Oasys Forum

Chris Raison

Raison Foster Associates

Variable EI in FREW

Raison Foster Associates

STANGER STREET, KESWICK
300mm PILE RETAINING WALL
6T20 cage & T8 shear steel

Job No.	Sheet No.	Rev.
C05/092		

Drg. Ref.

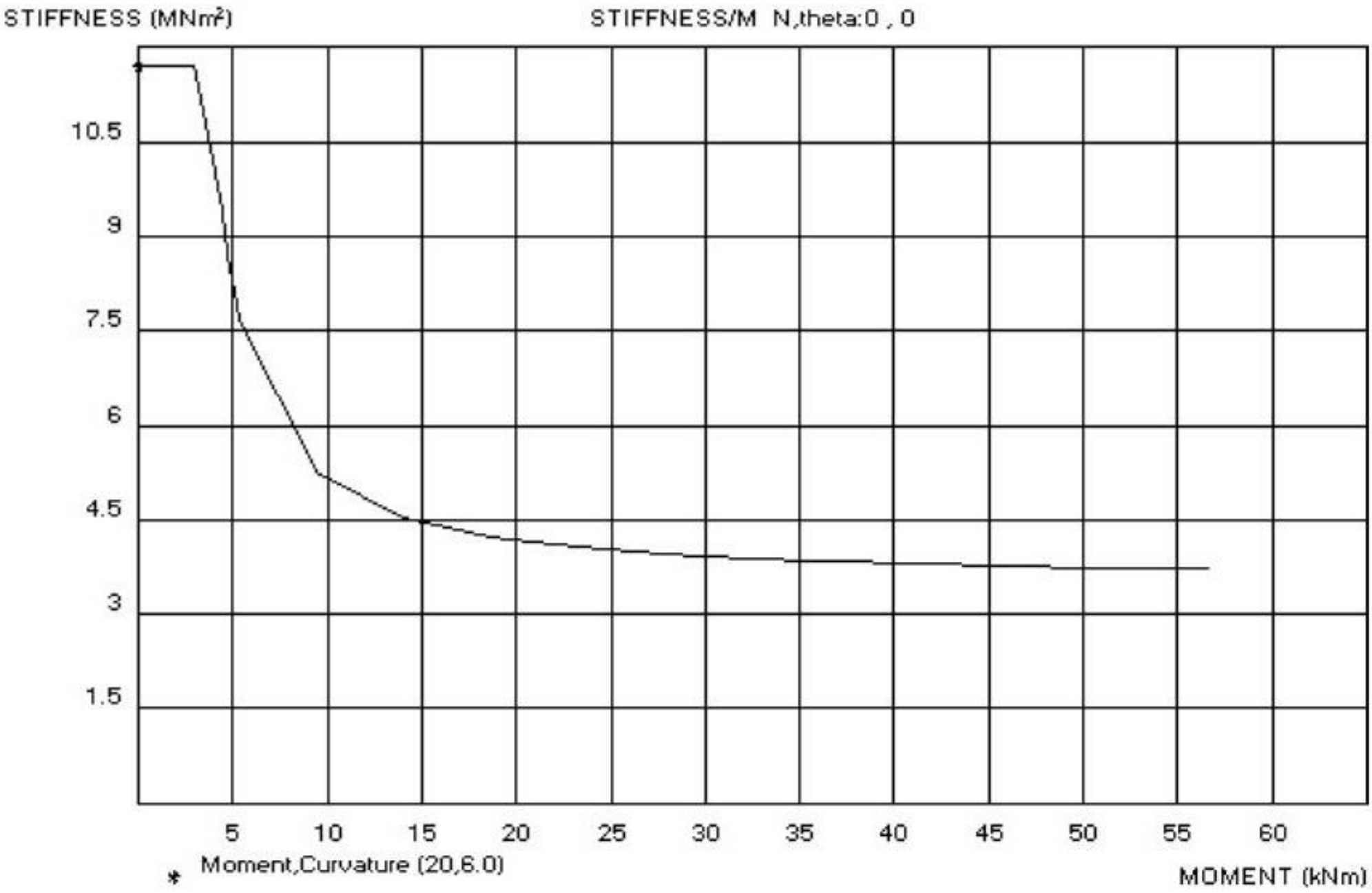
Made by CAR Date 29-May-05 Data 300MM_R4.ADS Checked

LINEAR ELASTIC SECTION PROPERTIES

Gross section properties

Area (mm2)	A: 70248	% Steel: 2.7		
Elastic centroid (mm)	x: 0	y: 0		
Second moments of area (m4)	Ix: 3.9270E-4	Iy: 3.9270E-4	Ixy: 0	
Principal 2nd moments of area (m4)	Iu: 3.9270E-4	Iv: 3.9270E-4		
Principal axis angle (deg)	ANG: 0			

Transformed section properties		Short term	Long term
Axial stiffness (kN)	EA:	2222793	992259
Elastic centroid (mm)	x:	0	0
	y:	0	0
Flexural stiffness (kNm2)	EIx:	1.1699E+4	4.7442E+3
	EIy:	1.1699E+4	4.7447E+3
	EIxy:	0	0
Principal flexural stiffness	EIu:	1.1699E+4	4.7447E+3
(kNm2)	EIv:	1.1699E+4	4.7442E+3
Principal axis angle (deg)	ANG:	90.00	90.00


STIFFNESS (MNm²)
STIFFNESS/M N,theta:0 , 0
10.5
9
7.5
6
4.5
3
1.5
5
10
15
20
25
30
35
40
45
50
55
60
* Moment,Curvature (20,6.0)
MOMENT (kNm)

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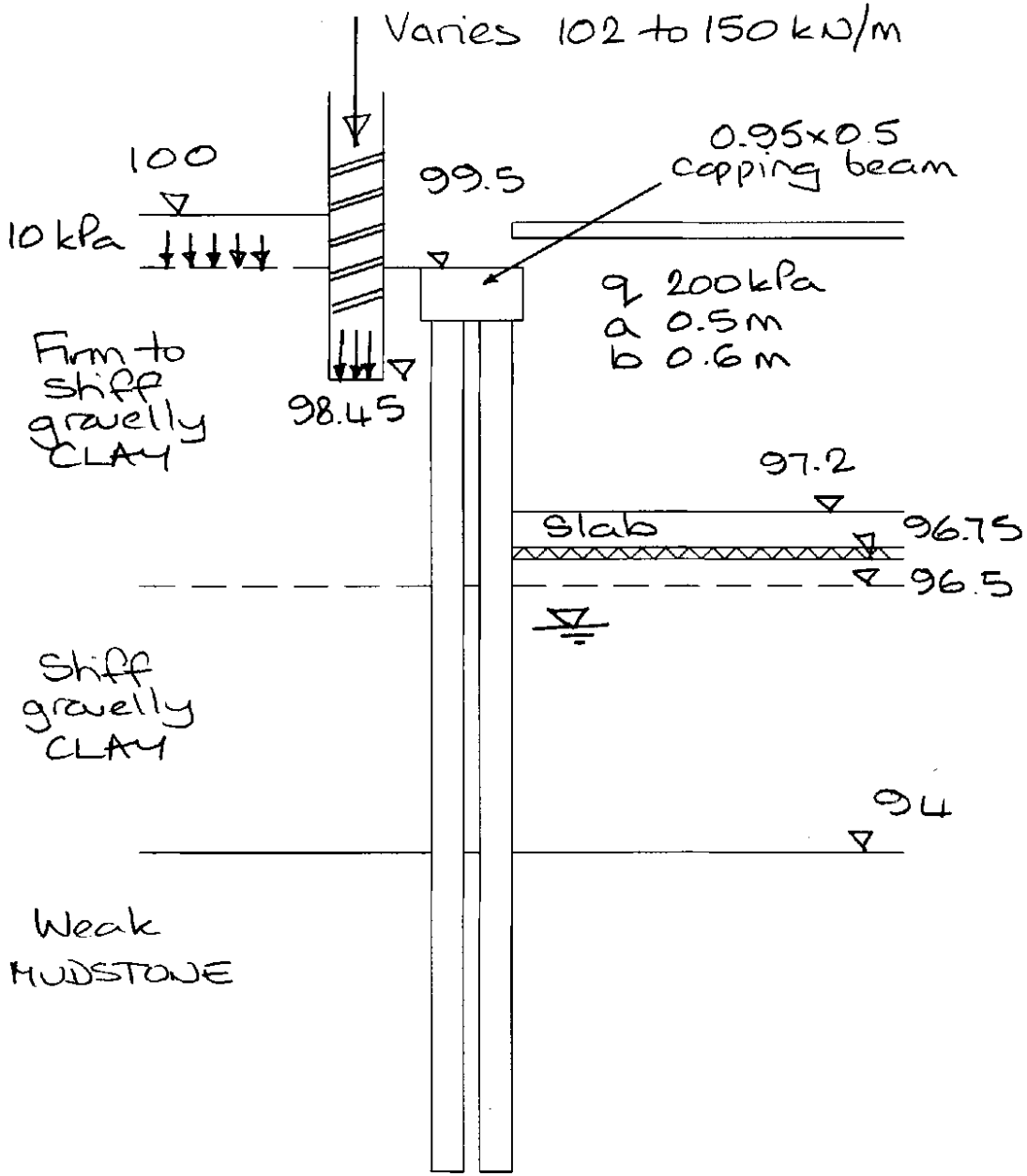
Contract Number: C05/092	Sheet No. 3	Date MAY 05
Contract Title: STANGER STREET, KESWICK		Made By CAR
		Checked by



Two Rows x 300mm Piles at 0.5m Centres

Short Term Flexural Stiffness

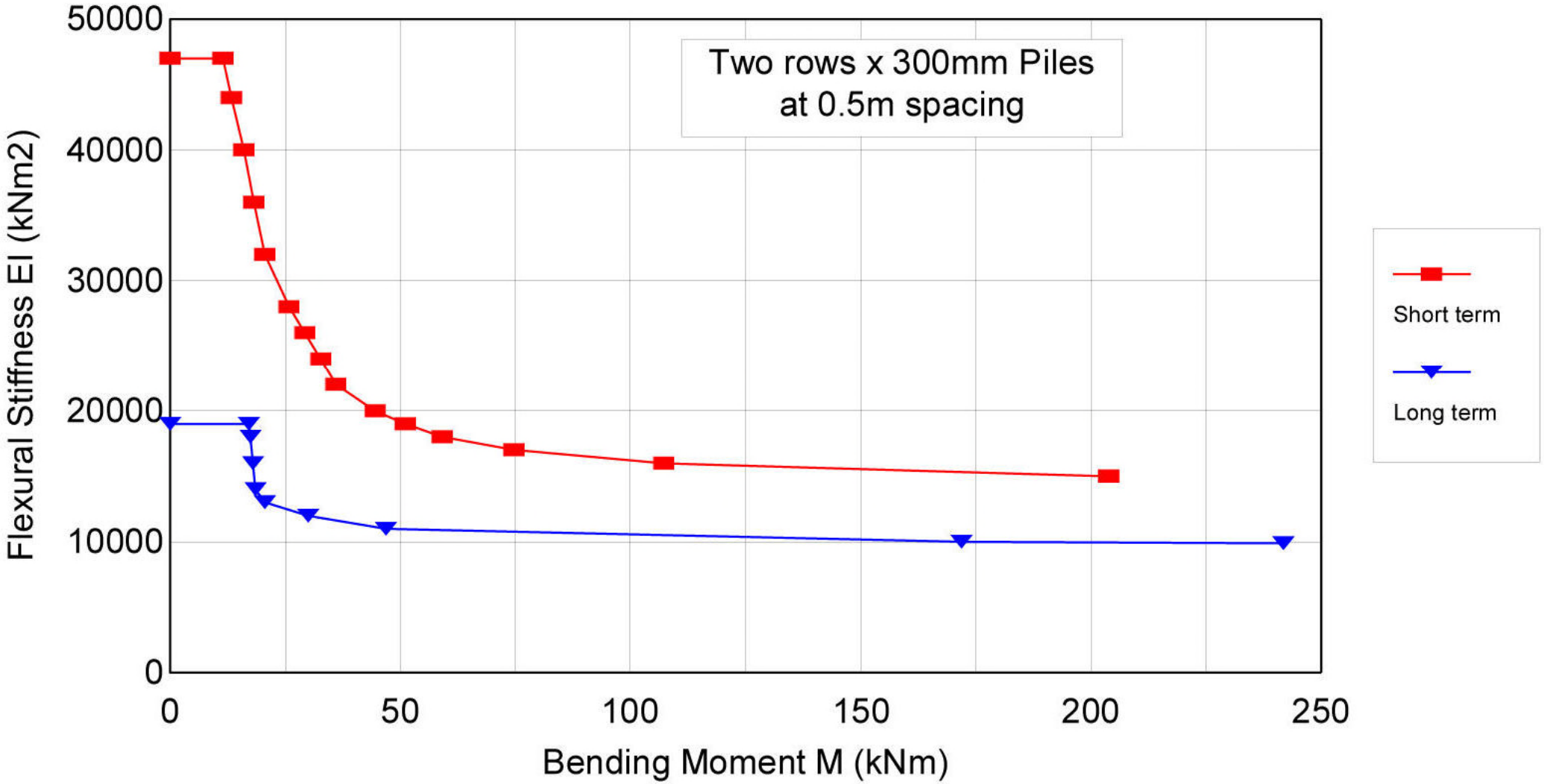
Moment (kNm)	Flexural Stiffness (kNm2/m)
0	47000
11.6	47000
13.3	44000
16.0	40000
18.3	36000
20.6	32000
25.9	28000
29.3	26000
32.7	24000
36.1	22000
44.7	20000
51.2	19000
59.2	18000
74.7	17000
107.2	16000
204.0	15000

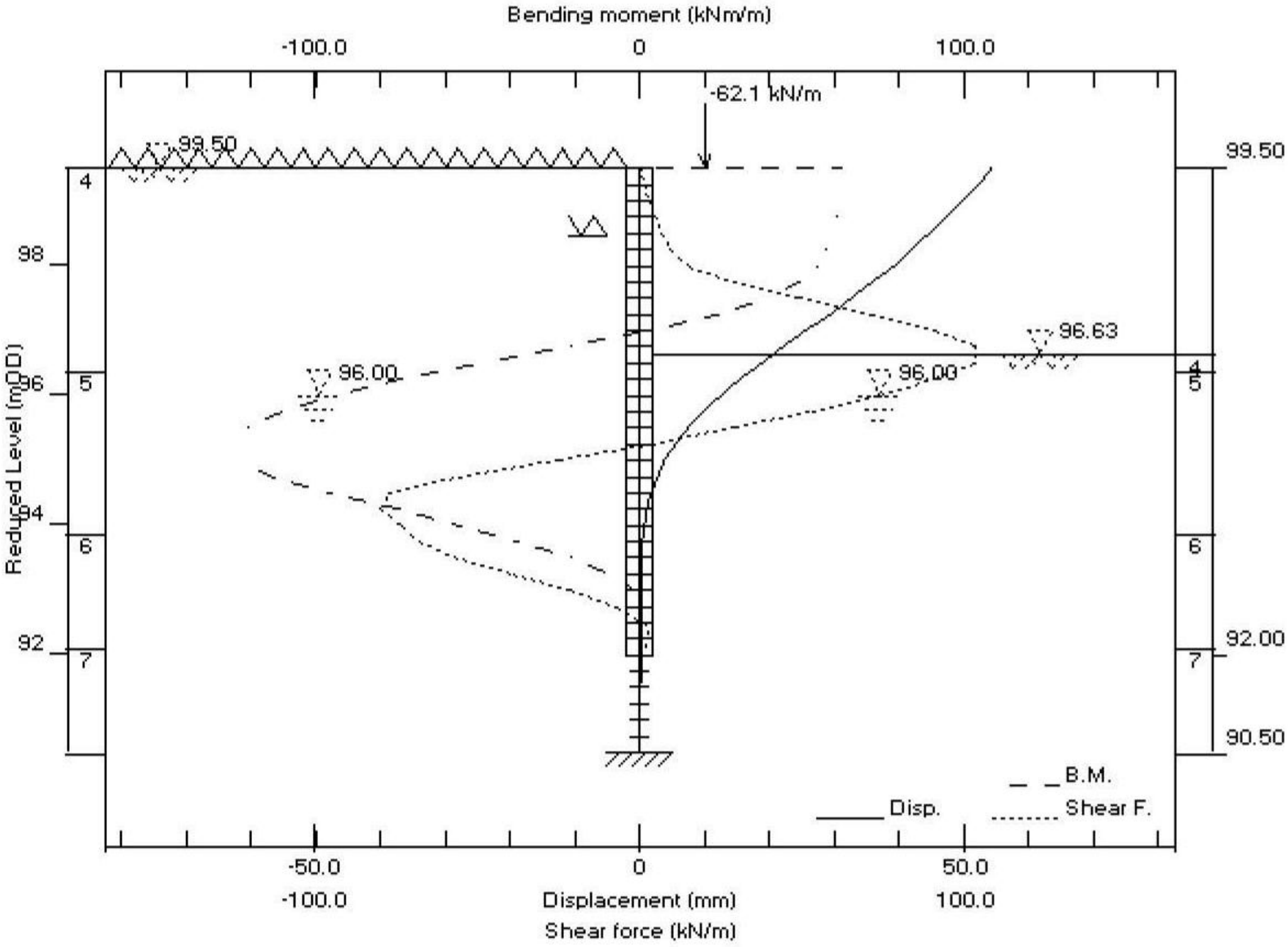
Long Term Flexural Stiffness

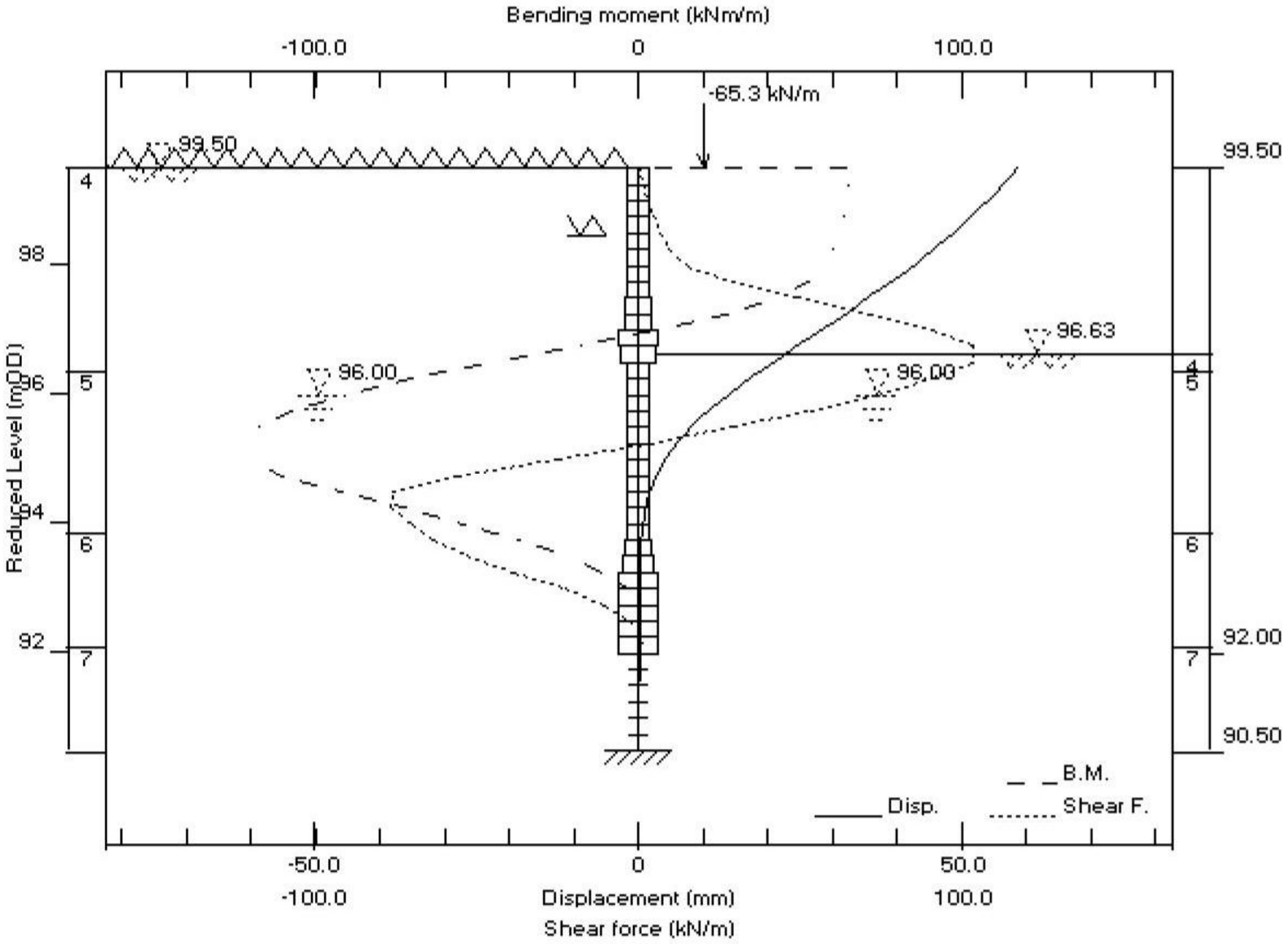
Moment (kNm)	Flexural Stiffness (kNm2/m)
0	19000
17.2	19000
17.5	18000
18.1	16000
18.7	14000
20.6	13000
30.1	12000
47.0	11000
172.0	10000
242.0	9900

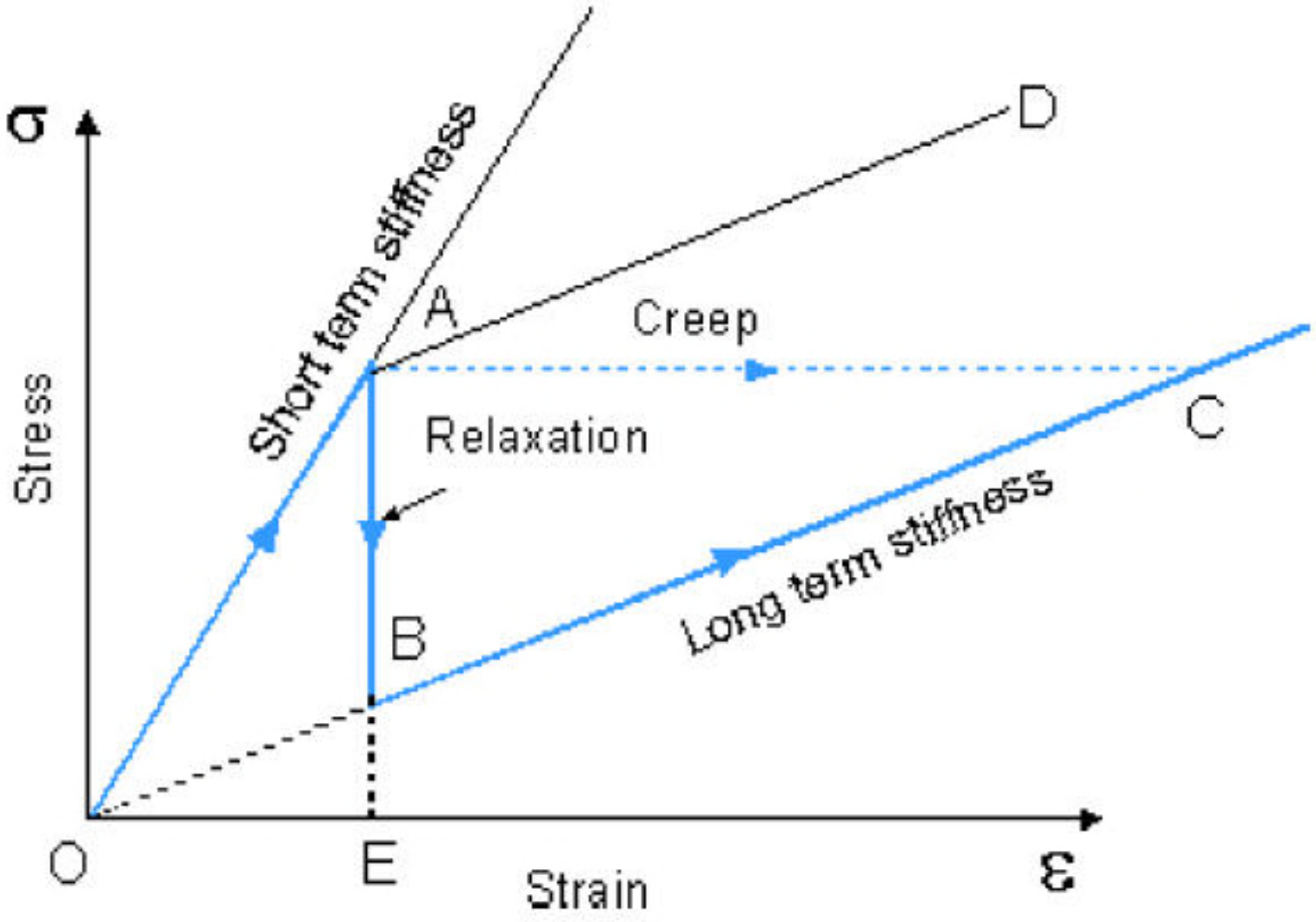
Stanger Street, Keswick

Flexural Stiffness EI vs Moment M




Bending moment (kNm/m)
-100.0
0
100.0
-62.1 kN/m
99.50
99.50
96.63
96.00
96.00
4
5
6
7
98
96
94
92
Reduced Level (mOD)
92.00
90.50
B.M.
Disp.
Shear F.
-50.0
0
50.0
-100.0
Displacement (mm)
100.0
Shear force (kN/m)


Bending moment (kNm/m)
-100.0
0
100.0
-65.3 kN/m
99.50
96.63
96.00
96.00
99.50
98
96
94
92
Reduced Level (mOD)
4
5
6
7
4
5
6
7
92.00
90.50
B.M.
Disp.
Shear F.
-50.0
0
50.0
-100.0
Displacement (mm)
100.0
Shear force (kN/m)



Creep and relaxation