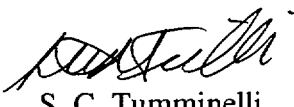


NON-PROPRIETARY CALCULATIONS

Book 4 of 8

**Attachments to PG&E Letter DIL-01-004
Dated December 21, 2001**




 Originator: S. C. Tumminelli
 Date: May 25, 2001
 Revised: November 30, 2001

Appendix SN-1

Maximum and Minimum Pad Stresses

This Appendix presents maximum and minimum stress data for the pad for all 19 load cases analyzed for the soft rock, hard rock and very hard rock models. The first set of data is for the stresses in the X and Z directions. The input file is provided followed by the two output files for the soft and hard rock models. This is then followed by the input and output files for the very hard rock analyses.

The second set of data is for maximum and minimum principal stresses. The input file is provided followed by the two output files for the soft and hard rock models. This is then followed by the input and output files for the very hard rock analyses.

Appendix Contents

ANSYS input file for pad X and Z stresses for soft and hard rock models	sheet 2
ANSYS output file for pad X and Z stresses for the soft rock model	sheet 29
ANSYS output file for pad X and Z stresses for the hard rock model	sheet 61
ANSYS input file for pad X and Z stresses for the very hard rock model	sheet 93
ANSYS output file for pad X and Z stresses for the very hard rock model	sheet 107
ANSYS input file for pad principal stresses for soft and hard rock models	sheet 139
ANSYS output file for pad principal stresses for the soft rock model	sheet 157
ANSYS output file for pad principal stresses for the hard rock model	sheet 179
ANSYS input file for pad principal stresses for the very hard rock model	sheet 200
ANSYS output file for pad principal stresses for the very hard rock model	sheet 209



Below is the ANSYS input file that scans the databases for the max/min X and Z stresses for the soft and hard rock models. This file creates two output files in one execution.

```

/COM
/OUTPUT,padsoftstress.out
/COM
/COM      STRESS DATA SORTED AND PRINTED BY LOAD STEP
/COM
/COM
/COM
/COM      THIS ROUTINE SORTS AND PRINTS STRESS DATA BY LOAD STEP
/COM      FIRST SX AND THEN SZ
/COM
/com      SOFT ROCK RESULTS
/COM
/file,dcslabs2
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 1 =====
/COM
SET,1
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM

```



```
/COM =====  
/COM ===== MINIMUM VALUES OF SZ =====  
/COM  
NSORT, S, Z, 1, 0, 2, SEL  
PRNSOL, S  
/COM  
/COM =====  
/COM =====  
/COM =====  
/COM ===== SET 2 =====  
/COM  
SET, 2  
ESEL, TYPE, 1  
NELEM  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SX =====  
/COM  
NSORT, S, X, 0, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SX =====  
/COM  
NSORT, S, X, 1, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SZ =====  
/COM  
NSORT, S, Z, 0, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SZ =====  
/COM  
NSORT, S, Z, 1, 0, 2, SEL  
PRNSOL, S  
/COM  
/COM =====  
/COM =====  
/COM =====  
/COM ===== SET 3 =====  
/COM  
SET, 3  
ESEL, TYPE, 1  
NELEM  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SX =====
```

Appendix SN-1 to Calculation PGE-009-CALC-003

```
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NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 4 =====
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SET,4
ESEL,TYPE,1
NELEM
/COM
/COM =====
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NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
```

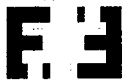


Appendix SN-1 to Calculation PGE-009-CALC-003

```
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 5 =====
/COM
SET, 5
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 6 =====
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SET, 6
ESEL, TYPE, 1
NELEM
/COM
```

Appendix SN-1 to Calculation PGE-009-CALC-003

```
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/COM  
NSORT,S,X,0,0,2,SEL  
PRNSOL,S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SX =====  
/COM  
NSORT,S,X,1,0,2,SEL  
PRNSOL,S  
NUSORT  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SZ =====  
/COM  
NSORT,S,Z,0,0,2,SEL  
PRNSOL,S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SZ =====  
/COM  
NSORT,S,Z,1,0,2,SEL  
PRNSOL,S  
/COM  
/COM =====  
/COM =====  
/COM =====  
/COM ===== SET 7 =====  
/COM  
SET,7  
ESEL,TYPE,1  
NELEM  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SX =====  
/COM  
NSORT,S,X,0,0,2,SEL  
PRNSOL,S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SX =====  
/COM  
NSORT,S,X,1,0,2,SEL  
PRNSOL,S  
NUSORT  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SZ =====  
/COM
```



```

NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 8 =====
/COM
SET, 8
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 9 =====
/COM
SET, 9
ESEL, TYPE, 1

```




Appendix SN-1 to Calculation PGE-009-CALC-003

```
NELEM
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/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 10 =====
/COM
SET, 10
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
```



ENERCON SERVICES, INC.

Appendix SN-1 to Calculation PGE-009-CALC-003

```

/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 11 =====
/COM
SET,11
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 12 =====
/COM

```

Appendix SN-1 to Calculation PGE-009-CALC-003

```
SET, 12
ESEL, TYPE, 1
NELEM
/COM
/COM =====
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PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 13 =====
/COM
SET, 13
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 14 =====
/COM
SET, 14
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
```

Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM ===== SET 15 =====
/COM
SET, 15
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 16 =====
/COM
SET, 16
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
```



ENERCON
SERVICES, INC.

Appendix SN-1 to Calculation PGE-009-CALC-003

```

PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 17 =====
/COM
SET, 17
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
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NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM =====  
/COM =====  
/COM ===== SET 18 =====  
/COM  
SET, 18  
ESEL, TYPE, 1  
NELEM  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SX =====  
/COM  
NSORT, S, X, 0, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SX =====  
/COM  
NSORT, S, X, 1, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SZ =====  
/COM  
NSORT, S, Z, 0, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SZ =====  
/COM  
NSORT, S, Z, 1, 0, 2, SEL  
PRNSOL, S  
/COM  
/COM =====  
/COM =====  
/COM =====  
/COM ===== SET 19 =====  
/COM  
SET, 19  
ESEL, TYPE, 1  
NELEM  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SX =====  
/COM  
NSORT, S, X, 0, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SX =====
```



```

/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM =====
/COM =====
/COM =====
/COM
EALL
NALL
FINI
/com
/com HARD ROCK RESULTS
/COM
/OUTPUT,padhardstress.out
/file,dcslabh2
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 1 =====
/COM
SET,1
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM

```




Appendix SN-1 to Calculation PGE-009-CALC-003

```

/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 2 =====
/COM
SET, 2
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM

```



```
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 3 =====
/COM
SET, 3
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 4 =====
/COM
SET, 4
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 5 =====
/COM
SET,5
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 6 =====
/COM
SET, 6
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 7 =====
/COM
SET, 7
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 8 =====
/COM
SET, 8
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
```



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Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 9 =====
/COM
SET, 9
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 10 =====
/COM
SET, 10
ESEL, TYPE, 1
NELEM
/COM
/COM =====
```



```

/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 11 =====
/COM
SET, 11
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 12 =====
/COM
SET, 12
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 13 =====
/COM
SET, 13
ESEL, TYPE, 1
NELEM
```




```

/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 14 =====
/COM
SET, 14
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====

```



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Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 15 =====
/COM
SET, 15
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM =====
/COM ===== SET 16 =====
/COM
SET, 16
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```

ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 17 =====
/COM
SET, 17
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM

```



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Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM =====  
/COM ===== MAXIMUM VALUES OF SZ =====  
/COM  
NSORT, S, Z, 0, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SZ =====  
/COM  
NSORT, S, Z, 1, 0, 2, SEL  
PRNSOL, S  
/COM  
/COM =====  
/COM =====  
/COM =====  
/COM ===== SET 18 =====  
/COM  
SET, 18  
ESEL, TYPE, 1  
NELEM  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SX =====  
/COM  
NSORT, S, X, 0, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SX =====  
/COM  
NSORT, S, X, 1, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SZ =====  
/COM  
NSORT, S, Z, 0, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SZ =====  
/COM  
NSORT, S, Z, 1, 0, 2, SEL  
PRNSOL, S  
/COM  
/COM =====  
/COM =====  
/COM =====  
/COM ===== SET 19 =====
```

Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
SET, 19
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM =====          MAXIMUM VALUES OF SX          =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM =====          MINIMUM VALUES OF SX          =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM =====          MAXIMUM VALUES OF SZ          =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM =====          MINIMUM VALUES OF SZ          =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM =====
EALL
NALL
FINI
/OUTPUT
/EXIT
```



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Appendix SN-1 to Calculation PGE-009-CALC-003

Below is the ANSYS output file for pad X and Z stresses for the soft rock analyses.

STRESS DATA SORTED AND PRINTED BY LOAD STEP

THIS ROUTINE SORTS AND PRINTS STRESS DATA BY LOAD STEP
FIRST SX AND THEN SZ

SOFT ROCK RESULTS

CURRENT JOBNAME REDEFINED AS dcslabs2

RESUME ANSYS DATA FROM FILE NAME=dcslabs2.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Soft Rock
ANALYSIS TYPE = STATIC (STEADY-STATE)

NUMBER OF ELEMENT TYPES = 6

15348 ELEMENTS CURRENTLY SELECTED.	MAX ELEMENT NUMBER =	33177
17051 NODES CURRENTLY SELECTED.	MAX NODE NUMBER =	17051
259 KEYPOINTS CURRENTLY SELECTED.	MAX KEYPOINT NUMBER =	259
250 LINES CURRENTLY SELECTED.	MAX LINE NUMBER =	396
181 AREAS CURRENTLY SELECTED.	MAX AREA NUMBER =	295
70 VOLUMES CURRENTLY SELECTED.	MAX VOL. NUMBER =	70

11 COMPONENTS CURRENTLY DEFINED

MAXIMUM LINEAR PROPERTY NUMBER	=	5
MAXIMUM REAL CONSTANT SET NUMBER	=	6
ACTIVE COORDINATE SYSTEM	=	0 (CARTESIAN)
MAXIMUM CONSTRAINT EQUATION NUMBER	=	4620
NUMBER OF SPECIFIED CONSTRAINTS	=	2193
NUMBER OF NODAL LOADS	=	2160

INITIAL JOBNAME = dcslabs2

CURRENT JOBNAME = dcslabs2

PRINT HEADER

DO NOT PRINT SUBTITLE(S)
DO NOT PRINT LOAD STEP ID
DO NOT PRINT NOTE LINE(S)
PRINT COLUMN HEADER LABELS
DO NOT PRINT REPORT TOTALS

***** ANSYS - ENGINEERING ANALYSIS SYSTEM RELEASE 5.7 *****

ANSYS/Structural U

00150104 VERSION=INTEL NT 17:26:16 MAY 17, 2001 CP= 2.514

Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Soft Rock



Appendix SN-1 to Calculation PGE-009-CALC-003

***** ANSYS RESULTS INTERPRETATION (POST1) *****

ENTER /SHOW,DEVICE-NAME TO ENABLE GRAPHIC DISPLAY
 ENTER FINISH TO LEAVE POST1

*** NOTE *** CP= 2.514 TIME= 17:26:16
 Reading results into the database (SET command) will update the current displacement and force boundary conditions in the database with the values from the results file for that load set. Note that any subsequent solutions will use these values unless action is taken to either SAVE the current values or not overwrite them (/EXIT,NOSAVE).

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

===== SET 1 =====

USE LOAD STEP 1 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 4
 TIME/FREQUENCY= 1.0000
 TITLE= Pad, Gravity, 20 Casks, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13416	32.943	1.2326	9.1869	0.60078E-02-0.90104		-0.56332
5392	32.943	1.2326	9.1869	-0.60106E-02-0.90104		0.56332



NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5606	-63.016	-99.703	-21.379	30.763	0.87683	2.2790
13630	-63.016	-99.703	-21.379	-30.763	0.87683	-2.2790

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
8294	21.944	-5.3019	23.486	-0.60754	-0.95404	2.4404
270	21.944	-5.3021	23.486	0.60758	-0.95408	-2.4404

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
246	-47.120	-5.8807	-55.217	0.13337	-8.3560	2.8763
8270	-47.120	-5.8807	-55.217	-0.13333	-8.3560	-2.8762

=====
 =====
 =====
 =====
 ===== SET 2 =====



Appendix SN-1 to Calculation PGE-009-CALC-003

USE LOAD STEP 2 SUBSTEP 0 FOR LOAD CASE 0
 SET COMMAND GOT LOAD STEP= 2 SUBSTEP= 1 CUMULATIVE ITERATION= 17
 TIME/FREQUENCY= 2.0000
 TITLE= Pad, HE(1), 20 Casks, 515 Kips North (Z), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7365	45.587	-20.246	-4.9882	3.4740	36.401	-8.3045
15379	45.587	-20.246	-4.9882	-3.4740	36.401	8.3045

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-106.68	-225.36	-71.069	0.33364	-20.765	-5.9442
11085	-106.68	-225.36	-71.069	-0.33363	-20.765	5.9442

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====



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Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7439	-6.3097	-69.922	269.97	18.592	126.96	-110.45
15443	-6.3097	-69.922	269.97	-18.592	126.96	110.45

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-87.445	-222.76	-404.12	62.240	256.01	-172.09
15363	-87.445	-222.76	-404.12	-62.241	256.01	172.09

=====

=====

=====

===== SET 3 =====

=====

USE LOAD STEP 3 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 3 SUBSTEP= 1 CUMULATIVE ITERATION= 26
TIME/FREQUENCY= 3.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 32.93 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13630	144.38	-38.651	5.2802	21.691	128.19	117.84
14342	142.99	-38.717	66.961	21.523	128.14	124.43

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-271.17	-340.12	-409.61	167.66	279.71	-220.31
5603	-245.26	-164.61	-34.792	89.863	140.18	-120.62

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15443	121.23	-97.199	234.90	27.507	111.96	143.72
15446	90.907	-0.73808	227.64	30.682	-1.0353	95.381

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-271.17	-340.12	-409.61	167.66	279.71	-220.31
7351	-130.08	24.722	-322.83	109.22	-16.387	-134.20

=====
 =====
 =====
 =====
 ===== SET 4 =====

USE LOAD STEP 4 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 4 SUBSTEP= 1 CUMULATIVE ITERATION= 30
 TIME/FREQUENCY= 4.0000
 TITLE= Pad, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13630	192.06	-51.744	1.3241	26.782	97.043	102.36
13512	191.54	16.313	15.923	16.792	11.035	95.800

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
------	----	----	----	-----	-----	-----



Appendix SN-1 to Calculation PGE-009-CALC-003

7349	-321.51	-348.00	-378.79	193.84	262.69	-222.92
5603	-303.27	-191.72	-36.412	106.81	114.94	-104.16

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15443	158.69	-100.21	208.72	41.535	100.53	145.04
15446	120.41	5.5694	200.67	44.287	-2.4476	100.65

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-321.51	-348.00	-378.79	193.84	262.69	-222.92
7351	-162.05	33.946	-285.98	132.29	-21.684	-143.03

=====

=====

===== SET 5 =====

=====

USE LOAD STEP 5 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 5 SUBSTEP= 1 CUMULATIVE ITERATION= 34
TIME/FREQUENCY= 5.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.



Appendix SN-1 to Calculation PGE-009-CALC-003

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15364	233.87	-34.442	-78.558	8.9666	60.545	30.938
15363	230.20	-22.656	-137.15	93.207	68.214	-11.771

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-359.49	-329.16	-329.49	207.99	232.38	-217.18
5603	-349.90	-215.16	-37.157	120.55	84.778	-83.099

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15443	191.36	-99.744	175.89	54.453	85.679	141.01
15446	146.76	11.800	167.29	56.831	-3.9056	101.76

NODE SORT REMOVED

=====



Appendix SN-1 to Calculation PGE-009-CALC-003

===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-359.49	-329.16	-329.49	207.99	232.38	-217.18
7351	-190.95	25.113	-239.17	150.53	-23.109	-146.25

===== SET 6 =====

USE LOAD STEP 6 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 6 SUBSTEP= 1 CUMULATIVE ITERATION= 42
TIME/FREQUENCY= 6.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips West (W), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13512	260.71	25.314	-6.8535	26.396	-3.9224	-0.30088
13511	260.70	25.314	-6.8457	26.394	3.9061	0.32200

NODE SORT REMOVED

===== MINIMUM VALUES OF SX =====



SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5603	-404.71	-251.30	-36.860	137.16	-10.453	-10.834
5606	-404.71	-251.30	-36.861	137.16	10.471	10.821

NODE SORT REMOVED

=====
===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6962	-17.398	7.7452	61.873	-5.0827	9.3497	7.2052
3989	-17.402	7.7446	61.866	-5.0837	-9.3504	-7.2039

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-386.31	-205.11	-134.68	200.97	103.83	-160.26
7439	-386.34	-205.12	-134.66	200.98	-103.82	160.26

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=====
=====
===== SET 7 =====

USE LOAD STEP 7 SUBSTEP 0 FOR LOAD CASE 0

Appendix SN-1 to Calculation PGE-009-CALC-003

SET COMMAND GOT LOAD STEP= 7 SUBSTEP= 1 CUMULATIVE ITERATION= 54
 TIME/FREQUENCY= 7.0000
 TITLE= Pad, HE(1), 20 Casks, 206 Kips North (z), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15379	19.520	-10.802	-2.0989	-1.7214	16.563	3.9401
7365	19.520	-10.802	-2.0989	1.7214	16.563	-3.9401

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11085	-44.277	-93.271	-4.4580	-0.32053E-01	-9.4093	2.9723
3061	-44.277	-93.270	-4.4562	0.31846E-01	-9.4096	-2.9729

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



Appendix SN-1 to Calculation PGE-009-CALC-003

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7439	-5.0514	-33.320	129.22	9.7584	62.124	-52.811
15443	-5.0514	-33.320	129.22	-9.7583	62.123	52.812

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15363	-41.036	-103.70	-178.88	-29.173	113.97	76.567
7349	-41.036	-103.70	-178.88	29.173	113.97	-76.566

=====

=====

===== SET 8 =====

=====

USE LOAD STEP 8 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 8 SUBSTEP= 1 CUMULATIVE ITERATION= 63
 TIME/FREQUENCY= 8.0000

TITLE= Pad, HE(1), 20 Casks, 206 Kips West (X), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13512	120.63	11.197	-1.6443	12.927	-1.6582	-0.14253
13511	120.63	11.197	-1.6441	12.927	1.6576	0.14278

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5606	-179.63	-112.93	-17.483	61.300	4.3227	4.8529
5603	-179.63	-112.93	-17.483	61.300	-4.3223	-4.8531

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3989	-5.3228	3.6278	27.853	-1.8844	-4.0212	-3.8953
6962	-5.3229	3.6278	27.853	-1.8844	4.0212	3.8953

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-170.07	-95.463	-60.593	89.495	46.490	-70.857
7439	-170.07	-95.463	-60.592	89.495	-46.490	70.857



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 =====
 =====
 =====
 ===== SET 9 =====

USE LOAD STEP 9 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 9 SUBSTEP= 1 CUMULATIVE ITERATION= 69
 TIME/FREQUENCY= 9.0000

TITLE= Pad, HE(3), 20 Casks, 171.2 Kips North (Z), Max Dn, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13530	61.896	11.494	20.885	-1.6101	-0.55957	-3.0072
5506	61.877	11.505	20.880	1.6268	-0.53888	3.0086

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5603	-117.32	-179.30	-40.047	58.552	62.030	-55.232
13627	-117.31	-179.27	-40.040	-58.540	62.046	55.226

NODE SORT REMOVED

Appendix SN-1 to Calculation PGE-009-CALC-003

=====
 ===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15443	-29.212	6.2267	83.362	-11.158	57.551	20.981
7439	-29.215	6.2302	83.361	11.157	57.552	-20.981

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-75.984	-139.43	-205.66	47.861	129.38	-98.599
15363	-75.981	-139.42	-205.66	-47.858	129.37	98.600

=====
 =====
 =====
 ===== SET 10 =====

USE LOAD STEP 10 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 10 SUBSTEP= 1 CUMULATIVE ITERATION= 73

TIME/FREQUENCY= 10.000

TITLE= Pad, HE(3), 20 Casks, 171.2 Kips West (X), Max Dn, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.



Appendix SN-1 to Calculation PGE-009-CALC-003

=====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15363	82.537	1.1585	-20.960	42.399	5.6770	-15.896
15443	82.537	1.1593	-20.960	42.400	-5.6778	15.895

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5606	-248.43	-248.18	-46.072	100.34	5.5019	7.7016
5603	-248.43	-248.18	-46.072	100.34	-5.5023	-7.7010

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3989	35.065	3.2970	59.601	0.62789	-5.6306	-15.265
6962	35.065	3.2970	59.600	0.62781	5.6308	15.265

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
8270	-91.301	-12.118	-108.35	3.1833	-17.827	-2.1900
11120	-91.301	-12.118	-108.35	3.1833	17.827	2.1900

=====
 =====
 =====
 =====
 ===== SET 11 =====

USE LOAD STEP 11 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 11 SUBSTEP= 1 CUMULATIVE ITERATION= 85

TIME/FREQUENCY= 11.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips North (Z), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 =====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7365	43.565	-16.773	-4.8436	2.9470	33.508	-7.7214
15379	43.565	-16.773	-4.8436	-2.9470	33.508	7.7214

NODE SORT REMOVED

=====
 =====
 ===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2



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Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-93.914	-196.47	-59.679	0.14628	-17.466	-5.8392
11085	-93.914	-196.47	-59.679	-0.14627	-17.466	5.8391

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7439	-6.2630	-67.577	260.53	18.001	122.73	-106.63
15443	-6.2630	-67.577	260.53	-18.001	122.73	106.63

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-80.063	-202.62	-380.65	56.757	239.90	-161.88
15363	-80.064	-202.62	-380.65	-56.757	239.90	161.88

=====

=====

=====

===== SET 12 =====

=====

USE LOAD STEP 12 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 12 SUBSTEP= 1 CUMULATIVE ITERATION= 94

TIME/FREQUENCY= 12.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Soft Rock



Appendix SN-1 to Calculation PGE-009-CALC-003

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14342	136.67	-36.855	57.511	20.733	124.20	117.30
13630	136.32	-36.387	1.0570	20.769	122.71	110.67

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-254.74	-312.44	-383.47	156.83	260.84	-207.18
5603	-229.52	-147.90	-31.465	82.848	131.59	-113.71

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15443	119.23	-94.602	226.62	28.072	107.26	139.67



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15446 88.850 -0.43820 219.78 31.193 -1.1296 93.140

NODE SORT REMOVED

=====

MINIMUM VALUES OF SZ

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-254.74	-312.44	-383.47	156.83	260.84	-207.18
7351	-122.90	22.974	-303.11	102.69	-15.365	-126.55

=====

SET 13

=====

USE LOAD STEP 13 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 13 SUBSTEP= 1 CUMULATIVE ITERATION= 98

TIME/FREQUENCY= 13.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

MAXIMUM VALUES OF SX

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13630	183.34	-49.465	-0.89922	25.765	93.968	96.116
13512	183.17	15.086	12.602	16.818	11.798	90.023



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NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-302.29	-319.28	-353.70	181.45	244.29	-209.55
5603	-283.73	-171.22	-32.928	98.203	108.02	-98.112

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15443	156.03	-97.565	200.56	42.143	95.551	141.07
15446	117.44	5.7945	192.96	44.869	-2.4794	98.636

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-302.29	-319.28	-353.70	181.45	244.29	-209.55
7351	-153.16	30.952	-267.91	124.52	-20.197	-134.94

=====
 ===== SET 14 =====



USE LOAD STEP 14 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 14 SUBSTEP= 1 CUMULATIVE ITERATION= 102
 TIME/FREQUENCY= 14.000
 TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

MAXIMUM VALUES OF SX

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15364	223.18	-33.223	-78.122	8.7936	60.661	28.789
15363	219.79	-21.359	-133.89	90.131	67.439	-11.688

NODE SORT REMOVED

=====

MINIMUM VALUES OF SX

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-338.02	-301.68	-306.76	194.84	215.43	-203.99
5603	-327.21	-191.40	-33.644	110.61	79.881	-78.169

NODE SORT REMOVED

=====

MAXIMUM VALUES OF SZ



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15443	188.24	-97.029	167.48	55.171	80.282	137.09
15446	143.00	11.998	159.32	57.542	-3.8815	100.04

NODE SORT REMOVED

=====
MINIMUM VALUES OF SZ
=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-338.02	-301.68	-306.76	194.84	215.43	-203.99
7351	-180.28	22.594	-223.34	141.71	-21.492	-137.98

=====
SET 15
=====

USE LOAD STEP 15 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 15 SUBSTEP= 1 CUMULATIVE ITERATION= 110
TIME/FREQUENCY= 15.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips West (X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
MAXIMUM VALUES OF SX
=====



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SERVICES, INC.

Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13512	253.65	23.554	-2.7421	26.615	-3.5096	-0.34863
13511	253.65	23.554	-2.7417	26.615	3.5084	0.35040

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5606	-378.76	-222.44	-33.590	125.49	9.2659	10.021
5603	-378.76	-222.44	-33.590	125.49	-9.2640	-10.022

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6962	-16.840	7.3249	56.503	-3.9001	8.3730	7.1573
3989	-16.840	7.3249	56.503	-3.9003	-8.3730	-7.1575

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-363.30	-186.78	-122.82	188.50	94.412	-150.11
7439	-363.31	-186.78	-122.82	188.50	-94.411	150.11

```
=====
=====
=====
===== SET 16 =====
```

USE LOAD STEP 16 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 16 SUBSTEP= 1 CUMULATIVE ITERATION= 123
 TIME/FREQUENCY= 16.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips North (Z), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

```
=====
===== MAXIMUM VALUES OF SX =====
```

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15379	20.098	-6.1843	-2.2766	-1.1441	14.618	3.3412
7365	20.098	-6.1843	-2.2766	1.1442	14.618	-3.3412

NODE SORT REMOVED

```
=====
===== MINIMUM VALUES OF SX =====
```

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



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Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-39.060	-78.817	-28.563	0.82163E-01	-6.7699	-2.5037
11085	-39.055	-78.829	-28.556	-0.81408E-01	-6.7722	2.4905

NODE SORT REMOVED

=====
===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7439	-2.6566	-31.116	119.52	8.1747	56.283	-48.992
15443	-2.6604	-31.115	119.51	-8.1753	56.281	48.991

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-34.466	-87.434	-171.95	24.433	107.66	-72.831
15363	-34.466	-87.434	-171.95	-24.433	107.66	72.831

=====
===== SET 17 =====

USE LOAD STEP 17 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 136
TIME/FREQUENCY= 17.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips West (X), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

Appendix SN-1 to Calculation PGE-009-CALC-003

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13512	117.40	10.516	0.11723	12.724	-1.5040	-0.17216
13511	117.40	10.516	0.11967	12.723	1.4988	0.17883

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5603	-169.53	-90.792	-14.211	54.155	-3.8328	-4.4060
5606	-169.53	-90.791	-14.211	54.155	3.8380	4.4021

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6962	-8.5857	3.3635	24.067	-1.2815	3.5295	3.1881
3989	-8.5865	3.3633	24.065	-1.2819	-3.5297	-3.1882

NODE SORT REMOVED



Appendix SN-1 to Calculation PGE-009-CALC-003

=====
 ===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-164.69	-81.877	-53.017	85.327	40.911	-67.376
7439	-164.70	-81.880	-53.010	85.331	-40.908	67.375

=====
 ===== SET 18 =====

USE LOAD STEP 18 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 18 SUBSTEP= 1 CUMULATIVE ITERATION= 151

TIME/FREQUENCY= 18.000

TITLE= Pad, LTSP(4), 20 Casks, 156 Kips North (Z), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
15379	19.108	-5.5102	-2.1642	-1.0030	13.439	2.9111
7365	19.108	-5.5102	-2.1642	1.0030	13.439	-2.9111

NODE SORT REMOVED

=====

Appendix SN-1 to Calculation PGE-009-CALC-003

===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-33.714	-65.158	-32.010	0.11070	-6.1569	-2.1619
11085	-33.705	-65.163	-31.997	-0.11307	-6.1571	2.1549

NODE SORT REMOVED

===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7439	-1.7276	-29.537	112.28	7.4264	52.910	-46.368
15443	-1.7310	-29.536	112.28	-7.4272	52.909	46.368

NODE SORT REMOVED

===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-31.154	-81.409	-161.82	22.419	101.02	-68.066
15363	-31.154	-81.409	-161.82	-22.419	101.02	68.066

===== SET 19 =====

USE LOAD STEP 19 SUBSTEP 0 FOR LOAD CASE 0



Appendix SN-1 to Calculation PGE-009-CALC-003

SET COMMAND GOT LOAD STEP= 19 SUBSTEP= 1 CUMULATIVE ITERATION= 168
 TIME/FREQUENCY= 19.000
 TITLE= Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13512	108.35	9.9495	-1.1280	11.826	-1.3984	-0.11808
13511	108.35	9.9495	-1.1280	11.826	1.3981	0.11804

NODE SORT REMOVED

===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5606	-159.38	-77.220	-12.497	48.984	3.3026	4.0759
5603	-159.38	-77.220	-12.496	48.984	-3.3022	-4.0761

NODE SORT REMOVED

===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



Appendix SN-1 to Calculation PGE-009-CALC-003

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5622	-0.33611	5.7469	21.975	0.91760	-3.4958	-0.19714
5619	-0.33610	5.7470	21.975	0.91759	3.4959	0.19712

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7349	-158.77	-81.603	-48.816	83.108	38.643	-63.727
7439	-158.77	-81.603	-48.816	83.108	-38.643	63.726

=====
 =====
 =====

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 61.559

*** NOTE *** CP= 61.559 TIME= 17:27:39
 A total of 1 warnings and errors written to dcslabs2.err.

HARD ROCK RESULTS

/OUTPUT FILE= padhardstress.out



Below is the ANSYS output file for pad X and Z stresses for the hard rock analyses.

```

CURRENT JOBNAME REDEFINED AS dcslabh2

RESUME ANSYS DATA FROM FILE NAME=dcslabh2.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Hard Rock
ANALYSIS TYPE = STATIC (STEADY-STATE)
NUMBER OF ELEMENT TYPES = 6
  15348 ELEMENTS CURRENTLY SELECTED.  MAX ELEMENT NUMBER = 33177
    14 NODES CURRENTLY SELECTED.  MAX NODE NUMBER = 17051
    259 KEYPOINTS CURRENTLY SELECTED.  MAX KEYPOINT NUMBER = 259
    250 LINES CURRENTLY SELECTED.  MAX LINE NUMBER = 396
    181 AREAS CURRENTLY SELECTED.  MAX AREA NUMBER = 295
    70 VOLUMES CURRENTLY SELECTED.  MAX VOL. NUMBER = 70
  11 COMPONENTS CURRENTLY DEFINED
MAXIMUM LINEAR PROPERTY NUMBER = 5
MAXIMUM REAL CONSTANT SET NUMBER = 6
ACTIVE COORDINATE SYSTEM = 0 (CARTESIAN)
MAXIMUM CONSTRAINT EQUATION NUMBER = 4620
NUMBER OF SPECIFIED CONSTRAINTS = 2193
NUMBER OF NODAL LOADS = 2160

INITIAL JOBNAME = dcslabs2
CURRENT JOBNAME = dcslabh2
    
```

```

PRINT HEADER
DO NOT PRINT SUBTITLE(S)
DO NOT PRINT LOAD STEP ID
DO NOT PRINT NOTE LINE(S)
PRINT COLUMN HEADER LABELS
DO NOT PRINT REPORT TOTALS
    
```

***** ANSYS RESULTS INTERPRETATION (POST1) *****

```

ENTER /SHOW,DEVICE-NAME TO ENABLE GRAPHIC DISPLAY
ENTER FINISH TO LEAVE POST1
    
```

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

```

=====
=====
=====
===== SET 1 =====
    
```



Appendix SN-1 to Calculation PGE-009-CALC-003

USE LOAD STEP 1 SUBSTEP 0 FOR LOAD CASE 0
 SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 2
 TIME/FREQUENCY= 1.0000
 TITLE= Pad, Gravity, 20 Casks, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6626	16.173	-54.132	-10.932	-2.0672	0.25913E-01	1.5787
14650	16.173	-54.132	-10.932	2.0672	0.25913E-01	-1.5787

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
9693	-20.326	-6.6709	-10.345	-9.1348	1.5577	1.9553
9692	-20.326	-6.6709	-10.345	-9.1348	-1.5577	-1.9553

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5189	-11.310	-45.651	9.0797	0.56729	2.5916	0.43231E-01
13213	-11.310	-45.651	9.0797	-0.56729	2.5916	-0.43231E-01

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
8270	-11.644	-6.3969	-18.840	0.18710E-02	-8.3311	-0.55268
246	-11.644	-6.3969	-18.840	-0.18673E-02	-8.3311	0.55268

=====
 ===== SET 2 =====
 =====

USE LOAD STEP 2 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 2 SUBSTEP= 1 CUMULATIVE ITERATION= 17
 TIME/FREQUENCY= 2.0000
 TITLE= Pad, HE(1), 20 Casks, 515 Kips North (Z), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



Appendix SN-1 to Calculation PGE-009-CALC-003

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14637	51.287	157.21	-66.604	-0.53754	-25.951	2.5060
6613	51.287	157.21	-66.604	0.53754	-25.951	-2.5060

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-79.442	-225.80	-26.788	0.72384E-01	-21.420	-1.5621
11085	-79.442	-225.80	-26.788	-0.72383E-01	-21.420	1.5621

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
4551	19.714	22.792	75.025	0.60821	64.088	-7.7517
12575	19.714	22.792	75.025	-0.60821	64.088	7.7517

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14700	-42.450	-30.736	-195.70	-0.82635	81.524	8.4664



Appendix SN-1 to Calculation PGE-009-CALC-003

6676 -42.450 -30.736 -195.70 0.82635 81.524 -8.4664

=====
=====
=====
===== SET 3 =====

USE LOAD STEP 3 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 3 SUBSTEP= 1 CUMULATIVE ITERATION= 30
TIME/FREQUENCY= 3.0000
TITLE= Pad, HE(1), 20 Casks, 515 Kips N 32.93 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6626	70.155	-174.90	-72.914	-19.649	22.801	-16.884
5202	69.800	-175.13	-49.593	-20.015	20.098	-5.3865

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13993	-131.86	-13.209	-56.598	38.112	5.5812	-50.851
14705	-126.36	-13.475	-50.082	34.809	-2.0923	-42.058

Appendix SN-1 to Calculation PGE-009-CALC-003

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5263	20.831	18.816	70.816	7.5509	53.073	14.219
4551	21.396	18.803	67.239	7.3843	52.860	14.165

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11120	-79.788	-26.432	-167.64	7.0857	69.558	-43.739
14700	-81.007	-26.008	-167.11	1.2688	66.086	-34.806

=====
 =====
 =====
 ===== SET 4 =====
 =====

USE LOAD STEP 4 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 4 SUBSTEP= 1 CUMULATIVE ITERATION= 36
 TIME/FREQUENCY= 4.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM



9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	81.034	-203.31	-53.359	-22.053	14.782	0.32497
4490	80.989	-203.14	-58.305	-22.120	14.834	-0.20390

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13993	-177.07	-17.799	-56.991	49.551	1.2214	-45.265
13992	-170.58	-24.257	-92.437	62.803	14.389	-48.270

NODE SORT REMOVED

=====
===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5908	-42.719	-14.498	62.777	22.331	9.8134	2.2544
5196	-42.664	-14.461	62.512	22.122	9.4156	2.9202

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SZ =====

Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11120	-94.596	-22.792	-137.47	9.6404	59.568	-51.214
14700	-93.734	-22.298	-137.24	1.4050	56.156	-38.118

=====
 =====
 =====
 ===== SET 5 =====

USE LOAD STEP 5 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 5 SUBSTEP= 1 CUMULATIVE ITERATION= 42
 TIME/FREQUENCY= 5.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 =====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	89.222	-224.29	-55.395	-23.182	8.8278	6.1690
4490	89.164	-224.12	-59.867	-23.247	8.9723	5.3228

NODE SORT REMOVED

=====
 =====
 ===== MINIMUM VALUES OF SX =====



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13993	-210.44	-21.823	-52.516	59.220	-2.1321	-32.821
13992	-206.09	-26.710	-81.092	69.110	12.878	-36.439

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5908	-44.138	-42.248	59.660	29.355	0.98692	2.3155
5196	-43.976	-42.259	57.948	29.355	0.98323	1.2470

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14700	-102.38	-17.806	-103.45	1.5120	44.366	-36.791
11120	-104.49	-18.324	-101.21	12.057	46.904	-50.278

=====

=====

=====

===== SET 6 =====

USE LOAD STEP 6 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 6 SUBSTEP= 1 CUMULATIVE ITERATION= 54
 TIME/FREQUENCY= 6.0000

Appendix SN-1 to Calculation PGE-009-CALC-003

TITLE= Pad, HE(1), 20 Casks, 515 Kips West (W), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	93.672	-238.69	-52.116	-21.380	-8.4704	20.700
5203	93.672	-238.69	-52.116	-21.380	8.4706	-20.700

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13281	-244.26	-28.145	-52.138	74.381	-8.6190	2.3915
13280	-244.26	-28.145	-52.137	74.381	8.6200	-2.4158

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14650	-76.049	152.89	51.694	-27.145	11.008	35.852
11783	-76.050	152.89	51.679	-27.145	-11.010	-35.856

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11808	-54.144	-232.45	-76.724	-21.407	9.3576	-46.008
14677	-54.126	-232.45	-76.706	-21.405	-9.3620	46.010

=====
 ===== SET 7 =====

USE LOAD STEP 7 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 7 SUBSTEP= 1 CUMULATIVE ITERATION= 74

TIME/FREQUENCY= 7.0000

TITLE= Pad, HE(1), 20 Casks, 206 Kips North (z), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
------	----	----	----	-----	-----	-----



Appendix SN-1 to Calculation PGE-009-CALC-003

6613	19.523	60.250	-23.049	0.22630	-9.2493	-1.3355
14637	19.520	60.250	-23.044	-0.22619	-9.2494	1.3331

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-29.444	-93.443	11.431	-0.26740E-01	-8.6621	-0.83961
11085	-29.441	-93.444	11.425	0.29787E-01	-8.6635	0.83752

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5263	6.6002	8.7070	31.328	0.30016	25.194	-3.5574
13287	6.6001	8.7069	31.327	-0.30014	25.195	3.5572

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

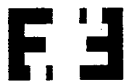
SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
8259	-16.333	-13.236	-56.476	0.59220E-02	29.641	0.48279
235	-16.333	-13.236	-56.476	-0.59204E-02	29.641	-0.48282

=====
 =====



===== SET 8 =====

USE LOAD STEP 8 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 8 SUBSTEP= 1 CUMULATIVE ITERATION= 90
 TIME/FREQUENCY= 8.0000
 TITLE= Pad, HE(1), 20 Casks, 206 Kips West (X), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	38.655	-98.754	-21.453	-8.5946	-3.4051	8.4416
5203	38.655	-98.754	-21.453	-8.5946	3.4051	-8.4417

NODE SORT REMOVED

===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13281	-86.220	-11.680	-21.100	32.030	-3.5432	0.97622
13280	-86.220	-11.680	-21.100	32.030	3.5436	-0.98148

NODE SORT REMOVED

=====



Appendix SN-1 to Calculation PGE-009-CALC-003

=====
===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5228	-14.590	58.422	18.581	-5.8812	-3.1584	-7.2789
5229	-14.590	58.422	18.581	-5.8812	3.1584	7.2786

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11808	-12.616	-96.229	-31.286	-7.1428	3.6837	-17.384
14677	-12.597	-96.218	-31.263	-7.1455	-3.6862	17.381

=====
===== SET 9 =====

USE LOAD STEP 9 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 9 SUBSTEP= 1 CUMULATIVE ITERATION= 95
TIME/FREQUENCY= 9.0000

TITLE= Pad, HE(3), 20 Casks, 171.2 Kips North (Z), Max Dn, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF SX =====



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3758	40.303	-126.30	-33.337	-7.8101	8.9809	1.9670
11782	40.302	-126.29	-33.336	7.8095	8.9808	-1.9665

NODE SORT REMOVED

===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
1639	-43.577	-161.93	33.738	0.66371E-02	-12.875	-0.77792
9663	-43.577	-161.93	33.738	-0.66676E-02	-12.875	0.77791

NODE SORT REMOVED

===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13953	-40.310	-161.53	36.941	-1.0702	-12.726	3.9001
5929	-40.307	-161.53	36.940	1.0696	-12.725	-3.9000

NODE SORT REMOVED

===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



Appendix SN-1 to Calculation PGE-009-CALC-003

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
235	-28.636	-21.575	-77.909	-0.31589E-01	42.648	0.64267
8259	-28.636	-21.575	-77.909	0.31564E-01	42.648	-0.64267

=====
 =====
 =====
 =====
 ===== SET 10 =====

USE LOAD STEP 10 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 10 SUBSTEP= 1 CUMULATIVE ITERATION= 99
 TIME/FREQUENCY= 10.000

TITLE= Pad, HE(3), 20 Casks, 171.2 Kips West (X), Max Dn, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 =====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	62.438	-181.71	-33.074	-11.191	-3.2001	12.310
5203	62.438	-181.71	-33.074	-11.191	3.2000	-12.310

NODE SORT REMOVED

=====
 =====
 ===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13280	-71.264	-21.820	-30.313	41.031	5.6962	-4.5417
13281	-71.264	-21.820	-30.313	41.031	-5.6962	4.5417

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5188	-17.706	-123.95	27.191	7.8450	9.1554	-11.571
5218	-17.706	-123.95	27.191	7.8450	-9.1554	11.571

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11097	36.893	-178.80	-43.085	-12.251	-3.1510	17.388
8232	36.893	-178.80	-43.085	-12.251	3.1510	-17.388

=====
 =====
 =====
 ===== SET 11 =====
 =====

USE LOAD STEP 11 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 11 SUBSTEP= 1 CUMULATIVE ITERATION= 117
 TIME/FREQUENCY= 11.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips North (Z), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

Appendix SN-1 to Calculation PGE-009-CALC-003

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6613	42.664	130.49	-60.061	0.51532	-21.753	-2.4241
14637	42.664	130.49	-60.061	-0.51532	-21.753	2.4241

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-68.903	-196.86	-20.775	0.65533E-01	-17.654	-1.4412
11085	-68.903	-196.86	-20.775	-0.65533E-01	-17.654	1.4412

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
4551	16.025	19.016	62.512	0.55835	54.135	-7.2497
12575	16.025	19.016	62.512	-0.55835	54.135	7.2497



NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6676	-36.917	-26.788	-166.07	0.73288	71.142	-7.9815
14700	-36.917	-26.788	-166.07	-0.73288	71.142	7.9815

=====
 ===== SET 12 =====

USE LOAD STEP 12 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 12 SUBSTEP= 1 CUMULATIVE ITERATION= 130
 TIME/FREQUENCY= 12.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6626	61.705	-154.05	-61.173	-16.909	19.732	-13.802
5202	61.398	-154.22	-42.626	-17.249	17.392	-4.6184

NODE SORT REMOVED

Appendix SN-1 to Calculation PGE-009-CALC-003

=====
 ===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13993	-110.76	-11.863	-45.845	33.884	5.7281	-41.116
14705	-110.74	-11.934	-47.932	30.764	-1.6250	-36.378

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5263	17.165	15.622	59.749	6.6730	44.714	11.735
4551	17.605	15.615	56.180	6.5437	44.532	11.611

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14700	-71.306	-22.613	-147.19	1.2772	57.647	-29.885
11120	-65.339	-23.287	-142.12	6.8150	61.075	-35.796

=====
 ===== SET 13 =====



Appendix SN-1 to Calculation PGE-009-CALC-003

USE LOAD STEP 13 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 13 SUBSTEP= 1 CUMULATIVE ITERATION= 135
 TIME/FREQUENCY= 13.000
 TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	71.120	-178.32	-45.811	-18.978	12.804	0.30043
4490	71.090	-178.18	-50.389	-19.036	12.853	-0.16634

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13993	-150.63	-15.614	-48.292	43.986	1.6863	-37.626
13992	-143.86	-21.278	-77.300	55.594	13.220	-40.038

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5908	-35.969	-14.106	54.230	19.883	7.8105	1.8219
5196	-35.924	-14.085	53.612	19.735	7.4996	2.1997

NODE SORT REMOVED

===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14700	-82.895	-19.429	-121.87	1.4237	49.003	-33.013
11120	-76.368	-20.236	-116.21	9.3049	52.223	-42.120

===== SET 14 =====

USE LOAD STEP 14 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 14 SUBSTEP= 1 CUMULATIVE ITERATION= 141
TIME/FREQUENCY= 14.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	78.213	-196.27	-47.517	-19.934	7.6686	5.3472
4490	78.168	-196.12	-51.599	-19.989	7.7965	4.6063

NODE SORT REMOVED

===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13993	-180.73	-19.071	-46.185	52.208	-1.5960	-27.287
13992	-176.51	-23.259	-70.081	60.807	11.510	-30.435

NODE SORT REMOVED

===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5908	-37.062	-37.832	51.375	25.921	0.25512	1.8363
5196	-36.930	-37.848	49.735	25.938	0.25892	0.84396

NODE SORT REMOVED

===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
------	----	----	----	-----	-----	-----



Appendix SN-1 to Calculation PGE-009-CALC-003

14700	-90.884	-15.581	-93.009	1.5403	38.777	-31.945
13988	-96.041	-15.574	-88.068	2.0962	39.986	-35.890

```
=====
=====
=====
===== SET 15 =====
=====
```

USE LOAD STEP 15 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 15 SUBSTEP= 1 CUMULATIVE ITERATION= 153
TIME/FREQUENCY= 15.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips West (X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

```
=====
===== MAXIMUM VALUES OF SX =====
=====
```

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	82.142	-208.60	-44.685	-18.395	-7.2610	17.908
5203	82.142	-208.60	-44.685	-18.395	7.2611	-17.909

NODE SORT REMOVED

```
=====
===== MINIMUM VALUES OF SX =====
=====
```

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13281	-209.77	-24.482	-46.764	65.197	-7.5053	2.1527



Appendix SN-1 to Calculation PGE-009-CALC-003

13280 -209.77 -24.483 -46.764 65.197 7.5058 -2.1742

NODE SORT REMOVED

=====

 ===== MAXIMUM VALUES OF SZ =====

 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5228	-30.950	127.15	40.987	-12.463	-6.7350	-15.676
5229	-30.950	127.15	40.987	-12.463	6.7350	15.674

NODE SORT REMOVED

=====

 ===== MINIMUM VALUES OF SZ =====

 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11808	-45.858	-203.01	-68.089	-17.929	8.0595	-38.126
14677	-45.849	-203.01	-68.038	-17.923	-8.0610	38.125

=====

 =====

 =====

 ===== SET 16 =====

 =====

USE LOAD STEP 16 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 16 SUBSTEP= 1 CUMULATIVE ITERATION= 177

TIME/FREQUENCY= 16.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips North (Z), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.



Appendix SN-1 to Calculation PGE-009-CALC-003

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14637	16.744	51.855	-26.390	-0.22900	-8.6590	1.0710
6613	16.743	51.855	-26.390	0.22895	-8.6591	-1.0713

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11085	-28.258	-79.034	-11.145	-0.27800E-01	-6.9572	0.63804
3061	-28.257	-79.034	-11.145	0.27812E-01	-6.9571	-0.63921

NODE SORT REMOVED

=====
===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7070	1.7859	-0.86960	24.905	0.95255	11.357	-5.0492
15094	1.7831	-0.85300	24.902	-0.96118	11.366	5.0520

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SZ =====



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Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6676	-15.139	-10.715	-70.039	0.32163	28.703	-3.5180
14700	-15.134	-10.717	-70.035	-0.32269	28.702	3.5165

=====
 =====
 =====
 =====
 ===== SET 17 =====

USE LOAD STEP 17 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 202
 TIME/FREQUENCY= 17.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips West (X), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 =====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	33.397	-83.948	-17.615	-7.3247	-2.9105	7.1749
5203	33.397	-83.948	-17.615	-7.3247	2.9105	-7.1751

NODE SORT REMOVED

=====
 =====
 ===== MINIMUM VALUES OF SX =====



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13280	-86.653	-9.8361	-19.463	26.249	3.0179	-0.88236
13281	-86.653	-9.8361	-19.463	26.249	-3.0179	0.87644

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5228	-12.650	50.493	16.419	-4.8365	-2.6930	-6.2454
5229	-12.650	50.493	16.419	-4.8365	2.6930	6.2450

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11808	-20.462	-81.578	-27.870	-7.1434	3.2388	-15.225
14677	-20.459	-81.578	-27.859	-7.1422	-3.2389	15.224

=====
 =====
 =====
 ===== SET 18 =====
 =====

USE LOAD STEP 18 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 18 SUBSTEP= 1 CUMULATIVE ITERATION= 227



Appendix SN-1 to Calculation PGE-009-CALC-003

TIME/FREQUENCY= 18.000
 TITLE= Pad, LTSP(4), 20 Casks, 156 Kips North (Z), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14637	15.452	50.688	-24.762	-0.19564	-7.9019	0.88592
6613	15.443	50.688	-24.769	0.19617	-7.9025	-0.89594

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-25.127	-65.282	-14.961	0.58727E-01	-6.4066	-0.58568
11085	-25.094	-65.283	-14.944	-0.60759E-01	-6.4005	0.57928

NODE SORT REMOVED

=====

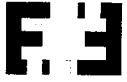
===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	SX	SY	SZ	SXY	SYZ	SXZ
7070	1.1896	-0.74001	23.212	0.94520	9.4620	-4.9919
15094	1.1864	-0.74091	23.200	-0.94131	9.4599	5.0005

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6676	-12.879	-9.0029	-65.908	0.28864	24.137	-2.9636
14700	-12.860	-9.0030	-65.888	-0.28558	24.139	2.9469

=====
 ===== SET 19 =====
 =====

USE LOAD STEP 19 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 19 SUBSTEP= 1 CUMULATIVE ITERATION= 252
 TIME/FREQUENCY= 19.000

TITLE= Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



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Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	28.085	-68.913	-14.665	-6.1767	-2.5622	6.0561
5203	28.085	-68.913	-14.665	-6.1767	2.5623	-6.0564

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13280	-80.883	-8.1997	-16.064	21.698	2.5102	-0.65701
13281	-80.883	-8.1997	-16.064	21.698	-2.5102	0.64739

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14650	-25.364	49.938	16.435	-8.7396	3.5045	11.716
11783	-25.364	49.939	16.425	-8.7397	-3.5051	-11.718

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11808	-23.511	-66.772	-23.140	-6.4690	2.8120	-15.050
14677	-23.507	-66.773	-23.125	-6.4679	-2.8127	15.049

=====



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Appendix SN-1 to Calculation PGE-009-CALC-003

=====
=====

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 121.054

*** NOTE *** CP= 121.054 TIME= 17:29:05
A total of 1 warnings and errors written to dcslabs2.err.



Below is the ANSYS input file that scans the database for the max/min X and Z stresses for the very hard rock model.

```

/COM
/OUTPUT,padvhardstress.out
/COM
/COM      STRESS DATA SORTED AND PRINTED BY LOAD STEP
/COM
/COM
/COM
/COM      THIS ROUTINE SORTS AND PRINTS STRESS DATA BY LOAD STEP
/COM      FIRST SX AND THEN SZ
/COM
/com      VERY HARD ROCK RESULTS
/COM
/file,dcslabh6
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM =====
/COM =====
/COM =====
/COM =====      SET 1      =====
/COM
SET,1
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM =====      MAXIMUM VALUES OF SX      =====
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM =====      MINIMUM VALUES OF SX      =====
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM =====      MAXIMUM VALUES OF SZ      =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM

```



```

/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 2 =====
/COM
SET,2
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 3 =====
/COM
SET,3
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 4 =====
/COM
SET,4
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT,S,X,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
```




Appendix SN-1 to Calculation PGE-009-CALC-003

```

NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 5 =====
/COM
SET, 5
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 6 =====
/COM
SET, 6
ESEL, TYPE, 1
NELEM
/COM

```



```
/COM =====  
/COM ===== MAXIMUM VALUES OF SX =====  
/COM  
NSORT, S, X, 0, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SX =====  
/COM  
NSORT, S, X, 1, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SZ =====  
/COM  
NSORT, S, Z, 0, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SZ =====  
/COM  
NSORT, S, Z, 1, 0, 2, SEL  
PRNSOL, S  
/COM  
/COM =====  
/COM =====  
/COM =====  
/COM ===== SET 7 =====  
/COM  
SET, 7  
ESEL, TYPE, 1  
NELEM  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SX =====  
/COM  
NSORT, S, X, 0, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF SX =====  
/COM  
NSORT, S, X, 1, 0, 2, SEL  
PRNSOL, S  
NUSORT  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF SZ =====  
/COM  
/COM
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```

NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 8 =====
/COM
SET, 8
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 9 =====
/COM
SET, 9
ESEL, TYPE, 1

```



```
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 10 =====
/COM
SET, 10
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
```



```

/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 11 =====
/COM
SET, 11
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 12 =====
/COM

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
SET, 12
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 13 =====
/COM
SET, 13
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
```



```

/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 14 =====
/COM
SET, 14
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```

/COM ===== SET 15 =====
/COM
SET, 15
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 16 =====
/COM
SET, 16
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL

```



```
PRNSOL, S
NUSORT
/COM
/COM =====
/COM =====          MAXIMUM VALUES OF SZ          =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM =====          MINIMUM VALUES OF SZ          =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM =====          SET 17          =====
/COM
SET, 17
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM =====          MAXIMUM VALUES OF SX          =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM =====          MINIMUM VALUES OF SX          =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM =====          MAXIMUM VALUES OF SZ          =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM =====          MINIMUM VALUES OF SZ          =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
```



```
/COM =====
/COM =====
/COM ===== SET 18 =====
/COM
SET, 18
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
/COM
NSORT, S, X, 1, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT, S, Z, 1, 0, 2, SEL
PRNSOL, S
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 19 =====
/COM
SET, 19
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SX =====
/COM
NSORT, S, X, 0, 0, 2, SEL
PRNSOL, S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SX =====
```

Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
NSORT,S,X,1,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,0,0,2,SEL
PRNSOL,S
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF SZ =====
/COM
NSORT,S,Z,1,0,2,SEL
PRNSOL,S
/COM
/COM =====
/COM =====
/COM =====
/COM
EALL
NALL
FINI
/OUTPUT
/EXIT
```



Below is the ANSYS output file for pad X and Z stresses for the very hard rock analyses.

STRESS DATA SORTED AND PRINTED BY LOAD STEP

THIS ROUTINE SORTS AND PRINTS STRESS DATA BY LOAD STEP
FIRST SX AND THEN SZ

VERY HARD ROCK RESULTS

CURRENT JOBNAME REDEFINED AS dcslabh6

RESUME ANSYS DATA FROM FILE NAME=dcslabh6.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Very Hard Rock
ANALYSIS TYPE = STATIC (STEADY-STATE)

NUMBER OF ELEMENT TYPES = 6

15348 ELEMENTS CURRENTLY SELECTED.	MAX ELEMENT NUMBER =	33177
14 NODES CURRENTLY SELECTED.	MAX NODE NUMBER =	17051
259 KEYPOINTS CURRENTLY SELECTED.	MAX KEYPOINT NUMBER =	259
250 LINES CURRENTLY SELECTED.	MAX LINE NUMBER =	396
181 AREAS CURRENTLY SELECTED.	MAX AREA NUMBER =	295
70 VOLUMES CURRENTLY SELECTED.	MAX VOL. NUMBER =	70
11 COMPONENTS CURRENTLY DEFINED		

MAXIMUM LINEAR PROPERTY NUMBER	=	5
MAXIMUM REAL CONSTANT SET NUMBER	=	6
ACTIVE COORDINATE SYSTEM	=	0 (CARTESIAN)
MAXIMUM CONSTRAINT EQUATION NUMBER	=	4620
NUMBER OF SPECIFIED CONSTRAINTS	=	2193
NUMBER OF NODAL LOADS	=	2160

INITIAL JOBNAME = dcslabh6

CURRENT JOBNAME = dcslabh6

PRINT HEADER

DO NOT PRINT SUBTITLE(S)

DO NOT PRINT LOAD STEP ID

DO NOT PRINT NOTE LINE(S)

PRINT COLUMN HEADER LABELS

DO NOT PRINT REPORT TOTALS

***** ANSYS - ENGINEERING ANALYSIS SYSTEM RELEASE 5.7 *****

ANSYS/Structural U

00150104

VERSION=INTEL NT

10:32:12

MAY 21, 2001 CP=

3.685

Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Very Hard Rock



Appendix SN-1 to Calculation PGE-009-CALC-003

***** ANSYS RESULTS INTERPRETATION (POST1) *****

ENTER /SHOW,DEVICE-NAME TO ENABLE GRAPHIC DISPLAY
ENTER FINISH TO LEAVE POST1

*** NOTE *** CP= 3.685 TIME= 10:32:12
Reading results into the database (SET command) will update the current displacement and force boundary conditions in the database with the values from the results file for that load set. Note that any subsequent solutions will use these values unless action is taken to either SAVE the current values or not overwrite them (/EXIT,NOSAVE).

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

=====
=====
=====
===== SET 1 =====

USE LOAD STEP 1 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 2

TIME/FREQUENCY= 1.0000

TITLE= Pad, Gravity, 20 Casks, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

Table with 7 columns: NODE, SX, SY, SZ, SXY, SYZ, SXZ. Rows show values for nodes 6626 and 14650.



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Appendix SN-1 to Calculation PGE-009-CALC-003

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
1677	-16.977	-6.6996	-8.4711	-9.0457	1.5414	1.9780
1678	-16.977	-6.6996	-8.4711	-9.0457	-1.5414	-1.9780

NODE SORT REMOVED

=====
===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5189	-7.8886	-45.805	10.689	0.45698	2.5470	0.66126E-01
13213	-7.8886	-45.805	10.689	-0.45698	2.5470	-0.66126E-01

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3107	-7.4955	-6.1218	-15.713	0.27959E-02	-9.4814	-0.44056
11131	-7.4955	-6.1218	-15.713	-0.27946E-02	-9.4814	0.44056

=====
===== SET 2 =====



Appendix SN-1 to Calculation PGE-009-CALC-003

USE LOAD STEP 2 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 2 SUBSTEP= 1 CUMULATIVE ITERATION= 17
TIME/FREQUENCY= 2.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips North (Z), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14637	53.169	157.48	-59.507	-0.39294	-25.748	1.1223
6613	53.169	157.48	-59.507	0.39294	-25.748	-1.1223

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-74.203	-225.93	-17.208	0.54893E-01	-21.792	-0.92808
11085	-74.203	-225.93	-17.208	-0.54892E-01	-21.792	0.92808

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
12575	22.131	22.754	79.715	-0.49354	64.136	4.5189
4551	22.131	22.754	79.715	0.49354	64.136	-4.5189

NODE SORT REMOVED

===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14700	-39.338	-30.994	-184.42	-0.59693	81.018	5.2286
6676	-39.338	-30.994	-184.42	0.59693	81.018	-5.2286

===== SET 3 =====

USE LOAD STEP 3 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 3 SUBSTEP= 1 CUMULATIVE ITERATION= 32
 TIME/FREQUENCY= 3.0000

TITLE= Pad, HE(1), 20 Casks; 515 Kips N 32.93 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6626	69.921	-174.37	-70.111	-19.927	22.385	-13.364
5914	69.859	-174.61	-50.259	-20.301	20.388	-4.1008

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13993	-124.26	-13.313	-47.701	37.665	5.3561	-51.040
14705	-117.19	-13.555	-40.180	34.736	-1.4373	-42.478

NODE SORT REMOVED

=====
===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5263	23.039	18.715	69.934	7.4426	53.020	17.239
4551	23.395	18.707	68.578	7.3324	52.867	17.513

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



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Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11120	-72.476	-26.634	-157.32	6.9390	68.938	-43.165
14700	-73.576	-26.312	-153.49	1.7802	65.882	-35.468

=====
 =====
 =====
 =====
 ===== SET 4 =====
 =====

USE LOAD STEP 4 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 4 SUBSTEP= 1 CUMULATIVE ITERATION= 39

TIME/FREQUENCY= 4.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 =====
 ===== MAXIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5914	80.914	-202.53	-53.467	-22.421	14.763	1.9776
5202	80.908	-202.48	-54.593	-22.479	14.667	2.0863

NODE SORT REMOVED

=====
 =====
 ===== MINIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
------	----	----	----	-----	-----	-----

Appendix SN-1 to Calculation PGE-009-CALC-003

13993	-166.61	-17.960	-47.580	49.054	1.1669	-45.061
13992	-160.65	-24.432	-83.316	62.116	14.218	-48.044

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5263	20.889	15.175	59.564	9.5452	43.652	24.820
5908	-42.159	-14.409	59.507	21.768	9.4960	4.3449

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11120	-86.262	-22.966	-128.13	9.4487	59.023	-50.745
14700	-84.620	-22.625	-124.49	2.0606	56.063	-38.900

=====

=====

===== SET 5 =====

=====

USE LOAD STEP 5 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 5 SUBSTEP= 1 CUMULATIVE ITERATION= 46

TIME/FREQUENCY= 5.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.



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Appendix SN-1 to Calculation PGE-009-CALC-003

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	89.026	-223.29	-57.735	-23.617	8.7551	7.5714
4490	89.017	-223.21	-59.939	-23.675	8.8292	7.1343

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13993	-197.43	-21.967	-43.512	58.678	-1.9945	-32.926
13992	-193.21	-26.891	-71.951	68.503	12.908	-36.533

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5908	-43.614	-42.197	55.498	28.794	0.79779	3.3929
6620	-43.463	-41.385	54.302	27.867	-0.33962	7.8317

NODE SORT REMOVED

=====



Appendix SN-1 to Calculation PGE-009-CALC-003

===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11120	-96.190	-18.431	-93.676	11.736	46.458	-50.051
14700	-91.870	-18.148	-92.105	2.2683	44.382	-37.853

===== SET 6 =====

USE LOAD STEP 6 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 6 SUBSTEP= 1 CUMULATIVE ITERATION= 58
TIME/FREQUENCY= 6.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips West (W), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	93.415	-237.45	-55.904	-21.811	-8.4978	20.765
5203	93.415	-237.45	-55.904	-21.811	8.4979	-20.765

NODE SORT REMOVED

===== MINIMUM VALUES OF SX =====



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Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13280	-229.99	-28.310	-45.128	73.705	8.5613	-2.3527
13281	-229.99	-28.310	-45.128	73.705	-8.5611	2.3423

NODE SORT REMOVED

=====
 =====
 ===== MAXIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14650	-73.613	153.05	57.441	-25.721	10.920	33.908
11783	-73.612	153.05	57.431	-25.721	-10.920	-33.909

NODE SORT REMOVED

=====
 =====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

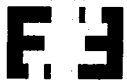
SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11808	-42.317	-232.58	-70.293	-21.522	9.2136	-44.052
14677	-42.310	-232.58	-70.280	-21.521	-9.2149	44.053

=====
 =====
 =====
 ===== SET 7 =====
 =====

USE LOAD STEP 7 SUBSTEP 0 FOR LOAD CASE 0



Appendix SN-1 to Calculation PGE-009-CALC-003

SET COMMAND GOT LOAD STEP= 7 SUBSTEP= 1 CUMULATIVE ITERATION= 80
TIME/FREQUENCY= 7.0000

TITLE= Pad, HE(1), 20 Casks, 206 Kips North (z), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6613	20.596	60.360	-20.173	0.16299	-9.2225	-0.63664
14637	20.595	60.361	-20.167	-0.16365	-9.2221	0.63455

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11085	-27.276	-93.413	13.870	0.14787E-01	-8.7181	0.48730
3061	-27.275	-93.414	13.875	-0.14522E-01	-8.7180	-0.49260

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



Appendix SN-1 to Calculation PGE-009-CALC-003

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5263	8.0779	8.6715	32.183	0.22745	25.214	-2.1090
13287	8.0779	8.6715	32.182	-0.22743	25.214	2.1088

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14700	-14.166	-13.388	-51.560	-0.17878	32.193	2.3127
6676	-14.163	-13.390	-51.542	0.17924	32.192	-2.3194

=====

=====

===== SET 8 =====

=====

USE LOAD STEP 8 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 8 SUBSTEP= 1 CUMULATIVE ITERATION= 99
 TIME/FREQUENCY= 8.0000

TITLE= Pad, HE(1), 20 Casks, 206 Kips West (X), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	38.633	-98.245	-22.923	-8.8333	-3.4134	8.4683
5203	38.633	-98.245	-22.923	-8.8333	3.4134	-8.4683

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13281	-82.294	-11.717	-18.686	31.633	-3.5247	0.95221
13280	-82.293	-11.717	-18.685	31.633	3.5252	-0.95257

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14650	-29.103	58.130	20.799	-10.128	4.2083	12.611
11783	-29.103	58.130	20.799	-10.128	-4.2083	-12.611

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13252	-14.864	-96.271	-28.604	-7.3513	3.2383	-9.5745
13253	-14.864	-96.272	-28.604	-7.3512	-3.2379	9.5741



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 =====
 =====
 ===== SET 9 =====

USE LOAD STEP 9 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 9 SUBSTEP= 1 CUMULATIVE ITERATION= 103
 TIME/FREQUENCY= 9.0000
 TITLE= Pad, HE(3), 20 Casks, 171.2 Kips North (Z), Max Dn, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 =====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11782	41.349	-126.23	-26.197	8.6886	9.0116	-1.4710
3758	41.348	-126.23	-26.196	-8.6882	9.0117	1.4704

NODE SORT REMOVED

=====
 =====
 ===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
1639	-38.151	-161.94	37.272	0.47130E-01	-12.732	-0.43857
9663	-38.151	-161.94	37.272	-0.47125E-01	-12.732	0.43857

NODE SORT REMOVED



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=====
 ===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14665	-33.337	-161.83	39.844	-0.78361	-12.585	3.2975
6641	-33.340	-161.83	39.844	0.78336	-12.585	-3.2976

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
235	-25.166	-21.717	-69.669	0.15615E-01	42.098	0.38467
8259	-25.166	-21.717	-69.669	-0.15582E-01	42.098	-0.38468

=====
 =====
 =====
 ===== SET 10 =====

USE LOAD STEP 10 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 10 SUBSTEP= 1 CUMULATIVE ITERATION= 106

TIME/FREQUENCY= 10.000

TITLE= Pad, HE(3), 20 Casks, 171.2 Kips West (X), Max Dn, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.



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Appendix SN-1 to Calculation PGE-009-CALC-003

=====
 ===== MAXIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	63.382	-181.06	-31.991	-12.166	-3.2004	12.266
5203	63.382	-181.06	-31.991	-12.166	3.2004	-12.266

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SX =====
 =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
9702	-64.783	-21.873	-25.614	40.943	-5.6528	4.4201
9701	-64.783	-21.873	-25.614	40.943	5.6528	-4.4202

NODE SORT REMOVED

=====
 ===== MAXIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5188	-12.490	-124.28	28.626	7.2223	9.1587	-11.535
5218	-12.490	-124.28	28.626	7.2223	-9.1587	11.535

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====
 =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11096	41.104	-178.86	-36.447	-12.211	2.8529	-10.962
8233	41.104	-178.86	-36.447	-12.211	-2.8529	10.962

=====
 =====
 =====
 =====
 ===== SET 11 =====

USE LOAD STEP 11 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 11 SUBSTEP= 1 CUMULATIVE ITERATION= 122
TIME/FREQUENCY= 11.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips North (Z), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 =====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6613	44.558	130.74	-53.229	0.37421	-21.590	-1.1083
14637	44.558	130.74	-53.229	-0.37421	-21.590	1.1083

NODE SORT REMOVED

=====
 =====
 ===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2



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SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-64.040	-196.97	-12.361	0.47044E-01	-18.015	-0.85810
11085	-64.040	-196.97	-12.361	-0.47043E-01	-18.015	0.85809

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
12575	18.285	18.976	66.800	-0.45152	54.207	4.2087
4551	18.285	18.976	66.800	0.45152	54.207	-4.2087

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6676	-33.939	-27.059	-156.24	0.51846	70.662	-4.9119
14700	-33.939	-27.059	-156.24	-0.51846	70.662	4.9119

=====

=====

===== SET 12 =====

=====

USE LOAD STEP 12 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 12 SUBSTEP= 1 CUMULATIVE ITERATION= 136

TIME/FREQUENCY= 12.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Very Hard Rock

Appendix SN-1 to Calculation PGE-009-CALC-003

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6626	61.486	-153.56	-58.814	-17.172	19.314	-10.647
5914	61.411	-153.71	-42.891	-17.526	17.558	-3.2949

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

=====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13993	-104.03	-11.944	-38.234	33.552	5.5233	-41.790
14705	-102.27	-12.016	-38.612	30.686	-1.0871	-36.750

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5263	19.265	15.522	58.896	6.5594	44.689	14.522



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4551 19.518 15.519 57.428 6.4797 44.561 14.691

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14700	-64.469	-22.890	-134.80	1.7051	57.431	-30.604
11120	-58.932	-23.413	-133.18	6.7111	60.473	-35.519

=====
 ===== SET 13 =====

USE LOAD STEP 13 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 13 SUBSTEP= 1 CUMULATIVE ITERATION= 142
 TIME/FREQUENCY= 13.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

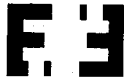
=====
 ===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
4490	70.976	-177.49	-49.248	-19.396	12.677	1.7228
5202	70.975	-177.56	-47.006	-19.352	12.679	1.9224



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NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13993	-141.93	-15.761	-40.334	43.469	1.5153	-37.588
13992	-135.85	-21.371	-69.856	54.876	12.961	-40.057

NODE SORT REMOVED

=====
===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5908	-35.471	-14.024	51.177	19.363	7.5151	3.7255
5196	-35.516	-13.987	50.874	19.272	7.3267	4.0793

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14700	-74.533	-19.728	-110.19	1.9665	48.891	-33.673
11120	-69.186	-20.326	-108.13	9.1505	51.740	-42.013

=====
===== SET 14 =====



Appendix SN-1 to Calculation PGE-009-CALC-003

USE LOAD STEP 14 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 14 SUBSTEP= 1 CUMULATIVE ITERATION= 149
 TIME/FREQUENCY= 14.000
 TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

MAXIMUM VALUES OF SX

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	77.993	-195.36	-49.703	-20.312	7.5876	6.6376
4490	77.988	-195.28	-51.707	-20.359	7.6544	6.2514

NODE SORT REMOVED

=====

MINIMUM VALUES OF SX

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13993	-169.71	-19.214	-38.238	51.676	-1.5824	-27.442
13992	-165.80	-23.424	-62.256	60.149	11.424	-30.566

NODE SORT REMOVED

=====

MAXIMUM VALUES OF SZ



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5908	-36.607	-37.780	47.555	25.403	0.74352E-01	2.8420
6620	-36.388	-37.087	46.301	24.582	-0.86950	6.7937

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14700	-81.203	-15.893	-82.430	2.1741	38.764	-32.886
13988	-85.874	-15.886	-79.022	2.5360	39.824	-36.556

=====
===== SET 15 =====

USE LOAD STEP 15 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 15 SUBSTEP= 1 CUMULATIVE ITERATION= 161
TIME/FREQUENCY= 15.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips West (X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF SX =====



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	81.857	-207.47	-48.150	-18.762	-7.2818	17.967
5203	81.857	-207.47	-48.150	-18.762	7.2819	-17.967

NODE SORT REMOVED

===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13281	-197.40	-24.634	-40.350	64.519	-7.4533	2.1063
13280	-197.40	-24.634	-40.349	64.520	7.4539	-2.1254

NODE SORT REMOVED

===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14650	-62.457	126.35	46.659	-21.878	9.1362	27.971
11783	-62.456	126.35	46.637	-21.878	-9.1375	-27.974

NODE SORT REMOVED

===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11808	-35.387	-203.13	-62.029	-18.063	7.9295	-36.539
14677	-35.377	-203.13	-61.995	-18.060	-7.9322	36.539

```
=====
=====
=====
===== SET 16 =====
=====
```

USE LOAD STEP 16 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 16 SUBSTEP= 1 CUMULATIVE ITERATION= 186
 TIME/FREQUENCY= 16.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips North (Z), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

```
=====
===== MAXIMUM VALUES OF SX =====
=====
```

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14637	17.603	51.964	-23.250	-0.16582	-8.5928	0.49893
6613	17.603	51.964	-23.250	0.16582	-8.5928	-0.49893

NODE SORT REMOVED

```
=====
===== MINIMUM VALUES OF SX =====
=====
```

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



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Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-26.138	-79.081	-7.4655	0.20734E-01	-7.1094	-0.37805
11085	-26.138	-79.081	-7.4655	-0.20734E-01	-7.1094	0.37805

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
12575	7.2308	7.5452	26.396	-0.18639	21.722	1.9019
4551	7.2308	7.5452	26.396	0.18639	21.722	-1.9019

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SZ =====

=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6676	-13.881	-10.826	-65.707	0.22752	28.503	-2.1619
14700	-13.881	-10.826	-65.707	-0.22752	28.503	2.1619

=====

=====

=====

===== SET 17 =====

=====

USE LOAD STEP 17 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 3 CUMULATIVE ITERATION= 257
TIME/FREQUENCY= 17.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips West (X), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.



Appendix SN-1 to Calculation PGE-009-CALC-003

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

MAXIMUM VALUES OF SX

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	33.199	-83.442	-19.190	-7.4463	-2.9180	7.2008
5203	33.199	-83.442	-19.190	-7.4463	2.9180	-7.2009

NODE SORT REMOVED

=====

MINIMUM VALUES OF SX

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13281	-81.348	-9.8983	-16.662	25.965	-2.9958	0.85774
13280	-81.348	-9.8983	-16.662	25.965	2.9960	-0.86051

NODE SORT REMOVED

=====

MAXIMUM VALUES OF SZ

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14650	-25.358	50.164	18.332	-8.8237	3.6406	11.119
11783	-25.358	50.164	18.328	-8.8237	-3.6408	-11.119

NODE SORT REMOVED



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Appendix SN-1 to Calculation PGE-009-CALC-003

=====
MINIMUM VALUES OF SZ
=====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11808	-15.952	-81.623	-25.255	-7.1988	3.1842	-14.593
14677	-15.952	-81.623	-25.246	-7.1977	-3.1841	14.592

=====
=====
=====
===== SET 18 =====

USE LOAD STEP 18 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 18 SUBSTEP= 3 CUMULATIVE ITERATION= 338
TIME/FREQUENCY= 18.000

TITLE= Pad, LTSP(4), 20 Casks, 156 Kips North (Z), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
MAXIMUM VALUES OF SX
=====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
14637	16.188	50.793	-21.928	-0.13880	-7.8450	0.39191
6613	16.188	50.793	-21.928	0.13882	-7.8451	-0.39256

NODE SORT REMOVED

=====

Appendix SN-1 to Calculation PGE-009-CALC-003

===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
3061	-23.094	-65.319	-11.298	0.47614E-01	-6.4928	-0.36290
11085	-23.092	-65.319	-11.297	-0.47717E-01	-6.4926	0.36196

NODE SORT REMOVED

===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
4551	6.9354	7.2176	24.362	0.14916	20.237	-1.8373
12575	6.9354	7.2176	24.362	-0.14916	20.237	1.8373

NODE SORT REMOVED

===== MINIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
6676	-11.811	-9.0861	-61.648	0.19475	23.992	-1.7643
14700	-11.808	-9.0861	-61.646	-0.19474	23.993	1.7630

===== SET 19 =====

USE LOAD STEP 19 SUBSTEP 0 FOR LOAD CASE 0



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Appendix SN-1 to Calculation PGE-009-CALC-003

SET COMMAND GOT LOAD STEP= 19 SUBSTEP= 3 CUMULATIVE ITERATION= 412
 TIME/FREQUENCY= 19.000

TITLE= Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
5202	27.775	-68.436	-16.275	-6.2225	-2.5701	6.0825
5203	27.775	-68.436	-16.275	-6.2225	2.5701	-6.0825

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF SX =====

SORT ON ITEM=S COMPONENT=X ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13280	-75.641	-8.2482	-13.529	21.513	2.4900	-0.62927
13281	-75.641	-8.2482	-13.529	21.513	-2.4901	0.62933

NODE SORT REMOVED

=====

===== MAXIMUM VALUES OF SZ =====

SORT ON ITEM=S COMPONENT=Z ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



Appendix SN-1 to Calculation PGE-009-CALC-003

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
13938	-24.826	50.014	18.607	-8.3210	2.8045	7.4875
12515	-24.826	50.014	18.607	-8.3210	-2.8045	-7.4876

NODE SORT REMOVED

```

=====
===== MINIMUM VALUES OF SZ =====
=====

```

SORT ON ITEM=S COMPONENT=Z ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	SX	SY	SZ	SXY	SYZ	SXZ
11808	-19.206	-66.802	-20.869	-6.4823	2.7642	-14.389
14677	-19.206	-66.802	-20.868	-6.4823	-2.7642	14.389

```

=====
=====
=====

```

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 63.021

*** NOTE *** CP= 63.021 TIME= 10:33:36
A total of 1 warnings and errors written to dcslabh6.err.



Below is the ANSYS input file that scans the databases for the max/min principal stresses for the soft and hard rock models. This file creates two output files in one execution.

```

/COM
/OUTPUT,padsoftprinstress.out
/COM
/COM      STRESS DATA SORTED AND PRINTED BY LOAD STEP
/COM
/COM
/COM      THIS ROUTINE SORTS AND PRINTS PRINCIPAL STRESS DATA BY LOAD STEP
/COM      FIRST S1 AND THEN S3
/COM
/com      SOFT ROCK RESULTS
/COM
/file,dcslabs2
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM =====
/COM =====
/COM =====
/COM =====      SET 1      =====
/COM
SET,1
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM =====      MAXIMUM VALUES OF S1      =====
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====      MINIMUM VALUES OF S3      =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM =====      SET 2      =====
/COM
SET,2
ESEL,TYPE,1
NELEM

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 3 =====
/COM
SET,3
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 4 =====
/COM
SET,4
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 5 =====
/COM
SET, 5
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 6 =====
/COM
SET, 6
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```

/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 7 =====
/COM
SET, 7
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 8 =====
/COM
SET, 8
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 9 =====
/COM
SET, 9

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 10 =====
/COM
SET, 10
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 11 =====
/COM
SET, 11
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
```




Appendix SN-1 to Calculation PGE-009-CALC-003

```

PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 12 =====
/COM
SET, 12
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 13 =====
/COM
SET, 13
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 14 =====
/COM
SET, 14
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 15 =====
/COM
SET, 15
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 16 =====
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```

/COM
SET, 16
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 17 =====
/COM
SET, 17
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 18 =====
/COM
SET, 18
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====

```



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Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 19 =====
/COM
SET,19
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM
EALL
NALL
FINI
/com
/com HARD ROCK RESULTS
/COM
/OUTPUT,padhardprinstress.out
/file,dclslabh2
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```

/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 1 =====
/COM
SET, 1
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 2 =====
/COM
SET, 2
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 3 =====
/COM
SET, 3

```



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Appendix SN-1 to Calculation PGE-009-CALC-003

```

ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 4 =====
/COM
SET, 4
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 5 =====
/COM
SET, 5
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```

PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 6 =====
/COM
SET, 6
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 7 =====
/COM
SET, 7
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 8 =====
/COM
SET, 8
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 9 =====
/COM
SET, 9
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 10 =====
```




Appendix SN-1 to Calculation PGE-009-CALC-003

```

/COM
SET, 10
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN.
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 11 =====
/COM
SET, 11
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 12 =====
/COM
SET, 12
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 13 =====
/COM
SET,13
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 14 =====
/COM
SET,14
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
```



```

/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 15 =====
/COM
SET,15
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 16 =====
/COM
SET,16
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====

```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM =====  
/COM ===== SET 17 =====  
/COM  
SET, 17  
ESEL, TYPE, 1  
NELEM  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF S1 =====  
/COM  
NSORT, S, 1, 0, 0, 2, SEL  
PRNSOL, S, PRIN  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF S3 =====  
/COM  
NSORT, S, 3, 1, 0, 2, SEL  
PRNSOL, S, PRIN  
NUSORT  
/COM  
/COM =====  
/COM =====  
/COM =====  
/COM ===== SET 18 =====  
/COM  
SET, 18  
ESEL, TYPE, 1  
NELEM  
/COM  
/COM =====  
/COM ===== MAXIMUM VALUES OF S1 =====  
/COM  
NSORT, S, 1, 0, 0, 2, SEL  
PRNSOL, S, PRIN  
NUSORT  
/COM  
/COM =====  
/COM ===== MINIMUM VALUES OF S3 =====  
/COM  
NSORT, S, 3, 1, 0, 2, SEL  
PRNSOL, S, PRIN  
NUSORT  
/COM  
/COM =====  
/COM =====  
/COM =====  
/COM ===== SET 19 =====  
/COM  
SET, 19  
ESEL, TYPE, 1  
NELEM  
/COM
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```

/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM
EALL
NALL
FINI
/OUTPUT
/EXIT

```



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Appendix SN-1 to Calculation PGE-009-CALC-003

Below is the ANSYS output file for pad max/min principal stresses for the soft rock analyses.

STRESS DATA SORTED AND PRINTED BY LOAD STEP

THIS ROUTINE SORTS AND PRINTS PRINCIPAL STRESS DATA BY LOAD STEP
FIRST S1 AND THEN S3

SOFT ROCK RESULTS

CURRENT JOBNAME REDEFINED AS dcslabs2

RESUME ANSYS DATA FROM FILE NAME=dcslabs2.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, Gravity, 20 Casks, Soft Rock

ANALYSIS TYPE = STATIC (STEADY-STATE)

NUMBER OF ELEMENT TYPES = 6

15348 ELEMENTS CURRENTLY SELECTED. MAX ELEMENT NUMBER = 33177

17051 NODES CURRENTLY SELECTED. MAX NODE NUMBER = 17051

259 KEYPOINTS CURRENTLY SELECTED. MAX KEYPOINT NUMBER = 259

250 LINES CURRENTLY SELECTED. MAX LINE NUMBER = 396

181 AREAS CURRENTLY SELECTED. MAX AREA NUMBER = 295

70 VOLUMES CURRENTLY SELECTED. MAX VOL. NUMBER = 70

11 COMPONENTS CURRENTLY DEFINED

MAXIMUM LINEAR PROPERTY NUMBER = 5

MAXIMUM REAL CONSTANT SET NUMBER = 6

ACTIVE COORDINATE SYSTEM = 0 (CARTESIAN)

MAXIMUM CONSTRAINT EQUATION NUMBER = 4620

NUMBER OF SPECIFIED CONSTRAINTS = 2193

NUMBER OF NODAL LOADS = 1080

INITIAL JOBNAME = dcslabs2

CURRENT JOBNAME = dcslabs2

PRINT HEADER

DO NOT PRINT SUBTITLE(S)

DO NOT PRINT LOAD STEP ID

DO NOT PRINT NOTE LINE(S)

PRINT COLUMN HEADER LABELS

DO NOT PRINT REPORT TOTALS

***** ANSYS - ENGINEERING ANALYSIS SYSTEM RELEASE 5.7 *****

ANSYS/Structural U

00150104 VERSION=INTEL NT 13:42:51 JUL 10, 2001 CP= 2.544

Pad, Gravity, 20 Casks, Soft Rock

***** ANSYS RESULTS INTERPRETATION (POST1) *****

Appendix SN-1 to Calculation PGE-009-CALC-003

ENTER /SHOW,DEVICE-NAME TO ENABLE GRAPHIC DISPLAY
 ENTER FINISH TO LEAVE POST1

*** NOTE *** CP= 2.544 TIME= 13:42:51
 Reading results into the database (SET command) will update the current displacement and force boundary conditions in the database with the values from the results file for that load set. Note that any subsequent solutions will use these values unless action is taken to either SAVE the current values or not overwrite them (/EXIT,NOSAVE).

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

=====
 =====
 =====
 ===== SET 1 =====

USE LOAD STEP 1 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 4
 TIME/FREQUENCY= 1.0000
 TITLE= Pad, Gravity, 20 Casks, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====

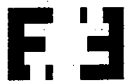
SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
11976	34.536	17.925	0.79647	33.739	29.220
3952	34.536	17.925	0.79647	33.739	29.220

NODE SORT REMOVED



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Appendix SN-1 to Calculation PGE-009-CALC-003

=====

===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13630	-21.139	-45.782	-117.18	96.039	86.394
5606	-21.139	-45.782	-117.18	96.038	86.394

NODE SORT REMOVED

=====

=====

=====

===== SET 2 =====

USE LOAD STEP 2 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 2 SUBSTEP= 1 CUMULATIVE ITERATION= 17
TIME/FREQUENCY= 2.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips North (Z), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7439	340.86	-9.8069	-137.32	478.17	428.88
15443	340.86	-9.8070	-137.32	478.17	428.88



NODE SORT REMOVED

=====
===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15363	10.114	-82.817	-641.61	651.73	610.59
7349	10.114	-82.817	-641.61	651.73	610.59

NODE SORT REMOVED

=====
===== SET 3 =====

USE LOAD STEP 3 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 3 SUBSTEP= 1 CUMULATIVE ITERATION= 26
TIME/FREQUENCY= 3.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 32.93 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15443	358.51	33.070	-132.65	491.15	432.78
15447	297.35	66.916	-62.735	360.08	315.88



NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7349	-85.227	-134.86	-800.81	715.59	692.11
7350	178.76	-124.30	-439.55	618.32	535.51

NODE SORT REMOVED

=====
 ===== SET 4 =====
 =====

USE LOAD STEP 4 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 4 SUBSTEP= 1 CUMULATIVE ITERATION= 30

TIME/FREQUENCY= 4.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====
 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15443	354.68	42.567	-130.05	484.73	425.55



Appendix SN-1 to Calculation PGE-009-CALC-003

15447 292.22 80.451 -57.106 349.32 304.79

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7349	-97.833	-144.14	-806.32	708.49	686.51
7350	158.02	-148.71	-435.77	593.79	514.33

NODE SORT REMOVED

=====
===== SET 5 =====

USE LOAD STEP 5 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 5 SUBSTEP= 1 CUMULATIVE ITERATION= 34
TIME/FREQUENCY= 5.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
------	----	----	----	------	------



Appendix SN-1 to Calculation PGE-009-CALC-003

15443	346.66	45.804	-124.96	471.62	413.58
15447	285.04	86.621	-51.137	336.17	292.71

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7349	-96.351	-143.98	-777.81	681.46	658.93
4891	-0.35162	-149.28	-455.93	455.58	402.35

NODE SORT REMOVED

=====
 ===== SET 6 =====
 =====

USE LOAD STEP 6 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 6 SUBSTEP= 1 CUMULATIVE ITERATION= 42
 TIME/FREQUENCY= 6.0000
 TITLE= Pad, HE(1), 20 Casks, 515 Kips West (W), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====
 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	S1	S2	S3	SINT	SEQV
15363	313.55	6.3136	-99.306	412.86	371.49
15443	313.48	6.2733	-99.283	412.77	371.41

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7439	-55.509	-75.267	-595.34	539.83	530.23
7349	-55.516	-75.262	-595.32	539.80	530.21

NODE SORT REMOVED

=====
 ===== SET 7 =====
 =====

USE LOAD STEP 7 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 7 SUBSTEP= 1 CUMULATIVE ITERATION= 54

TIME/FREQUENCY= 7.0000

TITLE= Pad, HE(1), 20 Casks, 206 Kips North (z), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====
 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	S1	S2	S3	SINT	SEQV
7439	163.54	-5.2440	-67.445	230.98	207.01
15443	163.54	-5.2441	-67.445	230.98	207.01

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15363	2.0553	-38.727	-286.95	289.00	270.93
7349	2.0553	-38.727	-286.95	289.00	270.93

NODE SORT REMOVED

=====
 ===== SET 8 =====
 =====

USE LOAD STEP 8 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 8 SUBSTEP= 1 CUMULATIVE ITERATION= 63

TIME/FREQUENCY= 8.0000

TITLE= Pad, HE(1), 20 Casks, 206 Kips West (X), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====
 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



Appendix SN-1 to Calculation PGE-009-CALC-003

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15443	147.91	0.21560	-47.637	195.55	176.55
15363	147.91	0.22036	-47.639	195.55	176.55

NODE SORT REMOVED

```

=====
===== MINIMUM VALUES OF S3 =====
=====

```

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7439	-25.407	-35.840	-264.88	239.47	234.43
7349	-25.406	-35.838	-264.88	239.47	234.43

NODE SORT REMOVED

```

=====
=====
=====
===== SET 9 =====
=====

```

USE LOAD STEP 9 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 9 SUBSTEP= 1 CUMULATIVE ITERATION= 69
TIME/FREQUENCY= 9.0000

TITLE= Pad, HE(3), 20 Casks, 171.2 Kips North (Z), Max Dn, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

```

=====
===== MAXIMUM VALUES OF S1 =====
=====

```

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



Appendix SN-1 to Calculation PGE-009-CALC-003

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7439	115.31	-7.6092	-47.329	162.64	146.87
15443	115.31	-7.6084	-47.328	162.64	146.87

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

=====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7349	-15.048	-57.490	-348.54	333.49	314.43
15363	-15.042	-57.486	-348.53	333.49	314.43

NODE SORT REMOVED

=====

=====

===== SET 10 =====

=====

USE LOAD STEP 10 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 10 SUBSTEP= 1 CUMULATIVE ITERATION= 73

TIME/FREQUENCY= 10.000

TITLE= Pad, HE(3), 20 Casks, 171.2 Kips West (X), Max Dn, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF S1 =====

=====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15363	101.88	-7.8697	-31.269	133.14	123.12
15443	101.88	-7.8694	-31.270	133.14	123.12

NODE SORT REMOVED

```

=====
===== MINIMUM VALUES OF S3 =====
=====

```

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5606	-45.216	-148.82	-348.65	303.44	267.15
5603	-45.216	-148.82	-348.65	303.44	267.15

NODE SORT REMOVED

```

=====
===== SET 11 =====
=====

```

USE LOAD STEP 11 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 11 SUBSTEP= 1 CUMULATIVE ITERATION= 85
TIME/FREQUENCY= 11.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips North (Z), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

```

=====
===== MAXIMUM VALUES OF S1 =====
=====

```

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2



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Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7439	329.04	-9.5507	-132.80	461.84	414.20
15443	329.04	-9.5507	-132.80	461.84	414.20

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

=====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15363	12.389	-75.318	-600.41	612.80	573.99
7349	12.389	-75.318	-600.41	612.80	573.99

NODE SORT REMOVED

=====

=====

=====

===== SET 12 =====

=====

USE LOAD STEP 12 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 12 SUBSTEP= 1 CUMULATIVE ITERATION= 94
TIME/FREQUENCY= 12.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF S1 =====

=====



SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15443	347.42	31.904	-128.08	475.50	419.08
15447	288.06	65.199	-59.322	347.38	304.83

NODE SORT REMOVED

```

=====
===== MINIMUM VALUES OF S3 =====
=====

```

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7349	-78.203	-124.79	-747.65	669.45	647.41
7350	167.68	-116.42	-412.14	579.82	502.18

NODE SORT REMOVED

```

=====
=====
=====
===== SET 13 =====
=====

```

USE LOAD STEP 13 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 13 SUBSTEP= 1 CUMULATIVE ITERATION= 98
TIME/FREQUENCY= 13.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

```

=====
===== MAXIMUM VALUES OF S1 =====
=====

```



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Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15443	343.92	40.664	-125.56	469.48	412.31
15447	283.18	77.690	-53.451	336.63	293.89

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

=====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7349	-89.773	-133.44	-752.05	662.28	641.56
7350	148.05	-138.91	-408.27	556.32	481.86

NODE SORT REMOVED

=====

=====

=====

===== SET 14 =====

=====

USE LOAD STEP 14 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 14 SUBSTEP= 1 CUMULATIVE ITERATION= 102
 TIME/FREQUENCY= 14.000
 TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF S1 =====

=====



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15443	336.26	43.004	-120.58	456.85	400.92
15447	276.44	82.378	-47.196	323.64	282.12

NODE SORT REMOVED

```

=====
===== MINIMUM VALUES OF S3 =====
=====

```

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7349	-88.421	-132.88	-725.17	636.74	615.72
4891	2.5773	-135.69	-422.58	425.15	375.62

NODE SORT REMOVED

```

=====
=====
===== SET 15 =====
=====

```

USE LOAD STEP 15 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 15 SUBSTEP= 1 CUMULATIVE ITERATION= 110

TIME/FREQUENCY= 15.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips West (X), Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

```

=====

```



Appendix SN-1 to Calculation PGE-009-CALC-003

===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15363	303.15	3.0201	-96.756	399.91	360.53
15443	303.15	3.0169	-96.752	399.90	360.53

NODE SORT REMOVED

===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7439	-50.159	-66.943	-555.81	505.65	497.47
7349	-50.159	-66.941	-555.80	505.64	497.47

NODE SORT REMOVED

===== SET 16 =====

USE LOAD STEP 16 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 16 SUBSTEP= 1 CUMULATIVE ITERATION= 123

TIME/FREQUENCY= 16.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips North (Z), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.



Appendix SN-1 to Calculation PGE-009-CALC-003

=====
===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7439	151.00	-4.3393	-60.913	211.91	190.05
15443	150.99	-4.3415	-60.913	211.90	190.04

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7349	7.4126	-32.415	-268.85	276.26	258.66
15363	7.4128	-32.415	-268.85	276.26	258.66

NODE SORT REMOVED

=====
=====
=====
===== SET 17 =====

USE LOAD STEP 17 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 136
TIME/FREQUENCY= 17.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips West (X), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.



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Appendix SN-1 to Calculation PGE-009-CALC-003

=====

===== MAXIMUM VALUES OF S1 =====

=====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15363	139.54	0.58308	-44.892	184.43	166.42
15443	139.52	0.56852	-44.883	184.40	166.40

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

=====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7439	-21.289	-28.584	-249.72	228.43	224.87
7349	-21.292	-28.582	-249.71	228.42	224.86

NODE SORT REMOVED

=====

=====

=====

===== SET 18 =====

=====

USE LOAD STEP 18 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 18 SUBSTEP= 1 CUMULATIVE ITERATION= 151

TIME/FREQUENCY= 18.000

TITLE= Pad, LTSP(4), 20 Casks, 156 Kips North (Z), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

Appendix SN-1 to Calculation PGE-009-CALC-003

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

 ===== MAXIMUM VALUES OF S1 =====

 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7439	142.13	-3.8643	-57.245	199.37	178.76
15443	142.12	-3.8660	-57.245	199.37	178.76

NODE SORT REMOVED

=====

 ===== MINIMUM VALUES OF S3 =====

 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7349	7.6318	-30.009	-252.01	259.64	243.02
15363	7.6319	-30.009	-252.01	259.64	243.02

NODE SORT REMOVED

=====

 =====

 ===== SET 19 =====

 =====

USE LOAD STEP 19 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 19 SUBSTEP= 1 CUMULATIVE ITERATION= 168

 TIME/FREQUENCY= 19.000

TITLE= Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Soft Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.



Appendix SN-1 to Calculation PGE-009-CALC-003

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
15443	130.10	1.6808	-41.781	171.89	154.80
15363	130.10	1.6809	-41.782	171.89	154.80

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
7439	-19.607	-28.842	-240.74	221.13	216.66
7349	-19.606	-28.841	-240.74	221.13	216.66

NODE SORT REMOVED

=====

=====

=====

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 58.484

*** NOTE *** CP= 58.484 TIME= 13:44:01
 A total of 1 warnings and errors written to dcslabs2.err.



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Appendix SN-1 to Calculation PGE-009-CALC-003

Sheet 178 of 229

HARD ROCK RESULTS

/OUTPUT FILE= padhardprinstress.out



Below is the ANSYS output file for pad max/min principal stresses for the hard rock analyses.

CURRENT JOBNAME REDEFINED AS dcslabh2

RESUME ANSYS DATA FROM FILE NAME=dcslabh2.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, HE(1), 20 Casks, 515 Kips North (Z), Hard Rock
 ANALYSIS TYPE = STATIC (STEADY-STATE)

NUMBER OF ELEMENT TYPES = 6
 15348 ELEMENTS CURRENTLY SELECTED. MAX ELEMENT NUMBER = 33177
 17051 NODES CURRENTLY SELECTED. MAX NODE NUMBER = 17051
 259 KEYPOINTS CURRENTLY SELECTED. MAX KEYPOINT NUMBER = 259
 250 LINES CURRENTLY SELECTED. MAX LINE NUMBER = 396
 181 AREAS CURRENTLY SELECTED. MAX AREA NUMBER = 295
 70 VOLUMES CURRENTLY SELECTED. MAX VOL. NUMBER = 70
 11 COMPONENTS CURRENTLY DEFINED
 MAXIMUM LINEAR PROPERTY NUMBER = 5
 MAXIMUM REAL CONSTANT SET NUMBER = 6
 ACTIVE COORDINATE SYSTEM = 0 (CARTESIAN)
 MAXIMUM CONSTRAINT EQUATION NUMBER = 4620
 NUMBER OF SPECIFIED CONSTRAINTS = 2193
 NUMBER OF NODAL LOADS = 2160

INITIAL JOBNAME = dcslabs2
 CURRENT JOBNAME = dcslabh2

PRINT HEADER
 DO NOT PRINT SUBTITLE(S)
 DO NOT PRINT LOAD STEP ID
 DO NOT PRINT NOTE LINE(S)
 PRINT COLUMN HEADER LABELS
 DO NOT PRINT REPORT TOTALS

***** ANSYS RESULTS INTERPRETATION (POST1) *****

ENTER /SHOW,DEVICE-NAME TO ENABLE GRAPHIC DISPLAY
 ENTER FINISH TO LEAVE POST1

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

=====
 =====
 =====
 =====
 ===== SET 1 =====



Appendix SN-1 to Calculation PGE-009-CALC-003

USE LOAD STEP 1 SUBSTEP 0 FOR LOAD CASE 0
 SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 2
 TIME/FREQUENCY= 1.0000
 TITLE= Pad, Gravity, 20 Casks, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1
 9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
3758	16.870	-11.710	-54.132	71.002	61.878
14651	16.870	-11.710	-54.132	71.002	61.878

NODE SORT REMOVED

===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5203	16.454	-9.3859	-54.283	70.737	61.997
13227	16.454	-9.3859	-54.283	70.737	61.997

NODE SORT REMOVED

===== SET 2 =====



Appendix SN-1 to Calculation PGE-009-CALC-003

USE LOAD STEP 2 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 2 SUBSTEP= 1 CUMULATIVE ITERATION= 17
 TIME/FREQUENCY= 2.0000
 TITLE= Pad, HE(1), 20 Casks, 515 Kips North (Z), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13222	163.84	39.775	10.421	153.42	141.06
5198	163.84	39.775	10.421	153.42	141.06

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
14700	2.8873	-42.229	-229.54	232.43	213.48
6676	2.8873	-42.229	-229.54	232.43	213.48

NODE SORT REMOVED

=====

=====

=====

===== SET 3 =====



Appendix SN-1 to Calculation PGE-009-CALC-003

USE LOAD STEP 3 SUBSTEP 0 FOR LOAD CASE 0
 SET COMMAND GOT LOAD STEP= 3 SUBSTEP= 1 CUMULATIVE ITERATION= 30
 TIME/FREQUENCY= 3.0000
 TITLE= Pad, HE(1), 20 Casks, 515 Kips N 32.93 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1
 9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

=====
 MAXIMUM VALUES OF S1
 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2
 SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
14636	155.51	24.056	-53.199	208.70	182.76
11056	155.37	19.069	-76.486	231.86	201.83

NODE SORT REMOVED

=====
 MINIMUM VALUES OF S3
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2
 SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
6624	43.742	-54.714	-226.98	270.72	237.34
5912	59.137	-50.218	-226.67	285.80	249.78

NODE SORT REMOVED

=====
 =====
 =====



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Appendix SN-1 to Calculation PGE-009-CALC-003

===== SET 4 =====

USE LOAD STEP 4 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 4 SUBSTEP= 1 CUMULATIVE ITERATION= 36
TIME/FREQUENCY= 4.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
14635	155.33	26.678	-53.721	209.05	182.65
13211	155.20	27.127	-80.884	236.09	204.70

NODE SORT REMOVED

===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
6625	72.488	-56.375	-230.68	303.17	263.53
5913	75.531	-52.427	-230.68	306.21	266.37

NODE SORT REMOVED

=====

Appendix SN-1 to Calculation PGE-009-CALC-003

===== SET 5 =====

USE LOAD STEP 5 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 5 SUBSTEP= 1 CUMULATIVE ITERATION= 42
 TIME/FREQUENCY= 5.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13940	158.23	29.075	-79.878	238.11	206.45
14652	158.15	38.844	-64.345	222.50	192.86

NODE SORT REMOVED

===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13992	-3.1687	-71.642	-239.08	235.91	210.21
5913	80.172	-50.908	-238.43	318.60	277.36

NODE SORT REMOVED

=====



Appendix SN-1 to Calculation PGE-009-CALC-003

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===== SET 6 =====

USE LOAD STEP 6 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 6 SUBSTEP= 1 CUMULATIVE ITERATION= 54

TIME/FREQUENCY= 6.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips West (W), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
4525	161.18	42.087	15.468	145.71	134.39
5948	161.18	42.089	15.465	145.72	134.40

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13280	-3.8485	-53.198	-267.49	263.65	242.76
13281	-3.8467	-53.202	-267.49	263.65	242.76

NODE SORT REMOVED



Appendix SN-1 to Calculation PGE-009-CALC-003

=====
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=====
=====
===== SET 7 =====

USE LOAD STEP 7 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 7 SUBSTEP= 1 CUMULATIVE ITERATION= 74
TIME/FREQUENCY= 7.0000

TITLE= Pad, HE(1), 20 Casks, 206 Kips North (z), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5198	64.067	15.339	5.9364	58.131	54.047
13222	64.067	15.339	5.9357	58.132	54.047

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
928	17.343	-27.171	-94.203	111.55	97.256
8952	17.343	-27.171	-94.203	111.55	97.256

NODE SORT REMOVED



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Appendix SN-1 to Calculation PGE-009-CALC-003

=====
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=====
===== SET 8 =====

USE LOAD STEP 8 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 8 SUBSTEP= 1 CUMULATIVE ITERATION= 90
TIME/FREQUENCY= 8.0000
TITLE= Pad, HE(1), 20 Casks, 206 Kips West (X), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
4525	62.545	16.135	5.8760	56.669	52.299
5948	62.545	16.136	5.8757	56.669	52.299

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5604	-17.905	-34.101	-104.65	86.745	79.888
5605	-17.905	-34.101	-104.65	86.745	79.888

NODE SORT REMOVED

```
=====
=====
=====
===== SET 9 =====
=====
```

USE LOAD STEP 9 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 9 SUBSTEP= 1 CUMULATIVE ITERATION= 95
 TIME/FREQUENCY= 9.0000
 TITLE= Pad, HE(3), 20 Casks, 171.2 Kips North (Z), Max Dn, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

```
=====
===== MAXIMUM VALUES OF S1 =====
=====
```

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
14650	40.896	-22.017	-127.58	168.48	147.46
6626	40.896	-22.017	-127.58	168.48	147.46

NODE SORT REMOVED

```
=====
===== MINIMUM VALUES OF S3 =====
=====
```

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
3061	35.248	-42.294	-162.85	198.09	172.90
11085	35.248	-42.294	-162.85	198.09	172.90



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NODE SORT REMOVED

```
=====
=====
=====
===== SET 10 =====
```

USE LOAD STEP 10 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 10 SUBSTEP= 1 CUMULATIVE ITERATION= 99
 TIME/FREQUENCY= 10.000
 TITLE= Pad, HE(3), 20 Casks, 171.2 Kips West (X), Max Dn, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

```
=====
===== MAXIMUM VALUES OF S1 =====
```

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
4490	64.599	-35.933	-182.20	246.80	214.95
5915	64.599	-35.933	-182.20	246.80	214.95

NODE SORT REMOVED

```
=====
===== MINIMUM VALUES OF S3 =====
```

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5203	64.537	-34.614	-182.27	246.81	215.11



5202 64.537 -34.614 -182.27 246.81 215.11

NODE SORT REMOVED

=====
=====
=====
===== SET 11 =====

USE LOAD STEP 11 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 11 SUBSTEP= 1 CUMULATIVE ITERATION= 117
TIME/FREQUENCY= 11.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips North (Z), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5198	137.91	33.740	8.7789	129.13	118.63
13222	137.91	33.740	8.7789	129.13	118.63

NODE SORT REMOVED

=====
===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
------	----	----	----	------	------



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Appendix SN-1 to Calculation PGE-009-CALC-003

2350	36.665	-58.484	-199.16	235.83	205.50
10374	36.665	-58.484	-199.16	235.83	205.50

NODE SORT REMOVED

```
=====
=====
=====
===== SET 12 =====
```

USE LOAD STEP 12 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 12 SUBSTEP= 1 CUMULATIVE ITERATION= 130
TIME/FREQUENCY= 12.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

```
=====
===== MAXIMUM VALUES OF S1 =====
```

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
14636	128.97	18.321	-48.884	177.85	155.55
12500	128.95	16.914	-46.934	175.88	154.21

NODE SORT REMOVED

```
=====
===== MINIMUM VALUES OF S3 =====
```

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	S1	S2	S3	SINT	SEQV
6624	39.584	-45.957	-198.11	237.69	208.53
5912	51.710	-42.399	-197.82	249.53	218.26

NODE SORT REMOVED

```
=====
=====
=====
===== SET 13 =====
```

USE LOAD STEP 13 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 13 SUBSTEP= 1 CUMULATIVE ITERATION= 135
 TIME/FREQUENCY= 13.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

```
=====
===== MAXIMUM VALUES OF S1 =====
```

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
14635	128.72	19.659	-47.979	176.70	154.42
13211	128.68	21.063	-67.016	195.70	169.76

NODE SORT REMOVED

```
=====
===== MINIMUM VALUES OF S3 =====
```

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	S1	S2	S3	SINT	SEQV
5913	66.109	-44.493	-201.57	267.68	232.98
6625	63.843	-47.922	-201.55	265.40	230.79

NODE SORT REMOVED

=====
 =====
 =====
 =====
 ===== SET 14 =====

USE LOAD STEP 14 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 14 SUBSTEP= 1 CUMULATIVE ITERATION= 141
 TIME/FREQUENCY= 14.000
 TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13940	131.02	21.742	-68.628	199.65	173.16
14652	130.93	29.343	-55.716	186.65	161.85

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



Appendix SN-1 to Calculation PGE-009-CALC-003

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5913	70.180	-43.289	-208.22	278.40	242.47
5201	69.441	-45.089	-208.21	277.65	241.68

NODE SORT REMOVED

=====
 =====
 =====
 ===== SET 15 =====

USE LOAD STEP 15 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 15 SUBSTEP= 1 CUMULATIVE ITERATION= 153

TIME/FREQUENCY= 15.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips West (X), Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
4525	135.23	35.520	13.097	122.13	112.60
5948	135.23	35.521	13.095	122.13	112.60

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



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PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13280	-2.8765	-47.626	-230.51	227.64	208.89
13281	-2.8749	-47.629	-230.51	227.64	208.89

NODE SORT REMOVED

=====
 =====
 =====
 =====
 ===== SET 16 =====

USE LOAD STEP 16 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 16 SUBSTEP= 1 CUMULATIVE ITERATION= 177
 TIME/FREQUENCY= 16.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips North (Z), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5198	55.005	13.548	2.8180	52.187	47.736
13222	55.005	13.548	2.8175	52.188	47.736

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
6676	0.96356	-15.032	-81.824	82.787	76.062
14700	0.96157	-15.028	-81.820	82.782	76.058

NODE SORT REMOVED

=====
 =====
 =====
 ===== SET 17 =====

USE LOAD STEP 17 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 202

TIME/FREQUENCY= 17.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips West (X), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
4525	53.914	14.107	4.9298	48.984	45.102
5948	53.914	14.107	4.9291	48.985	45.102

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2



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SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13280	-1.3428	-19.804	-94.806	93.463	85.737
13281	-1.3423	-19.805	-94.806	93.463	85.736

NODE SORT REMOVED

```
=====
=====
=====
===== SET 18 =====
=====
```

USE LOAD STEP 18 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 18 SUBSTEP= 1 CUMULATIVE ITERATION= 227
 TIME/FREQUENCY= 18.000
 TITLE= Pad, LTSP(4), 20 Casks, 156 Kips North (Z), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

```
=====
===== MAXIMUM VALUES OF S1 =====
=====
```

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
3745	51.700	15.016	-17.415	69.115	59.893
11769	51.700	15.016	-17.415	69.115	59.893

NODE SORT REMOVED

```
=====
===== MINIMUM VALUES OF S3 =====
=====
```

Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
6676	-0.99447E-01	-12.790	-74.901	74.802	69.333
14700	-0.96002E-01	-12.772	-74.883	74.787	69.324

NODE SORT REMOVED

```
=====
=====
=====
===== SET 19 =====
```

USE LOAD STEP 19 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 19 SUBSTEP= 1 CUMULATIVE ITERATION= 252
 TIME/FREQUENCY= 19.000

TITLE= Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

```
=====
===== MAXIMUM VALUES OF S1 =====
```

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
11782	51.141	16.117	-26.604	77.744	67.439
14651	51.140	16.127	-26.604	77.744	67.439

NODE SORT REMOVED

```
=====
===== MINIMUM VALUES OF S3 =====
```



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SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13280	-1.8598	-16.395	-86.891	85.032	78.776
13281	-1.8590	-16.397	-86.891	85.032	78.775

NODE SORT REMOVED

```
=====
=====
=====
```

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 115.326

*** NOTE *** CP= 115.326 TIME= 13:45:16
A total of 1 warnings and errors written to dcslabs2.err.

Below is the ANSYS input file that scans the database for the max/min principal stresses for the very hard rock model.

```
/COM
/OUTPUT,padvhardprinstress.out
/COM
/COM      STRESS DATA SORTED AND PRINTED BY LOAD STEP
/COM
/COM
/COM      THIS ROUTINE SORTS AND PRINTS PRINCIPAL STRESS DATA BY LOAD STEP
/COM      FIRST S1 AND THEN S3
/COM
/com      VERY HARD ROCK RESULTS
/COM
/file,dcslabh6
resume
/header,on,off,off,off,on,off
/post1
/COM
EALL
NALL
/COM
/COM =====
/COM =====
/COM =====
/COM =====      SET 1      =====
/COM
SET,1
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM =====      MAXIMUM VALUES OF S1      =====
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====      MINIMUM VALUES OF S3      =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM =====      SET 2      =====
/COM
SET,2
ESEL,TYPE,1
NELEM
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 3 =====
/COM
SET, 3
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 4 =====
/COM
SET, 4
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
```

Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 5 =====
/COM
SET, 5
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 6 =====
/COM
SET, 6
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 7 =====
/COM
SET, 7
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 8 =====
/COM
SET, 8
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 9 =====
/COM
SET, 9
```

Appendix SN-1 to Calculation PGE-009-CALC-003

```
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 10 =====
/COM
SET, 10
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 11 =====
/COM
SET, 11
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
```



Appendix SN-1 to Calculation PGE-009-CALC-003

```
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 12 =====
/COM
SET, 12
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 13 =====
/COM
SET, 13
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
```

Appendix SN-1 to Calculation PGE-009-CALC-003

```
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 14 =====
/COM
SET, 14
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 15 =====
/COM
SET, 15
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 16 =====
```



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Appendix SN-1 to Calculation PGE-009-CALC-003

```
/COM
SET, 16
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 17 =====
/COM
SET, 17
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT, S, 1, 0, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT, S, 3, 1, 0, 2, SEL
PRNSOL, S, PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 18 =====
/COM
SET, 18
ESEL, TYPE, 1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
```



```
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM ===== SET 19 =====
/COM
SET,19
ESEL,TYPE,1
NELEM
/COM
/COM =====
/COM ===== MAXIMUM VALUES OF S1 =====
/COM
NSORT,S,1,0,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM ===== MINIMUM VALUES OF S3 =====
/COM
NSORT,S,3,1,0,2,SEL
PRNSOL,S,PRIN
NUSORT
/COM
/COM =====
/COM =====
/COM =====
/COM
EALL
NALL
FINI
/OUTPUT
/EXIT
```



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Appendix SN-1 to Calculation PGE-009-CALC-003

Below is the ANSYS output file for pad max/min principal stresses for the very hard rock analyses.

STRESS DATA SORTED AND PRINTED BY LOAD STEP

THIS ROUTINE SORTS AND PRINTS PRINCIPAL STRESS DATA BY LOAD STEP
FIRST S1 AND THEN S3

VERY HARD ROCK RESULTS

CURRENT JOBNAME REDEFINED AS dcslabh6

RESUME ANSYS DATA FROM FILE NAME=dcslabh6.db

*** ANSYS GLOBAL STATUS ***

TITLE = Pad, Gravity, 20 Casks, Very Hard Rock

ANALYSIS TYPE = STATIC (STEADY-STATE)

NUMBER OF ELEMENT TYPES = 6

15348 ELEMENTS CURRENTLY SELECTED. MAX ELEMENT NUMBER = 33177

17051 NODES CURRENTLY SELECTED. MAX NODE NUMBER = 17051

259 KEYPOINTS CURRENTLY SELECTED. MAX KEYPOINT NUMBER = 259

250 LINES CURRENTLY SELECTED. MAX LINE NUMBER = 396

181 AREAS CURRENTLY SELECTED. MAX AREA NUMBER = 295

70 VOLUMES CURRENTLY SELECTED. MAX VOL. NUMBER = 70

11 COMPONENTS CURRENTLY DEFINED

MAXIMUM LINEAR PROPERTY NUMBER = 5

MAXIMUM REAL CONSTANT SET NUMBER = 6

ACTIVE COORDINATE SYSTEM = 0 (CARTESIAN)

MAXIMUM CONSTRAINT EQUATION NUMBER = 4620

NUMBER OF SPECIFIED CONSTRAINTS = 2193

NUMBER OF NODAL LOADS = 3240

INITIAL JOBNAME = dcslabh6

CURRENT JOBNAME = dcslabh6

PRINT HEADER

DO NOT PRINT SUBTITLE(S)

DO NOT PRINT LOAD STEP ID

DO NOT PRINT NOTE LINE(S)

PRINT COLUMN HEADER LABELS

DO NOT PRINT REPORT TOTALS

***** ANSYS - ENGINEERING ANALYSIS SYSTEM RELEASE 5.7 *****

ANSYS/Structural U

00150104 VERSION=INTEL NT 15:38:54 JUL 10, 2001 CP= 1.182

Pad, Gravity, 20 Casks, Very Hard Rock

Appendix SN-1 to Calculation PGE-009-CALC-003

***** ANSYS RESULTS INTERPRETATION (POST1) *****

ENTER /SHOW,DEVICE-NAME TO ENABLE GRAPHIC DISPLAY
 ENTER FINISH TO LEAVE POST1

*** NOTE *** CP= 1.182 TIME= 15:38:54
 Reading results into the database (SET command) will update the current displacement and force boundary conditions in the database with the values from the results file for that load set. Note that any subsequent solutions will use these values unless action is taken to either SAVE the current values or not overwrite them (/EXIT,NOSAVE).

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

=====

=====

=====

===== SET 1 =====

=====

USE LOAD STEP 1 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 2
 TIME/FREQUENCY= 1.0000
 TITLE= Pad, Gravity, 20 Casks, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF S1 =====

=====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
3758	17.312	-8.9691	-54.137	71.449	62.593
6627	17.312	-8.9691	-54.137	71.449	62.593



Appendix SN-1 to Calculation PGE-009-CALC-003

NODE SORT REMOVED

=====

MINIMUM VALUES OF S3

=====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5203	17.112	-7.8701	-54.218	71.330	62.691
13227	17.112	-7.8701	-54.218	71.330	62.691

NODE SORT REMOVED

=====

=====

=====

===== SET 2 =====

=====

USE LOAD STEP 2 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 2 SUBSTEP= 1 CUMULATIVE ITERATION= 17

TIME/FREQUENCY= 2.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips North (Z), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

=====

===== MAXIMUM VALUES OF S1 =====

=====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5198	164.07	41.032	14.652	149.41	138.13
13222	164.07	41.032	14.652	149.41	138.13



NODE SORT REMOVED

=====
===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
8221	40.406	-65.023	-228.71	269.12	234.88
197	40.406	-65.023	-228.71	269.12	234.88

NODE SORT REMOVED

=====
===== SET 3 =====

USE LOAD STEP 3 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 3 SUBSTEP= 1 CUMULATIVE ITERATION= 32
TIME/FREQUENCY= 3.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 32.93 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
14636	155.65	29.305	-47.858	203.50	177.95



Appendix SN-1 to Calculation PGE-009-CALC-003

11056 155.50 27.124 -69.868 225.37 195.81

NODE SORT REMOVED

=====

 ===== MINIMUM VALUES OF S3 =====

 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
6624	48.812	-55.753	-226.71	275.53	240.91
3756	54.685	-56.819	-226.53	281.21	245.27

NODE SORT REMOVED

=====

 ===== SET 4 =====

 =====

USE LOAD STEP 4 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 4 SUBSTEP= 1 CUMULATIVE ITERATION= 39
 TIME/FREQUENCY= 4.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 45 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

 ===== MAXIMUM VALUES OF S1 =====

 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
------	----	----	----	------	------



Appendix SN-1 to Calculation PGE-009-CALC-003

14635	155.30	33.727	-50.617	205.91	179.29
13923	154.93	29.063	-81.089	236.02	204.55

NODE SORT REMOVED

```

=====
===== MINIMUM VALUES OF S3 =====
=====

```

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
6625	74.335	-57.348	-230.00	304.34	264.36
5913	76.923	-55.510	-229.99	306.92	266.63

NODE SORT REMOVED

```

=====
=====
=====
===== SET 5 =====
=====

```

USE LOAD STEP 5 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 5 SUBSTEP= 1 CUMULATIVE ITERATION= 46

TIME/FREQUENCY= 5.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips N 57.07 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

```

=====
===== MAXIMUM VALUES OF S1 =====
=====

```

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE



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Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	S1	S2	S3	SINT	SEQV
14652	157.98	46.111	-62.082	220.06	190.59
13940	157.92	38.966	-75.649	233.56	202.28

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5913	81.002	-54.410	-237.57	318.57	276.92
5201	80.559	-55.551	-237.56	318.12	276.46

NODE SORT REMOVED

=====
 ===== SET 6 =====
 =====

USE LOAD STEP 6 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 6 SUBSTEP= 1 CUMULATIVE ITERATION= 58
 TIME/FREQUENCY= 6.0000

TITLE= Pad, HE(1), 20 Casks, 515 Kips West (W), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====
 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

Appendix SN-1 to Calculation PGE-009-CALC-003

NODE	S1	S2	S3	SINT	SEQV
4525	161.16	42.472	15.316	145.85	134.34
5948	161.16	42.473	15.315	145.85	134.35

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13280	-2.9417	-46.317	-254.17	251.23	232.60
13281	-2.9408	-46.319	-254.17	251.23	232.60

NODE SORT REMOVED

=====
 ===== SET 7 =====
 =====

USE LOAD STEP 7 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 7 SUBSTEP= 1 CUMULATIVE ITERATION= 80
 TIME/FREQUENCY= 7.0000

TITLE= Pad, HE(1), 20 Casks, 206 Kips North (z), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====
 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.



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Appendix SN-1 to Calculation PGE-009-CALC-003

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5198	64.113	15.918	7.4240	56.689	52.955
13222	64.113	15.918	7.4233	56.689	52.956

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
8221	16.409	-26.771	-94.222	110.63	96.575
197	16.409	-26.771	-94.222	110.63	96.575

NODE SORT REMOVED

=====
 ===== SET 8 =====
 =====

USE LOAD STEP 8 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 8 SUBSTEP= 1 CUMULATIVE ITERATION= 99
 TIME/FREQUENCY= 8.0000

TITLE= Pad, HE(1), 20 Casks, 206 Kips West (X), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====
 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

Appendix SN-1 to Calculation PGE-009-CALC-003

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
4525	62.589	16.554	6.0923	56.496	52.060
5948	62.589	16.554	6.0923	56.496	52.060

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5203	40.389	-24.003	-98.921	139.31	120.76
5202	40.389	-24.003	-98.921	139.31	120.76

NODE SORT REMOVED

=====
 ===== SET 9 =====
 =====

USE LOAD STEP 9 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 9 SUBSTEP= 1 CUMULATIVE ITERATION= 103

TIME/FREQUENCY= 9.0000

TITLE= Pad, HE(3), 20 Casks, 171.2 Kips North (Z), Max Dn, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====
 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2



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Appendix SN-1 to Calculation PGE-009-CALC-003

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
11781	42.068	-30.406	-144.28	186.35	162.70
3757	42.067	-30.406	-144.28	186.35	162.70

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
11085	39.520	-36.865	-162.80	202.32	176.96
3061	39.520	-36.865	-162.80	202.32	176.96

NODE SORT REMOVED

=====
 ===== SET 10 =====
 =====

USE LOAD STEP 10 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 10 SUBSTEP= 1 CUMULATIVE ITERATION= 106
 TIME/FREQUENCY= 10.000

TITLE= Pad, HE(3), 20 Casks, 171.2 Kips West (X), Max Dn, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
 9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====
 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2



SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5915	65.599	-34.035	-181.68	247.28	215.49
4490	65.599	-34.035	-181.68	247.28	215.49

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5203	65.565	-33.525	-181.71	247.27	215.55
5202	65.565	-33.525	-181.71	247.27	215.55

NODE SORT REMOVED

=====
 ===== SET 11 =====
 =====

USE LOAD STEP 11 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 11 SUBSTEP= 1 CUMULATIVE ITERATION= 122
TIME/FREQUENCY= 11.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips North (Z), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====
 =====



Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5198	138.09	34.756	12.604	125.49	116.01
13222	138.09	34.756	12.604	125.49	116.01

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====
 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
8221	35.032	-56.081	-199.14	234.17	204.46
197	35.032	-56.081	-199.14	234.17	204.46

NODE SORT REMOVED

=====
 ===== SET 12 =====
 =====

USE LOAD STEP 12 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 12 SUBSTEP= 1 CUMULATIVE ITERATION= 136

TIME/FREQUENCY= 12.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 32.93 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====
 =====

Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
14636	129.09	23.350	-43.420	172.51	150.66
11056	128.94	22.276	-61.508	190.45	165.33

NODE SORT REMOVED

=====
 ===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
6624	44.133	-47.140	-197.86	241.99	211.67
3756	47.682	-48.741	-197.66	245.34	214.09

NODE SORT REMOVED

=====
 ===== SET 13 =====

USE LOAD STEP 13 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 13 SUBSTEP= 1 CUMULATIVE ITERATION= 142

TIME/FREQUENCY= 13.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 45 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.

=====
 ===== MAXIMUM VALUES OF S1 =====



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Appendix SN-1 to Calculation PGE-009-CALC-003

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
14635	128.65	26.365	-44.641	173.29	150.88
13211	128.38	28.374	-62.613	190.99	165.46

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

=====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
6625	65.470	-49.021	-200.94	266.41	231.47
5913	67.330	-47.439	-200.92	268.25	233.12

NODE SORT REMOVED

=====

=====

=====

===== SET 14 =====

=====

USE LOAD STEP 14 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 14 SUBSTEP= 1 CUMULATIVE ITERATION= 149

TIME/FREQUENCY= 14.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips N 57.03 W (Z,X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====



Appendix SN-1 to Calculation PGE-009-CALC-003

===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
14652	130.72	36.482	-53.360	184.08	159.43
13940	130.68	30.751	-64.643	195.32	169.17

NODE SORT REMOVED

===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
5913	70.891	-46.580	-207.41	278.30	241.99
5201	70.486	-47.631	-207.41	277.90	241.57

NODE SORT REMOVED

===== SET 15 =====

USE LOAD STEP 15 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 15 SUBSTEP= 1 CUMULATIVE ITERATION= 161

TIME/FREQUENCY= 15.000

TITLE= Pad, LTSP(2), 20 Casks, 440 Kips West (X), Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM

9056 SELECTED ELEMENTS BY NELE COMMAND.



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=====

===== MAXIMUM VALUES OF S1 =====

=====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
4525	135.23	35.914	13.062	122.17	112.50
5948	135.23	35.915	13.060	122.17	112.50

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

=====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13280	-2.1233	-41.318	-218.94	216.82	200.12
13281	-2.1216	-41.321	-218.94	216.82	200.12

NODE SORT REMOVED

=====

=====

=====

===== SET 16 =====

=====

USE LOAD STEP 16 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 16 SUBSTEP= 1 CUMULATIVE ITERATION= 186
TIME/FREQUENCY= 16.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips North (Z), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.



Appendix SN-1 to Calculation PGE-009-CALC-003

=====

===== MAXIMUM VALUES OF S1 =====

=====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13222	55.090	13.890	4.5719	50.518	46.563
5198	55.090	13.890	4.5719	50.518	46.563

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

=====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
8221	13.844	-22.459	-79.945	93.789	81.911
197	13.844	-22.459	-79.945	93.789	81.911

NODE SORT REMOVED

=====

=====

=====

===== SET 17 =====

=====

USE LOAD STEP 17 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 3 CUMULATIVE ITERATION= 257
TIME/FREQUENCY= 17.000

TITLE= Pad, LTSP(2), 20 Casks, 176 Kips West (X), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

11550 NODES (OF 17051 DEFINED) SELECTED FROM



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9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
4525	53.924	14.218	4.9798	48.944	45.042
5948	53.924	14.218	4.9796	48.945	45.042

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13281	-1.0311	-17.049	-89.829	88.798	81.971
13280	-1.0313	-17.049	-89.829	88.798	81.971

NODE SORT REMOVED

=====

=====

===== SET 18 =====

USE LOAD STEP 18 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 18 SUBSTEP= 3 CUMULATIVE ITERATION= 338

TIME/FREQUENCY= 18.000

TITLE= Pad, LTSP(4), 20 Casks, 156 Kips North (Z), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

Appendix SN-1 to Calculation PGE-009-CALC-003

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

===== MAXIMUM VALUES OF S1 =====

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
3745	51.697	15.444	-15.280	66.977	58.070
11769	51.697	15.444	-15.280	66.977	58.070

NODE SORT REMOVED

=====

===== MINIMUM VALUES OF S3 =====

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
6676	0.23557	-11.778	-71.002	71.238	66.055
14700	0.23612	-11.776	-71.001	71.237	66.055

NODE SORT REMOVED

=====

=====

===== SET 19 =====

USE LOAD STEP 19 SUBSTEP 0 FOR LOAD CASE 0

SET COMMAND GOT LOAD STEP= 19 SUBSTEP= 3 CUMULATIVE ITERATION= 412
TIME/FREQUENCY= 19.000

TITLE= Pad, LTSP(4), 20 Casks, 156 Kips West (X), Max Up, Very Hard Rock

ESEL FOR LABEL= TYPE FROM 1 TO 1 BY 1

9056 ELEMENTS (OF 15348 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.



Appendix SN-1 to Calculation PGE-009-CALC-003

11550 NODES (OF 17051 DEFINED) SELECTED FROM
9056 SELECTED ELEMENTS BY NELE COMMAND.

=====

MAXIMUM VALUES OF S1

SORT ON ITEM=S COMPONENT=1 ORDER= 0 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
11782	51.055	18.125	-25.492	76.547	66.506
14651	51.055	18.126	-25.492	76.547	66.506

NODE SORT REMOVED

=====

MINIMUM VALUES OF S3

SORT ON ITEM=S COMPONENT=3 ORDER= 1 KABS= 0 NMAX= 2

SORT COMPLETED FOR 2 VALUES.

PRINT S NODAL SOLUTION PER NODE

NODE	S1	S2	S3	SINT	SEQV
13280	-1.5565	-13.914	-81.947	80.391	74.980
13281	-1.5565	-13.914	-81.947	80.391	74.980

NODE SORT REMOVED

=====

15348 ELEMENTS (OF 15348 DEFINED) SELECTED BY EALL COMMAND.

17051 NODES (OF 17051 DEFINED) SELECTED BY NALL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 57.403

*** NOTE *** CP= 57.403 TIME= 15:40:04
A total of 2 warnings and errors written to dcslabh6.err.