.01	0.00	0.04
72	0.00	-1.20	-11.85	11.91	-0.01	-0.01	0.01	0.02
73	0.00	0.00	0.07	0.07	-0.01	0.00	0.39	0.39
74	-2.51	-0.04	0.00	2.51	-0.01	0.00	0.09	0.09
75	-3.68	-0.18	-1.57	4.00	0.00	0.00	0.01	0.01
76	-4.98	-0.32	0.02	4.99	-0.02	0.00	0.01	0.02
77	-6.35	-0.45	-5.91	8.69	-0.03	0.00	0.01	0.03
78	-7.56	-0.58	-8.06	11.06	0.00	0.00	0.01	0.01
79	-8.43	-0.70	-5.84	10.28	0.03	-0.01	0.01	0.03
80	-8.84	-0.82	0.06	8.88	0.00	-0.01	0.00	0.01
81	-8.70	-0.94	-6.15	10.70	-0.03	-0.01	0.00	0.03
82	-7.98	-1.05	-8.45	11.67	0.00	-0.01	-0.01	0.01
83	-6.67	-1.15	-6.01	9.05	0.03	-0.01	-0.01	0.04
84	-4.83	-1.25	0.02	4.99	-0.02	-0.01	-0.02	0.03
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	-0.04	0.00	0.04	-0.01	0.00	0.01	0.01
87	0.07	-0.17	-1.57	1.58	0.00	0.00	0.00	0.00
88	0.00	-0.30	0.00	0.30	-0.02	0.00	0.00	0.02
89	0.07	-0.43	-5.91	5.93	-0.03	-0.01	0.00	0.03
90	0.00	-0.56	-8.06	8.08	0.00	-0.01	0.00	0.01
91	0.07	-0.68	-5.84	5.88	0.03	-0.01	0.00	0.03
92	0.00	-0.79	0.00	0.79	0.00	-0.01	0.00	0.01
93	0.07	-0.90	-6.15	6.22	-0.03	-0.02	0.00	0.03
94	0.00	-1.01	-8.45	8.51	0.00	-0.02	0.00	0.02
95	0.11	-1.11	-6.01	6.11	0.03	-0.02	0.00	0.04
96	0.00	-1.20	0.00	1.20	-0.02	-0.02	0.01	0.03
97	0.00	0.00	0.21	0.21	-0.02	0.00	0.38	0.38
98	-2.46	-0.04	0.00	2.46	-0.02	0.00	0.09	0.09
99	-3.69	-0.18	-5.72	6.81	-0.03	0.00	0.01	0.03
100	-4.99	-0.32	-7.77	9.23	0.00	0.00	0.01	0.01
101	-6.36	-0.45	-5.61	8.49	0.03	0.00	0.01	0.03
102	-7.57	-0.58	0.04	7.59	0.00	0.00	0.01	0.01
103	-8.44	-0.70	-5.97	10.36	-0.03	0.00	0.01	0.03
104	-8.85	-0.82	-8.23	12.12	0.00	0.00	0.00	0.00
105	-8.71	-0.94	-5.95	10.59	0.03	0.00	0.00	0.03
106	-7.98	-1.05	0.05	8.05	-0.01	0.00	-0.01	0.01
107	-6.67	-1.15	-8.31	10.72	-0.04	0.00	-0.01	0.05
108	-4.84	-1.26	-12.73	13.68	-0.01	0.00	-0.02	0.02
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.04	0.00	0.04	-0.02	0.00	0.01	0.02
111	0.07	-0.17	-5.72	5.72	-0.03	0.00	0.00	0.03
112	0.00	-0.31	-7.77	7.77	0.00	0.00	0.00	0.00
113	0.07	-0.43	-5.61	5.62	0.03	0.00	0.00	0.03
114	0.00	-0.56	0.00	0.56	0.00	0.00	0.00	0.00
115	0.07	-0.68	-5.97	6.01	-0.03	-0.01	0.00	0.03
116	0.00	-0.79	-8.23	8.27	0.00	-0.01	0.00	0.01

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Sheet : SD / 436

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Date : 29 September 2010 / Ver. 2010.06

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Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.07	-0.90	-5.95	6.01	0.03	-0.01	0.00	0.03
118	0.00	-1.01	0.00	1.01	-0.01	-0.01	0.00	0.01
119	0.11	-1.11	-8.31	8.38	-0.04	-0.01	0.00	0.05
120	0.00	-1.21	-12.73	12.79	-0.01	-0.01	0.01	0.02
121	0.00	0.00	0.07	0.07	-0.01	0.00	0.37	0.37
122	-2.42	-0.04	0.00	2.42	-0.01	0.00	0.08	0.08
123	-3.69	-0.18	-1.56	4.02	0.00	0.00	0.01	0.01
124	-4.99	-0.31	0.02	5.00	-0.02	0.00	0.01	0.02
125	-6.36	-0.45	-5.91	8.70	-0.03	-0.01	0.01	0.03
126	-7.57	-0.57	-8.05	11.07	0.00	-0.01	0.01	0.01
127	-8.45	-0.70	-5.84	10.29	0.03	-0.01	0.01	0.03
128	-8.85	-0.82	0.06	8.89	0.00	-0.01	0.00	0.01
129	-8.72	-0.93	-6.13	10.69	-0.03	-0.01	0.00	0.03
130	-7.99	-1.04	-8.40	11.64	0.00	-0.01	-0.01	0.01
131	-6.68	-1.14	-5.93	9.00	0.03	-0.01	-0.01	0.04
132	-4.84	-1.25	0.02	5.00	-0.03	-0.01	-0.02	0.03
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.04	0.00	0.04	-0.01	0.00	0.01	0.01
135	0.07	-0.17	-1.56	1.58	0.00	0.00	0.00	0.00
136	0.00	-0.30	0.00	0.30	-0.02	-0.01	0.00	0.02
137	0.07	-0.43	-5.91	5.93	-0.03	-0.01	0.00	0.03
138	0.00	-0.55	-8.05	8.07	0.00	-0.01	0.00	0.01
139	0.07	-0.67	-5.84	5.88	0.03	-0.01	0.00	0.03
140	0.00	-0.78	0.00	0.78	0.00	-0.01	0.00	0.01
141	0.07	-0.89	-6.13	6.19	-0.03	-0.02	0.00	0.03
142	0.00	-1.00	-8.40	8.46	0.00	-0.02	0.00	0.02
143	0.11	-1.10	-5.93	6.03	0.03	-0.02	0.00	0.04
144	0.00	-1.19	0.00	1.19	-0.03	-0.02	0.01	0.04
145	0.00	0.00	0.21	0.21	-0.02	0.00	0.36	0.36
146	-2.41	-0.03	0.00	2.41	-0.02	0.00	0.10	0.11
147	-3.70	-0.15	-5.78	6.86	-0.03	0.00	0.01	0.03
148	-4.99	-0.26	-7.93	9.38	0.00	0.00	0.02	0.02
149	-6.36	-0.38	-5.67	8.53	0.03	0.00	0.02	0.03
150	-7.57	-0.48	0.04	7.59	0.00	0.00	0.01	0.01
151	-8.45	-0.59	-6.07	10.42	-0.03	0.00	0.01	0.03
152	-8.86	-0.70	-8.48	12.28	0.00	0.00	0.00	0.00
153	-8.72	-0.80	-6.03	10.63	0.03	0.00	0.00	0.03
154	-7.99	-0.90	0.05	8.04	-0.01	0.00	-0.01	0.01
155	-6.68	-0.99	-9.18	11.40	-0.05	0.00	-0.02	0.05
156	-4.85	-1.09	-14.48	15.31	-0.02	0.00	-0.02	0.03
157	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
158	0.00	-0.03	0.00	0.03	-0.02	0.00	0.01	0.02
159	0.07	-0.14	-5.78	5.78	-0.03	0.00	0.00	0.03
160	-0.03	-0.26	-7.93	7.94	0.00	0.00	0.00	0.00
161	0.07	-0.37	-5.67	5.68	0.03	0.00	0.00	0.03
162	0.00	-0.47	0.00	0.47	0.00	0.00	0.00	0.00
163	0.07	-0.58	-6.07	6.10	-0.03	-0.01	0.00	0.03
164	-0.04	-0.68	-8.48	8.50	0.00	-0.01	0.00	0.01
165	0.07	-0.78	-6.03	6.08	0.03	-0.01	0.00	0.03
166	0.00	-0.87	0.00	0.87	-0.01	-0.01	0.00	0.01
167	0.11	-0.96	-9.18	9.23	-0.05	-0.01	0.00	0.05
168	-0.12	-1.06	-14.48	14.52	-0.02	-0.01	0.01	0.02
169	-2.49	-1.46	-9.70	10.12	0.05	-0.02	-0.04	0.07
170	-2.34	-1.19	-9.70	10.05	0.05	-0.01	-0.01	0.05
171	-2.55	-1.47	-10.33	10.74	-0.02	0.02	-0.03	0.04
172	-2.35	-1.28	-10.33	10.67	-0.02	-0.02	0.00	0.03
173	-2.55	-1.35	-11.03	11.40	0.04	0.00	-0.02	0.05
174	-2.35	-1.30	-11.03	11.35	0.04	-0.01	0.00	0.04

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Job Ref : B11323

Sheet : SD / 437

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-2.55	-1.35	-11.70	12.05	0.00	-0.01	-0.02	0.02
176	-2.35	-1.30	-11.70	12.00	-0.01	-0.02	0.00	0.02
177	-2.55	-1.35	-12.42	12.75	0.05	0.00	-0.02	0.05
178	-2.35	-1.30	-12.42	12.70	0.05	-0.01	0.00	0.05
179	-2.56	-1.34	-13.11	13.42	0.00	-0.01	-0.02	0.03
180	-2.35	-1.29	-13.11	13.38	-0.01	-0.03	0.00	0.03
181	-2.56	-1.18	-13.85	14.13	0.06	0.00	-0.03	0.06
182	-2.34	-1.15	-13.85	14.09	0.05	-0.01	0.00	0.06
183	-0.10	-1.51	-0.01	1.52	0.04	-0.02	-0.04	0.06
184	0.00	-1.26	0.00	1.26	0.03	-0.01	-0.03	0.04
185	-0.12	-1.58	-0.12	1.59	0.05	0.02	-0.02	0.06
186	-0.03	-1.34	-0.12	1.35	0.04	-0.02	-0.02	0.05
187	-0.06	-1.41	-0.03	1.41	0.05	0.00	-0.01	0.05
188	0.00	-1.36	0.00	1.36	0.04	-0.01	-0.01	0.05
189	-0.05	-1.41	-0.12	1.42	0.06	-0.01	-0.02	0.06
190	-0.02	-1.36	-0.11	1.37	0.05	-0.02	-0.02	0.05
191	-0.03	-1.41	-0.03	1.41	0.06	0.00	-0.01	0.06
192	0.00	-1.36	0.00	1.36	0.05	-0.01	-0.02	0.05
193	-0.03	-1.40	-0.13	1.41	0.06	-0.01	-0.01	0.06
194	-0.01	-1.35	-0.12	1.36	0.05	-0.03	-0.01	0.06
195	0.05	-1.23	-0.02	1.24	0.06	0.00	-0.02	0.07
196	0.00	-1.21	0.00	1.21	0.06	-0.01	-0.02	0.06

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	20.14C	0.00	-1.00	0.00	0.00	0.00		0.00	0.34
	2	20.14C	0.00	-1.00	0.00	-0.50	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	12.64C	0.00	-0.03	0.30	-0.07	-0.23	0.00	0.00	0.64
	3	12.64C	0.00	0.04	0.23	0.02	0.23	@ 0.000	@ 0.000	@ 0.424
3	3	7.34C	0.00	-0.18	0.22	0.03	-0.07	0.00	0.00	0.33
	4	7.34C	0.00	-0.03	0.08	-0.02	0.09	@ 0.000	@ 0.000	@ 1.495
4	4	6.57C	0.00	-0.18	0.07	0.02	0.09	0.00	0.00	0.35
	5	6.57C	0.00	-0.02	-0.08	-0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
5	5	6.46C	0.00	-0.18	-0.09	0.02	0.24	0.00	0.00	0.79
	6	6.46C	0.00	-0.02	-0.25	-0.02	-0.26	@ 0.000	@ 0.000	@ 1.535
6	13	5.67C	0.00	0.06	-0.11	0.00	0.00		0.00	0.04
	14	5.67C	0.00	0.06	-0.11	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
7	14	5.55C	0.00	0.00	0.31	-0.01	-0.24	0.00	0.00	0.69
	15	5.55C	0.00	0.00	0.24	0.00	0.23	@ 0.000	@ 0.000	@ 0.444
8	15	5.48C	0.00	0.00	0.22	0.00	-0.07	0.00	0.00	0.33
	16	5.48C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
9	16	5.34C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.35
	17	5.34C	0.00	0.00	-0.08	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
10	17	5.14C	0.00	0.00	-0.09	0.00	0.24	0.00	0.00	0.79
	18	5.14C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.535

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 438

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	10.97T	0.00	-1.06	0.00	0.00	0.00		0.00	0.36
	26	10.97T	0.00	-1.06	0.00	-0.53	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	11.24T	0.00	-0.05	0.14	-0.04	-0.06	0.00	0.00	0.39
	27	11.24T	0.00	0.03	0.07	0.01	0.07	@ 0.000	@ 0.000	@ 0.788
18	27	6.16C	0.00	-0.19	0.06	0.03	0.08	0.00	0.00	0.29
	28	6.16C	0.00	-0.03	-0.09	-0.03	-0.09	@ 0.000	@ 0.000	@ 1.535
19	28	5.78C	0.00	-0.19	0.39	0.03	-0.24	0.00	0.00	0.70
	29	5.78C	0.00	-0.03	0.24	-0.03	0.24	@ 0.000	@ 0.000	@ 0.444
20	29	5.88C	0.00	-0.19	0.23	0.03	-0.07	0.00	0.00	0.32
	30	5.88C	0.00	-0.03	0.08	-0.03	0.08	@ 0.000	@ 0.000	@ 1.475
21	37	6.43C	0.00	0.04	-0.03	0.00	0.00	0.00	0.00	0.01
	38	6.43C	0.00	0.04	-0.03	0.02	-0.02	@ 0.000	@ 0.000	@ 0.290
22	38	6.21C	0.00	0.00	0.14	0.00	-0.07	0.00	0.00	0.21
	39	6.21C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.555
23	39	6.00C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.29
	40	6.00C	0.00	0.00	-0.09	0.00	-0.09	@ 0.000	@ 0.000	@ 1.535
24	40	5.82C	0.00	0.00	0.39	0.00	-0.24	0.00	0.00	0.70
	41	5.82C	0.00	0.00	0.24	0.00	0.24	@ 0.000	@ 0.000	@ 0.444
25	41	5.67C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.32
	42	5.67C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
31	49	6.80C	0.00	-1.02	0.00	0.00	0.00		0.00	0.35
	50	6.80C	0.00	-1.02	0.00	-0.51	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	6.57C	0.00	-0.04	0.23	-0.04	-0.17	0.00	0.00	0.47
	51	6.57C	0.00	0.02	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
33	51	6.36C	0.00	-0.15	0.17	0.04	-0.05	0.00	0.00	0.24
	52	6.36C	0.00	-0.04	0.06	-0.04	0.06	@ 0.000	@ 0.000	@ 1.475
34	52	6.15C	0.00	-0.15	0.06	0.04	0.07	0.00	0.00	0.25
	53	6.15C	0.00	-0.04	-0.06	-0.04	-0.05	@ 0.000	@ 0.000	@ 0.505
35	53	5.95C	0.00	-0.15	-0.06	0.03	0.18	0.00	0.00	0.58
	54	5.95C	0.00	-0.03	-0.18	-0.04	-0.19	@ 0.000	@ 0.000	@ 1.555
36	61	6.55C	0.00	0.04	-0.08	0.00	0.00	0.00	0.00	0.03
	62	6.55C	0.00	0.04	-0.08	0.02	-0.04	@ 0.000	@ 0.000	@ 0.290
37	62	6.35C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.51
	63	6.35C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
38	63	6.18C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.24
	64	6.18C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.475
39	64	5.96C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.25
	65	5.96C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505

James Crosbie Associates Ltd.

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Job Ref : B11323

Sheet : SD / 439

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	5.70C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.58
	66	5.70C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.555
46	73	6.83C	0.00	-0.99	0.00	0.00	0.00		0.00	0.34
	74	6.83C	0.00	-0.99	0.00	-0.50	0.00		@ 0.000	@ 0.290
47	74	6.60C	0.00	-0.04	0.10	-0.03	-0.05	0.00	0.00	0.36
	75	6.60C	0.00	0.02	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 0.848
48	75	6.39C	0.00	-0.15	0.05	0.04	0.06	0.00	0.00	0.22
	76	6.39C	0.00	-0.03	-0.07	-0.03	-0.07	@ 0.000	@ 0.000	@ 1.535
49	76	6.18C	0.00	-0.15	0.30	0.03	-0.19	0.00	0.00	0.54
	77	6.18C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
50	77	5.97C	0.00	-0.15	0.18	0.03	-0.05	0.00	0.00	0.25
	78	5.97C	0.00	-0.03	0.06	-0.03	0.06	@ 0.000	@ 0.000	@ 1.495
51	85	6.56C	0.00	0.04	-0.02	0.00	0.00	0.00	0.00	0.01
	86	6.56C	0.00	0.04	-0.02	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
52	86	6.34C	0.00	0.00	0.11	0.00	-0.05	0.00	0.00	0.15
	87	6.34C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.555
53	87	6.13C	0.00	0.00	0.05	0.00	0.06	0.00	0.00	0.22
	88	6.13C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 1.535
54	88	5.94C	0.00	0.00	0.30	0.00	-0.19	0.00	0.00	0.53
	89	5.94C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
55	89	5.77C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.25
	90	5.77C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.475
91	97	6.84C	0.00	-0.97	0.00	0.00	0.00		0.00	0.33
	98	6.84C	0.00	-0.97	0.00	-0.49	0.00		@ 0.000	@ 0.290
92	98	6.61C	0.00	-0.04	0.23	-0.03	-0.17	0.00	0.00	0.47
	99	6.61C	0.00	0.01	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
93	99	6.40C	0.00	-0.15	0.17	0.04	-0.05	0.00	0.00	0.24
	100	6.40C	0.00	-0.03	0.06	-0.03	0.06	@ 0.000	@ 0.000	@ 1.475
94	100	6.18C	0.00	-0.15	0.06	0.03	0.07	0.00	0.00	0.25
	101	6.18C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.505
95	101	5.97C	0.00	-0.15	-0.06	0.03	0.18	0.00	0.00	0.58
	102	5.97C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.535
96	109	6.55C	0.00	0.04	-0.08	0.00	0.00	0.00	0.00	0.03
	110	6.55C	0.00	0.04	-0.08	0.02	-0.04	@ 0.000	@ 0.000	@ 0.290
97	110	6.36C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.51
	111	6.36C	0.00	0.00	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.444
98	111	6.19C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.24
	112	6.19C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.475

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Job Ref : B11323

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	5.97C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.25
	113	5.97C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505
100	113	5.71C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.58
	114	5.71C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.535
120	121	6.77C	0.00	-0.96	0.00	0.00	0.00		0.00	0.32
	122	6.77C	0.00	-0.96	0.00	-0.48	0.00		@ 0.000	@ 0.290
121	122	6.55C	0.00	-0.04	0.10	-0.03	-0.05	0.00	0.00	0.34
	123	6.55C	0.00	0.01	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 0.889
122	123	6.34C	0.00	-0.15	0.05	0.03	0.06	0.00	0.00	0.22
	124	6.34C	0.00	-0.03	-0.07	-0.03	-0.07	@ 0.000	@ 0.000	@ 1.535
123	124	6.13C	0.00	-0.15	0.30	0.03	-0.19	0.00	0.00	0.54
	125	6.13C	0.00	-0.03	0.18	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
124	125	5.92C	0.00	-0.15	0.18	0.03	-0.05	0.00	0.00	0.25
	126	5.92C	0.00	-0.03	0.06	-0.03	0.06	@ 0.000	@ 0.000	@ 1.495
125	133	6.51C	0.00	0.04	-0.02	0.00	0.00	0.00	0.00	0.01
	134	6.51C	0.00	0.04	-0.02	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
126	134	6.30C	0.00	0.00	0.11	0.00	-0.05	0.00	0.00	0.15
	135	6.30C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.555
127	135	6.08C	0.00	0.00	0.05	0.00	0.06	0.00	0.00	0.22
	136	6.08C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 1.535
128	136	5.89C	0.00	0.00	0.30	0.00	-0.19	0.00	0.00	0.53
	137	5.89C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
129	137	5.73C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.25
	138	5.73C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.495
135	145	5.60C	0.00	-0.86	0.00	0.00	0.00		0.00	0.29
	146	5.60C	0.00	-0.86	0.00	-0.43	0.00		@ 0.000	@ 0.290
136	146	5.47C	0.00	-0.03	0.23	-0.04	-0.17	0.00	0.00	0.48
	147	5.47C	0.00	0.02	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
137	147	5.34C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.25
	148	5.34C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.475
138	148	5.22C	0.00	-0.14	0.05	0.03	0.07	0.00	0.00	0.26
	149	5.22C	0.00	-0.03	-0.06	-0.03	-0.06	@ 0.000	@ 0.000	@ 0.505
139	149	5.10C	0.00	-0.14	-0.07	0.02	0.18	0.00	0.00	0.59
	150	5.10C	0.00	-0.03	-0.18	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.535
140	157	5.40C	0.00	0.06	-0.08	0.00	0.00	0.00	0.00	0.03
	158	5.40C	0.00	0.06	-0.08	0.03	-0.04	@ 0.000	@ 0.000	@ 0.290
141	158	5.29C	0.00	0.01	0.23	-0.01	-0.18	0.00	0.00	0.52
	159	5.29C	0.00	0.01	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.444

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Job Ref : B11323

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	5.22C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.25
	160	5.22C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.475
143	160	5.09C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.26
	161	5.09C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
144	161	4.91C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.59
	162	4.91C	0.00	0.00	-0.18	0.00	-0.19	@ 0.000	@ 0.000	@ 1.535
170	6	6.31C	0.00	-0.18	0.42	0.01	-0.27	0.00	0.00	0.82
	7	6.31C	0.00	-0.01	0.26	-0.02	0.25	@ 0.000	@ 0.000	@ 0.444
171	7	7.04T	0.00	-0.18	0.25	0.01	-0.08	0.00	0.00	0.37
	8	7.04T	0.00	-0.01	0.09	-0.01	0.10	@ 0.000	@ 0.000	@ 1.495
172	8	8.04T	0.00	-0.17	0.08	0.00	0.10	0.00	0.00	0.38
	9	8.04T	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
173	9	8.03T	0.00	-0.17	-0.09	-0.01	0.26	0.00	0.00	0.86
	10	8.03T	0.00	0.01	-0.27	0.01	-0.28	@ 0.000	@ 0.000	@ 1.535
174	18	4.99C	0.00	0.00	0.42	0.00	-0.27	0.00	0.00	0.82
	19	4.99C	0.00	0.00	0.26	0.00	0.25	@ 0.000	@ 0.000	@ 0.444
175	19	4.91C	0.00	0.00	0.25	0.00	-0.08	0.00	0.00	0.37
	20	4.91C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.495
176	20	4.76C	0.00	0.00	0.08	0.00	0.10	0.00	0.00	0.38
	21	4.76C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
177	21	4.53C	0.00	0.00	-0.10	0.00	0.26	0.00	0.00	0.87
	22	4.53C	0.00	0.00	-0.27	0.00	-0.28	@ 0.000	@ 0.000	@ 1.535
182	30	8.78C	0.00	-0.19	0.09	0.02	0.08	0.00	0.00	0.32
	31	8.78C	0.00	-0.02	-0.08	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.525
183	31	11.22C	0.00	-0.18	-0.08	0.01	0.24	0.00	0.00	0.78
	32	11.22C	0.00	-0.01	-0.25	-0.01	-0.26	@ 0.000	@ 0.000	@ 1.556
184	32	12.73C	0.00	-0.18	0.44	0.00	-0.27	0.00	0.00	0.83
	33	12.73C	0.00	0.00	0.27	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
185	33	13.30C	0.00	-0.17	0.26	-0.02	-0.08	0.00	0.00	0.35
	34	13.30C	0.00	0.01	0.08	0.01	0.09	@ 0.000	@ 0.000	@ 1.495
186	42	5.46C	0.00	0.00	0.09	0.00	0.08	0.00	0.00	0.32
	43	5.46C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.525
187	43	5.21C	0.00	0.00	-0.08	0.00	0.24	0.00	0.00	0.78
	44	5.21C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.555
188	44	5.01C	0.00	0.00	0.44	0.00	-0.27	0.00	0.00	0.83
	45	5.01C	0.00	0.00	0.27	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
189	45	4.85C	0.00	0.00	0.26	0.00	-0.08	0.00	0.00	0.35
	46	4.85C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.495

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

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Job Ref : B11323

Sheet : SD / 442

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	5.75C	0.00	-0.15	0.32	0.03	-0.20	0.00	0.00	0.61
	55	5.75C	0.00	-0.03	0.19	-0.03	0.19	@ 0.000	@ 0.000	@ 0.444
195	55	5.55C	0.00	-0.14	0.19	0.01	-0.06	0.00	0.00	0.26
	56	5.55C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.495
196	56	5.34C	0.00	-0.13	0.07	0.00	0.07	0.00	0.00	0.26
	57	5.34C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
197	57	5.14C	0.00	-0.11	-0.07	-0.02	0.19	0.00	0.00	0.64
	58	5.14C	0.00	0.02	-0.20	0.02	-0.20	@ 0.000	@ 0.000	@ 1.535
198	66	5.48C	0.00	0.00	0.32	0.00	-0.20	0.00	0.00	0.61
	67	5.48C	0.00	0.00	0.19	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
199	67	5.32C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.26
	68	5.32C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
200	68	5.10C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.26
	69	5.10C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
201	69	4.83C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.64
	70	4.83C	0.00	0.00	-0.20	0.00	-0.20	@ 0.000	@ 0.000	@ 1.535
206	78	5.76C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.25
	79	5.76C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.505
207	79	5.54C	0.00	-0.13	-0.07	0.01	0.18	0.00	0.00	0.60
	80	5.54C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.556
208	80	5.34C	0.00	-0.13	0.33	0.00	-0.21	0.00	0.00	0.63
	81	5.34C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
209	81	5.13C	0.00	-0.11	0.20	-0.02	-0.06	0.00	0.00	0.27
	82	5.13C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.495
210	90	5.55C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.25
	91	5.55C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505
211	91	5.28C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.60
	92	5.28C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.556
212	92	5.06C	0.00	0.00	0.33	0.00	-0.21	0.00	0.00	0.63
	93	5.06C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
213	93	4.90C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.27
	94	4.90C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
218	102	5.76C	0.00	-0.14	0.32	0.02	-0.20	0.00	0.00	0.61
	103	5.76C	0.00	-0.02	0.19	-0.02	0.19	@ 0.000	@ 0.000	@ 0.444
219	103	5.55C	0.00	-0.14	0.19	0.01	-0.06	0.00	0.00	0.26
	104	5.55C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.495
220	104	5.34C	0.00	-0.13	0.07	-0.01	0.07	0.00	0.00	0.26
	105	5.34C	0.00	0.01	-0.06	0.01	-0.06	@ 0.000	@ 0.000	@ 0.505

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Job Ref : B11323

Sheet : SD / 443

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	5.13C	0.00	-0.11	-0.07	-0.02	0.19	0.00	0.00	0.65
	106	5.13C	0.00	0.02	-0.20	0.02	-0.20	@ 0.000	@ 0.000	@ 1.535
222	114	5.49C	0.00	0.00	0.31	0.00	-0.20	0.00	0.00	0.61
	115	5.49C	0.00	0.00	0.19	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
223	115	5.32C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.26
	116	5.32C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
224	116	5.10C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.26
	117	5.10C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
225	117	4.83C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.65
	118	4.83C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.535
230	126	5.71C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.25
	127	5.71C	0.00	-0.02	-0.06	-0.02	-0.05	@ 0.000	@ 0.000	@ 0.505
231	127	5.51C	0.00	-0.13	-0.07	0.01	0.18	0.00	0.00	0.60
	128	5.51C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.556
232	128	5.30C	0.00	-0.12	0.33	-0.01	-0.21	0.00	0.00	0.63
	129	5.30C	0.00	0.01	0.20	0.01	0.19	@ 0.000	@ 0.000	@ 0.444
233	129	5.10C	0.00	-0.11	0.19	-0.02	-0.06	0.00	0.00	0.27
	130	5.10C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.495
234	138	5.51C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.25
	139	5.51C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505
235	139	5.25C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.60
	140	5.25C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.556
236	140	5.03C	0.00	0.00	0.33	0.00	-0.21	0.00	0.00	0.62
	141	5.03C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
237	141	4.87C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.27
	142	4.87C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
242	150	4.98C	0.00	-0.14	0.32	0.02	-0.20	0.00	0.00	0.62
	151	4.98C	0.00	-0.02	0.20	-0.02	0.19	@ 0.000	@ 0.000	@ 0.444
243	151	4.85C	0.00	-0.13	0.19	0.01	-0.06	0.00	0.00	0.28
	152	4.85C	0.00	-0.01	0.07	-0.01	0.07	@ 0.000	@ 0.000	@ 1.495
244	152	4.73C	0.00	-0.12	0.06	-0.01	0.07	0.00	0.00	0.28
	153	4.73C	0.00	0.01	-0.07	0.01	-0.06	@ 0.000	@ 0.000	@ 0.505
245	153	4.60C	0.00	-0.11	-0.07	-0.02	0.19	0.00	0.00	0.67
	154	4.60C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.535
246	162	4.78C	0.00	0.00	0.32	0.00	-0.20	0.00	0.00	0.62
	163	4.78C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
247	163	4.70C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.28
	164	4.70C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.495

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Sheet : SD / 444

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	4.57C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.28
	165	4.57C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
249	165	4.39C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.67
	166	4.39C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.535
306	10	6.99T	0.00	-0.17	0.47	-0.02	-0.30	0.00	0.00	0.92
	11	6.99T	0.00	0.02	0.29	0.02	0.28	@ 0.000	@ 0.000	@ 0.444
307	11	5.18C	0.00	-0.16	0.29	-0.03	-0.09	0.00	0.00	0.42
	12	5.18C	0.00	0.03	0.10	0.03	0.11	@ 0.000	@ 0.000	@ 1.495
308	22	4.40C	0.00	0.00	0.47	0.00	-0.30	0.00	0.00	0.92
	23	4.40C	0.00	0.00	0.29	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
309	23	4.36C	0.00	0.00	0.29	0.01	-0.09	0.00	0.00	0.42
	24	4.36C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.495
312	34	12.89C	0.00	-0.16	0.10	-0.03	0.09	0.00	0.00	0.34
	35	12.89C	0.00	0.03	-0.08	0.02	-0.07	@ 0.000	@ 0.000	@ 0.525
313	35	11.46C	0.00	-0.15	-0.08	-0.04	0.26	0.00	0.00	0.87
	36	11.46C	0.00	0.04	-0.27	0.04	-0.28	@ 0.000	@ 0.000	@ 1.535
314	46	4.64C	0.00	0.00	0.10	0.00	0.09	0.00	0.00	0.34
	47	4.64C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.525
315	47	4.37C	0.00	0.00	-0.08	0.00	0.26	0.00	0.00	0.87
	48	4.37C	0.00	0.00	-0.27	0.00	-0.28	@ 0.000	@ 0.000	@ 1.535
318	58	4.93C	0.00	-0.10	0.39	-0.03	-0.26	0.00	0.00	0.79
	59	4.93C	0.00	0.03	0.25	0.03	0.24	@ 0.000	@ 0.000	@ 0.444
319	59	4.73C	0.00	-0.09	0.25	-0.05	-0.10	0.00	0.00	0.39
	60	4.73C	0.00	0.05	0.11	0.05	0.12	@ 0.000	@ 0.000	@ 1.515
320	70	4.63C	0.00	0.00	0.39	0.00	-0.26	0.00	0.00	0.78
	71	4.63C	0.00	0.00	0.25	0.00	0.24	@ 0.000	@ 0.000	@ 0.444
321	71	4.52C	0.00	0.00	0.25	0.00	-0.10	0.00	0.00	0.39
	72	4.52C	0.00	0.00	0.11	0.00	0.12	@ 0.000	@ 0.000	@ 1.515
324	82	4.92C	0.00	-0.10	0.07	-0.03	0.07	0.00	0.00	0.28
	83	4.92C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.505
325	83	4.71C	0.00	-0.09	-0.07	-0.05	0.20	0.00	0.00	0.72
	84	4.71C	0.00	0.05	-0.21	0.04	-0.22	@ 0.000	@ 0.000	@ 1.535
326	94	4.67C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.28
	95	4.67C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
327	95	4.40C	0.00	0.00	-0.07	0.00	0.20	0.00	0.00	0.72
	96	4.40C	0.00	0.00	-0.21	0.00	-0.22	@ 0.000	@ 0.000	@ 1.535
330	106	4.93C	0.00	-0.10	0.40	-0.03	-0.27	0.00	0.00	0.82
	107	4.93C	0.00	0.03	0.26	0.03	0.26	@ 0.000	@ 0.000	@ 0.444

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	4.72C	0.00	-0.09	0.26	-0.05	-0.12	0.00	0.00	0.42
	108	4.72C	0.00	0.05	0.12	0.04	0.13	@ 0.000	@ 0.000	@ 1.535
332	118	4.64C	0.00	0.00	0.40	0.00	-0.27	0.00	0.00	0.82
	119	4.64C	0.00	0.00	0.26	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
333	119	4.52C	0.00	0.00	0.26	0.00	-0.12	0.00	0.00	0.42
	120	4.52C	0.00	0.00	0.12	0.00	0.13	@ 0.000	@ 0.000	@ 1.535
336	130	4.90C	0.00	-0.10	0.07	-0.03	0.07	0.00	0.00	0.28
	131	4.90C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.505
337	131	4.70C	0.00	-0.09	-0.07	-0.05	0.20	0.00	0.00	0.74
	132	4.70C	0.00	0.05	-0.21	0.05	-0.22	@ 0.000	@ 0.000	@ 1.515
338	142	4.65C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.28
	143	4.65C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
339	143	4.38C	0.00	0.00	-0.07	0.00	0.20	0.01	0.00	0.74
	144	4.38C	0.00	0.00	-0.21	0.01	-0.22	@ 0.000	@ 0.000	@ 1.515
342	154	4.48C	0.00	-0.11	0.42	-0.03	-0.30	0.00	0.00	0.91
	155	4.48C	0.00	0.03	0.29	0.03	0.28	@ 0.000	@ 0.000	@ 0.444
343	155	4.35C	0.00	-0.10	0.29	-0.04	-0.14	0.00	0.00	0.51
	156	4.35C	0.00	0.04	0.15	0.04	0.15	@ 0.000	@ 0.000	@ 1.535
344	166	4.28C	0.00	0.00	0.42	0.00	-0.30	0.00	0.00	0.90
	167	4.28C	0.00	0.00	0.29	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
345	167	4.25C	0.00	0.00	0.29	0.00	-0.14	0.00	0.00	0.51
	168	4.25C	0.00	0.00	0.15	0.01	0.15	@ 0.000	@ 0.000	@ 1.535
412	12	4.86C	0.00	-0.16	0.10	-0.04	0.10	0.00	0.00	0.40
	169	4.86C	0.00	0.03	-0.09	0.03	-0.08	@ 0.000	@ 0.000	@ 0.525
413	169	2.67C	0.00	-0.24	0.35	-0.03	0.29	0.00	0.00	0.79
	183	2.67C	0.00	0.32	-0.94	0.04	-0.29	@ 0.000	@ 0.000	@ 1.571
414	24	4.25C	0.00	-0.08	0.10	0.08	0.10	0.00		0.40
	170	4.25C	0.00	-0.08	-0.09	-0.09	-0.08	@ 0.000		@ 0.525
415	170	2.63C	0.00	0.06	-0.22	-0.07	0.29	0.00		0.83
	184	2.63C	0.00	0.06	-0.95	0.06	-0.30	@ 0.000		@ 1.571
416	36	9.01C	0.00	-0.15	0.55	-0.05	-0.36	0.00	0.00	1.02
	171	9.01C	0.00	0.05	0.37	0.05	0.37	@ 0.000	@ 0.000	@ 1.576
417	171	4.92C	0.00	-0.22	0.31	-0.05	0.34	0.00		1.03
	185	4.92C	0.00	0.34	-0.98	0.06	-0.32	@ 0.000		@ 0.449
418	48	4.23C	0.00	-0.08	0.55	0.08	-0.36	0.00	0.00	1.02
	172	4.23C	0.00	-0.08	0.36	-0.08	0.37	@ 0.000	@ 0.000	@ 1.576
419	172	2.69C	0.00	0.07	-0.26	-0.07	0.34	0.00		1.03
	186	2.69C	0.00	0.07	-0.99	0.07	-0.33	@ 0.000		@ 0.449

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

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Job Ref : B11323

Sheet : SD / 446

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	4.53C	0.00	-0.08	0.13	-0.06	0.02	0.00	0.00	0.25
	173	4.53C	0.00	0.06	0.01	0.06	0.01	@ 0.000	@ 0.000	@ 0.889
421	173	2.77C	0.00	-0.07	0.25	-0.07	0.33	0.00		0.92
	187	2.77C	0.00	0.22	-0.93	0.08	-0.33	@ 0.000		@ 0.429
422	72	4.35C	0.00	-0.08	0.13	0.07	0.02	0.00		0.25
	174	4.35C	0.00	-0.08	-0.01	-0.08	-0.01	@ 0.000		@ 1.540
423	174	2.69C	0.00	0.07	0.24	-0.08	0.34	0.00	0.00	0.92
	188	2.69C	0.00	0.07	-0.94	0.07	-0.34	@ 0.000	@ 0.000	@ 1.571
424	84	4.51C	0.00	-0.09	0.55	-0.06	-0.40	0.00	0.00	1.16
	175	4.51C	0.00	0.06	0.40	0.05	0.41	@ 0.000	@ 0.000	@ 1.556
425	175	2.76C	0.00	-0.08	0.21	-0.06	0.39	0.00	0.00	1.17
	189	2.76C	0.00	0.21	-0.97	0.07	-0.37	@ 0.000	@ 0.000	@ 0.449
426	96	4.26C	0.00	-0.08	0.55	0.08	-0.40	0.00	0.00	1.16
	176	4.26C	0.00	-0.08	0.40	-0.08	0.41	@ 0.000	@ 0.000	@ 1.555
427	176	2.70C	0.00	0.07	0.20	-0.07	0.39	0.00		1.17
	190	2.70C	0.00	0.07	-0.98	0.07	-0.37	@ 0.000		@ 0.449
428	108	4.52C	0.00	-0.09	0.15	-0.06	0.00	0.00	0.00	0.28
	177	4.52C	0.00	0.06	0.01	0.06	0.02	@ 0.000	@ 0.000	@ 1.111
429	177	2.77C	0.00	-0.08	0.21	-0.07	0.38	0.00		1.04
	191	2.77C	0.00	0.22	-0.97	0.07	-0.37	@ 0.000		@ 0.429
430	120	4.35C	0.00	-0.08	0.15	0.08	0.00	0.00	0.00	0.27
	178	4.35C	0.00	-0.08	0.01	-0.08	0.02	@ 0.000	@ 0.000	@ 1.111
431	178	2.69C	0.00	0.07	0.20	-0.08	0.38	0.00		1.04
	192	2.69C	0.00	0.07	-0.98	0.07	-0.38	@ 0.000		@ 0.429
432	132	4.50C	0.00	-0.08	0.59	-0.06	-0.45	0.00	0.00	1.31
	179	4.50C	0.00	0.06	0.45	0.06	0.46	@ 0.000	@ 0.000	@ 1.555
433	179	2.76C	0.00	-0.08	0.16	-0.07	0.43	0.00		1.31
	193	2.76C	0.00	0.22	-1.02	0.07	-0.41	@ 0.000		@ 0.449
434	144	4.24C	0.00	-0.08	0.59	0.07	-0.45	0.00	0.00	1.30
	180	4.24C	0.00	-0.08	0.45	-0.08	0.46	@ 0.000	@ 0.000	@ 1.555
435	180	2.69C	0.00	0.07	0.15	-0.08	0.44	0.00		1.31
	194	2.69C	0.00	0.07	-1.03	0.07	-0.42	@ 0.000		@ 0.449
436	156	4.21C	0.00	-0.09	0.14	-0.05	0.01	0.00	0.00	0.32
	181	4.21C	0.00	0.05	0.01	0.05	0.02	@ 0.000	@ 0.000	@ 1.030
437	181	2.61C	0.00	-0.16	0.17	-0.06	0.42	0.00		1.15
	195	2.61C	0.00	0.29	-1.01	0.06	-0.42	@ 0.000		@ 0.429
438	168	4.17C	0.00	-0.08	0.14	0.07	0.01	0.00	0.02	0.31
	182	4.17C	0.00	-0.08	0.01	-0.08	0.02	@ 0.000	@ 0.000	@ 1.030

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Job Ref : B11323

Sheet : SD / 447

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Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	2.59C	0.00	0.07	0.16	-0.07	0.43	0.00		1.15
	196	2.59C	0.00	0.07	-1.02	0.07	-0.43	@ 0.000		@ 0.429

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.891	20.142	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.050	0.000	-0.212
3	0.000	0.000	0.000	0.059	0.000	-0.016
4	0.000	0.000	0.000	0.017	0.000	-0.040
5	0.000	0.000	0.000	-0.057	0.000	-0.038
6	0.000	0.000	0.000	0.015	0.000	-0.031
7	0.000	0.000	0.000	0.067	0.000	-0.018
9	0.000	0.000	0.000	-0.062	0.000	0.015
10	0.000	0.000	0.000	-0.018	0.000	0.034
11	0.000	0.000	0.000	0.075	0.000	0.052
12	0.000	0.000	0.000	-0.031	0.000	0.061
13	-0.062	5.672	-0.107	0.000	0.000	0.000
14	0.057	0.000	0.687	0.033	0.000	-0.023
15	0.000	0.000	0.000	0.061	0.000	0.000
16	0.000	0.000	0.000	0.018	0.000	0.000
17	0.000	0.000	0.000	-0.057	0.000	0.000
18	-3.116	0.000	1.310	0.015	0.000	0.000
19	0.000	0.000	0.000	0.068	0.000	0.000
21	0.000	0.000	0.000	-0.062	0.000	0.000
22	-3.552	0.000	1.471	-0.018	0.000	0.000
23	0.000	0.000	0.000	0.076	0.000	0.013
24	0.000	0.000	0.000	-0.031	0.000	-0.017
25	1.122	-10.963	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.016	0.000	-0.166
27	0.000	0.000	0.000	-0.015	0.000	-0.014
28	0.000	0.000	0.000	0.029	0.000	-0.027
29	0.000	0.000	0.000	0.055	0.000	-0.025
30	0.000	0.000	0.000	-0.022	0.000	-0.019
31	0.000	0.000	0.000	-0.059	0.000	-0.011
32	0.000	0.000	0.000	-0.011	0.000	0.000
33	0.000	0.000	0.000	0.057	0.000	0.012
34	0.000	0.000	0.000	0.000	0.000	0.024
35	0.000	0.000	0.000	-0.065	0.000	0.036
36	0.000	0.000	0.000	0.022	0.000	0.043
37	-0.040	6.428	-0.032	0.000	0.000	0.000
38	0.037	0.000	0.305	0.000	0.000	-0.015
39	0.000	0.000	0.000	-0.015	0.000	0.000
40	-1.716	0.000	0.931	0.029	0.000	0.000
41	0.000	0.000	0.000	0.055	0.000	0.000
42	0.000	0.000	0.000	-0.022	0.000	0.000
43	0.000	0.000	0.000	-0.059	0.000	0.000
44	-1.935	0.000	1.335	-0.011	0.000	0.000
45	0.000	0.000	0.000	0.058	0.000	0.000
47	0.000	0.000	0.000	-0.065	0.000	0.000
48	-4.053	0.000	1.636	0.022	0.000	-0.016
49	1.003	6.802	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.037	0.000	-0.163
51	0.000	0.000	0.000	0.042	0.000	0.000

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Job Ref : B11323

Sheet : SD / 448

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
52	0.000	0.000	0.000	0.000	0.000	-0.016
53	0.000	0.000	0.000	-0.043	0.000	-0.014
54	0.000	0.000	0.000	0.000	0.000	-0.010
55	0.000	0.000	0.000	0.044	0.000	0.000
57	0.000	0.000	0.000	-0.046	0.000	0.000
58	0.000	0.000	0.000	0.000	0.000	0.015
59	0.000	0.000	0.000	0.062	0.000	0.022
60	0.000	0.000	0.000	0.016	0.000	0.024
61	-0.040	6.549	-0.079	0.000	0.000	0.000
62	0.038	0.000	0.512	0.024	0.000	-0.015
63	0.000	0.000	0.000	0.043	0.000	0.000
65	0.000	0.000	0.000	-0.042	0.000	0.000
66	1.255	0.000	0.986	0.000	0.000	0.000
67	0.000	0.000	0.000	0.044	0.000	0.000
69	0.000	0.000	0.000	-0.046	0.000	0.000
70	1.507	0.000	1.169	0.000	0.000	0.000
71	0.000	0.000	0.000	0.062	0.000	0.000
72	0.000	0.000	0.000	0.016	0.000	-0.021
73	0.972	6.826	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.012	0.000	-0.159
75	0.000	0.000	0.000	0.000	0.000	-0.012
76	0.000	0.000	0.000	0.023	0.000	-0.023
77	0.000	0.000	0.000	0.043	0.000	-0.022
78	0.000	0.000	0.000	0.000	0.000	-0.018
79	0.000	0.000	0.000	-0.044	0.000	-0.011
81	0.000	0.000	0.000	0.045	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.017
83	0.000	0.000	0.000	-0.048	0.000	0.027
84	0.000	0.000	0.000	0.033	0.000	0.032
85	-0.040	6.556	-0.025	0.000	0.000	0.000
86	0.037	0.000	0.230	0.000	0.000	-0.014
88	-0.021	0.000	0.717	0.023	0.000	0.000
89	0.000	0.000	0.000	0.043	0.000	0.000
91	0.000	0.000	0.000	-0.044	0.000	0.000
92	-0.020	0.000	1.023	0.000	0.000	0.000
93	0.000	0.000	0.000	0.046	0.000	0.000
95	0.000	0.000	0.000	-0.048	0.000	0.000
96	-0.650	0.000	1.535	0.033	0.000	-0.020
97	0.950	6.841	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.037	0.000	-0.157
99	0.000	0.000	0.000	0.042	0.000	-0.013
100	0.000	0.000	0.000	0.000	0.000	-0.023
101	0.000	0.000	0.000	-0.043	0.000	-0.022
102	0.000	0.000	0.000	0.000	0.000	-0.018
103	0.000	0.000	0.000	0.044	0.000	-0.011
105	0.000	0.000	0.000	-0.047	0.000	0.000
106	0.000	0.000	0.000	0.011	0.000	0.017
107	0.000	0.000	0.000	0.067	0.000	0.027
108	0.000	0.000	0.000	0.022	0.000	0.032
109	-0.039	6.555	-0.079	0.000	0.000	0.000
110	0.036	0.000	0.512	0.024	0.000	-0.014
111	0.000	0.000	0.000	0.043	0.000	0.000
113	0.000	0.000	0.000	-0.042	0.000	0.000
114	-0.020	0.000	0.976	0.000	0.000	0.000
115	0.000	0.000	0.000	0.044	0.000	0.000
117	0.000	0.000	0.000	-0.046	0.000	0.000
118	0.027	0.000	1.179	0.011	0.000	0.000
119	0.000	0.000	0.000	0.067	0.000	0.000

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
120	0.000	0.000	0.000	0.023	0.000	-0.020
121	0.942	6.774	0.000	0.000	0.000	0.000
122	0.000	0.000	0.000	0.012	0.000	-0.153
123	0.000	0.000	0.000	0.000	0.000	-0.014
124	0.000	0.000	0.000	0.023	0.000	-0.023
125	0.000	0.000	0.000	0.043	0.000	-0.022
126	0.000	0.000	0.000	0.000	0.000	-0.018
127	0.000	0.000	0.000	-0.044	0.000	-0.012
129	0.000	0.000	0.000	0.045	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.015
131	0.000	0.000	0.000	-0.048	0.000	0.024
132	0.000	0.000	0.000	0.042	0.000	0.030
133	-0.037	6.509	-0.025	0.000	0.000	0.000
134	0.034	0.000	0.230	0.000	0.000	-0.013
136	1.724	0.000	0.709	0.023	0.000	0.000
137	0.000	0.000	0.000	0.043	0.000	0.000
139	0.000	0.000	0.000	-0.044	0.000	0.000
140	1.937	0.000	1.013	0.000	0.000	0.000
141	0.000	0.000	0.000	0.045	0.000	0.000
143	0.000	0.000	0.000	-0.048	0.000	0.000
144	4.601	0.000	1.602	0.042	0.000	-0.021
145	0.847	5.601	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.037	0.000	-0.187
147	0.000	0.000	0.000	0.043	0.000	-0.015
148	0.000	0.000	0.000	0.000	0.000	-0.030
149	0.000	0.000	0.000	-0.046	0.000	-0.029
150	0.000	0.000	0.000	0.000	0.000	-0.024
151	0.000	0.000	0.000	0.047	0.000	-0.016
153	0.000	0.000	0.000	-0.051	0.000	0.000
154	0.000	0.000	0.000	0.014	0.000	0.019
155	0.000	0.000	0.000	0.078	0.000	0.031
156	0.000	0.000	0.000	0.024	0.000	0.036
157	-0.058	5.401	-0.080	0.000	0.000	0.000
158	0.053	0.000	0.522	0.024	0.000	-0.021
159	0.000	0.000	0.000	0.045	0.000	0.000
161	0.000	0.000	0.000	-0.045	0.000	0.000
162	1.859	0.000	0.983	0.000	0.000	0.000
163	0.000	0.000	0.000	0.047	0.000	0.000
165	0.000	0.000	0.000	-0.050	0.000	0.000
166	2.022	0.000	1.230	0.015	0.000	0.000
167	0.000	0.000	0.000	0.078	0.000	0.000
168	0.000	0.000	0.000	0.024	0.000	-0.027
169	0.000	0.000	0.000	-0.073	0.000	0.076
170	0.000	0.000	0.000	-0.070	0.000	0.013
171	0.000	0.000	0.000	0.028	0.000	0.052
172	0.000	0.000	0.000	0.031	0.000	0.000
173	0.000	0.000	0.000	-0.068	0.000	0.031
174	0.000	0.000	0.000	-0.066	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.042
176	0.000	0.000	0.000	0.011	0.000	0.000
177	0.000	0.000	0.000	-0.073	0.000	0.041
178	0.000	0.000	0.000	-0.071	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.039
180	0.000	0.000	0.000	0.011	0.000	0.000
181	0.000	0.000	0.000	-0.087	0.000	0.048
182	0.000	0.000	0.000	-0.082	0.000	0.000
183	0.000	0.000	0.000	-0.066	0.000	0.072
184	1.440	0.000	2.547	-0.052	0.000	0.050

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	R _x →(kN)	R _y ↑(kN)	R _z ↗(kN)	M _x →(kN.m)	M _y ↑(kN.m)	M _z ↗(kN.m)
185	0.000	0.000	0.000	-0.078	0.000	0.040
186	0.000	0.000	0.000	-0.064	0.000	0.031
187	0.000	0.000	0.000	-0.079	0.000	0.014
188	2.307	0.000	4.110	-0.065	0.000	0.025
189	0.000	0.000	0.000	-0.085	0.000	0.028
190	0.000	0.000	0.000	-0.070	0.000	0.028
191	0.000	0.000	0.000	-0.088	0.000	0.027
192	1.423	0.000	4.231	-0.074	0.000	0.028
193	0.000	0.000	0.000	-0.094	0.000	0.024
194	0.000	0.000	0.000	-0.080	0.000	0.025
195	0.000	0.000	0.000	-0.098	0.000	0.032
196	0.565	0.000	2.736	-0.084	0.000	0.034
Total	12.985	90.015	36.001	-0.338	0.000	-0.654

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 451

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

MasterFrame Data File

Loading Cases and Load Combination

Load Group Labels

Load Group UT	Unity Load Factor (All Cases)
Load Group D1	Dead Load
Load Group W1	Wind Load
Load Group W2	Wind Load
Load Group W4	Wind Load
Load Group W5	Wind Load
Load Group N1	
Load Group G1	Live Load
Load Group G2	Live Load
Load Group G3	Live Load
Load Group G4	Live Load

Load Case 001 : In service Dead Plus Live

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Notional Loads	FIND +2.5 (Determine notional load equal to the specified percentage)
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 002 : In Service Dead plus Live Plus Wind Unsheeted

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 W1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Second Degree Analysis	P-Delta Analysis using the Non-Linear Iterative Method

Load Case 003 : In Service Dead Plus Live Plus Notional

Load Combination	+ 1.00 UT + 1.00 D1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4
Notional Loads	ADD @ +0.0 (Apply the FIND a% notional load at the specified angle)

Level	@ (m)	F (kN)	Level	@ (m)	F (kN)	Level	@ (m)	F (kN)
0	0.000	0.000	1	0.500	0.065	2	2.500	0.065
3	4.500	0.065	4	6.500	0.065	5	8.500	0.065
6	10.500	0.065	7	12.500	0.065	8	14.500	0.065
9	16.500	0.065	10	18.500	0.065	11	20.500	0.065
12	22.500	0.746	13	24.500	1.278			

Node	F (kN)	Node	F (kN)	Node	F (kN)	Node	F (kN)
1	0.000	2	0.004	3	0.004	4	0.004
5	0.004	6	0.004	7	0.004	8	0.004
9	0.004	10	0.004	11	0.004	12	0.004
13	0.000	14	0.003	15	0.003	16	0.003
17	0.003	18	0.003	19	0.003	20	0.003
21	0.003	22	0.003	23	0.003	24	0.003
25	0.000	26	0.007	27	0.007	28	0.007
29	0.007	30	0.007	31	0.007	32	0.007
33	0.007	34	0.007	35	0.007	36	0.007
37	0.000	38	0.005	39	0.005	40	0.005
41	0.005	42	0.005	43	0.005	44	0.005
45	0.005	46	0.005	47	0.005	48	0.005
49	0.000	50	0.005	51	0.005	52	0.005
53	0.005	54	0.005	55	0.005	56	0.005
57	0.005	58	0.005	59	0.005	60	0.005
61	0.000	62	0.005	63	0.005	64	0.005
65	0.005	66	0.005	67	0.005	68	0.005
69	0.005	70	0.005	71	0.005	72	0.005
73	0.000	74	0.005	75	0.005	76	0.005
77	0.005	78	0.005	79	0.005	80	0.005
81	0.005	82	0.005	83	0.005	84	0.005
85	0.000	86	0.005	87	0.005	88	0.005
89	0.005	90	0.005	91	0.005	92	0.005
93	0.005	94	0.005	95	0.005	96	0.005
97	0.000	98	0.005	99	0.005	100	0.005
101	0.005	102	0.005	103	0.005	104	0.005
105	0.005	106	0.005	107	0.005	108	0.005
109	0.000	110	0.005	111	0.005	112	0.005
113	0.005	114	0.005	115	0.005	116	0.005
117	0.005	118	0.005	119	0.005	120	0.005
121	0.000	122	0.005	123	0.005	124	0.005

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 452****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

125	0.005	126	0.005	127	0.005	128	0.005
129	0.005	130	0.005	131	0.005	132	0.005
133	0.000	134	0.005	135	0.005	136	0.005
137	0.005	138	0.005	139	0.005	140	0.005
141	0.005	142	0.005	143	0.005	144	0.005
145	0.000	146	0.003	147	0.003	148	0.003
149	0.003	150	0.003	151	0.003	152	0.003
153	0.003	154	0.003	155	0.003	156	0.003
157	0.000	158	0.003	159	0.003	160	0.003
161	0.003	162	0.003	163	0.003	164	0.003
165	0.003	166	0.003	167	0.003	168	0.003
169	0.054	170	0.049	171	0.058	172	0.051
173	0.057	174	0.051	175	0.057	176	0.051
177	0.057	178	0.051	179	0.057	180	0.051
181	0.053	182	0.049	183	0.092	184	0.087
185	0.096	186	0.089	187	0.095	188	0.089
189	0.095	190	0.089	191	0.095	192	0.089
193	0.095	194	0.089	195	0.091	196	0.087

Second Degree Analysis

P-Delta Analysis using the Non-Linear Iterative Method

Load Case 004 : In Service Dead Plus Live Plus Horizontal Working Load

Load Combination + 1.00 UT + 1.00 D1 + 1.00 N1 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 005 : Out of Service Wind Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W4 + 0.50 G1 + 0.50 G3

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 006 : In Service Dead plus Live plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W2 + 1.00 G1 + 0.50 G2 + 1.00 G3 + 0.50 G4

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

Load Case 007 : Out of service Dead Plus Live Plus Wind Parallel Unsheeted

Load Combination + 1.00 UT + 1.00 D1 + 1.00 W5 + 0.50 G1 + 0.50 G3

Second Degree Analysis P-Delta Analysis using the Non-Linear Iterative Method

The Nodal Co-ordinates

Node	X (m)	Y (m)	Z (m)	Node	X (m)	Y (m)	Z (m)
1	0.000	0.000	0.000	2	0.000	0.500	0.000
3	0.000	2.500	0.000	4	0.000	4.500	0.000
5	0.000	6.500	0.000	6	0.000	8.500	0.000
7	0.000	10.500	0.000	8	0.000	12.500	0.000
9	0.000	14.500	0.000	10	0.000	16.500	0.000
11	0.000	18.500	0.000	12	0.000	20.500	0.000
13	0.000	0.000	1.300	14	0.000	0.500	1.300
15	0.000	2.500	1.300	16	0.000	4.500	1.300
17	0.000	6.500	1.300	18	0.000	8.500	1.300
19	0.000	10.500	1.300	20	0.000	12.500	1.300
21	0.000	14.500	1.300	22	0.000	16.500	1.300
23	0.000	18.500	1.300	24	0.000	20.500	1.300
25	1.800	0.000	0.000	26	1.800	0.500	0.000
27	1.800	2.500	0.000	28	1.800	4.500	0.000
29	1.800	6.500	0.000	30	1.800	8.500	0.000
31	1.800	10.500	0.000	32	1.800	12.500	0.000
33	1.800	14.500	0.000	34	1.800	16.500	0.000
35	1.800	18.500	0.000	36	1.800	20.500	0.000
37	1.800	0.000	1.300	38	1.800	0.500	1.300
39	1.800	2.500	1.300	40	1.800	4.500	1.300
41	1.800	6.500	1.300	42	1.800	8.500	1.300
43	1.800	10.500	1.300	44	1.800	12.500	1.300
45	1.800	14.500	1.300	46	1.800	16.500	1.300
47	1.800	18.500	1.300	48	1.800	20.500	1.300
49	3.600	0.000	0.000	50	3.600	0.500	0.000
51	3.600	2.500	0.000	52	3.600	4.500	0.000
53	3.600	6.500	0.000	54	3.600	8.500	0.000
55	3.600	10.500	0.000	56	3.600	12.500	0.000
57	3.600	14.500	0.000	58	3.600	16.500	0.000
59	3.600	18.500	0.000	60	3.600	20.500	0.000
61	3.600	0.000	1.300	62	3.600	0.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 453****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

63	3.600	2.500	1.300	64	3.600	4.500	1.300
65	3.600	6.500	1.300	66	3.600	8.500	1.300
67	3.600	10.500	1.300	68	3.600	12.500	1.300
69	3.600	14.500	1.300	70	3.600	16.500	1.300
71	3.600	18.500	1.300	72	3.600	20.500	1.300
73	5.400	0.000	0.000	74	5.400	0.500	0.000
75	5.400	2.500	0.000	76	5.400	4.500	0.000
77	5.400	6.500	0.000	78	5.400	8.500	0.000
79	5.400	10.500	0.000	80	5.400	12.500	0.000
81	5.400	14.500	0.000	82	5.400	16.500	0.000
83	5.400	18.500	0.000	84	5.400	20.500	0.000
85	5.400	0.000	1.300	86	5.400	0.500	1.300
87	5.400	2.500	1.300	88	5.400	4.500	1.300
89	5.400	6.500	1.300	90	5.400	8.500	1.300
91	5.400	10.500	1.300	92	5.400	12.500	1.300
93	5.400	14.500	1.300	94	5.400	16.500	1.300
95	5.400	18.500	1.300	96	5.400	20.500	1.300
97	7.200	0.000	0.000	98	7.200	0.500	0.000
99	7.200	2.500	0.000	100	7.200	4.500	0.000
101	7.200	6.500	0.000	102	7.200	8.500	0.000
103	7.200	10.500	0.000	104	7.200	12.500	0.000
105	7.200	14.500	0.000	106	7.200	16.500	0.000
107	7.200	18.500	0.000	108	7.200	20.500	0.000
109	7.200	0.000	1.300	110	7.200	0.500	1.300
111	7.200	2.500	1.300	112	7.200	4.500	1.300
113	7.200	6.500	1.300	114	7.200	8.500	1.300
115	7.200	10.500	1.300	116	7.200	12.500	1.300
117	7.200	14.500	1.300	118	7.200	16.500	1.300
119	7.200	18.500	1.300	120	7.200	20.500	1.300
121	9.000	0.000	0.000	122	9.000	0.500	0.000
123	9.000	2.500	0.000	124	9.000	4.500	0.000
125	9.000	6.500	0.000	126	9.000	8.500	0.000
127	9.000	10.500	0.000	128	9.000	12.500	0.000
129	9.000	14.500	0.000	130	9.000	16.500	0.000
131	9.000	18.500	0.000	132	9.000	20.500	0.000
133	9.000	0.000	1.300	134	9.000	0.500	1.300
135	9.000	2.500	1.300	136	9.000	4.500	1.300
137	9.000	6.500	1.300	138	9.000	8.500	1.300
139	9.000	10.500	1.300	140	9.000	12.500	1.300
141	9.000	14.500	1.300	142	9.000	16.500	1.300
143	9.000	18.500	1.300	144	9.000	20.500	1.300
145	10.800	0.000	0.000	146	10.800	0.500	0.000
147	10.800	2.500	0.000	148	10.800	4.500	0.000
149	10.800	6.500	0.000	150	10.800	8.500	0.000
151	10.800	10.500	0.000	152	10.800	12.500	0.000
153	10.800	14.500	0.000	154	10.800	16.500	0.000
155	10.800	18.500	0.000	156	10.800	20.500	0.000
157	10.800	0.000	1.300	158	10.800	0.500	1.300
159	10.800	2.500	1.300	160	10.800	4.500	1.300
161	10.800	6.500	1.300	162	10.800	8.500	1.300
163	10.800	10.500	1.300	164	10.800	12.500	1.300
165	10.800	14.500	1.300	166	10.800	16.500	1.300
167	10.800	18.500	1.300	168	10.800	20.500	1.300
169	0.000	22.500	0.000	170	0.000	22.500	1.300
171	1.800	22.500	0.000	172	1.800	22.500	1.300
173	3.600	22.500	0.000	174	3.600	22.500	1.300
175	5.400	22.500	0.000	176	5.400	22.500	1.300
177	7.200	22.500	0.000	178	7.200	22.500	1.300
179	9.000	22.500	0.000	180	9.000	22.500	1.300
181	10.800	22.500	0.000	182	10.800	22.500	1.300
183	0.000	24.500	0.000	184	0.000	24.500	1.300
185	1.800	24.500	0.000	186	1.800	24.500	1.300
187	3.600	24.500	0.000	188	3.600	24.500	1.300
189	5.400	24.500	0.000	190	5.400	24.500	1.300
191	7.200	24.500	0.000	192	7.200	24.500	1.300
193	9.000	24.500	0.000	194	9.000	24.500	1.300
195	10.800	24.500	0.000	196	10.800	24.500	1.300

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 454****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member Properties**

Members 1-10, 16-25, 31-40, 46-55, 61-100, 106-129, 135-144, 150-177, 182-189,
194-201, 206-213, 218-225, 230-237, 242-249, 254-309, 312-315, 318-321,
324-327, 330-333, 336-339, 342-345, 348-373, 381-392 and 400-454

M	...	...	48.3x3.2	CHS	3.56	[S 355]		
A	4.53E-4		Ix	11.59E-8		Iy	11.59E-8	J 23.17E-8
E	205.0E6		G	78.85E6				

Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341, 346-347, 374-380 and 393-399

M	...	...	Omega Transom	[]	E 210E6	G 78E6		
A	7.02E-4		Ix	36.1E-8		Iy	54.0E-8	J 72.21E-8

Member Loading**Members 2 and 17**

W1	PZ	-000.013	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.072	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.014	0.000	(kN,m)
W5	PX	-000.074	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 3 and 18

W1	PZ	-000.027	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.146	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.028	0.000	(kN,m)
W5	PX	-000.153	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 4 and 19

W1	PZ	-000.028	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.152	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.029	0.000	(kN,m)
W5	PX	-000.158	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 5 and 20

W1	PZ	-000.029	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.157	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.030	0.000	(kN,m)
W5	PX	-000.163	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 7 and 22

W1	PZ	-000.013	0.000	(kN,m)
W4	PZ	-000.072	0.000	(kN,m)

Members 8 and 23

W1	PZ	-000.027	0.000	(kN,m)
W4	PZ	-000.146	0.000	(kN,m)

Members 9 and 24

W1	PZ	-000.028	0.000	(kN,m)
W4	PZ	-000.152	0.000	(kN,m)

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W1 PZ	-000.029	0.000	(kN,m)
W4 PZ	-000.157	0.000	(kN,m)

**Members 11-15, 26-30, 41-45, 56-60, 101-105, 130-134, 145-149, 178-181, 190-193,
202-205, 214-217, 226-229, 238-241, 250-253, 310-311, 316-317, 322-323,
328-329, 334-335, 340-341 and 346-347**

D1 PY	-000.035	0.025	(kN,m)
D1 PY	-000.035	1.275	(kN,m)

Members 32, 47, 92, 121 and 136

W1 PZ	-000.009	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.054	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.009	0.000	(kN,m)
W5 PX	-000.054	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 33, 48, 93, 122 and 137

W1 PZ	-000.020	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.111	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.020	0.000	(kN,m)
W5 PX	-000.112	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 34, 49, 94, 123 and 138

W1 PZ	-000.021	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.115	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.021	0.000	(kN,m)
W5 PX	-000.115	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 35, 50, 95, 124 and 139

W1 PZ	-000.022	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.118	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.022	0.000	(kN,m)
W5 PX	-000.119	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 37, 52, 97, 126 and 141

W1 PZ	-000.009	0.000	(kN,m)
W4 PZ	-000.054	0.000	(kN,m)

Members 38, 53, 98, 127 and 142

W1 PZ	-000.020	0.000	(kN,m)
W4 PZ	-000.111	0.000	(kN,m)

Members 39, 54, 99, 128 and 143

W1 PZ	-000.021	0.000	(kN,m)
W4 PZ	-000.115	0.000	(kN,m)

Members 40, 55, 100, 129 and 144

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.118	0.000	(kN,m)

Members 61, 64, 67, 70, 73, 254, 266, 278, 290, 348 and 360

D1 PY	-000.143	0.025	(kN,m)
D1 PY	-000.143	1.775	(kN,m)

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Members 62-63, 65-66, 68-69, 71-72, 74-90, 106-115, 150-169, 255-265, 267-277,
279-289, 291-301, 349-359, 361-371, 387-392 and 406-411

D1 PY -000.090 0.025 (kN,m)
D1 PY -000.090 1.775 (kN,m)

Members 170 and 182

W1 PZ -000.029 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.161 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.030 0.000 (kN,m)
W5 PX -000.167 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 171 and 183

W1 PZ -000.030 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.165 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.031 0.000 (kN,m)
W5 PX -000.172 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 172 and 184

W1 PZ -000.031 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.170 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.032 0.000 (kN,m)
W5 PX -000.176 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 173 and 185

W1 PZ -000.032 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.175 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.033 0.000 (kN,m)
W5 PX -000.181 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

Members 174 and 186

W1 PZ -000.029 0.000 (kN,m)
W4 PZ -000.161 0.000 (kN,m)

Members 175 and 187

W1 PZ -000.030 0.000 (kN,m)
W4 PZ -000.165 0.000 (kN,m)

Members 176 and 188

W1 PZ -000.031 0.000 (kN,m)
W4 PZ -000.170 0.000 (kN,m)

Members 177 and 189

W1 PZ -000.032 0.000 (kN,m)
W4 PZ -000.175 0.000 (kN,m)

Members 194, 206, 218, 230 and 242

W1 PZ -000.022 0.000 (kN,m)
W3 PZ -000.000 0.000 (kN,m)
W4 PZ -000.121 0.000 (kN,m)
W6 PZ -000.000 0.000 (kN,m)
W2 PX -000.022 0.000 (kN,m)
W5 PX -000.122 0.000 (kN,m)
W7 PX -000.000 0.000 (kN,m)
W8 PX -000.000 0.000 (kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 457****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 195, 207, 219, 231 and 243**

W1 PZ	-000.023	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.125	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.125	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 196, 208, 220, 232 and 244

W1 PZ	-000.023	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.128	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.023	0.000	(kN,m)
W5 PX	-000.129	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 197, 209, 221, 233 and 245

W1 PZ	-000.024	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.131	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.024	0.000	(kN,m)
W5 PX	-000.132	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 198, 210, 222, 234 and 246

W1 PZ	-000.022	0.000	(kN,m)
W4 PZ	-000.121	0.000	(kN,m)

Members 199, 211, 223, 235 and 247

W1 PZ	-000.023	0.000	(kN,m)
W4 PZ	-000.125	0.000	(kN,m)

Members 200, 212, 224, 236 and 248

W1 PZ	-000.023	0.000	(kN,m)
W4 PZ	-000.128	0.000	(kN,m)

Members 201, 213, 225, 237 and 249

W1 PZ	-000.024	0.000	(kN,m)
W4 PZ	-000.131	0.000	(kN,m)

Members 306 and 312

W1 PZ	-000.033	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.179	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.034	0.000	(kN,m)
W5 PX	-000.186	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 307 and 313

W1 PZ	-000.034	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.184	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.190	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 308 and 314

W1 PZ	-000.033	0.000	(kN,m)
W4 PZ	-000.179	0.000	(kN,m)

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 458****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Members 309 and 315**

W1	PZ	-000.034	0.000	(kN,m)
W4	PZ	-000.184	0.000	(kN,m)

Members 318, 324, 330, 336 and 342

W1	PZ	-000.025	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.135	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.136	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 319, 325, 331, 337 and 343

W1	PZ	-000.025	0.000	(kN,m)
W3	PZ	-000.000	0.000	(kN,m)
W4	PZ	-000.138	0.000	(kN,m)
W6	PZ	-000.000	0.000	(kN,m)
W2	PX	-000.025	0.000	(kN,m)
W5	PX	-000.139	0.000	(kN,m)
W7	PX	-000.000	0.000	(kN,m)
W8	PX	-000.000	0.000	(kN,m)

Members 320, 326, 332, 338 and 344

W1	PZ	-000.025	0.000	(kN,m)
W4	PZ	-000.135	0.000	(kN,m)

Members 321, 327, 333, 339 and 345

W1	PZ	-000.025	0.000	(kN,m)
W4	PZ	-000.138	0.000	(kN,m)

Members 374-380

D1	PY	-000.431	0.025	(kN,m)
D1	PY	-000.354	1.275	(kN,m)
L2	PY	-001.519	0.025	(kN,m)
L4	PY	-001.519	1.275	(kN,m)
L6	PY	-002.025	0.025	(kN,m)
L8	PY	-002.025	1.275	(kN,m)
G2	PY	-003.038	0.025	(kN,m)
G4	PY	-003.038	1.275	(kN,m)

Member 381

D1	PY	-000.211	0.025	(kN,m)
D1	PY	-000.211	1.775	(kN,m)

Members 382-386

D1	PY	-000.159	0.025	(kN,m)
D1	PY	-000.159	1.775	(kN,m)

Members 393-399

D1	PY	-000.431	0.025	(kN,m)
D1	PY	-000.354	1.275	(kN,m)
L1	PY	-001.519	0.025	(kN,m)
L3	PY	-001.519	1.275	(kN,m)
L5	PY	-002.025	0.025	(kN,m)
L7	PY	-002.025	1.275	(kN,m)
G1	PY	-003.038	0.025	(kN,m)
G3	PY	-003.038	1.275	(kN,m)

Member 400

D1	PY	-000.211	0.025	(kN,m)
D1	PY	-000.211	1.775	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

Members 401-404

D1	PY	-000.159	0.025	(kN,m)
D1	PY	-000.159	1.775	(kN,m)
N1	PZ	-000.300	0.025	(kN,m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 459****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :****Member 405**

D1 PY	-000.159	0.025	(kN,m)
D1 PY	-000.159	1.775	(kN,m)
N1 PZ	-000.300	0.025	(kN,m)
N1 PZ	-000.300	1.775	(kN,m)

Members 412 and 416

W1 PZ	-000.034	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.035	0.000	(kN,m)
W5 PX	-000.195	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 413 and 417

W1 PZ	-000.156	0.000	(kN,m)
W1 PZ	-000.160	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.640	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.655	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.052	0.000	(kN,m)
W2 PX	-000.053	2.000	(kN,m)
W5 PX	-000.276	0.000	(kN,m)
W5 PX	-000.282	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	2.000	(kN,m)

Members 414 and 418

W1 PZ	-000.034	0.000	(kN,m)
W4 PZ	-000.188	0.000	(kN,m)

Members 415 and 419

W1 PZ	-000.156	0.000	(kN,m)
W4 PZ	-000.072	0.000	(kN,m)
W1 PZ	-000.640	2.000	(kN,m)
W4 PZ	-000.655	2.000	(kN,m)

Members 420, 424, 428, 432 and 436

W1 PZ	-000.026	0.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.141	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W2 PX	-000.026	0.000	(kN,m)
W5 PX	-000.142	0.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

Members 421, 425, 429 and 433

W1 PZ	-000.146	0.000	(kN,m)
W1 PZ	-000.149	2.000	(kN,m)
W3 PZ	-000.000	0.000	(kN,m)
W4 PZ	-000.583	0.000	(kN,m)
W6 PZ	-000.000	0.000	(kN,m)
W3 PZ	-000.000	2.000	(kN,m)
W4 PZ	-000.596	2.000	(kN,m)
W6 PZ	-000.000	2.000	(kN,m)
W2 PX	-000.042	0.000	(kN,m)
W2 PX	-000.043	2.000	(kN,m)
W5 PX	-000.146	0.000	(kN,m)
W5 PX	-000.149	2.000	(kN,m)
W7 PX	-000.000	0.000	(kN,m)
W7 PX	-000.000	2.000	(kN,m)
W8 PX	-000.000	0.000	(kN,m)

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 460****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

W8 PX -000.000 2.000 (kN,m)

Members 422, 426, 430, 434 and 438

W1 PZ -000.026 0.000 (kN,m)

W4 PZ -000.141 0.000 (kN,m)

Members 423, 427, 431, 435 and 439

W1 PZ -000.146 0.000 (kN,m)

W4 PZ -000.583 0.000 (kN,m)

W1 PZ -000.149 2.000 (kN,m)

W4 PZ -000.596 2.000 (kN,m)

Member 437

W1 PZ -000.146 0.000 (kN,m)

W1 PZ -000.149 2.000 (kN,m)

W3 PZ -000.000 0.000 (kN,m)

W4 PZ -000.583 0.000 (kN,m)

W6 PZ -000.000 0.000 (kN,m)

W3 PZ -000.000 2.000 (kN,m)

W4 PZ -000.596 2.000 (kN,m)

W6 PZ -000.000 2.000 (kN,m)

W2 PX -000.042 0.000 (kN,m)

W2 PX -000.043 2.000 (kN,m)

W5 PX -000.222 0.000 (kN,m)

W5 PX -000.227 2.000 (kN,m)

W7 PX -000.000 0.000 (kN,m)

W7 PX -000.000 2.000 (kN,m)

W8 PX -000.000 0.000 (kN,m)

W8 PX -000.000 2.000 (kN,m)

Member End Releases

Symbols	End 1 torsion-minor-major			End 2 torsion-minor-major			O Relased			® Fixed			
11	ROO	ROO		12	ROO	ROO	13	ROO	ROO		14	ROO	ROO
15	ROO	ROO		26	ROO	ROO	27	ROO	ROO		28	ROO	ROO
29	ROO	ROO		30	ROO	ROO	41	ROO	ROO		42	ROO	ROO
43	ROO	ROO		44	ROO	ROO	45	ROO	ROO		56	ROO	ROO
57	ROO	ROO		58	ROO	ROO	59	ROO	ROO		60	ROO	ROO
61	ROO	ROO		62	ROO	ROO	63	ROO	ROO		64	ROO	ROO
65	ROO	ROO		66	ROO	ROO	67	ROO	ROO		68	ROO	ROO
69	ROO	ROO		70	ROO	ROO	71	ROO	ROO		72	ROO	ROO
73	ROO	ROO		74	ROO	ROO	75	ROO	ROO		76	ROO	ROO
77	ROO	ROO		78	ROO	ROO	79	ROO	ROO		80	ROO	ROO
81	ROO	ROO		82	ROO	ROO	83	ROO	ROO		84	ROO	ROO
85	ROO	ROO		86	ROO	ROO	87	ROO	ROO		88	ROO	ROO
89	ROO	ROO		90	ROO	ROO	101	ROO	ROO		102	ROO	ROO
103	ROO	ROO		104	ROO	ROO	105	ROO	ROO		106	ROO	ROO
107	ROO	ROO		108	ROO	ROO	109	ROO	ROO		110	ROO	ROO
111	ROO	ROO		112	ROO	ROO	113	ROO	ROO		114	ROO	ROO
115	ROO	ROO		116	ROO	ROO	117	ROO	ROO		118	ROO	ROO
119	ROO	ROO		130	ROO	ROO	131	ROO	ROO		132	ROO	ROO
133	ROO	ROO		134	ROO	ROO	145	ROO	ROO		146	ROO	ROO
147	ROO	ROO		148	ROO	ROO	149	ROO	ROO		150	ROO	ROO
151	ROO	ROO		152	ROO	ROO	153	ROO	ROO		154	ROO	ROO
155	ROO	ROO		156	ROO	ROO	157	ROO	ROO		158	ROO	ROO
159	ROO	ROO		160	ROO	ROO	161	ROO	ROO		162	ROO	ROO
163	ROO	ROO		164	ROO	ROO	165	ROO	ROO		166	ROO	ROO
167	ROO	ROO		168	ROO	ROO	169	ROO	ROO		178	ROO	ROO
179	ROO	ROO		180	ROO	ROO	181	ROO	ROO		190	ROO	ROO
191	ROO	ROO		192	ROO	ROO	193	ROO	ROO		202	ROO	ROO
203	ROO	ROO		204	ROO	ROO	205	ROO	ROO		214	ROO	ROO
215	ROO	ROO		216	ROO	ROO	217	ROO	ROO		226	ROO	ROO
227	ROO	ROO		228	ROO	ROO	229	ROO	ROO		238	ROO	ROO
239	ROO	ROO		240	ROO	ROO	241	ROO	ROO		250	ROO	ROO
251	ROO	ROO		252	ROO	ROO	253	ROO	ROO		254	ROO	ROO
255	ROO	ROO		256	ROO	ROO	257	ROO	ROO		258	ROO	ROO
259	ROO	ROO		260	ROO	ROO	261	ROO	ROO		262	ROO	ROO
263	ROO	ROO		264	ROO	ROO	265	ROO	ROO		266	ROO	ROO
267	ROO	ROO		268	ROO	ROO	269	ROO	ROO		270	ROO	ROO
271	ROO	ROO		272	ROO	ROO	273	ROO	ROO		274	ROO	ROO
275	ROO	ROO		276	ROO	ROO	277	ROO	ROO		278	ROO	ROO
279	ROO	ROO		280	ROO	ROO	281	ROO	ROO		282	ROO	ROO

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers**37 Chorley New Road,****Bolton BL1 4QR****Telephone 01204 384585****Facsimile 01204 363358****Job Ref : B11323****Sheet : SD / 461****Made by : IH****Date : 29 September 2010 / Ver. 2010.06****Checked :****Approved :**

283 @ @ @	284 @ @ @	285 @ @ @	286 @ @ @
287 @ @ @	288 @ @ @	289 @ @ @	290 @ @ @
291 @ @ @	292 @ @ @	293 @ @ @	294 @ @ @
295 @ @ @	296 @ @ @	297 @ @ @	298 @ @ @
299 @ @ @	300 @ @ @	301 @ @ @	302 @ @ @
303 @ @ @	304 @ @ @	305 @ @ @	310 @ @ @
311 @ @ @	316 @ @ @	317 @ @ @	322 @ @ @
323 @ @ @	328 @ @ @	329 @ @ @	334 @ @ @
335 @ @ @	340 @ @ @	341 @ @ @	346 @ @ @
347 @ @ @	348 @ @ @	349 @ @ @	350 @ @ @
351 @ @ @	352 @ @ @	353 @ @ @	354 @ @ @
355 @ @ @	356 @ @ @	357 @ @ @	358 @ @ @
359 @ @ @	360 @ @ @	361 @ @ @	362 @ @ @
363 @ @ @	364 @ @ @	365 @ @ @	366 @ @ @
367 @ @ @	368 @ @ @	369 @ @ @	370 @ @ @
371 @ @ @	372 @ @ @	373 @ @ @	374 @ @ @
375 @ @ @	376 @ @ @	377 @ @ @	378 @ @ @
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383 @ @ @	384 @ @ @	385 @ @ @	386 @ @ @
387 @ @ @	388 @ @ @	389 @ @ @	390 @ @ @
391 @ @ @	392 @ @ @	393 @ @ @	394 @ @ @
395 @ @ @	396 @ @ @	397 @ @ @	398 @ @ @
399 @ @ @	400 @ @ @	401 @ @ @	402 @ @ @
403 @ @ @	404 @ @ @	405 @ @ @	406 @ @ @
407 @ @ @	408 @ @ @	409 @ @ @	410 @ @ @
411 @ @ @	440 @ @ @	441 @ @ @	442 @ @ @
443 @ @ @	444 @ @ @	445 @ @ @	446 @ @ @
447 @ @ @	448 @ @ @	449 @ @ @	450 @ @ @
451 @ @ @	452 @ @ @	453 @ @ @	454 @ @ @

Nodal Loading and Support Conditions

NODES 1, 25, 49, 73, 97, 121 and 145

UT Ls +0000.000 -0000.000 +0000.000 +0000.000 +0000.000 +0000.000

NODES 13, 37, 61, 85, 109, 133 and 157

UT Rs 1 1 1 0 1 0 (Pinned with Y Moment Restraint)

NODES 1, 25, 49, 73, 97, 121 and 145

UT Rs 1 1 0 0 1 0

NODES 14, 18, 22, 38, 40, 44, 48, 62, 66, 70, 86, 88, 92, 96, 110, 114, 118,
134, 136, 140, 144, 158, 162, 166, 184, 188, 192 and 196

UT Rs 1 0 1 0 0 0 (Horizontally Restraint)

NODES 2-12, 14-24, 26-36, 38-48, 50-60, 62-72, 74-84, 86-96, 98-108, 110-120,
122-132, 134-144, 146-156 and 158-196

UT Springs 0000.000 0000.000 0000.000 0087.100 0000.000 0104.050

James Crosbie Associates Ltd.

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Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

Telephone 01204 384585

Facsimile 01204 363358

Job Ref : B11323

Sheet : SD / 462

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
1	0.00	0.00	0.29	0.29	-0.03	0.00	0.42	0.42
2	-2.79	-0.13	0.01	2.80	-0.03	0.00	0.12	0.12
3	-3.76	-0.43	-7.82	8.69	-0.04	0.01	0.01	0.04
4	-5.04	-0.60	-10.75	11.89	-0.01	-0.01	0.02	0.03
5	-6.38	-0.66	-7.68	10.01	0.04	0.01	0.02	0.04
6	-7.57	-0.80	0.04	7.62	-0.01	0.01	0.02	0.02
7	-8.43	-0.93	-8.27	11.85	-0.04	0.00	0.01	0.05
8	-8.82	-1.09	-11.60	14.62	0.00	-0.01	0.00	0.01
9	-8.67	-1.26	-8.34	12.10	0.04	-0.01	-0.01	0.04
10	-7.92	-1.41	0.05	8.05	0.01	-0.01	-0.02	0.02
11	-6.60	-1.57	-9.33	11.53	-0.05	-0.01	-0.03	0.06
12	-4.75	-1.71	-13.21	14.15	0.02	-0.01	-0.03	0.04
13	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
14	0.00	-0.04	0.00	0.04	-0.02	0.00	0.01	0.03
15	0.07	-0.19	-7.82	7.82	-0.04	0.00	0.00	0.04
16	0.06	-0.34	-10.75	10.76	-0.01	0.00	0.00	0.01
17	0.07	-0.49	-7.68	7.70	0.04	0.00	0.00	0.04
18	0.00	-0.64	0.00	0.64	-0.01	0.00	0.00	0.01
19	0.07	-0.78	-8.27	8.31	-0.05	0.00	0.00	0.05
20	0.07	-0.92	-11.60	11.64	0.00	-0.01	0.00	0.01
21	0.07	-1.05	-8.34	8.41	0.04	-0.01	0.00	0.04
22	0.00	-1.18	0.00	1.18	0.01	-0.01	-0.01	0.01
23	0.11	-1.31	-9.33	9.42	-0.05	-0.01	-0.01	0.05
24	0.10	-1.44	-13.21	13.29	0.02	-0.01	0.01	0.02
25	0.00	0.00	0.09	0.09	-0.01	0.00	0.42	0.42
26	-2.68	-0.04	0.01	2.68	-0.01	0.00	0.09	0.09
27	-3.65	0.26	-2.09	4.21	0.01	-0.01	0.01	0.01
28	-4.95	-0.38	0.02	4.96	-0.02	-0.01	0.01	0.03
29	-6.31	-0.53	-7.83	10.07	-0.04	-0.01	0.01	0.04
30	-7.52	-0.68	-10.58	13.00	0.01	-0.01	0.01	0.02
31	-8.39	-0.82	-7.72	11.43	0.04	-0.01	0.01	0.04
32	-8.81	-0.96	0.06	8.86	0.01	-0.01	0.00	0.01
33	-8.67	-1.09	-8.25	12.02	-0.04	0.00	-0.01	0.04
34	-7.94	-1.25	-11.29	13.86	0.00	0.00	-0.01	0.01
35	-6.64	-1.42	-8.25	10.68	0.04	-0.01	-0.02	0.05
36	-4.80	-1.59	0.02	5.06	-0.01	-0.02	-0.02	0.03
37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
38	0.00	-0.04	0.00	0.04	-0.01	0.00	0.01	0.01
39	0.07	-0.21	-2.09	2.10	0.01	0.00	0.00	0.01
40	0.00	-0.37	0.00	0.37	-0.02	0.00	0.00	0.02
41	0.07	-0.53	-7.83	7.84	-0.04	-0.01	0.00	0.04
42	0.00	-0.68	-10.58	10.60	0.01	-0.01	0.00	0.02
43	0.07	-0.83	-7.72	7.76	0.04	-0.01	0.00	0.04
44	0.00	-0.98	0.00	0.98	0.01	-0.01	0.00	0.01
45	0.07	-1.12	-8.25	8.33	-0.04	-0.01	0.00	0.04
46	0.00	-1.26	-11.29	11.36	0.00	-0.02	0.00	0.02
47	0.11	-1.39	-8.25	8.37	0.04	-0.02	0.00	0.05
48	0.00	-1.52	0.00	1.52	-0.01	-0.02	0.01	0.03
49	0.00	0.00	0.21	0.21	-0.02	0.00	0.40	0.40
50	-2.60	-0.04	0.01	2.60	-0.02	0.00	0.09	0.09
51	-3.67	-0.22	-5.81	6.87	-0.03	0.00	0.00	0.03
52	-4.96	-0.39	-7.89	9.33	0.00	0.00	0.01	0.01
53	-6.32	-0.55	-5.69	8.53	0.03	0.00	0.01	0.03
54	-7.53	-0.71	0.04	7.57	0.00	0.00	0.01	0.01
55	-8.41	-0.87	-6.06	10.40	-0.03	0.00	0.00	0.03
56	-8.82	-1.02	-8.36	12.20	0.00	0.00	0.00	0.00
57	-8.68	-1.17	-6.05	10.65	0.03	0.00	0.00	0.03
58	-7.96	-1.31	0.05	8.06	-0.01	0.00	-0.01	0.01

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Job Ref : B11323

Sheet : SD / 463

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
59	-6.65	-1.45	-8.00	10.50	-0.04	0.00	-0.01	0.04
60	-4.82	-1.59	-12.02	13.04	-0.01	0.00	-0.01	0.02
61	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
62	0.00	-0.04	0.00	0.04	-0.02	0.00	0.01	0.02
63	0.07	-0.21	-5.81	5.81	-0.03	0.00	0.00	0.03
64	0.00	-0.38	-7.89	7.90	0.00	0.00	0.00	0.00
65	0.07	-0.54	-5.69	5.72	0.03	0.00	0.00	0.03
66	0.00	-0.70	0.00	0.70	0.00	0.00	0.00	0.00
67	0.07	-0.85	-6.06	6.12	-0.03	-0.01	0.00	0.03
68	0.00	-0.99	-8.36	8.42	0.00	-0.01	0.00	0.01
69	0.07	-1.14	-6.05	6.16	0.03	-0.01	0.00	0.03
70	0.00	-1.27	0.00	1.27	-0.01	-0.01	0.00	0.01
71	0.11	-1.41	-8.00	8.12	-0.04	-0.01	0.00	0.04
72	0.00	-1.54	-12.02	12.12	-0.01	-0.01	0.01	0.02
73	0.00	0.00	0.07	0.07	-0.01	0.00	0.39	0.39
74	-2.53	-0.04	0.00	2.53	-0.01	0.00	0.09	0.09
75	-3.68	-0.22	-1.59	4.01	0.00	0.00	0.01	0.01
76	-4.97	-0.39	0.02	4.98	-0.02	0.00	0.01	0.02
77	-6.33	-0.56	-6.01	8.75	-0.03	0.00	0.01	0.03
78	-7.54	-0.72	-8.19	11.15	0.00	0.00	0.01	0.01
79	-8.41	-0.87	-5.94	10.33	0.03	-0.01	0.01	0.03
80	-8.83	-1.03	0.06	8.88	0.00	-0.01	0.00	0.01
81	-8.69	-1.17	-6.25	10.76	-0.03	-0.01	0.00	0.03
82	-7.96	-1.32	-8.58	11.78	0.00	-0.01	-0.01	0.01
83	-6.66	-1.46	-6.09	9.14	0.03	-0.01	-0.01	0.04
84	-4.83	-1.59	0.02	5.08	-0.02	-0.01	-0.02	0.03
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86	0.00	-0.04	0.00	0.04	-0.01	0.00	0.01	0.01
87	0.07	-0.21	-1.59	1.60	0.00	0.00	0.00	0.00
88	0.00	-0.38	0.00	0.38	-0.02	0.00	0.00	0.02
89	0.07	-0.54	-6.01	6.03	-0.03	-0.01	0.00	0.03
90	0.00	-0.70	-8.19	8.22	0.00	-0.01	0.00	0.01
91	0.07	-0.85	-5.94	6.00	0.03	-0.01	0.00	0.03
92	0.00	-1.00	0.00	1.00	0.00	-0.01	0.00	0.01
93	0.07	-1.14	-6.25	6.35	-0.03	-0.02	0.00	0.03
94	0.00	-1.28	-8.58	8.67	0.00	-0.02	0.00	0.02
95	0.11	-1.41	-6.09	6.26	0.03	-0.02	0.00	0.04
96	0.00	-1.54	0.00	1.54	-0.02	-0.02	0.01	0.03
97	0.00	0.00	0.21	0.21	-0.02	0.00	0.38	0.38
98	-2.47	-0.05	0.00	2.48	-0.02	0.00	0.09	0.09
99	-3.69	-0.22	-5.81	6.89	-0.03	0.00	0.01	0.03
100	-4.98	-0.39	-7.89	9.34	0.00	0.00	0.01	0.01
101	-6.34	-0.56	-5.70	8.54	0.03	0.00	0.01	0.03
102	-7.55	-0.72	0.04	7.58	0.00	0.00	0.01	0.01
103	-8.42	-0.87	-6.06	10.41	-0.03	0.00	0.01	0.03
104	-8.83	-1.03	-8.36	12.20	0.00	0.00	0.00	0.00
105	-8.70	-1.17	-6.04	10.65	0.03	0.00	0.00	0.03
106	-7.97	-1.32	0.05	8.08	-0.01	0.00	-0.01	0.01
107	-6.67	-1.46	-8.42	10.84	-0.04	0.00	-0.01	0.05
108	-4.83	-1.59	-12.91	13.88	-0.01	0.00	-0.02	0.02
109	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
110	0.00	-0.04	0.00	0.04	-0.02	0.00	0.01	0.02
111	0.07	-0.21	-5.81	5.82	-0.03	0.00	0.00	0.03
112	0.00	-0.38	-7.89	7.90	0.00	0.00	0.00	0.00
113	0.07	-0.54	-5.70	5.72	0.03	0.00	0.00	0.03
114	0.00	-0.70	0.00	0.70	0.00	0.00	0.00	0.01
115	0.07	-0.85	-6.06	6.12	-0.03	-0.01	0.00	0.03
116	0.00	-1.00	-8.36	8.42	0.00	-0.01	0.00	0.01

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Job Ref : B11323

Sheet : SD / 464

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)								
Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
117	0.07	-1.14	-6.04	6.14	0.03	-0.01	0.00	0.03
118	0.00	-1.28	0.00	1.28	-0.01	-0.01	0.00	0.01
119	0.11	-1.41	-8.42	8.54	-0.04	-0.01	0.00	0.05
120	0.00	-1.54	-12.91	13.00	-0.02	-0.01	0.01	0.02
121	0.00	0.00	0.07	0.07	-0.01	0.00	0.38	0.38
122	-2.44	-0.04	0.00	2.44	-0.01	0.00	0.08	0.09
123	-3.70	-0.22	-1.59	4.03	0.00	0.00	0.01	0.01
124	-4.98	-0.39	0.02	4.99	-0.02	0.00	0.01	0.02
125	-6.34	-0.55	-6.01	8.75	-0.03	-0.01	0.01	0.03
126	-7.55	-0.71	-8.18	11.16	0.00	-0.01	0.01	0.01
127	-8.43	-0.87	-5.93	10.34	0.03	-0.01	0.01	0.03
128	-8.84	-1.02	0.06	8.90	0.00	-0.01	0.00	0.01
129	-8.70	-1.17	-6.22	10.76	-0.03	-0.01	0.00	0.03
130	-7.98	-1.31	-8.52	11.75	0.00	-0.01	-0.01	0.02
131	-6.67	-1.45	-6.01	9.10	0.03	-0.01	-0.01	0.04
132	-4.84	-1.58	0.02	5.09	-0.03	-0.02	-0.02	0.04
133	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134	0.00	-0.04	0.00	0.04	-0.01	0.00	0.01	0.01
135	0.07	-0.21	-1.59	1.60	0.00	0.00	0.00	0.00
136	0.00	-0.38	0.00	0.38	-0.02	-0.01	0.00	0.02
137	0.07	-0.54	-6.01	6.03	-0.03	-0.01	0.00	0.03
138	0.00	-0.69	-8.18	8.21	0.00	-0.01	0.00	0.01
139	0.07	-0.84	-5.93	5.99	0.03	-0.01	0.00	0.03
140	0.00	-0.99	0.00	0.99	0.00	-0.02	0.00	0.02
141	0.07	-1.13	-6.22	6.32	-0.03	-0.02	0.00	0.03
142	0.00	-1.27	-8.52	8.62	0.00	-0.02	0.00	0.02
143	0.11	-1.40	-6.01	6.18	0.03	-0.02	0.00	0.04
144	0.00	-1.53	0.00	1.53	-0.03	-0.02	0.01	0.04
145	0.00	0.00	0.22	0.22	-0.03	0.00	0.37	0.37
146	-2.43	-0.04	0.00	2.43	-0.03	0.00	0.10	0.11
147	-3.70	-0.19	-5.88	6.95	-0.03	0.00	0.01	0.03
148	-4.98	-0.34	-8.07	9.49	0.00	0.00	0.02	0.02
149	-6.35	-0.48	-5.76	8.59	0.03	0.00	0.02	0.03
150	-7.55	-0.62	0.04	7.58	0.00	0.00	0.01	0.01
151	-8.43	-0.76	-6.17	10.47	-0.03	0.00	0.01	0.03
152	-8.84	-0.90	-8.62	12.38	0.00	0.00	0.00	0.00
153	-8.70	-1.04	-6.13	10.69	0.03	0.00	0.00	0.03
154	-7.98	-1.17	0.05	8.06	-0.01	0.00	-0.01	0.01
155	-6.67	-1.30	-9.32	11.54	-0.05	0.00	-0.02	0.05
156	-4.84	-1.42	-14.72	15.56	-0.02	0.00	-0.02	0.03
157	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.01
158	0.00	-0.04	0.00	0.04	-0.02	0.00	0.01	0.02
159	0.07	-0.18	-5.88	5.88	-0.03	0.00	0.00	0.03
160	-0.04	-0.33	-8.07	8.08	0.00	0.00	0.00	0.00
161	0.07	-0.47	-5.76	5.78	0.03	0.00	0.00	0.03
162	0.00	-0.61	0.00	0.61	0.00	0.00	0.00	0.01
163	0.07	-0.75	-6.17	6.22	-0.03	-0.01	0.00	0.03
164	-0.04	-0.88	-8.62	8.66	0.00	-0.01	0.00	0.01
165	0.07	-1.01	-6.13	6.21	0.03	-0.01	0.00	0.03
166	0.00	-1.14	0.00	1.14	-0.01	-0.01	0.00	0.01
167	0.11	-1.27	-9.32	9.41	-0.05	-0.01	0.00	0.05
168	-0.12	-1.39	-14.72	14.78	-0.02	-0.01	0.01	0.02
169	-2.49	-1.85	-9.86	10.33	0.05	-0.01	-0.04	0.06
170	-2.35	-1.57	-9.85	10.25	0.05	-0.01	-0.01	0.05
171	-2.55	-1.75	-10.49	10.94	-0.02	0.02	-0.03	0.04
172	-2.35	-1.65	-10.49	10.88	-0.02	-0.02	0.00	0.03
173	-2.55	-1.72	-11.20	11.62	0.05	0.00	-0.02	0.05
174	-2.35	-1.67	-11.21	11.57	0.04	-0.01	0.00	0.05

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Job Ref : B11323

Sheet : SD / 465

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Nodal Deflections (Maximum Values)

Node	Nodal Displacements (mm)				Nodal Rotations (Degrees)			
	$\delta X \rightarrow$	$\delta Y \uparrow$	$\delta Z \nearrow$	δXYZ	$\phi X \rightarrow$	$\phi Y \uparrow$	$\phi Z \nearrow$	ϕXYZ
175	-2.55	-1.72	-11.88	12.27	0.01	-0.01	-0.02	0.03
176	-2.35	-1.67	-11.88	12.23	-0.01	-0.02	0.00	0.03
177	-2.55	-1.72	-12.61	12.98	0.05	0.00	-0.02	0.05
178	-2.35	-1.67	-12.61	12.94	0.05	-0.01	0.00	0.05
179	-2.56	-1.71	-13.31	13.66	0.01	-0.02	-0.02	0.03
180	-2.35	-1.66	-13.32	13.62	-0.01	-0.03	0.00	0.03
181	-2.56	-1.55	-14.07	14.38	0.06	0.00	-0.03	0.06
182	-2.35	-1.51	-14.07	14.34	0.06	-0.01	0.00	0.06
183	-0.10	-1.93	-0.01	1.94	0.05	-0.01	-0.04	0.06
184	0.00	-1.65	0.00	1.65	0.03	-0.01	-0.03	0.04
185	-0.12	-1.84	-0.12	1.85	0.06	0.02	-0.02	0.06
186	-0.03	-1.73	-0.12	1.74	0.04	-0.02	-0.02	0.05
187	-0.06	-1.80	-0.03	1.80	0.06	0.00	-0.01	0.06
188	0.00	-1.75	0.00	1.75	0.04	-0.01	-0.01	0.04
189	-0.05	-1.80	-0.12	1.81	0.06	-0.01	-0.02	0.06
190	-0.02	-1.75	-0.11	1.76	0.04	-0.02	-0.02	0.05
191	-0.03	-1.80	-0.03	1.80	0.06	0.00	-0.01	0.07
192	0.00	-1.75	0.00	1.75	0.04	-0.01	-0.02	0.05
193	-0.03	-1.79	-0.13	1.80	0.07	-0.02	-0.01	0.07
194	-0.01	-1.74	-0.12	1.75	0.05	-0.03	-0.01	0.06
195	0.05	-1.62	-0.02	1.63	0.07	0.00	-0.02	0.07
196	0.00	-1.60	0.00	1.60	0.05	-0.01	-0.02	0.06

Member Forces (Maximum Values)

Member Forces (Maximum Values)										
Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
1	1	21.30C	0.00	-1.01	0.00	0.00	0.00		0.00	0.34
	2	21.30C	0.00	-1.01	0.00	-0.51	0.00	@ 0.000	@ 0.000	@ 0.290
2	2	13.77C	0.00	-0.03	0.31	-0.07	-0.23	0.00	0.00	0.65
	3	13.78C	0.00	0.04	0.23	0.02	0.23	@ 0.000	@ 0.000	@ 0.424
3	3	9.01C	0.00	-0.18	0.22	0.03	-0.07	0.00	0.00	0.33
	4	9.01C	0.00	-0.03	0.08	-0.02	0.09	@ 0.000	@ 0.000	@ 1.495
4	4	8.20C	0.00	-0.18	0.07	0.02	0.09	0.00	0.00	0.36
	5	8.20C	0.00	-0.02	-0.09	-0.02	-0.08	@ 0.000	@ 0.000	@ 0.505
5	5	8.09C	0.00	-0.18	-0.10	0.02	0.24	0.00	0.00	0.81
	6	8.09C	0.00	-0.02	-0.25	-0.02	-0.26	@ 0.000	@ 0.000	@ 1.535
6	13	7.22C	0.00	0.06	-0.11	0.00	0.00	0.00	0.00	0.04
	14	7.22C	0.00	0.06	-0.11	0.03	-0.05	@ 0.000	@ 0.000	@ 0.290
7	14	7.09C	0.00	0.00	0.31	-0.01	-0.24	0.00	0.00	0.70
	15	7.09C	0.00	0.00	0.24	0.00	0.24	@ 0.000	@ 0.000	@ 0.444
8	15	7.02C	0.00	0.00	0.22	0.00	-0.07	0.00	0.00	0.34
	16	7.02C	0.00	0.00	0.08	0.00	0.09	@ 0.000	@ 0.000	@ 1.475
9	16	6.88C	0.00	0.00	0.07	0.00	0.09	0.00	0.00	0.36
	17	6.88C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
10	17	6.68C	0.00	0.00	-0.10	0.00	0.24	0.00	0.00	0.81
	18	6.68C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.535

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

Bolton BL1 4QR

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Job Ref : B11323

Sheet : SD / 466

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Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
16	25	10.10T	0.00	-1.07	0.00	0.00	0.00		0.00	0.36
	26	10.10T	0.00	-1.07	0.00	-0.54	0.00	@ 0.000	@ 0.000	@ 0.290
17	26	10.37T	0.00	-0.05	0.14	-0.04	-0.07	0.00	0.00	0.39
	27	10.37T	0.00	0.03	0.07	0.01	0.07	@ 0.000	@ 0.000	@ 0.788
18	27	7.57C	0.00	-0.19	0.06	0.03	0.08	0.00	0.00	0.29
	28	7.57C	0.00	-0.03	-0.09	-0.03	-0.09	@ 0.000	@ 0.000	@ 1.535
19	28	7.19C	0.00	-0.19	0.40	0.03	-0.25	0.00	0.00	0.71
	29	7.19C	0.00	-0.03	0.24	-0.03	0.24	@ 0.000	@ 0.000	@ 0.444
20	29	7.29C	0.00	-0.19	0.23	0.03	-0.07	0.00	0.00	0.33
	30	7.29C	0.00	-0.03	0.08	-0.03	0.08	@ 0.000	@ 0.000	@ 1.475
21	37	7.92C	0.00	0.04	-0.03	0.00	0.00	0.00	0.00	0.01
	38	7.92C	0.00	0.04	-0.03	0.02	-0.02	@ 0.000	@ 0.000	@ 0.290
22	38	7.71C	0.00	0.00	0.14	0.00	-0.07	0.00	0.00	0.21
	39	7.71C	0.00	0.00	0.07	0.00	0.07	@ 0.000	@ 0.000	@ 1.555
23	39	7.49C	0.00	0.00	0.06	0.00	0.08	0.00	0.00	0.29
	40	7.49C	0.00	0.00	-0.09	0.00	-0.09	@ 0.000	@ 0.000	@ 1.535
24	40	7.31C	0.00	0.00	0.40	0.00	-0.25	0.00	0.00	0.71
	41	7.31C	0.00	0.00	0.24	0.00	0.24	@ 0.000	@ 0.000	@ 0.444
25	41	7.17C	0.00	0.00	0.23	0.00	-0.07	0.00	0.00	0.32
	42	7.17C	0.00	0.00	0.08	0.00	0.08	@ 0.000	@ 0.000	@ 1.475
31	49	8.31C	0.00	-1.03	0.00	0.00	0.00		0.00	0.35
	50	8.31C	0.00	-1.03	0.00	-0.52	0.00	@ 0.000	@ 0.000	@ 0.290
32	50	8.08C	0.00	-0.03	0.23	-0.04	-0.18	0.00	0.00	0.48
	51	8.08C	0.00	0.02	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
33	51	7.87C	0.00	-0.15	0.17	0.04	-0.05	0.00	0.00	0.24
	52	7.87C	0.00	-0.04	0.06	-0.04	0.06	@ 0.000	@ 0.000	@ 1.475
34	52	7.67C	0.00	-0.15	0.05	0.04	0.07	0.00	0.00	0.25
	53	7.67C	0.00	-0.04	-0.06	-0.04	-0.05	@ 0.000	@ 0.000	@ 0.505
35	53	7.46C	0.00	-0.15	-0.07	0.03	0.18	0.00	0.00	0.59
	54	7.46C	0.00	-0.03	-0.19	-0.04	-0.19	@ 0.000	@ 0.000	@ 1.555
36	61	8.07C	0.00	0.04	-0.08	0.00	0.00	0.00	0.00	0.03
	62	8.07C	0.00	0.04	-0.08	0.02	-0.04	@ 0.000	@ 0.000	@ 0.290
37	62	7.86C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.52
	63	7.86C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
38	63	7.70C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.24
	64	7.70C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.475
39	64	7.48C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.25
	65	7.48C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505

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Sheet : SD / 467

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Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
40	65	7.22C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.59
	66	7.22C	0.00	0.00	-0.19	0.00	-0.19	@ 0.000	@ 0.000	@ 1.555
46	73	8.34C	0.00	-1.00	0.00	0.00	0.00		0.00	0.34
	74	8.34C	0.00	-1.00	0.00	-0.50	0.00		@ 0.000	@ 0.290
47	74	8.12C	0.00	-0.04	0.11	-0.03	-0.05	0.00	0.00	0.37
	75	8.12C	0.00	0.02	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 0.828
48	75	7.91C	0.00	-0.15	0.04	0.04	0.06	0.00	0.00	0.22
	76	7.91C	0.00	-0.03	-0.07	-0.03	-0.07	@ 0.000	@ 0.000	@ 1.535
49	76	7.70C	0.00	-0.15	0.30	0.03	-0.19	0.00	0.00	0.54
	77	7.70C	0.00	-0.03	0.19	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
50	77	7.49C	0.00	-0.15	0.18	0.03	-0.05	0.00	0.00	0.25
	78	7.49C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.495
51	85	8.08C	0.00	0.04	-0.03	0.00	0.00	0.00	0.00	0.01
	86	8.08C	0.00	0.04	-0.03	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
52	86	7.86C	0.00	0.00	0.11	0.00	-0.05	0.00	0.00	0.16
	87	7.86C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.555
53	87	7.65C	0.00	0.00	0.04	0.00	0.06	0.00	0.00	0.23
	88	7.65C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 1.535
54	88	7.46C	0.00	0.00	0.30	0.00	-0.19	0.00	0.00	0.54
	89	7.46C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
55	89	7.29C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.25
	90	7.29C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.475
91	97	8.36C	0.00	-0.98	0.00	0.00	0.00		0.00	0.33
	98	8.36C	0.00	-0.98	0.00	-0.49	0.00		@ 0.000	@ 0.290
92	98	8.13C	0.00	-0.04	0.23	-0.03	-0.18	0.00	0.00	0.48
	99	8.13C	0.00	0.02	0.17	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
93	99	7.92C	0.00	-0.15	0.17	0.03	-0.05	0.00	0.00	0.24
	100	7.92C	0.00	-0.03	0.06	-0.03	0.06	@ 0.000	@ 0.000	@ 1.475
94	100	7.70C	0.00	-0.15	0.05	0.03	0.07	0.00	0.00	0.25
	101	7.70C	0.00	-0.03	-0.06	-0.03	-0.05	@ 0.000	@ 0.000	@ 0.505
95	101	7.49C	0.00	-0.15	-0.07	0.03	0.18	0.00	0.00	0.59
	102	7.49C	0.00	-0.03	-0.19	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.535
96	109	8.07C	0.00	0.04	-0.08	0.00	0.00	0.00	0.00	0.03
	110	8.07C	0.00	0.04	-0.08	0.02	-0.04	@ 0.000	@ 0.000	@ 0.290
97	110	7.88C	0.00	0.00	0.23	0.00	-0.18	0.00	0.00	0.52
	111	7.88C	0.00	0.00	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
98	111	7.71C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.24
	112	7.71C	0.00	0.00	0.06	0.00	0.06	@ 0.000	@ 0.000	@ 1.475

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
99	112	7.49C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.25
	113	7.49C	0.00	0.00	-0.06	0.00	-0.05	@ 0.000	@ 0.000	@ 0.505
100	113	7.23C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.59
	114	7.23C	0.00	0.00	-0.19	0.00	-0.19	@ 0.000	@ 0.000	@ 1.535
120	121	8.29C	0.00	-0.97	0.00	0.00	0.00		0.00	0.33
	122	8.29C	0.00	-0.97	0.00	-0.49	0.00		@ 0.000	@ 0.290
121	122	8.07C	0.00	-0.04	0.11	-0.03	-0.05	0.00	0.00	0.34
	123	8.07C	0.00	0.01	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 0.869
122	123	7.86C	0.00	-0.15	0.05	0.03	0.06	0.00	0.00	0.22
	124	7.86C	0.00	-0.03	-0.07	-0.03	-0.07	@ 0.000	@ 0.000	@ 1.535
123	124	7.65C	0.00	-0.15	0.30	0.03	-0.19	0.00	0.00	0.54
	125	7.65C	0.00	-0.03	0.19	-0.03	0.18	@ 0.000	@ 0.000	@ 0.444
124	125	7.44C	0.00	-0.15	0.18	0.03	-0.05	0.00	0.00	0.25
	126	7.44C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.495
125	133	8.03C	0.00	0.04	-0.03	0.00	0.00	0.00	0.00	0.01
	134	8.03C	0.00	0.04	-0.03	0.02	-0.01	@ 0.000	@ 0.000	@ 0.290
126	134	7.82C	0.00	0.00	0.11	0.00	-0.05	0.00	0.00	0.16
	135	7.82C	0.00	0.00	0.05	0.00	0.05	@ 0.000	@ 0.000	@ 1.555
127	135	7.60C	0.00	0.00	0.04	0.00	0.06	0.00	0.00	0.22
	136	7.60C	0.00	0.00	-0.07	0.00	-0.07	@ 0.000	@ 0.000	@ 1.535
128	136	7.41C	0.00	0.00	0.30	0.00	-0.19	0.00	0.00	0.54
	137	7.41C	0.00	0.00	0.19	0.00	0.18	@ 0.000	@ 0.000	@ 0.444
129	137	7.25C	0.00	0.00	0.18	0.00	-0.05	0.00	0.00	0.25
	138	7.25C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
135	145	7.12C	0.00	-0.87	0.00	0.00	0.00		0.00	0.29
	146	7.12C	0.00	-0.87	0.00	-0.43	0.00		@ 0.000	@ 0.290
136	146	6.99C	0.00	-0.03	0.23	-0.04	-0.18	0.00	0.00	0.49
	147	6.99C	0.00	0.02	0.18	0.00	0.17	@ 0.000	@ 0.000	@ 0.424
137	147	6.86C	0.00	-0.14	0.17	0.03	-0.05	0.00	0.00	0.26
	148	6.86C	0.00	-0.03	0.06	-0.03	0.07	@ 0.000	@ 0.000	@ 1.475
138	148	6.74C	0.00	-0.14	0.05	0.03	0.07	0.00	0.00	0.27
	149	6.74C	0.00	-0.03	-0.06	-0.03	-0.06	@ 0.000	@ 0.000	@ 0.505
139	149	6.62C	0.00	-0.14	-0.07	0.02	0.18	0.00	0.00	0.60
	150	6.62C	0.00	-0.03	-0.19	-0.03	-0.19	@ 0.000	@ 0.000	@ 1.535
140	157	6.92C	0.00	0.06	-0.08	0.00	0.00	0.00	0.00	0.03
	158	6.92C	0.00	0.06	-0.08	0.03	-0.04	@ 0.000	@ 0.000	@ 0.290
141	158	6.81C	0.00	0.01	0.23	-0.01	-0.18	0.00	0.00	0.53
	159	6.81C	0.00	0.01	0.18	0.00	0.18	@ 0.000	@ 0.000	@ 0.444

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Member Forces (Maximum Values)

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				x-x	y-y	x-x	y-y	x-x	y-y	
142	159	6.74C	0.00	0.00	0.17	0.00	-0.05	0.00	0.00	0.26
	160	6.74C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.475
143	160	6.61C	0.00	0.00	0.05	0.00	0.07	0.00	0.00	0.26
	161	6.61C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
144	161	6.43C	0.00	0.00	-0.07	0.00	0.18	0.00	0.00	0.60
	162	6.43C	0.00	0.00	-0.19	0.00	-0.19	@ 0.000	@ 0.000	@ 1.535
170	6	7.94C	0.00	-0.18	0.43	0.01	-0.27	0.00	0.00	0.84
	7	7.94C	0.00	-0.01	0.26	-0.01	0.26	@ 0.000	@ 0.000	@ 0.444
171	7	7.77C	0.00	-0.18	0.25	0.00	-0.08	0.00	0.00	0.37
	8	7.77C	0.00	-0.01	0.09	-0.01	0.10	@ 0.000	@ 0.000	@ 1.495
172	8	7.58C	0.00	-0.17	0.08	0.00	0.10	0.00	0.00	0.39
	9	7.58C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
173	9	7.35C	0.00	-0.17	-0.10	-0.01	0.26	0.00	0.00	0.88
	10	7.35C	0.00	0.01	-0.27	0.01	-0.28	@ 0.000	@ 0.000	@ 1.535
174	18	6.54C	0.00	0.00	0.43	0.00	-0.27	0.00	0.00	0.84
	19	6.54C	0.00	0.00	0.26	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
175	19	6.45C	0.00	0.00	0.25	0.00	-0.08	0.00	0.00	0.37
	20	6.45C	0.00	0.00	0.09	0.00	0.10	@ 0.000	@ 0.000	@ 1.495
176	20	6.29C	0.00	0.00	0.08	0.00	0.10	0.00	0.00	0.39
	21	6.29C	0.00	0.00	-0.09	0.00	-0.08	@ 0.000	@ 0.000	@ 0.505
177	21	6.06C	0.00	0.00	-0.10	0.00	0.27	0.00	0.00	0.88
	22	6.06C	0.00	0.00	-0.28	0.00	-0.28	@ 0.000	@ 0.000	@ 1.535
182	30	9.73C	0.00	-0.19	0.08	0.02	0.08	0.00	0.00	0.32
	31	9.73C	0.00	-0.02	-0.08	-0.02	-0.07	@ 0.000	@ 0.000	@ 0.525
183	31	12.19C	0.00	-0.18	-0.09	0.01	0.24	0.00	0.00	0.79
	32	12.19C	0.00	-0.01	-0.25	-0.01	-0.26	@ 0.000	@ 0.000	@ 1.555
184	32	13.71C	0.00	-0.18	0.44	0.00	-0.28	0.00	0.00	0.84
	33	13.71C	0.00	0.00	0.27	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
185	33	14.29C	0.00	-0.17	0.26	-0.02	-0.08	0.00	0.00	0.36
	34	14.29C	0.00	0.01	0.09	0.01	0.09	@ 0.000	@ 0.000	@ 1.495
186	42	6.97C	0.00	0.00	0.08	0.00	0.08	0.00	0.00	0.33
	43	6.97C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.525
187	43	6.72C	0.00	0.00	-0.09	0.00	0.24	0.00	0.00	0.79
	44	6.72C	0.00	0.00	-0.25	0.00	-0.26	@ 0.000	@ 0.000	@ 1.555
188	44	6.52C	0.00	0.00	0.44	0.00	-0.28	0.00	0.00	0.84
	45	6.52C	0.00	0.00	0.27	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
189	45	6.36C	0.00	0.00	0.26	0.00	-0.08	0.00	0.00	0.36
	46	6.36C	0.00	0.00	0.09	0.00	0.09	@ 0.000	@ 0.000	@ 1.495

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 470

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
194	54	7.26C	0.00	-0.15	0.32	0.03	-0.20	0.00	0.00	0.62
	55	7.26C	0.00	-0.03	0.20	-0.03	0.19	@ 0.000	@ 0.000	@ 0.444
195	55	7.06C	0.00	-0.14	0.19	0.01	-0.06	0.00	0.00	0.27
	56	7.06C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.495
196	56	6.86C	0.00	-0.13	0.07	0.00	0.07	0.00	0.00	0.26
	57	6.86C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
197	57	6.65C	0.00	-0.11	-0.07	-0.02	0.19	0.00	0.00	0.65
	58	6.65C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.535
198	66	7.00C	0.00	0.00	0.32	0.00	-0.20	0.00	0.00	0.62
	67	7.00C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
199	67	6.84C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.27
	68	6.84C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
200	68	6.62C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.26
	69	6.62C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
201	69	6.34C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.65
	70	6.34C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.535
206	78	7.27C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.26
	79	7.27C	0.00	-0.02	-0.06	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.505
207	79	7.06C	0.00	-0.13	-0.07	0.01	0.19	0.00	0.00	0.61
	80	7.06C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.555
208	80	6.85C	0.00	-0.13	0.33	0.00	-0.21	0.00	0.00	0.64
	81	6.85C	0.00	0.00	0.20	0.00	0.20	@ 0.000	@ 0.000	@ 0.444
209	81	6.65C	0.00	-0.11	0.20	-0.02	-0.06	0.00	0.00	0.27
	82	6.65C	0.00	0.02	0.07	0.02	0.07	@ 0.000	@ 0.000	@ 1.495
210	90	7.07C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.26
	91	7.07C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
211	91	6.80C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.61
	92	6.80C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.555
212	92	6.58C	0.00	0.00	0.33	0.00	-0.21	0.00	0.00	0.64
	93	6.58C	0.00	0.00	0.20	0.00	0.20	@ 0.000	@ 0.000	@ 0.444
213	93	6.42C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.27
	94	6.42C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
218	102	7.28C	0.00	-0.14	0.32	0.02	-0.20	0.00	0.00	0.62
	103	7.28C	0.00	-0.02	0.20	-0.02	0.19	@ 0.000	@ 0.000	@ 0.444
219	103	7.07C	0.00	-0.14	0.19	0.01	-0.06	0.00	0.00	0.27
	104	7.07C	0.00	-0.01	0.06	-0.01	0.07	@ 0.000	@ 0.000	@ 1.495
220	104	6.86C	0.00	-0.13	0.06	-0.01	0.07	0.00	0.00	0.27
	105	6.86C	0.00	0.01	-0.06	0.01	-0.06	@ 0.000	@ 0.000	@ 0.505

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Job Ref : B11323

Sheet : SD / 471

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
221	105	6.65C	0.00	-0.11	-0.07	-0.02	0.19	0.00	0.00	0.66
	106	6.65C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.535
222	114	7.01C	0.00	0.00	0.32	0.00	-0.20	0.00	0.00	0.62
	115	7.01C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
223	115	6.84C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.27
	116	6.84C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
224	116	6.62C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.27
	117	6.62C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
225	117	6.35C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.66
	118	6.35C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.535
230	126	7.23C	0.00	-0.14	0.06	0.02	0.07	0.00	0.00	0.26
	127	7.23C	0.00	-0.02	-0.06	-0.02	-0.06	@ 0.000	@ 0.000	@ 0.505
231	127	7.02C	0.00	-0.13	-0.07	0.01	0.19	0.00	0.00	0.61
	128	7.02C	0.00	-0.01	-0.19	-0.01	-0.20	@ 0.000	@ 0.000	@ 1.555
232	128	6.82C	0.00	-0.12	0.33	-0.01	-0.21	0.00	0.00	0.63
	129	6.82C	0.00	0.01	0.20	0.01	0.20	@ 0.000	@ 0.000	@ 0.444
233	129	6.62C	0.00	-0.11	0.20	-0.02	-0.06	0.00	0.00	0.27
	130	6.62C	0.00	0.02	0.06	0.02	0.07	@ 0.000	@ 0.000	@ 1.495
234	138	7.04C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.26
	139	7.04C	0.00	0.00	-0.06	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
235	139	6.77C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.61
	140	6.77C	0.00	0.00	-0.19	0.00	-0.20	@ 0.000	@ 0.000	@ 1.555
236	140	6.55C	0.00	0.00	0.33	0.00	-0.21	0.00	0.00	0.63
	141	6.55C	0.00	0.00	0.20	0.00	0.20	@ 0.000	@ 0.000	@ 0.444
237	141	6.39C	0.00	0.00	0.20	0.00	-0.06	0.00	0.00	0.27
	142	6.39C	0.00	0.00	0.06	0.00	0.07	@ 0.000	@ 0.000	@ 1.495
242	150	6.49C	0.00	-0.14	0.32	0.02	-0.21	0.00	0.00	0.63
	151	6.49C	0.00	-0.02	0.20	-0.02	0.19	@ 0.000	@ 0.000	@ 0.444
243	151	6.37C	0.00	-0.13	0.19	0.01	-0.06	0.00	0.00	0.29
	152	6.37C	0.00	-0.01	0.07	-0.01	0.08	@ 0.000	@ 0.000	@ 1.495
244	152	6.25C	0.00	-0.12	0.06	-0.01	0.07	0.00	0.00	0.28
	153	6.25C	0.00	0.01	-0.07	0.01	-0.06	@ 0.000	@ 0.000	@ 0.505
245	153	6.12C	0.00	-0.11	-0.07	-0.02	0.19	0.00	0.00	0.68
	154	6.12C	0.00	0.02	-0.20	0.02	-0.21	@ 0.000	@ 0.000	@ 1.535
246	162	6.30C	0.00	0.00	0.32	0.00	-0.21	0.00	0.00	0.63
	163	6.30C	0.00	0.00	0.20	0.00	0.19	@ 0.000	@ 0.000	@ 0.444
247	163	6.23C	0.00	0.00	0.19	0.00	-0.06	0.00	0.00	0.29
	164	6.23C	0.00	0.00	0.07	0.00	0.08	@ 0.000	@ 0.000	@ 1.495

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Sheet : SD / 472

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
248	164	6.09C	0.00	0.00	0.06	0.00	0.07	0.00	0.00	0.28
	165	6.09C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
249	165	5.91C	0.00	0.00	-0.07	0.00	0.19	0.00	0.00	0.68
	166	5.91C	0.00	0.00	-0.20	0.00	-0.21	@ 0.000	@ 0.000	@ 1.535
306	10	7.10C	0.00	-0.17	0.48	-0.02	-0.31	0.00	0.00	0.94
	11	7.10C	0.00	0.02	0.30	0.02	0.29	@ 0.000	@ 0.000	@ 0.444
307	11	6.83C	0.00	-0.16	0.29	-0.03	-0.10	0.00	0.00	0.43
	12	6.83C	0.00	0.03	0.11	0.03	0.11	@ 0.000	@ 0.000	@ 1.495
308	22	5.93C	0.00	0.00	0.48	0.00	-0.31	0.00	0.00	0.94
	23	5.93C	0.00	0.00	0.30	0.00	0.29	@ 0.000	@ 0.000	@ 0.444
309	23	5.89C	0.00	0.00	0.29	0.01	-0.10	0.01	0.00	0.43
	24	5.89C	0.00	0.00	0.10	0.00	0.11	@ 0.000	@ 0.000	@ 1.495
312	34	13.90C	0.00	-0.16	0.10	-0.03	0.09	0.00	0.00	0.34
	35	13.90C	0.00	0.03	-0.08	0.02	-0.07	@ 0.000	@ 0.000	@ 0.525
313	35	12.47C	0.00	-0.15	-0.09	-0.04	0.26	0.00	0.00	0.89
	36	12.47C	0.00	0.04	-0.27	0.04	-0.28	@ 0.000	@ 0.000	@ 1.535
314	46	6.16C	0.00	0.00	0.10	0.00	0.09	0.00	0.00	0.35
	47	6.16C	0.00	0.00	-0.08	0.00	-0.07	@ 0.000	@ 0.000	@ 0.525
315	47	5.89C	0.00	0.00	-0.09	0.00	0.26	0.00	0.00	0.89
	48	5.89C	0.00	0.00	-0.27	0.00	-0.28	@ 0.000	@ 0.000	@ 1.535
318	58	6.45C	0.00	-0.10	0.39	-0.03	-0.26	0.00	0.00	0.80
	59	6.45C	0.00	0.03	0.26	0.03	0.25	@ 0.000	@ 0.000	@ 0.444
319	59	6.25C	0.00	-0.09	0.25	-0.05	-0.10	0.00	0.00	0.39
	60	6.25C	0.00	0.05	0.11	0.05	0.12	@ 0.000	@ 0.000	@ 1.515
320	70	6.15C	0.00	0.00	0.39	0.00	-0.26	0.00	0.00	0.80
	71	6.15C	0.00	0.00	0.26	0.00	0.25	@ 0.000	@ 0.000	@ 0.444
321	71	6.04C	0.00	0.00	0.25	0.00	-0.10	0.00	0.00	0.39
	72	6.04C	0.00	0.00	0.11	0.00	0.12	@ 0.000	@ 0.000	@ 1.515
324	82	6.44C	0.00	-0.10	0.07	-0.03	0.07	0.00	0.00	0.28
	83	6.44C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.505
325	83	6.23C	0.00	-0.09	-0.07	-0.05	0.20	0.00	0.00	0.73
	84	6.23C	0.00	0.05	-0.21	0.04	-0.22	@ 0.000	@ 0.000	@ 1.535
326	94	6.20C	0.00	0.00	0.07	0.00	0.07	0.00	0.00	0.28
	95	6.20C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
327	95	5.92C	0.00	0.00	-0.07	0.00	0.20	0.00	0.00	0.74
	96	5.92C	0.00	0.00	-0.21	0.00	-0.22	@ 0.000	@ 0.000	@ 1.535
330	106	6.45C	0.00	-0.10	0.40	-0.03	-0.28	0.00	0.00	0.83
	107	6.45C	0.00	0.03	0.27	0.03	0.26	@ 0.000	@ 0.000	@ 0.444

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Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
331	107	6.24C	0.00	-0.09	0.26	-0.05	-0.12	0.00	0.00	0.42
	108	6.24C	0.00	0.05	0.12	0.04	0.13	@ 0.000	@ 0.000	@ 1.535
332	118	6.16C	0.00	0.00	0.40	0.00	-0.28	0.00	0.00	0.83
	119	6.16C	0.00	0.00	0.27	0.00	0.26	@ 0.000	@ 0.000	@ 0.444
333	119	6.04C	0.00	0.00	0.26	0.00	-0.12	0.00	0.00	0.42
	120	6.04C	0.00	0.00	0.12	0.00	0.13	@ 0.000	@ 0.000	@ 1.535
336	130	6.42C	0.00	-0.10	0.07	-0.03	0.07	0.00	0.00	0.28
	131	6.42C	0.00	0.03	-0.07	0.03	-0.06	@ 0.000	@ 0.000	@ 0.505
337	131	6.22C	0.00	-0.09	-0.07	-0.05	0.20	0.00	0.00	0.75
	132	6.22C	0.00	0.05	-0.21	0.05	-0.22	@ 0.000	@ 0.000	@ 1.515
338	142	6.17C	0.00	0.00	0.07	0.00	0.08	0.00	0.00	0.28
	143	6.17C	0.00	0.00	-0.07	0.00	-0.06	@ 0.000	@ 0.000	@ 0.505
339	143	5.90C	0.00	0.00	-0.07	0.00	0.20	0.01	0.00	0.75
	144	5.90C	0.00	0.00	-0.21	0.01	-0.22	@ 0.000	@ 0.000	@ 1.515
342	154	5.99C	0.00	-0.11	0.43	-0.03	-0.30	0.00	0.00	0.92
	155	5.99C	0.00	0.03	0.29	0.03	0.29	@ 0.000	@ 0.000	@ 0.444
343	155	5.86C	0.00	-0.10	0.29	-0.04	-0.14	0.00	0.00	0.52
	156	5.86C	0.00	0.04	0.15	0.04	0.16	@ 0.000	@ 0.000	@ 1.535
344	166	5.80C	0.00	0.00	0.43	0.00	-0.30	0.00	0.00	0.92
	167	5.80C	0.00	0.00	0.29	0.00	0.28	@ 0.000	@ 0.000	@ 0.444
345	167	5.78C	0.00	0.00	0.29	0.00	-0.14	0.00	0.00	0.51
	168	5.78C	0.00	0.00	0.15	0.01	0.16	@ 0.000	@ 0.000	@ 1.535
412	12	6.53C	0.00	-0.16	0.10	-0.04	0.10	0.00	0.01	0.41
	169	6.53C	0.00	0.03	-0.09	0.03	-0.08	@ 0.000	@ 0.000	@ 0.525
413	169	3.68C	0.00	-0.24	0.35	-0.03	0.29	0.00		0.79
	183	3.68C	0.00	0.32	-0.94	0.04	-0.29	@ 0.000		@ 0.429
414	24	5.78C	0.00	-0.08	0.10	0.08	0.10	0.00		0.41
	170	5.78C	0.00	-0.08	-0.09	-0.09	-0.08	@ 0.000		@ 0.525
415	170	3.65C	0.00	0.06	-0.23	-0.07	0.30	0.00		0.88
	184	3.64C	0.00	0.06	-0.96	0.06	-0.31	@ 0.000		@ 1.571
416	36	10.03C	0.00	-0.15	0.56	-0.05	-0.37	0.00	0.00	1.04
	171	10.03C	0.00	0.05	0.37	0.05	0.37	@ 0.000	@ 0.000	@ 1.576
417	171	5.95C	0.00	-0.22	0.31	-0.05	0.34	0.00	0.00	1.06
	185	5.95C	0.00	0.34	-0.99	0.06	-0.32	@ 0.000	@ 0.000	@ 0.449
418	48	5.74C	0.00	-0.08	0.56	0.08	-0.37	0.00	0.00	1.03
	172	5.75C	0.00	-0.08	0.37	-0.08	0.37	@ 0.000	@ 0.000	@ 1.576
419	172	3.70C	0.00	0.07	-0.27	-0.07	0.35	0.00		1.03
	186	3.70C	0.00	0.07	-1.00	0.07	-0.34	@ 0.000		@ 0.449

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Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
420	60	6.04C	0.00	-0.08	0.13	-0.06	0.02	0.00	0.00	0.25
	173	6.04C	0.00	0.06	0.01	0.06	0.02	@ 0.000	@ 0.000	@ 0.889
421	173	3.78C	0.00	-0.07	0.25	-0.07	0.34	0.00		0.94
	187	3.78C	0.00	0.22	-0.93	0.08	-0.33	@ 0.000		@ 0.429
422	72	5.88C	0.00	-0.08	0.13	0.07	0.02	0.00	0.00	0.25
	174	5.88C	0.00	-0.08	-0.01	-0.08	-0.01	@ 0.000	@ 0.000	@ 1.540
423	174	3.70C	0.00	0.07	0.23	-0.08	0.35	0.00	0.00	0.96
	188	3.70C	0.00	0.07	-0.94	0.07	-0.35	@ 0.000	@ 0.000	@ 1.571
424	84	6.03C	0.00	-0.09	0.55	-0.06	-0.41	0.00	0.00	1.18
	175	6.03C	0.00	0.06	0.41	0.05	0.42	@ 0.000	@ 0.000	@ 1.555
425	175	3.77C	0.00	-0.08	0.20	-0.06	0.39	0.00		1.20
	189	3.77C	0.00	0.21	-0.98	0.07	-0.37	@ 0.000		@ 0.449
426	96	5.78C	0.00	-0.08	0.55	0.08	-0.41	0.00	0.00	1.18
	176	5.78C	0.00	-0.08	0.41	-0.08	0.42	@ 0.000	@ 0.000	@ 1.555
427	176	3.71C	0.00	0.07	0.19	-0.07	0.40	0.00		1.18
	190	3.71C	0.00	0.07	-0.99	0.07	-0.38	@ 0.000		@ 0.449
428	108	6.04C	0.00	-0.09	0.15	-0.06	0.00	0.00	0.00	0.28
	177	6.04C	0.00	0.06	0.01	0.06	0.02	@ 0.000	@ 0.000	@ 1.131
429	177	3.78C	0.00	-0.08	0.20	-0.07	0.38	0.00		1.07
	191	3.78C	0.00	0.22	-0.97	0.07	-0.38	@ 0.000		@ 0.429
430	120	5.87C	0.00	-0.08	0.15	0.08	0.00	0.00	0.00	0.28
	178	5.87C	0.00	-0.08	0.01	-0.08	0.02	@ 0.000	@ 0.000	@ 1.131
431	178	3.70C	0.00	0.07	0.19	-0.08	0.39	0.00		1.07
	192	3.70C	0.00	0.07	-0.99	0.07	-0.39	@ 0.000		@ 1.571
432	132	6.02C	0.00	-0.08	0.60	-0.06	-0.45	0.00	0.00	1.33
	179	6.02C	0.00	0.06	0.46	0.06	0.47	@ 0.000	@ 0.000	@ 1.555
433	179	3.77C	0.00	-0.08	0.16	-0.07	0.44	0.00		1.34
	193	3.77C	0.00	0.22	-1.02	0.07	-0.41	@ 0.000		@ 0.449
434	144	5.76C	0.00	-0.08	0.60	0.07	-0.45	0.00	0.00	1.33
	180	5.76C	0.00	-0.08	0.46	-0.08	0.46	@ 0.000	@ 0.000	@ 1.555
435	180	3.70C	0.00	0.07	0.14	-0.08	0.45	0.00		1.32
	194	3.70C	0.00	0.07	-1.04	0.07	-0.43	@ 0.000		@ 0.449
436	156	5.73C	0.00	-0.09	0.14	-0.05	0.01	0.00	0.02	0.32
	181	5.73C	0.00	0.05	0.01	0.05	0.02	@ 0.000	@ 0.000	@ 1.030
437	181	3.63C	0.00	-0.16	0.16	-0.06	0.42	0.00		1.18
	195	3.63C	0.00	0.29	-1.02	0.06	-0.42	@ 0.000		@ 0.429
438	168	5.69C	0.00	-0.08	0.14	0.07	0.01	0.00	0.02	0.31
	182	5.69C	0.00	-0.08	-0.01	-0.08	0.02	@ 0.000	@ 0.000	@ 1.030

James Crosbie Associates Ltd.

25252

Consulting Civil and Structural Engineers

37 Chorley New Road,

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Job Ref : B11323

Sheet : SD / 475

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Member Forces (Maximum Values)

Mem ber No.	Node End1 End2	Axial Force (kN)	Torque Moment (kN.m)	Shear Force (kN)		Bending Moment (kN.m)		Maximum Moment (kN.m @ m)		Maximum Deflection (mm @ m)
				x-x	y-y	x-x	y-y	x-x	y-y	
439	182	3.61C	0.00	0.07	0.15	-0.07	0.43	0.00		1.19
	196	3.61C	0.00	0.07	-1.03	0.07	-0.44	@ 0.000		@ 1.571

Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
1	0.891	21.307	0.000	0.000	0.000	0.000
2	0.000	0.000	0.000	0.051	0.000	-0.213
3	0.000	0.000	0.000	0.060	0.000	-0.016
4	0.000	0.000	0.000	0.017	0.000	-0.040
5	0.000	0.000	0.000	-0.058	0.000	-0.038
6	0.000	0.000	0.000	0.015	0.000	-0.031
7	0.000	0.000	0.000	0.068	0.000	-0.019
9	0.000	0.000	0.000	-0.063	0.000	0.015
10	0.000	0.000	0.000	-0.018	0.000	0.033
11	0.000	0.000	0.000	0.076	0.000	0.051
12	0.000	0.000	0.000	-0.030	0.000	0.061
13	-0.062	7.217	-0.109	0.000	0.000	0.000
14	0.057	0.000	0.689	0.033	0.000	-0.023
15	0.000	0.000	0.000	0.062	0.000	0.000
16	0.000	0.000	0.000	0.018	0.000	0.000
17	0.000	0.000	0.000	-0.058	0.000	0.000
18	-3.207	0.000	1.311	0.016	0.000	0.000
19	0.000	0.000	0.000	0.069	0.000	0.000
21	0.000	0.000	0.000	-0.063	0.000	0.000
22	-3.650	0.000	1.471	-0.017	0.000	0.000
23	0.000	0.000	0.000	0.077	0.000	0.012
24	0.000	0.000	0.000	-0.031	0.000	-0.017
25	1.126	-10.095	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.016	0.000	-0.167
27	0.000	0.000	0.000	-0.015	0.000	-0.013
28	0.000	0.000	0.000	0.029	0.000	-0.027
29	0.000	0.000	0.000	0.055	0.000	-0.025
30	0.000	0.000	0.000	-0.023	0.000	-0.019
31	0.000	0.000	0.000	-0.060	0.000	-0.011
32	0.000	0.000	0.000	-0.012	0.000	0.000
33	0.000	0.000	0.000	0.058	0.000	0.012
34	0.000	0.000	0.000	0.000	0.000	0.024
35	0.000	0.000	0.000	-0.066	0.000	0.035
36	0.000	0.000	0.000	0.022	0.000	0.042
37	-0.040	7.924	-0.033	0.000	0.000	0.000
38	0.037	0.000	0.305	0.000	0.000	-0.015
39	0.000	0.000	0.000	-0.015	0.000	0.000
40	-1.766	0.000	0.931	0.030	0.000	0.000
41	0.000	0.000	0.000	0.056	0.000	0.000
42	0.000	0.000	0.000	-0.022	0.000	0.000
43	0.000	0.000	0.000	-0.060	0.000	0.000
44	-1.989	0.000	1.334	-0.011	0.000	0.000
45	0.000	0.000	0.000	0.059	0.000	0.000
47	0.000	0.000	0.000	-0.066	0.000	0.000
48	-4.162	0.000	1.638	0.022	0.000	-0.016
49	1.005	8.314	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.037	0.000	-0.164
51	0.000	0.000	0.000	0.042	0.000	0.000

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Sheet : SD / 476

Made by : IH

Date : 29 September 2010 / Ver. 2010.06

Checked :

Approved :

Support Reactions (Maximum Values)						
Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
52	0.000	0.000	0.000	0.000	0.000	-0.016
53	0.000	0.000	0.000	-0.043	0.000	-0.014
54	0.000	0.000	0.000	0.000	0.000	-0.010
55	0.000	0.000	0.000	0.044	0.000	0.000
57	0.000	0.000	0.000	-0.047	0.000	0.000
58	0.000	0.000	0.000	0.000	0.000	0.015
59	0.000	0.000	0.000	0.062	0.000	0.022
60	0.000	0.000	0.000	0.016	0.000	0.024
61	-0.041	8.066	-0.080	0.000	0.000	0.000
62	0.038	0.000	0.513	0.024	0.000	-0.015
63	0.000	0.000	0.000	0.044	0.000	0.000
65	0.000	0.000	0.000	-0.043	0.000	0.000
66	1.285	0.000	0.987	0.000	0.000	0.000
67	0.000	0.000	0.000	0.045	0.000	0.000
69	0.000	0.000	0.000	-0.047	0.000	0.000
70	1.543	0.000	1.168	0.000	0.000	0.000
71	0.000	0.000	0.000	0.063	0.000	0.000
72	0.000	0.000	0.000	0.017	0.000	-0.021
73	0.974	8.345	0.000	0.000	0.000	0.000
74	0.000	0.000	0.000	0.012	0.000	-0.160
75	0.000	0.000	0.000	0.000	0.000	-0.012
76	0.000	0.000	0.000	0.023	0.000	-0.023
77	0.000	0.000	0.000	0.044	0.000	-0.022
78	0.000	0.000	0.000	0.000	0.000	-0.018
79	0.000	0.000	0.000	-0.045	0.000	-0.011
81	0.000	0.000	0.000	0.046	0.000	0.000
82	0.000	0.000	0.000	0.000	0.000	0.017
83	0.000	0.000	0.000	-0.049	0.000	0.027
84	0.000	0.000	0.000	0.034	0.000	0.032
85	-0.040	8.076	-0.025	0.000	0.000	0.000
86	0.037	0.000	0.230	0.000	0.000	-0.015
88	-0.021	0.000	0.717	0.024	0.000	0.000
89	0.000	0.000	0.000	0.044	0.000	0.000
91	0.000	0.000	0.000	-0.045	0.000	0.000
92	-0.021	0.000	1.023	0.000	0.000	0.000
93	0.000	0.000	0.000	0.046	0.000	0.000
95	0.000	0.000	0.000	-0.049	0.000	0.000
96	-0.669	0.000	1.537	0.034	0.000	-0.020
97	0.953	8.362	0.000	0.000	0.000	0.000
98	0.000	0.000	0.000	0.037	0.000	-0.158
99	0.000	0.000	0.000	0.043	0.000	-0.012
100	0.000	0.000	0.000	0.000	0.000	-0.023
101	0.000	0.000	0.000	-0.044	0.000	-0.022
102	0.000	0.000	0.000	0.000	0.000	-0.018
103	0.000	0.000	0.000	0.045	0.000	-0.011
105	0.000	0.000	0.000	-0.047	0.000	0.000
106	0.000	0.000	0.000	0.011	0.000	0.017
107	0.000	0.000	0.000	0.068	0.000	0.027
108	0.000	0.000	0.000	0.023	0.000	0.032
109	-0.039	8.074	-0.080	0.000	0.000	0.000
110	0.037	0.000	0.513	0.024	0.000	-0.014
111	0.000	0.000	0.000	0.044	0.000	0.000
113	0.000	0.000	0.000	-0.043	0.000	0.000
114	-0.020	0.000	0.976	0.000	0.000	0.000
115	0.000	0.000	0.000	0.045	0.000	0.000
117	0.000	0.000	0.000	-0.047	0.000	0.000
118	0.028	0.000	1.179	0.011	0.000	0.000
119	0.000	0.000	0.000	0.068	0.000	0.000

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	Rx→(kN)	Ry↑(kN)	Rz↗(kN)	Mx→(kN.m)	My↑(kN.m)	Mz↗(kN.m)
120	0.000	0.000	0.000	0.023	0.000	-0.020
121	0.945	8.293	0.000	0.000	0.000	0.000
122	0.000	0.000	0.000	0.012	0.000	-0.154
123	0.000	0.000	0.000	0.000	0.000	-0.013
124	0.000	0.000	0.000	0.023	0.000	-0.023
125	0.000	0.000	0.000	0.044	0.000	-0.022
126	0.000	0.000	0.000	0.000	0.000	-0.018
127	0.000	0.000	0.000	-0.045	0.000	-0.012
129	0.000	0.000	0.000	0.045	0.000	0.000
130	0.000	0.000	0.000	0.000	0.000	0.015
131	0.000	0.000	0.000	-0.049	0.000	0.024
132	0.000	0.000	0.000	0.042	0.000	0.030
133	-0.037	8.029	-0.025	0.000	0.000	0.000
134	0.035	0.000	0.230	0.000	0.000	-0.014
136	1.778	0.000	0.709	0.024	0.000	0.000
137	0.000	0.000	0.000	0.044	0.000	0.000
139	0.000	0.000	0.000	-0.045	0.000	0.000
140	1.995	0.000	1.012	0.000	0.000	0.000
141	0.000	0.000	0.000	0.046	0.000	0.000
143	0.000	0.000	0.000	-0.049	0.000	0.000
144	4.726	0.000	1.603	0.043	0.000	-0.021
145	0.848	7.121	0.000	0.000	0.000	0.000
146	0.000	0.000	0.000	0.038	0.000	-0.188
147	0.000	0.000	0.000	0.044	0.000	-0.015
148	0.000	0.000	0.000	0.000	0.000	-0.030
149	0.000	0.000	0.000	-0.047	0.000	-0.029
150	0.000	0.000	0.000	0.000	0.000	-0.024
151	0.000	0.000	0.000	0.047	0.000	-0.016
153	0.000	0.000	0.000	-0.051	0.000	0.000
154	0.000	0.000	0.000	0.015	0.000	0.019
155	0.000	0.000	0.000	0.079	0.000	0.031
156	0.000	0.000	0.000	0.024	0.000	0.036
157	-0.058	6.920	-0.081	0.000	0.000	0.000
158	0.053	0.000	0.523	0.025	0.000	-0.021
159	0.000	0.000	0.000	0.046	0.000	0.000
161	0.000	0.000	0.000	-0.046	0.000	0.000
162	1.918	0.000	0.984	0.000	0.000	0.000
163	0.000	0.000	0.000	0.048	0.000	0.000
165	0.000	0.000	0.000	-0.051	0.000	0.000
166	2.083	0.000	1.230	0.015	0.000	0.000
167	0.000	0.000	0.000	0.079	0.000	0.000
168	0.000	0.000	0.000	0.025	0.000	-0.027
169	0.000	0.000	0.000	-0.073	0.000	0.075
170	0.000	0.000	0.000	-0.072	0.000	0.013
171	0.000	0.000	0.000	0.028	0.000	0.052
172	0.000	0.000	0.000	0.030	0.000	0.000
173	0.000	0.000	0.000	-0.068	0.000	0.031
174	0.000	0.000	0.000	-0.068	0.000	0.000
175	0.000	0.000	0.000	0.000	0.000	0.042
176	0.000	0.000	0.000	0.014	0.000	0.000
177	0.000	0.000	0.000	-0.073	0.000	0.041
178	0.000	0.000	0.000	-0.073	0.000	0.000
179	0.000	0.000	0.000	0.000	0.000	0.039
180	0.000	0.000	0.000	0.014	0.000	0.000
181	0.000	0.000	0.000	-0.087	0.000	0.048
182	0.000	0.000	0.000	-0.085	0.000	0.000
183	0.000	0.000	0.000	-0.076	0.000	0.071
184	1.440	0.000	2.547	-0.044	0.000	0.050

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Support Reactions (Maximum Values)

Node	Directional Reactions (kN)			Moment Reactions (kN.m)		
	R _x →(kN)	R _y ↑(kN)	R _z ↗(kN)	M _x →(kN.m)	M _y ↑(kN.m)	M _z ↗(kN.m)
185	0.000	0.000	0.000	-0.088	0.000	0.040
186	0.000	0.000	0.000	-0.057	0.000	0.031
187	0.000	0.000	0.000	-0.088	0.000	0.014
188	2.306	0.000	4.108	-0.058	0.000	0.025
189	0.000	0.000	0.000	-0.094	0.000	0.028
190	0.000	0.000	0.000	-0.063	0.000	0.028
191	0.000	0.000	0.000	-0.097	0.000	0.027
192	1.420	0.000	4.229	-0.066	0.000	0.028
193	0.000	0.000	0.000	-0.104	0.000	0.024
194	0.000	0.000	0.000	-0.073	0.000	0.025
195	0.000	0.000	0.000	-0.108	0.000	0.032
196	0.563	0.000	2.734	-0.077	0.000	0.034
Total	12.985	111.288	36.000	-0.347	0.000	-0.664



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Calculation

Sheet No. SD479 rev.

Contract

TURNLOK

Part of Structure

SYSTEM CONFIGURATIONS

Contract No.

11323

Date

SEP 10

Designer

1H

Checked

Member

OMEGA FRAME SUMMARY:

Tie Arrangement B 12 Lift (24.5m) Frame										
Omega Transom Frames										
		LC 1-5-0				LC 2-5-0				
Axial Cap	15.6	Axial	Mmt	Defln	Status	Axial	Mmt	Defln	Status	
In Service D + L + W Unsheeted		7.12	0.02	4.6	0.47	8.87	0.02	4.8	0.58	
Out of Service D + L + W Unsheeted	2.5m bays	11.2	0.01	20.6	0.73	11.7	0.01	20.8	0.76	
		LC 3-5-0				LC 4-5-0				
Axial Cap	15.6	Axial	Mmt	Defln	Status	Axial	Mmt	Defln	Status	
In Service D + L + W Unsheeted		10	0.02	4.8	0.66	12.4	0.02	4.9	0.81	
Out of Service D + L + W Unsheeted	2.5m bays	11.8	0.01	20.8	0.76	13.2	0.01	21.3	0.85	
		LC 1-5-0				LC 2-5-0				
Axial Cap	15.6	Axial	Mmt	Defln	Status	Axial	Mmt	Defln	Status	
In Service D + L + W Unsheeted		6.57	0.01	3.6	0.43	7.84	0.01	3.6	0.51	
Out of Service D + L + W Unsheeted	1.8m bays	12.8	0.02	14.4	0.83	13.2	0.02	14.5	0.86	
		LC 3-5-0				LC 4-5-0				
Axial Cap	15.6	Axial	Mmt	Defln	Status	Axial	Mmt	Defln	Status	
In Service D + L + W Unsheeted		8.68	0.02	3.7	0.57	10.4	0.02	3.8	0.68	
Out of Service D + L + W Unsheeted	1.8m bays	13.3	0.02	14.5	0.87	14.3	0.02	14.7	0.93	