

```

          oo      oo      o
         ooo     ooo     oo
        ooooo   ooooo   ooooo   oo      ooooo
       oo  o   oo  oo   oo oooo oo  o   oo   oo  oo
       oo      oo  oo   oo  oo  oo  oooooo  oooooo  oo
       ooooo   oo  oo   oo      oo  oo  oo   oo      ooooo
           oo  oooooo   oo      oo  oo  oo   oo      oo
       o   oo   oo      oo      oo  oo  oo  oo  oo  o   oo
       ooooo   oo      oo      oo  oo  ooooo o   oo   ooooo (TM)

```

```

=====
                        spMats v8.10 (TM)
A Computer Program for Analysis and Design of Foundation Mats, Combined Footings, and Slabs on Grade
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=====

```

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A1 - GENERAL INFORMATION:

=====

Project : spMats Manual, Example 1
 File : C:\Program Files\StructurePoint\spMats\Examples\example1.ma8
 Units : English Date : 7/9/2015
 Code : ACI 318-14 Time : 8:00:00 AM

Maximum number of iterations = 10
 Maximum allowed service displacement = 11 in
 Minimum ratio of soil contact area w.r.t. initial soil-supported area = 50.00 %
 Minimum ratio of active spring/piles w.r.t. total number of spring/piles = 0.00 %
 Displacement limit for uplift = 0 in
 Reinforcement is based on maximum moment within an element.

Number of nodes = 36
 Number of elements = 25

A2 - THICKNESS DEFINITIONS:

=====

Label	t (in)	Assigned
Thick1	30.00	Yes

A3 - SOIL DEFINITIONS:

=====

Label	Ks (kcf)	Qa (ksf)	Assigned
Soil1	100	6	Yes

A4 - CONCRETE DEFINITIONS:

=====

Label	f'c (ksi)	Wc (pcf)	Ec (ksi)	v	Assigned
Concl	3	148	3245	0.150	Yes

A5 - REINFORCING STEEL DEFINITIONS:

=====

Label	Fy (ksi)	Es (ksi)	Assigned
Steel1	60	29000	Yes

A6 - DESIGN PARAMETERS DEFINITIONS:

=====

Label	Top-X (in)	Top-Y (in)	Bot-X (in)	Bot-Y (in)	Min Reinf	Assigned
DC_1	3.2500	3.7500	3.2500	3.7500	0.0900%	Yes

A11 - CONCENTRATED LOAD DEFINITIONS:

```

=====
Label          Case          Pz (kips)      Mx (k-ft)      My (k-ft)      Assigned
-----
P1             A             -125.0000     0.0000         0.0000         Yes

```

A13 - LOAD COMBINATIONS:

```

=====
Self weight is not included under Case A.

```

Load Cases

```

-----
Case          A          B          C          D          E          F          G
Case label    N/A         N/A         N/A         N/A         N/A         N/A         N/A
Load defined   Yes         No          No          No          No          No          No

Case          H          I          J          K          L          M          N
Case label    N/A         N/A         N/A         N/A         N/A         N/A         N/A
Load defined   No          No          No          No          No          No          No

Case          O          P          Q          R          S          T          U
Case label    N/A         N/A         N/A         N/A         N/A         N/A         N/A
Load defined   No          No          No          No          No          No          No

Case          V          W          X          Y          Z
Case label    N/A         N/A         N/A         N/A         N/A
Load defined   No          No          No          No          No

```

Service Load Combinations (factors listed only for cases with defined loads)

```

-----
S1           1.0000 A          -          -          -          -          -          -
              -          -          -          -          -          -          -
              -          -          -          -          -          -          -

```

Ultimate Load Combinations (factors listed only for cases with defined loads)

```

-----
U1           1.0000 A          -          -          -          -          -          -
              -          -          -          -          -          -          -
              -          -          -          -          -          -          -

```

A14 - X-GRID LINE DEFINITIONS:

=====

No.	Coord. (ft)	No.	Coord. (ft)	No.	Coord. (ft)
---	-----	---	-----	---	-----
1	0	2	2	3	4
4	6	5	8	6	10

A15 - Y-GRID LINE DEFINITIONS:

=====

No.	Coord. (ft)	No.	Coord. (ft)	No.	Coord. (ft)
---	-----	---	-----	---	-----
1	0	2	2	3	4
4	6	5	8	6	10

A16 - NODAL DATA:

=====

Node	X (ft)	Y (ft)	Fixity	Spring	Column	Pile	Loaded?	Slaved?
1	0.000	0.000	- -					
2	2.000	0.000	- -					
3	4.000	0.000	- -					
4	6.000	0.000	- -					
5	8.000	0.000	- -					
6	10.000	0.000	- -					
7	0.000	2.000	- -					
8	2.000	2.000	- -					
9	4.000	2.000	- -					
10	6.000	2.000	- -					
11	8.000	2.000	- -					
12	10.000	2.000	- -					
13	0.000	4.000	- -					
14	2.000	4.000	- -					
15	4.000	4.000	- -				Yes	
16	6.000	4.000	- -				Yes	
17	8.000	4.000	- -					
18	10.000	4.000	- -					
19	0.000	6.000	- -					
20	2.000	6.000	- -					
21	4.000	6.000	- -				Yes	
22	6.000	6.000	- -				Yes	
23	8.000	6.000	- -					
24	10.000	6.000	- -					
25	0.000	8.000	- -					
26	2.000	8.000	- -					
27	4.000	8.000	- -					
28	6.000	8.000	- -					
29	8.000	8.000	- -					
30	10.000	8.000	- -					
31	0.000	10.000	- -					
32	2.000	10.000	- -					
33	4.000	10.000	- -					
34	6.000	10.000	- -					
35	8.000	10.000	- -					
36	10.000	10.000	- -					

A17 - LOADED NODES:

=====

Node	Case A	Case B	Case C	Case D	Case E	Case F	Case G
15	P1						
16	P1						
21	P1						
22	P1						
Node	Case H	Case I	Case J	Case K	Case L	Case M	Case N
Node	Case O	Case P	Case Q	Case R	Case S	Case T	Case U
Node	Case V	Case W	Case X	Case Y	Case Z		

A18 - SLAVED NODES ASSIGNMENTS:

```
=====
Node   Dz-Group  Rx-Group  Ry-Group
----  -
```

A19 - ELEMENT GEOMETRY:

=====

Elem	i	j	k	l	X-Dim (ft)	Y-Dim (ft)	Thick.(in)
1	1	7	2	8	2.000	2.000	30.00
2	2	8	3	9	2.000	2.000	30.00
3	3	9	4	10	2.000	2.000	30.00
4	4	10	5	11	2.000	2.000	30.00
5	5	11	6	12	2.000	2.000	30.00
6	7	13	8	14	2.000	2.000	30.00
7	8	14	9	15	2.000	2.000	30.00
8	9	15	10	16	2.000	2.000	30.00
9	10	16	11	17	2.000	2.000	30.00
10	11	17	12	18	2.000	2.000	30.00
11	13	19	14	20	2.000	2.000	30.00
12	14	20	15	21	2.000	2.000	30.00
13	15	21	16	22	2.000	2.000	30.00
14	16	22	17	23	2.000	2.000	30.00
15	17	23	18	24	2.000	2.000	30.00
16	19	25	20	26	2.000	2.000	30.00
17	20	26	21	27	2.000	2.000	30.00
18	21	27	22	28	2.000	2.000	30.00
19	22	28	23	29	2.000	2.000	30.00
20	23	29	24	30	2.000	2.000	30.00
21	25	31	26	32	2.000	2.000	30.00
22	26	32	27	33	2.000	2.000	30.00
23	27	33	28	34	2.000	2.000	30.00
24	28	34	29	35	2.000	2.000	30.00
25	29	35	30	36	2.000	2.000	30.00

A20 - ELEMENT ASSIGNMENTS:

```
=====
Elem  Thick.  Concrete  Soil    Steel  DesParam  Loaded?
-----
  1  Thick1   Concl    Soil1   Steel1  DC_1
  2  Thick1   Concl    Soil1   Steel1  DC_1
  3  Thick1   Concl    Soil1   Steel1  DC_1
  4  Thick1   Concl    Soil1   Steel1  DC_1
  5  Thick1   Concl    Soil1   Steel1  DC_1
  6  Thick1   Concl    Soil1   Steel1  DC_1
  7  Thick1   Concl    Soil1   Steel1  DC_1
  8  Thick1   Concl    Soil1   Steel1  DC_1
  9  Thick1   Concl    Soil1   Steel1  DC_1
 10  Thick1   Concl    Soil1   Steel1  DC_1
 11  Thick1   Concl    Soil1   Steel1  DC_1
 12  Thick1   Concl    Soil1   Steel1  DC_1
 13  Thick1   Concl    Soil1   Steel1  DC_1
 14  Thick1   Concl    Soil1   Steel1  DC_1
 15  Thick1   Concl    Soil1   Steel1  DC_1
 16  Thick1   Concl    Soil1   Steel1  DC_1
 17  Thick1   Concl    Soil1   Steel1  DC_1
 18  Thick1   Concl    Soil1   Steel1  DC_1
 19  Thick1   Concl    Soil1   Steel1  DC_1
 20  Thick1   Concl    Soil1   Steel1  DC_1
 21  Thick1   Concl    Soil1   Steel1  DC_1
 22  Thick1   Concl    Soil1   Steel1  DC_1
 23  Thick1   Concl    Soil1   Steel1  DC_1
 24  Thick1   Concl    Soil1   Steel1  DC_1
 25  Thick1   Concl    Soil1   Steel1  DC_1
```

A21 - LOADED ELEMENTS:

=====

Element	Case A	Case B	Case C	Case D	Case E	Case F	Case G
Element	Case H	Case I	Case J	Case K	Case L	Case M	Case N
Element	Case O	Case P	Case Q	Case R	Case S	Case T	Case U
Element	Case V	Case W	Case X	Case Y	Case Z		

B1 - FORCE VECTOR:

=====

Units --> Force (kip), Moment (kip-ft)

Service Load Combination: S1

Node	Force, Pz	Moment, Mx	Moment, My
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	-125	0	0
16	-125	0	0
17	0	0	0
18	0	0	0
19	0	0	0
20	0	0	0
21	-125	0	0
22	-125	0	0
23	0	0	0
24	0	0	0
25	0	0	0
26	0	0	0
27	0	0	0
28	0	0	0
29	0	0	0
30	0	0	0
31	0	0	0
32	0	0	0
33	0	0	0
34	0	0	0
35	0	0	0
36	0	0	0

B1 - FORCE VECTOR:

=====

Units --> Force (kip), Moment (kip-ft)

Ultimate Load Combination: U1

Node	Force, Pz	Moment, Mx	Moment, My
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	-125	0	0
16	-125	0	0
17	0	0	0
18	0	0	0
19	0	0	0
20	0	0	0
21	-125	0	0
22	-125	0	0
23	0	0	0
24	0	0	0
25	0	0	0
26	0	0	0
27	0	0	0
28	0	0	0
29	0	0	0
30	0	0	0
31	0	0	0
32	0	0	0
33	0	0	0
34	0	0	0
35	0	0	0
36	0	0	0

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Project: spMats Manual, Example 1

C:\Program Files\StructurePoint\spMats\Examples\example1.ma8

Page 13

B2 - NODAL DISPLACEMENTS AND ROTATIONS:

=====

Units --> Displacement (in), Rotation (Radians)

Flags --> [x] Indicates maximum displacement is exceeded.

Service Load Combination: S1

Node	Disp, Dz	X-Rot, Rx	Y-Rot, Ry
----	-----	-----	-----
1	-0.59336	-0.0001246	0.0001246
2	-0.59620	-0.0001362	0.0001049
3	-0.59803	-0.0001494	0.0000422
4	-0.59803	-0.0001494	-0.0000422
5	-0.59620	-0.0001362	-0.0001049
6	-0.59336	-0.0001246	-0.0001246
7	-0.59620	-0.0001049	0.0001362
8	-0.59940	-0.0001237	0.0001237
9	-0.60168	-0.0001514	0.0000540
10	-0.60168	-0.0001514	-0.0000540
11	-0.59940	-0.0001237	-0.0001237
12	-0.59620	-0.0001049	-0.0001362
13	-0.59803	-0.0000422	0.0001494
14	-0.60168	-0.0000540	0.0001514
15	-0.60468	-0.0000738	0.0000738
16	-0.60468	-0.0000738	-0.0000738
17	-0.60168	-0.0000540	-0.0001514
18	-0.59803	-0.0000422	-0.0001494
19	-0.59803	0.0000422	0.0001494
20	-0.60168	0.0000540	0.0001514
21	-0.60468	0.0000738	0.0000738
22	-0.60468	0.0000738	-0.0000738
23	-0.60168	0.0000540	-0.0001514
24	-0.59803	0.0000422	-0.0001494
25	-0.59620	0.0001049	0.0001362
26	-0.59940	0.0001237	0.0001237
27	-0.60168	0.0001514	0.0000540
28	-0.60168	0.0001514	-0.0000540
29	-0.59940	0.0001237	-0.0001237
30	-0.59620	0.0001049	-0.0001362
31	-0.59336	0.0001246	0.0001246
32	-0.59620	0.0001362	0.0001049
33	-0.59803	0.0001494	0.0000422
34	-0.59803	0.0001494	-0.0000422
35	-0.59620	0.0001362	-0.0001049
36	-0.59336	0.0001246	-0.0001246

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Project: spMats Manual, Example 1

C:\Program Files\StructurePoint\spMats\Examples\example1.ma8

Page 14

B2 - NODAL DISPLACEMENTS AND ROTATIONS:

=====

Units --> Displacement (in), Rotation (Radians)

Flags --> [x] Indicates maximum displacement is exceeded.

Ultimate Load Combination: U1

Node	Disp, Dz	X-Rot, Rx	Y-Rot, Ry
----	-----	-----	-----
1	-0.59336	-0.0001246	0.0001246
2	-0.59620	-0.0001362	0.0001049
3	-0.59803	-0.0001494	0.0000422
4	-0.59803	-0.0001494	-0.0000422
5	-0.59620	-0.0001362	-0.0001049
6	-0.59336	-0.0001246	-0.0001246
7	-0.59620	-0.0001049	0.0001362
8	-0.59940	-0.0001237	0.0001237
9	-0.60168	-0.0001514	0.0000540
10	-0.60168	-0.0001514	-0.0000540
11	-0.59940	-0.0001237	-0.0001237
12	-0.59620	-0.0001049	-0.0001362
13	-0.59803	-0.0000422	0.0001494
14	-0.60168	-0.0000540	0.0001514
15	-0.60468	-0.0000738	0.0000738
16	-0.60468	-0.0000738	-0.0000738
17	-0.60168	-0.0000540	-0.0001514
18	-0.59803	-0.0000422	-0.0001494
19	-0.59803	0.0000422	0.0001494
20	-0.60168	0.0000540	0.0001514
21	-0.60468	0.0000738	0.0000738
22	-0.60468	0.0000738	-0.0000738
23	-0.60168	0.0000540	-0.0001514
24	-0.59803	0.0000422	-0.0001494
25	-0.59620	0.0001049	0.0001362
26	-0.59940	0.0001237	0.0001237
27	-0.60168	0.0001514	0.0000540
28	-0.60168	0.0001514	-0.0000540
29	-0.59940	0.0001237	-0.0001237
30	-0.59620	0.0001049	-0.0001362
31	-0.59336	0.0001246	0.0001246
32	-0.59620	0.0001362	0.0001049
33	-0.59803	0.0001494	0.0000422
34	-0.59803	0.0001494	-0.0000422
35	-0.59620	0.0001362	-0.0001049
36	-0.59336	0.0001246	-0.0001246

B3 - REACTIONS:

=====

Units --> Force (kip), Moment (kip-ft)

Service Load Combination: S1

Node	Soil	Spring	Pile	Restraints			Slaved Nodes		
	Fz	Fz	Fz	Fz	Mx	My	Fz	Mx	My
1	4.945	-	-	-	-	-	-	-	-
2	9.937	-	-	-	-	-	-	-	-
3	9.967	-	-	-	-	-	-	-	-
4	9.967	-	-	-	-	-	-	-	-
5	9.937	-	-	-	-	-	-	-	-
6	4.945	-	-	-	-	-	-	-	-
7	9.937	-	-	-	-	-	-	-	-
8	19.980	-	-	-	-	-	-	-	-
9	20.056	-	-	-	-	-	-	-	-
10	20.056	-	-	-	-	-	-	-	-
11	19.980	-	-	-	-	-	-	-	-
12	9.937	-	-	-	-	-	-	-	-
13	9.967	-	-	-	-	-	-	-	-
14	20.056	-	-	-	-	-	-	-	-
15	20.156	-	-	-	-	-	-	-	-
16	20.156	-	-	-	-	-	-	-	-
17	20.056	-	-	-	-	-	-	-	-
18	9.967	-	-	-	-	-	-	-	-
19	9.967	-	-	-	-	-	-	-	-
20	20.056	-	-	-	-	-	-	-	-
21	20.156	-	-	-	-	-	-	-	-
22	20.156	-	-	-	-	-	-	-	-
23	20.056	-	-	-	-	-	-	-	-
24	9.967	-	-	-	-	-	-	-	-
25	9.937	-	-	-	-	-	-	-	-
26	19.980	-	-	-	-	-	-	-	-
27	20.056	-	-	-	-	-	-	-	-
28	20.056	-	-	-	-	-	-	-	-
29	19.980	-	-	-	-	-	-	-	-
30	9.937	-	-	-	-	-	-	-	-
31	4.945	-	-	-	-	-	-	-	-
32	9.937	-	-	-	-	-	-	-	-
33	9.967	-	-	-	-	-	-	-	-
34	9.967	-	-	-	-	-	-	-	-
35	9.937	-	-	-	-	-	-	-	-
36	4.945	-	-	-	-	-	-	-	-

Sum of all forces and moments with respect to center of gravity (X, Y) = (5.00, 5.00) ft

Sum of Reactions	Fz	Mx	My
Soil	500.000	-0.000	-0.000
Springs	-	-	-
Piles	-	-	-
Restrains	-	-	-
Slaved Nodes	-	-	-
Total Reactions	500.000	-0.000	-0.000
Total Loads	-500.000	0.000	0.000

B3 - REACTIONS:

=====

Units --> Force (kip), Moment (kip-ft)

Ultimate Load Combination: U1

Node	Soil			Spring			Pile			Restraints			Slaved Nodes		
	Fz	Fz	Fz	Fz	Mx	My	Fz	Mx	My	Fz	Mx	My	Fz	Mx	My
1	4.945	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9.937	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9.967	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9.967	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9.937	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	4.945	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9.937	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	19.980	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	20.056	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	20.056	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	19.980	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9.937	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9.967	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	20.056	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	20.156	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	20.156	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	20.056	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9.967	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9.967	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	20.056	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	20.156	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	20.156	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	20.056	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9.967	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9.937	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	19.980	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	20.056	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	20.056	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	19.980	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9.937	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	4.945	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9.937	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9.967	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9.967	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9.937	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	4.945	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Sum of all forces and moments with respect to center of gravity (X, Y) = (5.00, 5.00) ft

Sum of Reactions	Fz	Mx	My
Soil	500.000	-0.000	-0.000
Springs	-	-	-
Piles	-	-	-
Restrains	-	-	-
Slaved Nodes	-	-	-
Total Reactions	500.000	-0.000	-0.000
Total Loads	-500.000	0.000	0.000

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Project: spMats Manual, Example 1

C:\Program Files\StructurePoint\spMats\Examples\example1.ma8

Page 17

B4 - SOIL DISPLACEMENTS AND PRESSURES:

=====

Units --> Displacement (in), Pressure (ksf)

Flags --> [x] Indicates allowable pressure is exceeded.

Service Load Combination: S1

Elem	Node	Disp, Dz	Pressure, Qz	Node	Disp, Dz	Pressure, Qz
1	8	-0.5994	-4.995	2	-0.5962	-4.968
	7	-0.5962	-4.968	1	-0.5934	-4.945
2	9	-0.6017	-5.014	3	-0.5980	-4.984
	8	-0.5994	-4.995	2	-0.5962	-4.968
3	10	-0.6017	-5.014	4	-0.5980	-4.984
	9	-0.6017	-5.014	3	-0.5980	-4.984
4	11	-0.5994	-4.995	5	-0.5962	-4.968
	10	-0.6017	-5.014	4	-0.5980	-4.984
5	12	-0.5962	-4.968	6	-0.5934	-4.945
	11	-0.5994	-4.995	5	-0.5962	-4.968
6	14	-0.6017	-5.014	8	-0.5994	-4.995
	13	-0.5980	-4.984	7	-0.5962	-4.968
7	15	-0.6047	-5.039	9	-0.6017	-5.014
	14	-0.6017	-5.014	8	-0.5994	-4.995
8	16	-0.6047	-5.039	10	-0.6017	-5.014
	15	-0.6047	-5.039	9	-0.6017	-5.014
9	17	-0.6017	-5.014	11	-0.5994	-4.995
	16	-0.6047	-5.039	10	-0.6017	-5.014
10	18	-0.5980	-4.984	12	-0.5962	-4.968
	17	-0.6017	-5.014	11	-0.5994	-4.995
11	20	-0.6017	-5.014	14	-0.6017	-5.014
	19	-0.5980	-4.984	13	-0.5980	-4.984
12	21	-0.6047	-5.039	15	-0.6047	-5.039
	20	-0.6017	-5.014	14	-0.6017	-5.014
13	22	-0.6047	-5.039	16	-0.6047	-5.039
	21	-0.6047	-5.039	15	-0.6047	-5.039
14	23	-0.6017	-5.014	17	-0.6017	-5.014
	22	-0.6047	-5.039	16	-0.6047	-5.039
15	24	-0.5980	-4.984	18	-0.5980	-4.984
	23	-0.6017	-5.014	17	-0.6017	-5.014
16	26	-0.5994	-4.995	20	-0.6017	-5.014
	25	-0.5962	-4.968	19	-0.5980	-4.984
17	27	-0.6017	-5.014	21	-0.6047	-5.039
	26	-0.5994	-4.995	20	-0.6017	-5.014
18	28	-0.6017	-5.014	22	-0.6047	-5.039
	27	-0.6017	-5.014	21	-0.6047	-5.039
19	29	-0.5994	-4.995	23	-0.6017	-5.014
	28	-0.6017	-5.014	22	-0.6047	-5.039
20	30	-0.5962	-4.968	24	-0.5980	-4.984
	29	-0.5994	-4.995	23	-0.6017	-5.014
21	32	-0.5962	-4.968	26	-0.5994	-4.995
	31	-0.5934	-4.945	25	-0.5962	-4.968
22	33	-0.5980	-4.984	27	-0.6017	-5.014
	32	-0.5962	-4.968	26	-0.5994	-4.995
23	34	-0.5980	-4.984	28	-0.6017	-5.014
	33	-0.5980	-4.984	27	-0.6017	-5.014
24	35	-0.5962	-4.968	29	-0.5994	-4.995
	34	-0.5980	-4.984	28	-0.6017	-5.014
25	36	-0.5934	-4.945	30	-0.5962	-4.968
	35	-0.5962	-4.968	29	-0.5994	-4.995

B5 - ELEMENT NODAL MOMENTS:

=====

Units --> Moment (kip-ft/ft), Angle (Deg)

Ultimate Load Combination: U1

Elem	Node	M(xx)	M(yy)	M(xy)	M(r1)	M(r2)	Angle	Top		Bottom	
								M(ux)	M(uy)	M(ux)	M(uy)
1	8	-11.64	-11.64	6.00	-5.65	-17.64	45.0	0.00	0.00	-17.64	-17
	2	-12.50	0.41	4.10	1.60	-13.69	73.8	0.00	1.76	-16.60	-3
	7	0.41	-12.50	4.10	1.60	-13.69	16.2	1.76	0.00	-3.69	-16
	1	0.70	0.70	2.21	2.91	-1.51	45.0	2.91	2.91	-1.51	-1
2	9	-33.19	-6.87	5.57	-5.74	-34.32	78.5	0.00	0.00	-38.76	-12
	3	-24.45	-0.57	1.73	-0.44	-24.58	85.9	0.00	0.00	-26.19	-2
	8	-11.99	-11.70	7.42	-4.43	-19.26	45.6	0.00	0.00	-19.41	-19
	2	-13.74	0.22	3.58	1.09	-14.61	76.4	0.00	1.16	-17.33	-3
3	10	-33.93	-6.99	-3.13	-6.63	-34.29	-83.5	0.00	0.00	-37.06	-10
	4	-25.80	-0.77	-3.13	-0.38	-26.18	-83.0	0.00	0.00	-28.93	-3
	9	-33.93	-6.99	3.13	-6.63	-34.29	83.5	0.00	0.00	-37.06	-10
	3	-25.80	-0.77	3.13	-0.38	-26.18	83.0	0.00	0.00	-28.93	-3
4	11	-11.99	-11.70	-7.42	-4.43	-19.26	-45.6	0.00	0.00	-19.41	-19
	5	-13.74	0.22	-3.58	1.09	-14.61	-76.4	0.00	1.16	-17.33	-3
	10	-33.19	-6.87	-5.57	-5.74	-34.32	-78.5	0.00	0.00	-38.76	-12
	4	-24.45	-0.57	-1.73	-0.44	-24.58	-85.9	0.00	0.00	-26.19	-2
5	12	0.41	-12.50	-4.10	1.60	-13.69	-16.2	1.76	0.00	-3.69	-16
	6	0.70	0.70	-2.21	2.91	-1.51	-45.0	2.91	2.91	-1.51	-1
	11	-11.64	-11.64	-6.00	-5.65	-17.64	-45.0	0.00	0.00	-17.64	-17
	5	-12.50	0.41	-4.10	1.60	-13.69	-73.8	0.00	1.76	-16.60	-3
6	14	-6.87	-33.19	5.57	-5.74	-34.32	11.5	0.00	0.00	-12.44	-38
	8	-11.70	-11.99	7.42	-4.43	-19.26	44.4	0.00	0.00	-19.11	-19
	13	-0.57	-24.45	1.73	-0.44	-24.58	4.1	0.00	0.00	-2.30	-26
	7	0.22	-13.74	3.58	1.09	-14.61	13.6	1.16	0.00	-3.36	-17
7	15	-54.43	-54.43	2.48	-51.95	-56.91	45.0	0.00	0.00	-56.91	-56
	9	-33.04	-5.90	4.57	-5.15	-33.79	80.7	0.00	0.00	-37.61	-10
	14	-5.90	-33.04	4.57	-5.15	-33.79	9.3	0.00	0.00	-10.47	-37
	8	-12.05	-12.05	6.66	-5.38	-18.71	45.0	0.00	0.00	-18.71	-18
8	16	-53.02	-54.22	-5.22	-48.37	-58.88	-41.7	0.00	0.00	-58.24	-59
	10	-33.78	-6.01	-5.22	-5.06	-34.73	-79.7	0.00	0.00	-39.00	-11
	15	-53.02	-54.22	5.22	-48.37	-58.88	41.7	0.00	0.00	-58.24	-59
	9	-33.78	-6.01	5.22	-5.06	-34.73	79.7	0.00	0.00	-39.00	-11
9	17	-5.90	-33.04	-4.57	-5.15	-33.79	-9.3	0.00	0.00	-10.47	-37
	11	-12.05	-12.05	-6.66	-5.38	-18.71	-45.0	0.00	0.00	-18.71	-18
	16	-54.43	-54.43	-2.48	-51.95	-56.91	-45.0	0.00	0.00	-56.91	-56
	10	-33.04	-5.90	-4.57	-5.15	-33.79	-80.7	0.00	0.00	-37.61	-10
10	18	-0.57	-24.45	-1.73	-0.44	-24.58	-4.1	0.00	0.00	-2.30	-26
	12	0.22	-13.74	-3.58	1.09	-14.61	-13.6	1.16	0.00	-3.36	-17
	17	-6.87	-33.19	-5.57	-5.74	-34.32	-11.5	0.00	0.00	-12.44	-38
	11	-11.70	-11.99	-7.42	-4.43	-19.26	-44.4	0.00	0.00	-19.11	-19
11	20	-6.99	-33.93	-3.13	-6.63	-34.29	-6.5	0.00	0.00	-10.12	-37
	14	-6.99	-33.93	3.13	-6.63	-34.29	6.5	0.00	0.00	-10.12	-37
	19	-0.77	-25.80	-3.13	-0.38	-26.18	-7.0	0.00	0.00	-3.90	-28
	13	-0.77	-25.80	3.13	-0.38	-26.18	7.0	0.00	0.00	-3.90	-28
12	21	-54.22	-53.02	-5.22	-48.37	-58.88	-48.3	0.00	0.00	-59.44	-58
	15	-54.22	-53.02	5.22	-48.37	-58.88	48.3	0.00	0.00	-59.44	-58
	20	-6.01	-33.78	-5.22	-5.06	-34.73	-10.3	0.00	0.00	-11.23	-39
	14	-6.01	-33.78	5.22	-5.06	-34.73	10.3	0.00	0.00	-11.23	-39
13	22	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	0.00	0.00	-52.81	-52
	16	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	0.00	0.00	-52.81	-52
	21	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	0.00	0.00	-52.81	-52
	15	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	0.00	0.00	-52.81	-52
14	23	-6.01	-33.78	5.22	-5.06	-34.73	10.3	0.00	0.00	-11.23	-39
	17	-6.01	-33.78	-5.22	-5.06	-34.73	-10.3	0.00	0.00	-11.23	-39
	22	-54.22	-53.02	5.22	-48.37	-58.88	48.3	0.00	0.00	-59.44	-58
	16	-54.22	-53.02	-5.22	-48.37	-58.88	-48.3	0.00	0.00	-59.44	-58

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C:\Program Files\StructurePoint\spMats\Examples\example1.ma8

Page 19

B5 - ELEMENT NODAL MOMENTS:

=====

Units --> Moment (kip-ft/ft), Angle (Deg)

Ultimate Load Combination: U1

Elem	Node	M(xx)	M(yy)	M(xy)	M(r1)	M(r2)	Angle	Top		Bottom	
								M(ux)	M(uy)	M(ux)	M(uy)
15	24	-0.77	-25.80	3.13	-0.38	-26.18	7.0	0.00	0.00	-3.90	-28
	18	-0.77	-25.80	-3.13	-0.38	-26.18	-7.0	0.00	0.00	-3.90	-28
	23	-6.99	-33.93	3.13	-6.63	-34.29	6.5	0.00	0.00	-10.12	-37
	17	-6.99	-33.93	-3.13	-6.63	-34.29	-6.5	0.00	0.00	-10.12	-37
16	26	-11.70	-11.99	-7.42	-4.43	-19.26	-44.4	0.00	0.00	-19.11	-19
	20	-6.87	-33.19	-5.57	-5.74	-34.32	-11.5	0.00	0.00	-12.44	-38
	25	0.22	-13.74	-3.58	1.09	-14.61	-13.6	1.16	0.00	-3.36	-17
	19	-0.57	-24.45	-1.73	-0.44	-24.58	-4.1	0.00	0.00	-2.30	-26
17	27	-33.04	-5.90	-4.57	-5.15	-33.79	-80.7	0.00	0.00	-37.61	-10
	21	-54.43	-54.43	-2.48	-51.95	-56.91	-45.0	0.00	0.00	-56.91	-56
	26	-12.05	-12.05	-6.66	-5.38	-18.71	-45.0	0.00	0.00	-18.71	-18
	20	-5.90	-33.04	-4.57	-5.15	-33.79	-9.3	0.00	0.00	-10.47	-37
18	28	-33.78	-6.01	5.22	-5.06	-34.73	79.7	0.00	0.00	-39.00	-11
	22	-53.02	-54.22	5.22	-48.37	-58.88	41.7	0.00	0.00	-58.24	-59
	27	-33.78	-6.01	-5.22	-5.06	-34.73	-79.7	0.00	0.00	-39.00	-11
	21	-53.02	-54.22	-5.22	-48.37	-58.88	-41.7	0.00	0.00	-58.24	-59
19	29	-12.05	-12.05	6.66	-5.38	-18.71	45.0	0.00	0.00	-18.71	-18
	23	-5.90	-33.04	4.57	-5.15	-33.79	9.3	0.00	0.00	-10.47	-37
	28	-33.04	-5.90	4.57	-5.15	-33.79	80.7	0.00	0.00	-37.61	-10
	22	-54.43	-54.43	2.48	-51.95	-56.91	45.0	0.00	0.00	-56.91	-56
20	30	0.22	-13.74	3.58	1.09	-14.61	13.6	1.16	0.00	-3.36	-17
	24	-0.57	-24.45	1.73	-0.44	-24.58	4.1	0.00	0.00	-2.30	-26
	29	-11.70	-11.99	7.42	-4.43	-19.26	44.4	0.00	0.00	-19.11	-19
	23	-6.87	-33.19	5.57	-5.74	-34.32	11.5	0.00	0.00	-12.44	-38
21	32	-12.50	0.41	-4.10	1.60	-13.69	-73.8	0.00	1.76	-16.60	-3
	26	-11.64	-11.64	-6.00	-5.65	-17.64	-45.0	0.00	0.00	-17.64	-17
	31	0.70	0.70	-2.21	2.91	-1.51	-45.0	2.91	2.91	-1.51	-1
	25	0.41	-12.50	-4.10	1.60	-13.69	-16.2	1.76	0.00	-3.69	-16
22	33	-24.45	-0.57	-1.73	-0.44	-24.58	-85.9	0.00	0.00	-26.19	-2
	27	-33.19	-6.87	-5.57	-5.74	-34.32	-78.5	0.00	0.00	-38.76	-12
	32	-13.74	0.22	-3.58	1.09	-14.61	-76.4	0.00	1.16	-17.33	-3
	26	-11.99	-11.70	-7.42	-4.43	-19.26	-45.6	0.00	0.00	-19.41	-19
23	34	-25.80	-0.77	3.13	-0.38	-26.18	83.0	0.00	0.00	-28.93	-3
	28	-33.93	-6.99	3.13	-6.63	-34.29	83.5	0.00	0.00	-37.06	-10
	33	-25.80	-0.77	-3.13	-0.38	-26.18	-83.0	0.00	0.00	-28.93	-3
	27	-33.93	-6.99	-3.13	-6.63	-34.29	-83.5	0.00	0.00	-37.06	-10
24	35	-13.74	0.22	3.58	1.09	-14.61	76.4	0.00	1.16	-17.33	-3
	29	-11.99	-11.70	7.42	-4.43	-19.26	45.6	0.00	0.00	-19.41	-19
	34	-24.45	-0.57	1.73	-0.44	-24.58	85.9	0.00	0.00	-26.19	-2
	28	-33.19	-6.87	5.57	-5.74	-34.32	78.5	0.00	0.00	-38.76	-12
25	36	0.70	0.70	2.21	2.91	-1.51	45.0	2.91	2.91	-1.51	-1
	30	0.41	-12.50	4.10	1.60	-13.69	16.2	1.76	0.00	-3.69	-16
	35	-12.50	0.41	4.10	1.60	-13.69	73.8	0.00	1.76	-16.60	-3
	29	-11.64	-11.64	6.00	-5.65	-17.64	45.0	0.00	0.00	-17.64	-17

B6 - Punching Shear Around Columns (Ultimate Load Combinations):

```
=====
* No columns assigned
```

B7 - Punching Shear Around Piles (Ultimate Load Combinations):

```
=====
* No piles assigned
```

C1 - NODAL DISPLACEMENT ENVELOPES:

```
=====
```

Node	Downward		Upward	
	Dz (in)	Ld Comb.	Dz (in)	Ld Comb.
1	-0.5934	S1	0.0000	-
2	-0.5962	S1	0.0000	-
3	-0.5980	S1	0.0000	-
4	-0.5980	S1	0.0000	-
5	-0.5962	S1	0.0000	-
6	-0.5934	S1	0.0000	-
7	-0.5962	S1	0.0000	-
8	-0.5994	S1	0.0000	-
9	-0.6017	S1	0.0000	-
10	-0.6017	S1	0.0000	-
11	-0.5994	S1	0.0000	-
12	-0.5962	S1	0.0000	-
13	-0.5980	S1	0.0000	-
14	-0.6017	S1	0.0000	-
15	-0.6047	S1	0.0000	-
16	-0.6047	S1	0.0000	-
17	-0.6017	S1	0.0000	-
18	-0.5980	S1	0.0000	-
19	-0.5980	S1	0.0000	-
20	-0.6017	S1	0.0000	-
21	-0.6047	S1	0.0000	-
22	-0.6047	S1	0.0000	-
23	-0.6017	S1	0.0000	-
24	-0.5980	S1	0.0000	-
25	-0.5962	S1	0.0000	-
26	-0.5994	S1	0.0000	-
27	-0.6017	S1	0.0000	-
28	-0.6017	S1	0.0000	-
29	-0.5994	S1	0.0000	-
30	-0.5962	S1	0.0000	-
31	-0.5934	S1	0.0000	-
32	-0.5962	S1	0.0000	-
33	-0.5980	S1	0.0000	-
34	-0.5980	S1	0.0000	-
35	-0.5962	S1	0.0000	-
36	-0.5934	S1	0.0000	-

C2 - SERVICE REACTION ENVELOPES:

=====
 Units --> Force (kip), Moment (kip-ft)

Node	Soil		Springs		Piles	
	Fz(+ -)	Ld Comb.	Fz(+ -)	Ld Comb.	Fz(+ -)	Ld Comb.
1	4.945	S1	-	-	-	-
	0.000	-	-	-	-	-
2	9.937	S1	-	-	-	-
	0.000	-	-	-	-	-
3	9.967	S1	-	-	-	-
	0.000	-	-	-	-	-
4	9.967	S1	-	-	-	-
	0.000	-	-	-	-	-
5	9.937	S1	-	-	-	-
	0.000	-	-	-	-	-
6	4.945	S1	-	-	-	-
	0.000	-	-	-	-	-
7	9.937	S1	-	-	-	-
	0.000	-	-	-	-	-
8	19.980	S1	-	-	-	-
	0.000	-	-	-	-	-
9	20.056	S1	-	-	-	-
	0.000	-	-	-	-	-
10	20.056	S1	-	-	-	-
	0.000	-	-	-	-	-
11	19.980	S1	-	-	-	-
	0.000	-	-	-	-	-
12	9.937	S1	-	-	-	-
	0.000	-	-	-	-	-
13	9.967	S1	-	-	-	-
	0.000	-	-	-	-	-
14	20.056	S1	-	-	-	-
	0.000	-	-	-	-	-
15	20.156	S1	-	-	-	-
	0.000	-	-	-	-	-
16	20.156	S1	-	-	-	-
	0.000	-	-	-	-	-
17	20.056	S1	-	-	-	-
	0.000	-	-	-	-	-
18	9.967	S1	-	-	-	-
	0.000	-	-	-	-	-
19	9.967	S1	-	-	-	-
	0.000	-	-	-	-	-
20	20.056	S1	-	-	-	-
	0.000	-	-	-	-	-
21	20.156	S1	-	-	-	-
	0.000	-	-	-	-	-
22	20.156	S1	-	-	-	-
	0.000	-	-	-	-	-
23	20.056	S1	-	-	-	-
	0.000	-	-	-	-	-
24	9.967	S1	-	-	-	-
	0.000	-	-	-	-	-
25	9.937	S1	-	-	-	-
	0.000	-	-	-	-	-
26	19.980	S1	-	-	-	-
	0.000	-	-	-	-	-
27	20.056	S1	-	-	-	-
	0.000	-	-	-	-	-
28	20.056	S1	-	-	-	-
	0.000	-	-	-	-	-
29	19.980	S1	-	-	-	-
	0.000	-	-	-	-	-

C2 - SERVICE REACTION ENVELOPES:

=====

Units --> Force (kip), Moment (kip-ft)

Node	Soil		Springs		Piles	
	Fz(+ -)	Ld Comb.	Fz(+ -)	Ld Comb.	Fz(+ -)	Ld Comb.
30	9.937	S1	-	-	-	-
	0.000	-	-	-	-	-
31	4.945	S1	-	-	-	-
	0.000	-	-	-	-	-
32	9.937	S1	-	-	-	-
	0.000	-	-	-	-	-
33	9.967	S1	-	-	-	-
	0.000	-	-	-	-	-
34	9.967	S1	-	-	-	-
	0.000	-	-	-	-	-
35	9.937	S1	-	-	-	-
	0.000	-	-	-	-	-
36	4.945	S1	-	-	-	-
	0.000	-	-	-	-	-

Restraints						
Node	Fz(+ -)	Ld Comb.	Mx(+ -)	Ld Comb.	My(+ -)	Ld Comb.

Slaved Nodes						
Node	Fz(+ -)	Ld Comb.	Mx(+ -)	Ld Comb.	My(+ -)	Ld Comb.

C2 - ULTIMATE REACTION ENVELOPES:

=====

Units --> Force (kip), Moment (kip-ft)

Node	Soil		Springs		Piles	
	Fz(+ -)	Ld Comb.	Fz(+ -)	Ld Comb.	Fz(+ -)	Ld Comb.
1	4.945	U1	-	-	-	-
	0.000	-	-	-	-	-
2	9.937	U1	-	-	-	-
	0.000	-	-	-	-	-
3	9.967	U1	-	-	-	-
	0.000	-	-	-	-	-
4	9.967	U1	-	-	-	-
	0.000	-	-	-	-	-
5	9.937	U1	-	-	-	-
	0.000	-	-	-	-	-
6	4.945	U1	-	-	-	-
	0.000	-	-	-	-	-
7	9.937	U1	-	-	-	-
	0.000	-	-	-	-	-
8	19.980	U1	-	-	-	-
	0.000	-	-	-	-	-
9	20.056	U1	-	-	-	-
	0.000	-	-	-	-	-
10	20.056	U1	-	-	-	-
	0.000	-	-	-	-	-
11	19.980	U1	-	-	-	-
	0.000	-	-	-	-	-
12	9.937	U1	-	-	-	-
	0.000	-	-	-	-	-
13	9.967	U1	-	-	-	-
	0.000	-	-	-	-	-
14	20.056	U1	-	-	-	-
	0.000	-	-	-	-	-
15	20.156	U1	-	-	-	-
	0.000	-	-	-	-	-
16	20.156	U1	-	-	-	-
	0.000	-	-	-	-	-
17	20.056	U1	-	-	-	-
	0.000	-	-	-	-	-
18	9.967	U1	-	-	-	-
	0.000	-	-	-	-	-
19	9.967	U1	-	-	-	-
	0.000	-	-	-	-	-
20	20.056	U1	-	-	-	-
	0.000	-	-	-	-	-
21	20.156	U1	-	-	-	-
	0.000	-	-	-	-	-
22	20.156	U1	-	-	-	-
	0.000	-	-	-	-	-
23	20.056	U1	-	-	-	-
	0.000	-	-	-	-	-
24	9.967	U1	-	-	-	-
	0.000	-	-	-	-	-
25	9.937	U1	-	-	-	-
	0.000	-	-	-	-	-
26	19.980	U1	-	-	-	-
	0.000	-	-	-	-	-
27	20.056	U1	-	-	-	-
	0.000	-	-	-	-	-
28	20.056	U1	-	-	-	-
	0.000	-	-	-	-	-
29	19.980	U1	-	-	-	-
	0.000	-	-	-	-	-

C2 - ULTIMATE REACTION ENVELOPES:

=====

Units --> Force (kip), Moment (kip-ft)

Node	Soil		Springs		Piles	
	Fz(+ -)	Ld Comb.	Fz(+ -)	Ld Comb.	Fz(+ -)	Ld Comb.
30	9.937	U1	-	-	-	-
	0.000	-	-	-	-	-
31	4.945	U1	-	-	-	-
	0.000	-	-	-	-	-
32	9.937	U1	-	-	-	-
	0.000	-	-	-	-	-
33	9.967	U1	-	-	-	-
	0.000	-	-	-	-	-
34	9.967	U1	-	-	-	-
	0.000	-	-	-	-	-
35	9.937	U1	-	-	-	-
	0.000	-	-	-	-	-
36	4.945	U1	-	-	-	-
	0.000	-	-	-	-	-

Restraints						
Node	Fz(+ -)	Ld Comb.	Mx(+ -)	Ld Comb.	My(+ -)	Ld Comb.

Slaved Nodes						
Node	Fz(+ -)	Ld Comb.	Mx(+ -)	Ld Comb.	My(+ -)	Ld Comb.

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C:\Program Files\StructurePoint\spMats\Examples\example1.ma8

Page 25

C3 - SOIL DISPLACEMENT AND PRESSURE ENVELOPES:

=====

Units --> Displacement, Dz (in) - Pressure, Qz (ksf)

Flags --> [x] Indicates allowable pressure is exceeded.

Elem	Compression		Node	Ld Comb.	Tension
	Dz	Qz			Dz
-----	-----	-----	-----	-----	-----
1	-0.5994	-4.995	8	S1	0.0000
2	-0.6017	-5.014	9	S1	0.0000
3	-0.6017	-5.014	10	S1	0.0000
4	-0.6017	-5.014	10	S1	0.0000
5	-0.5994	-4.995	11	S1	0.0000
6	-0.6017	-5.014	14	S1	0.0000
7	-0.6047	-5.039	15	S1	0.0000
8	-0.6047	-5.039	16	S1	0.0000
9	-0.6047	-5.039	16	S1	0.0000
10	-0.6017	-5.014	17	S1	0.0000
11	-0.6017	-5.014	14	S1	0.0000
12	-0.6047	-5.039	15	S1	0.0000
13	-0.6047	-5.039	16	S1	0.0000
14	-0.6047	-5.039	16	S1	0.0000
15	-0.6017	-5.014	17	S1	0.0000
16	-0.6017	-5.014	20	S1	0.0000
17	-0.6047	-5.039	21	S1	0.0000
18	-0.6047	-5.039	22	S1	0.0000
19	-0.6047	-5.039	22	S1	0.0000
20	-0.6017	-5.014	23	S1	0.0000
21	-0.5994	-4.995	26	S1	0.0000
22	-0.6017	-5.014	27	S1	0.0000
23	-0.6017	-5.014	28	S1	0.0000
24	-0.6017	-5.014	28	S1	0.0000
25	-0.5994	-4.995	29	S1	0.0000

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C:\Program Files\StructurePoint\spMats\Examples\example1.ma8

Page 30

C4b - ELEMENT BOTTOM MOMENT ENVELOPES:

=====

Units --> Moment (kip-ft/ft), Angle (Deg)

Elem	Node	Dir	Ld	Comb.	M(xx)	M(yy)	M(xy)	M(r1)	M(r2)	Angle	M(ux uy)
1	8	X		U1	-11.64	-11.64	6.00	-5.65	-17.64	45.0	-17.64
		Y		U1	-11.64	-11.64	6.00	-5.65	-17.64	45.0	-17.64
2		X		U1	-12.50	0.41	4.10	1.60	-13.69	73.8	-16.60
		Y		U1	-12.50	0.41	4.10	1.60	-13.69	73.8	-3.69
7		X		U1	0.41	-12.50	4.10	1.60	-13.69	16.2	-3.69
		Y		U1	0.41	-12.50	4.10	1.60	-13.69	16.2	-16.60
1		X		U1	0.70	0.70	2.21	2.91	-1.51	45.0	-1.51
		Y		U1	0.70	0.70	2.21	2.91	-1.51	45.0	-1.51
2	9	X		U1	-33.19	-6.87	5.57	-5.74	-34.32	78.5	-38.76
		Y		U1	-33.19	-6.87	5.57	-5.74	-34.32	78.5	-12.44
3		X		U1	-24.45	-0.57	1.73	-0.44	-24.58	85.9	-26.19
		Y		U1	-24.45	-0.57	1.73	-0.44	-24.58	85.9	-2.30
8		X		U1	-11.99	-11.70	7.42	-4.43	-19.26	45.6	-19.41
		Y		U1	-11.99	-11.70	7.42	-4.43	-19.26	45.6	-19.11
2		X		U1	-13.74	0.22	3.58	1.09	-14.61	76.4	-17.33
		Y		U1	-13.74	0.22	3.58	1.09	-14.61	76.4	-3.36
3	10	X		U1	-33.93	-6.99	-3.13	-6.63	-34.29	-83.5	-37.06
		Y		U1	-33.93	-6.99	-3.13	-6.63	-34.29	-83.5	-10.12
4		X		U1	-25.80	-0.77	-3.13	-0.38	-26.18	-83.0	-28.93
		Y		U1	-25.80	-0.77	-3.13	-0.38	-26.18	-83.0	-3.90
9		X		U1	-33.93	-6.99	3.13	-6.63	-34.29	83.5	-37.06
		Y		U1	-33.93	-6.99	3.13	-6.63	-34.29	83.5	-10.12
3		X		U1	-25.80	-0.77	3.13	-0.38	-26.18	83.0	-28.93
		Y		U1	-25.80	-0.77	3.13	-0.38	-26.18	83.0	-3.90
4	11	X		U1	-11.99	-11.70	-7.42	-4.43	-19.26	-45.6	-19.41
		Y		U1	-11.99	-11.70	-7.42	-4.43	-19.26	-45.6	-19.11
5		X		U1	-13.74	0.22	-3.58	1.09	-14.61	-76.4	-17.33
		Y		U1	-13.74	0.22	-3.58	1.09	-14.61	-76.4	-3.36
10		X		U1	-33.19	-6.87	-5.57	-5.74	-34.32	-78.5	-38.76
		Y		U1	-33.19	-6.87	-5.57	-5.74	-34.32	-78.5	-12.44
4		X		U1	-24.45	-0.57	-1.73	-0.44	-24.58	-85.9	-26.19
		Y		U1	-24.45	-0.57	-1.73	-0.44	-24.58	-85.9	-2.30
5	12	X		U1	0.41	-12.50	-4.10	1.60	-13.69	-16.2	-3.69
		Y		U1	0.41	-12.50	-4.10	1.60	-13.69	-16.2	-16.60
6		X		U1	0.70	0.70	-2.21	2.91	-1.51	-45.0	-1.51
		Y		U1	0.70	0.70	-2.21	2.91	-1.51	-45.0	-1.51
11		X		U1	-11.64	-11.64	-6.00	-5.65	-17.64	-45.0	-17.64
		Y		U1	-11.64	-11.64	-6.00	-5.65	-17.64	-45.0	-17.64
5		X		U1	-12.50	0.41	-4.10	1.60	-13.69	-73.8	-16.60
		Y		U1	-12.50	0.41	-4.10	1.60	-13.69	-73.8	-3.69
6	14	X		U1	-6.87	-33.19	5.57	-5.74	-34.32	11.5	-12.44
		Y		U1	-6.87	-33.19	5.57	-5.74	-34.32	11.5	-38.76
8		X		U1	-11.70	-11.99	7.42	-4.43	-19.26	44.4	-19.11
		Y		U1	-11.70	-11.99	7.42	-4.43	-19.26	44.4	-19.41
13		X		U1	-0.57	-24.45	1.73	-0.44	-24.58	4.1	-2.30
		Y		U1	-0.57	-24.45	1.73	-0.44	-24.58	4.1	-26.19
7		X		U1	0.22	-13.74	3.58	1.09	-14.61	13.6	-3.36
		Y		U1	0.22	-13.74	3.58	1.09	-14.61	13.6	-17.33
7	15	X		U1	-54.43	-54.43	2.48	-51.95	-56.91	45.0	-56.91
		Y		U1	-54.43	-54.43	2.48	-51.95	-56.91	45.0	-56.91
9		X		U1	-33.04	-5.90	4.57	-5.15	-33.79	80.7	-37.61
		Y		U1	-33.04	-5.90	4.57	-5.15	-33.79	80.7	-10.47
14		X		U1	-5.90	-33.04	4.57	-5.15	-33.79	9.3	-10.47
		Y		U1	-5.90	-33.04	4.57	-5.15	-33.79	9.3	-37.61
8		X		U1	-12.05	-12.05	6.66	-5.38	-18.71	45.0	-18.71
		Y		U1	-12.05	-12.05	6.66	-5.38	-18.71	45.0	-18.71

C4b - ELEMENT BOTTOM MOMENT ENVELOPES:

=====

Units --> Moment (kip-ft/ft), Angle (Deg)

Elem	Node	Dir	Ld	Comb.	M(xx)	M(yy)	M(xy)	M(r1)	M(r2)	Angle	M(ux uy)
8	16	X		U1	-53.02	-54.22	-5.22	-48.37	-58.88	-41.7	-58.24
		Y		U1	-53.02	-54.22	-5.22	-48.37	-58.88	-41.7	-59.44
	10	X		U1	-33.78	-6.01	-5.22	-5.06	-34.73	-79.7	-39.00
		Y		U1	-33.78	-6.01	-5.22	-5.06	-34.73	-79.7	-11.23
	15	X		U1	-53.02	-54.22	5.22	-48.37	-58.88	41.7	-58.24
		Y		U1	-53.02	-54.22	5.22	-48.37	-58.88	41.7	-59.44
9	9	X		U1	-33.78	-6.01	5.22	-5.06	-34.73	79.7	-39.00
		Y		U1	-33.78	-6.01	5.22	-5.06	-34.73	79.7	-11.23
	17	X		U1	-5.90	-33.04	-4.57	-5.15	-33.79	-9.3	-10.47
		Y		U1	-5.90	-33.04	-4.57	-5.15	-33.79	-9.3	-17.61
	11	X		U1	-12.05	-12.05	-6.66	-5.38	-18.71	-45.0	-18.71
		Y		U1	-12.05	-12.05	-6.66	-5.38	-18.71	-45.0	-18.71
16	X		U1	-54.43	-54.43	-2.48	-51.95	-56.91	-45.0	-56.91	
	Y		U1	-54.43	-54.43	-2.48	-51.95	-56.91	-45.0	-56.91	
10	10	X		U1	-33.04	-5.90	-4.57	-5.15	-33.79	-80.7	-37.61
		Y		U1	-33.04	-5.90	-4.57	-5.15	-33.79	-80.7	-10.47
	18	X		U1	-0.57	-24.45	-1.73	-0.44	-24.58	-4.1	-2.30
		Y		U1	-0.57	-24.45	-1.73	-0.44	-24.58	-4.1	-26.19
	12	X		U1	0.22	-13.74	-3.58	1.09	-14.61	-13.6	-3.36
		Y		U1	0.22	-13.74	-3.58	1.09	-14.61	-13.6	-17.33
11	17	X		U1	-6.87	-33.19	-5.57	-5.74	-34.32	-11.5	-12.44
		Y		U1	-6.87	-33.19	-5.57	-5.74	-34.32	-11.5	-38.76
	11	X		U1	-11.70	-11.99	-7.42	-4.43	-19.26	-44.4	-19.11
		Y		U1	-11.70	-11.99	-7.42	-4.43	-19.26	-44.4	-19.41
	20	X		U1	-6.99	-33.93	-3.13	-6.63	-34.29	-6.5	-10.12
		Y		U1	-6.99	-33.93	-3.13	-6.63	-34.29	-6.5	-37.06
12	14	X		U1	-6.99	-33.93	3.13	-6.63	-34.29	6.5	-10.12
		Y		U1	-6.99	-33.93	3.13	-6.63	-34.29	6.5	-37.06
	19	X		U1	-0.77	-25.80	-3.13	-0.38	-26.18	-7.0	-3.90
		Y		U1	-0.77	-25.80	-3.13	-0.38	-26.18	-7.0	-28.93
	13	X		U1	-0.77	-25.80	3.13	-0.38	-26.18	7.0	-3.90
		Y		U1	-0.77	-25.80	3.13	-0.38	-26.18	7.0	-28.93
13	21	X		U1	-54.22	-53.02	-5.22	-48.37	-58.88	-48.3	-59.44
		Y		U1	-54.22	-53.02	-5.22	-48.37	-58.88	-48.3	-58.24
	15	X		U1	-54.22	-53.02	5.22	-48.37	-58.88	48.3	-59.44
		Y		U1	-54.22	-53.02	5.22	-48.37	-58.88	48.3	-58.24
	20	X		U1	-6.01	-33.78	-5.22	-5.06	-34.73	-10.3	-11.23
		Y		U1	-6.01	-33.78	-5.22	-5.06	-34.73	-10.3	-39.00
14	14	X		U1	-6.01	-33.78	5.22	-5.06	-34.73	10.3	-11.23
		Y		U1	-6.01	-33.78	5.22	-5.06	-34.73	10.3	-39.00
	22	X		U1	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	-52.81
		Y		U1	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	-52.81
	16	X		U1	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	-52.81
		Y		U1	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	-52.81
15	21	X		U1	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	-52.81
		Y		U1	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	-52.81
	15	X		U1	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	-52.81
		Y		U1	-52.81	-52.81	-0.00	-52.81	-52.81	0.0	-52.81
	23	X		U1	-6.01	-33.78	5.22	-5.06	-34.73	10.3	-11.23
		Y		U1	-6.01	-33.78	5.22	-5.06	-34.73	10.3	-39.00
14	17	X		U1	-6.01	-33.78	-5.22	-5.06	-34.73	-10.3	-11.23
		Y		U1	-6.01	-33.78	-5.22	-5.06	-34.73	-10.3	-39.00
	22	X		U1	-54.22	-53.02	5.22	-48.37	-58.88	48.3	-59.44
		Y		U1	-54.22	-53.02	5.22	-48.37	-58.88	48.3	-58.24
	16	X		U1	-54.22	-53.02	-5.22	-48.37	-58.88	-48.3	-59.44
		Y		U1	-54.22	-53.02	-5.22	-48.37	-58.88	-48.3	-58.24
15	24	X		U1	-0.77	-25.80	3.13	-0.38	-26.18	7.0	-3.90
		Y		U1	-0.77	-25.80	3.13	-0.38	-26.18	7.0	-28.93
	18	X		U1	-0.77	-25.80	-3.13	-0.38	-26.18	-7.0	-3.90
		Y		U1	-0.77	-25.80	-3.13	-0.38	-26.18	-7.0	-28.93
	23	X		U1	-6.99	-33.93	3.13	-6.63	-34.29	6.5	-10.12
		Y		U1	-6.99	-33.93	3.13	-6.63	-34.29	6.5	-37.06
17	X		U1	-6.99	-33.93	-3.13	-6.63	-34.29	-6.5	-10.12	
	Y		U1	-6.99	-33.93	-3.13	-6.63	-34.29	-6.5	-37.06	

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Project: spMats Manual, Example 1

C:\Program Files\StructurePoint\spMats\Examples\example1.ma8

Page 32

C4b - ELEMENT BOTTOM MOMENT ENVELOPES:

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Units --> Moment (kip-ft/ft), Angle (Deg)

Elem	Node	Dir	Ld	Comb.	M(xx)	M(yy)	M(xy)	M(r1)	M(r2)	Angle	M(ux uy)
16	26	X		U1	-11.70	-11.99	-7.42	-4.43	-19.26	-44.4	-19.11
		Y		U1	-11.70	-11.99	-7.42	-4.43	-19.26	-44.4	-19.41
	20	X		U1	-6.87	-33.19	-5.57	-5.74	-34.32	-11.5	-12.44
		Y		U1	-6.87	-33.19	-5.57	-5.74	-34.32	-11.5	-38.76
	25	X		U1	0.22	-13.74	-3.58	1.09	-14.61	-13.6	-3.36
		Y		U1	0.22	-13.74	-3.58	1.09	-14.61	-13.6	-17.33
	19	X		U1	-0.57	-24.45	-1.73	-0.44	-24.58	-4.1	-2.30
		Y		U1	-0.57	-24.45	-1.73	-0.44	-24.58	-4.1	-26.19
17	27	X		U1	-33.04	-5.90	-4.57	-5.15	-33.79	-80.7	-37.61
		Y		U1	-33.04	-5.90	-4.57	-5.15	-33.79	-80.7	-10.47
	21	X		U1	-54.43	-54.43	-2.48	-51.95	-56.91	-45.0	-56.91
		Y		U1	-54.43	-54.43	-2.48	-51.95	-56.91	-45.0	-56.91
	26	X		U1	-12.05	-12.05	-6.66	-5.38	-18.71	-45.0	-18.71
		Y		U1	-12.05	-12.05	-6.66	-5.38	-18.71	-45.0	-18.71
	20	X		U1	-5.90	-33.04	-4.57	-5.15	-33.79	-9.3	-10.47
		Y		U1	-5.90	-33.04	-4.57	-5.15	-33.79	-9.3	-37.61
18	28	X		U1	-33.78	-6.01	5.22	-5.06	-34.73	79.7	-39.00
		Y		U1	-33.78	-6.01	5.22	-5.06	-34.73	79.7	-11.23
	22	X		U1	-53.02	-54.22	5.22	-48.37	-58.88	41.7	-58.24
		Y		U1	-53.02	-54.22	5.22	-48.37	-58.88	41.7	-59.44
	27	X		U1	-33.78	-6.01	-5.22	-5.06	-34.73	-79.7	-39.00
		Y		U1	-33.78	-6.01	-5.22	-5.06	-34.73	-79.7	-11.23
	21	X		U1	-53.02	-54.22	-5.22	-48.37	-58.88	-41.7	-58.24
		Y		U1	-53.02	-54.22	-5.22	-48.37	-58.88	-41.7	-59.44
19	29	X		U1	-12.05	-12.05	6.66	-5.38	-18.71	45.0	-18.71
		Y		U1	-12.05	-12.05	6.66	-5.38	-18.71	45.0	-18.71
	23	X		U1	-5.90	-33.04	4.57	-5.15	-33.79	9.3	-10.47
		Y		U1	-5.90	-33.04	4.57	-5.15	-33.79	9.3	-37.61
	28	X		U1	-33.04	-5.90	4.57	-5.15	-33.79	80.7	-37.61
		Y		U1	-33.04	-5.90	4.57	-5.15	-33.79	80.7	-10.47
	22	X		U1	-54.43	-54.43	2.48	-51.95	-56.91	45.0	-56.91
		Y		U1	-54.43	-54.43	2.48	-51.95	-56.91	45.0	-56.91
20	30	X		U1	0.22	-13.74	3.58	1.09	-14.61	13.6	-3.36
		Y		U1	0.22	-13.74	3.58	1.09	-14.61	13.6	-17.33
	24	X		U1	-0.57	-24.45	1.73	-0.44	-24.58	4.1	-2.30
		Y		U1	-0.57	-24.45	1.73	-0.44	-24.58	4.1	-26.19
	29	X		U1	-11.70	-11.99	7.42	-4.43	-19.26	44.4	-19.11
		Y		U1	-11.70	-11.99	7.42	-4.43	-19.26	44.4	-19.41
	23	X		U1	-6.87	-33.19	5.57	-5.74	-34.32	11.5	-12.44
		Y		U1	-6.87	-33.19	5.57	-5.74	-34.32	11.5	-38.76
21	32	X		U1	-12.50	0.41	-4.10	1.60	-13.69	-73.8	-16.60
		Y		U1	-12.50	0.41	-4.10	1.60	-13.69	-73.8	-3.69
	26	X		U1	-11.64	-11.64	-6.00	-5.65	-17.64	-45.0	-17.64
		Y		U1	-11.64	-11.64	-6.00	-5.65	-17.64	-45.0	-17.64
	31	X		U1	0.70	0.70	-2.21	2.91	-1.51	-45.0	-1.51
		Y		U1	0.70	0.70	-2.21	2.91	-1.51	-45.0	-1.51
	25	X		U1	0.41	-12.50	-4.10	1.60	-13.69	-16.2	-3.69
		Y		U1	0.41	-12.50	-4.10	1.60	-13.69	-16.2	-16.60
22	33	X		U1	-24.45	-0.57	-1.73	-0.44	-24.58	-85.9	-26.19
		Y		U1	-24.45	-0.57	-1.73	-0.44	-24.58	-85.9	-2.30
	27	X		U1	-33.19	-6.87	-5.57	-5.74	-34.32	-78.5	-38.76
		Y		U1	-33.19	-6.87	-5.57	-5.74	-34.32	-78.5	-12.44
	32	X		U1	-13.74	0.22	-3.58	1.09	-14.61	-76.4	-17.33
		Y		U1	-13.74	0.22	-3.58	1.09	-14.61	-76.4	-3.36
	26	X		U1	-11.99	-11.70	-7.42	-4.43	-19.26	-45.6	-19.41
		Y		U1	-11.99	-11.70	-7.42	-4.43	-19.26	-45.6	-19.11
23	34	X		U1	-25.80	-0.77	3.13	-0.38	-26.18	83.0	-28.93
		Y		U1	-25.80	-0.77	3.13	-0.38	-26.18	83.0	-3.90
	28	X		U1	-33.93	-6.99	3.13	-6.63	-34.29	83.5	-37.06
		Y		U1	-33.93	-6.99	3.13	-6.63	-34.29	83.5	-10.12
	33	X		U1	-25.80	-0.77	-3.13	-0.38	-26.18	-83.0	-28.93
		Y		U1	-25.80	-0.77	-3.13	-0.38	-26.18	-83.0	-3.90
	27	X		U1	-33.93	-6.99	-3.13	-6.63	-34.29	-83.5	-37.06
		Y		U1	-33.93	-6.99	-3.13	-6.63	-34.29	-83.5	-10.12

C4b - ELEMENT BOTTOM MOMENT ENVELOPES:

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Units --> Moment (kip-ft/ft), Angle (Deg)

Elem	Node	Dir	Ld	Comb.	M(xx)	M(yy)	M(xy)	M(r1)	M(r2)	Angle	M(ux uy)
24	35	X		U1	-13.74	0.22	3.58	1.09	-14.61	76.4	-17.33
		Y		U1	-13.74	0.22	3.58	1.09	-14.61	76.4	-3.36
	29	X		U1	-11.99	-11.70	7.42	-4.43	-19.26	45.6	-19.41
		Y		U1	-11.99	-11.70	7.42	-4.43	-19.26	45.6	-19.11
	34	X		U1	-24.45	-0.57	1.73	-0.44	-24.58	85.9	-26.19
		Y		U1	-24.45	-0.57	1.73	-0.44	-24.58	85.9	-2.30
	28	X		U1	-33.19	-6.87	5.57	-5.74	-34.32	78.5	-38.76
		Y		U1	-33.19	-6.87	5.57	-5.74	-34.32	78.5	-12.44
25	36	X		U1	0.70	0.70	2.21	2.91	-1.51	45.0	-1.51
		Y		U1	0.70	0.70	2.21	2.91	-1.51	45.0	-1.51
	30	X		U1	0.41	-12.50	4.10	1.60	-13.69	16.2	-3.69
		Y		U1	0.41	-12.50	4.10	1.60	-13.69	16.2	-16.60
	35	X		U1	-12.50	0.41	4.10	1.60	-13.69	73.8	-16.60
		Y		U1	-12.50	0.41	4.10	1.60	-13.69	73.8	-3.69
	29	X		U1	-11.64	-11.64	6.00	-5.65	-17.64	45.0	-17.64
		Y		U1	-11.64	-11.64	6.00	-5.65	-17.64	45.0	-17.64

C5a - ELEMENT TOP DESIGN MOMENT AND REINFORCEMENT:

=====

Units --> Moment (kip-ft/ft), As (in²/ft)

Flags --> [m] Minimum controls. [x] Exceeds maximum. [*] Cannot compute.

Elem	Node	Ld	Comb.	Max. M(ux)	As(xx)	Node	Ld	Comb.	Max. M(uy)	As(yy)
1	1		U1	2.91	0.324m	1		U1	2.91	0.324m
2	0		-	0.00	0.324m	2		U1	1.16	0.324m
3	0		-	0.00	0.324m	0		-	0.00	0.324m
4	0		-	0.00	0.324m	5		U1	1.16	0.324m
5	6		U1	2.91	0.324m	6		U1	2.91	0.324m
6	7		U1	1.16	0.324m	0		-	0.00	0.324m
7	0		-	0.00	0.324m	0		-	0.00	0.324m
8	0		-	0.00	0.324m	0		-	0.00	0.324m
9	0		-	0.00	0.324m	0		-	0.00	0.324m
10	12		U1	1.16	0.324m	0		-	0.00	0.324m
11	0		-	0.00	0.324m	0		-	0.00	0.324m
12	0		-	0.00	0.324m	0		-	0.00	0.324m
13	0		-	0.00	0.324m	0		-	0.00	0.324m
14	0		-	0.00	0.324m	0		-	0.00	0.324m
15	0		-	0.00	0.324m	0		-	0.00	0.324m
16	25		U1	1.16	0.324m	0		-	0.00	0.324m
17	0		-	0.00	0.324m	0		-	0.00	0.324m
18	0		-	0.00	0.324m	0		-	0.00	0.324m
19	0		-	0.00	0.324m	0		-	0.00	0.324m
20	30		U1	1.16	0.324m	0		-	0.00	0.324m
21	31		U1	2.91	0.324m	31		U1	2.91	0.324m
22	0		-	0.00	0.324m	32		U1	1.16	0.324m
23	0		-	0.00	0.324m	0		-	0.00	0.324m
24	0		-	0.00	0.324m	35		U1	1.16	0.324m
25	36		U1	2.91	0.324m	36		U1	2.91	0.324m

C5b - ELEMENT BOTTOM DESIGN MOMENT AND REINFORCEMENT:

=====

Units --> Moment (kip-ft/ft), As (in²/ft)

Flags --> [m] Minimum controls. [x] Exceeds maximum. [*] Cannot compute.

Elem	Node	Ld	Comb.	Max. M(ux)	As(xx)	Node	Ld	Comb.	Max. M(uy)	As(yy)
1	8		U1	-17.64	0.324m	8		U1	-17.64	0.324m
2	9		U1	-38.76	0.326	8		U1	-19.11	0.324m
3	10		U1	-37.06	0.324m	10		U1	-10.12	0.324m
4	10		U1	-38.76	0.326	11		U1	-19.11	0.324m
5	11		U1	-17.64	0.324m	11		U1	-17.64	0.324m
6	8		U1	-19.11	0.324m	14		U1	-38.76	0.332
7	15		U1	-56.91	0.481	15		U1	-56.91	0.491
8	16		U1	-58.24	0.493	16		U1	-59.44	0.513
9	16		U1	-56.91	0.481	16		U1	-56.91	0.491
10	11		U1	-19.11	0.324m	17		U1	-38.76	0.332
11	20		U1	-10.12	0.324m	20		U1	-37.06	0.324m
12	21		U1	-59.44	0.503	21		U1	-58.24	0.502
13	15		U1	-52.81	0.446	15		U1	-52.81	0.455
14	16		U1	-59.44	0.503	16		U1	-58.24	0.502
15	17		U1	-10.12	0.324m	17		U1	-37.06	0.324m
16	26		U1	-19.11	0.324m	20		U1	-38.76	0.332
17	21		U1	-56.91	0.481	21		U1	-56.91	0.491
18	21		U1	-58.24	0.493	21		U1	-59.44	0.513
19	22		U1	-56.91	0.481	22		U1	-56.91	0.491
20	29		U1	-19.11	0.324m	23		U1	-38.76	0.332
21	26		U1	-17.64	0.324m	26		U1	-17.64	0.324m
22	27		U1	-38.76	0.326	26		U1	-19.11	0.324m
23	27		U1	-37.06	0.324m	27		U1	-10.12	0.324m
24	28		U1	-38.76	0.326	29		U1	-19.11	0.324m
25	29		U1	-17.64	0.324m	29		U1	-17.64	0.324m