
Appendix F
FLAC^{3D} Seismic Modeling

Appendix F

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Explanation for figure numbering:

Figure F-A.B.C.x

F = Appendix F

A = 1 for as-designed, 2 for as-built, and 3 for independent design

B = 1 for OLE, 2 for CLE, and 3 for MCE

C = Figure sequence number for set

x = a for the first EQ in sequence, b for the second EQ sequence, etc. (for example, a = Michoacan, b = Nisqually P0, etc.). Note earthquake record sequence changed from OLE to CLE and MCE in some cases. See caption to confirm record being used.

Example

Figure F-1.1.9.b

As-designed case, OLE, 9th figure in sequence, Michoacan EQ

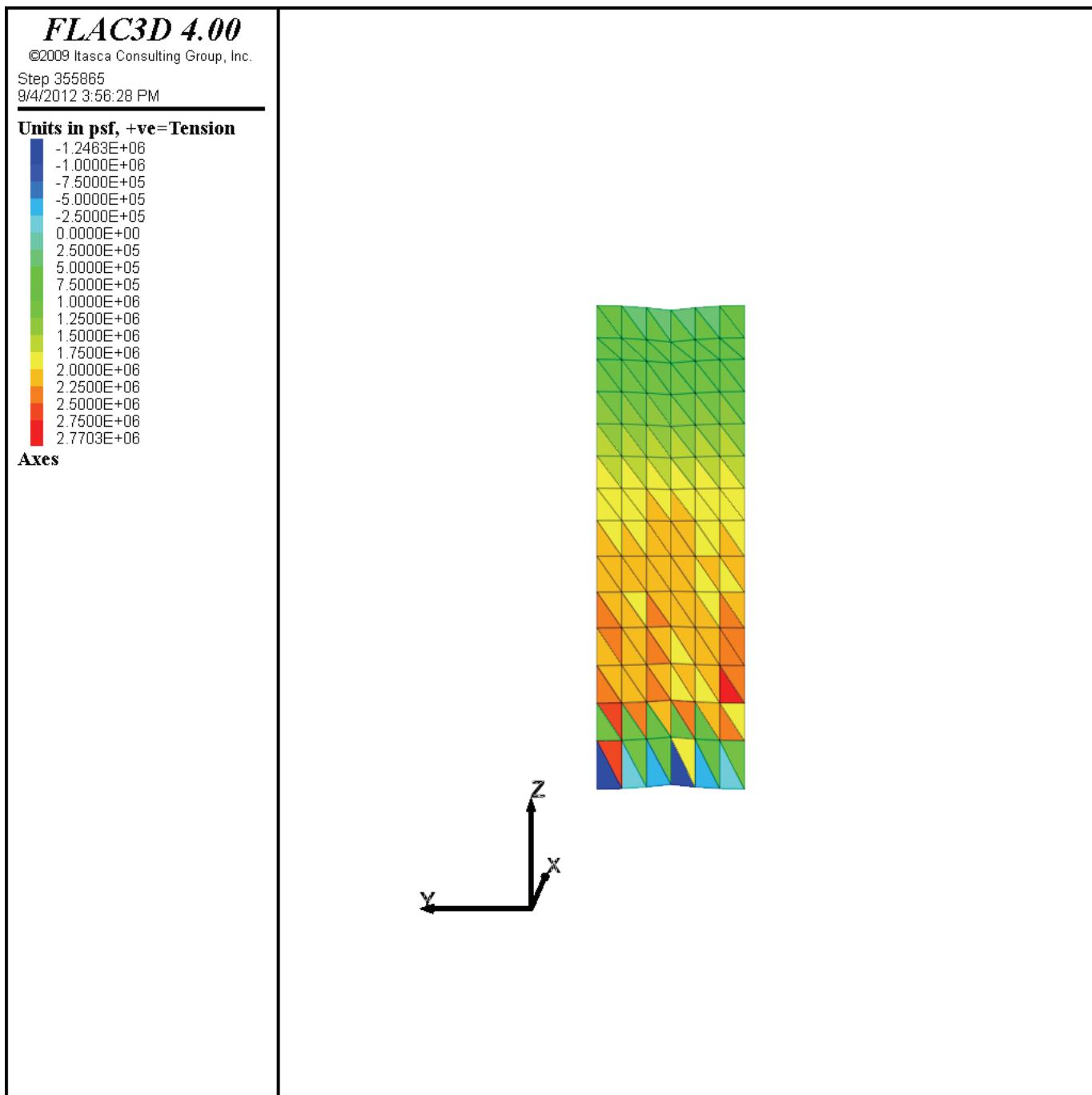


Figure F-1.1.1.a Facewall Membrane Stress – As-Designed Snapshot At 20 Sec – Michoacan EQ Record

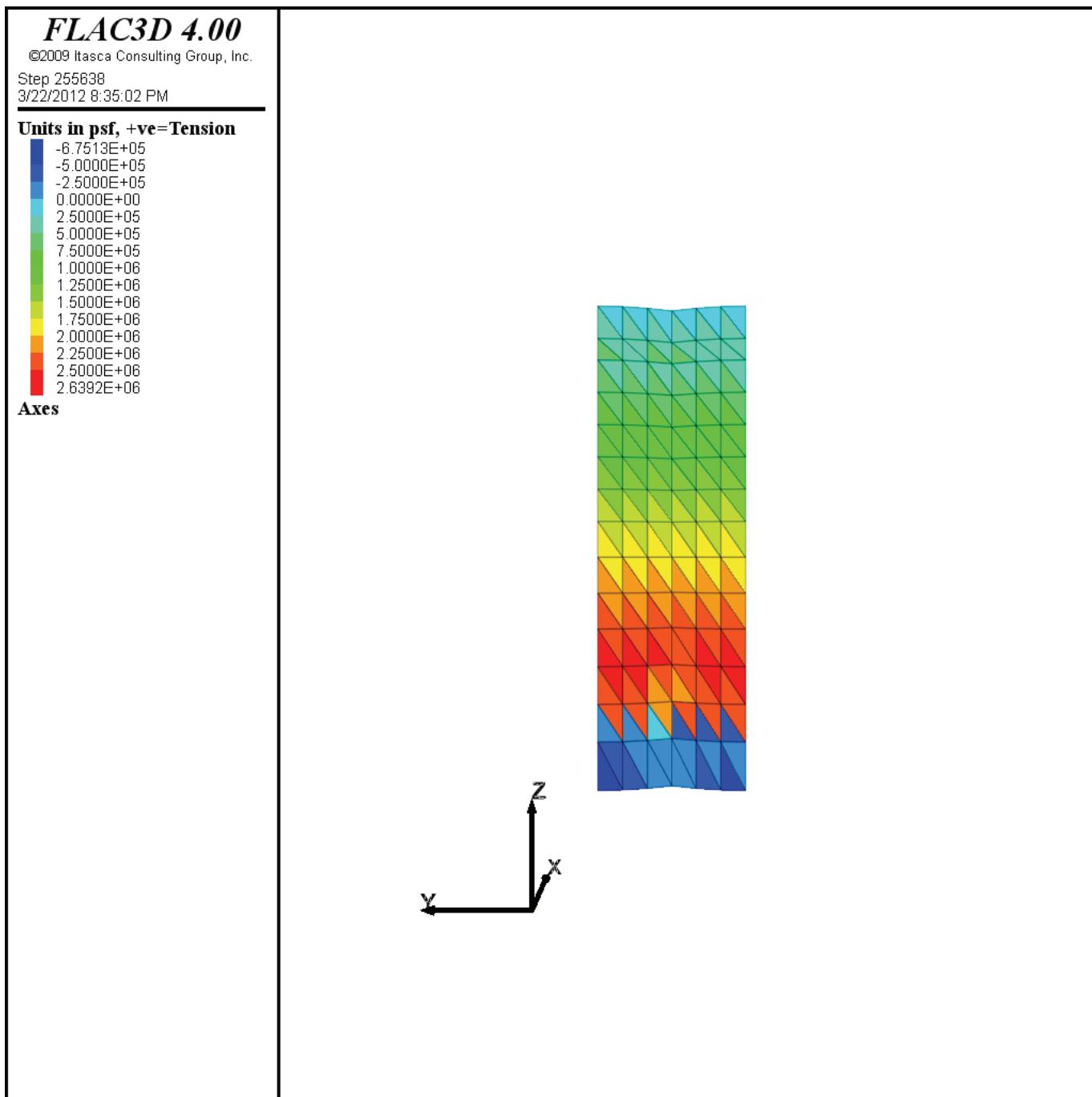


Figure F-1.1.2.a Facewall Membrane Stress – As-Designed Snapshot At 40 Sec – Michoacan EQ Record

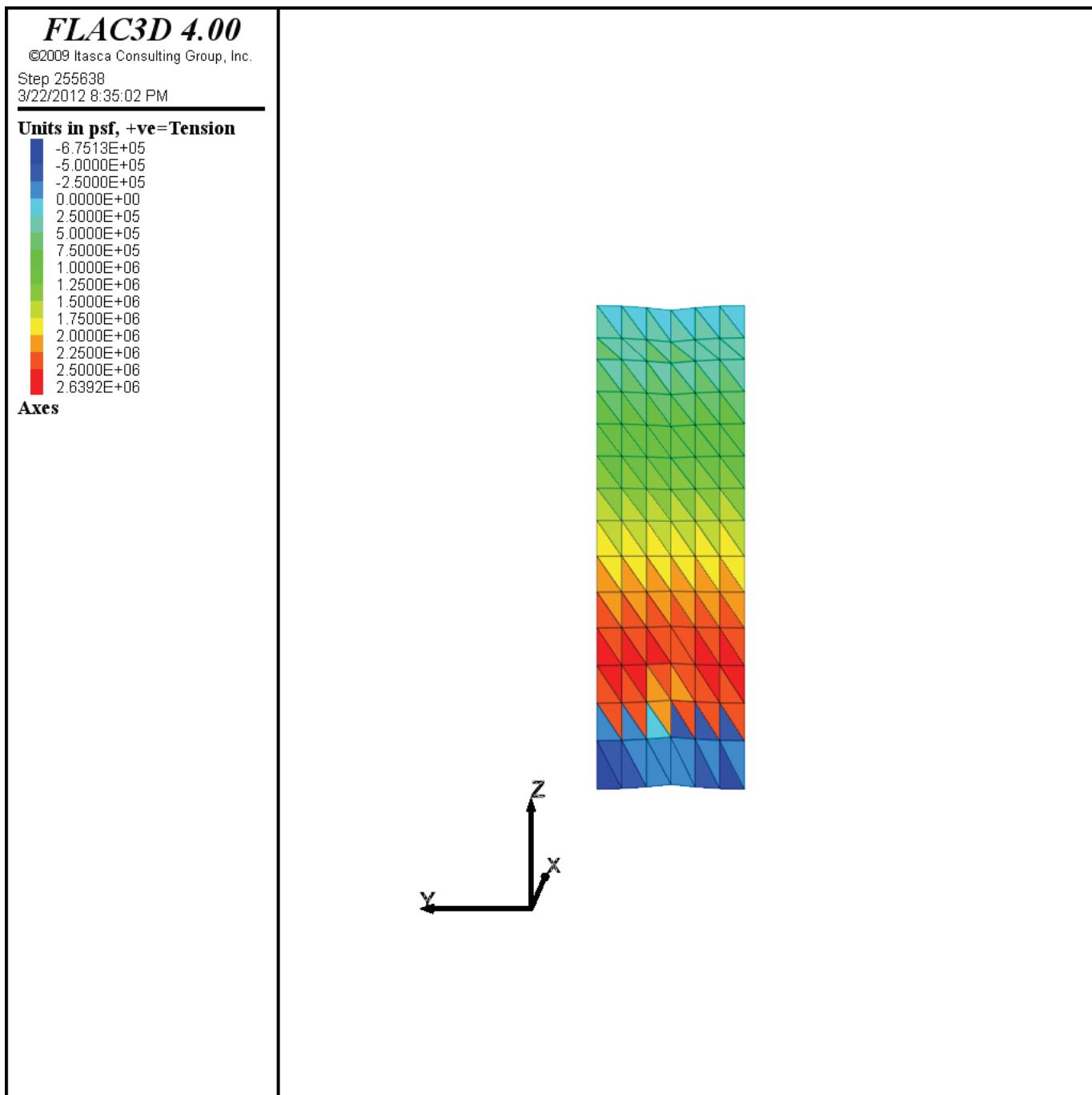


Figure F-1.1.3.a Facewall Membrane Stress – As-Designed Snapshot At 63 Sec – Michoacan EQ Record

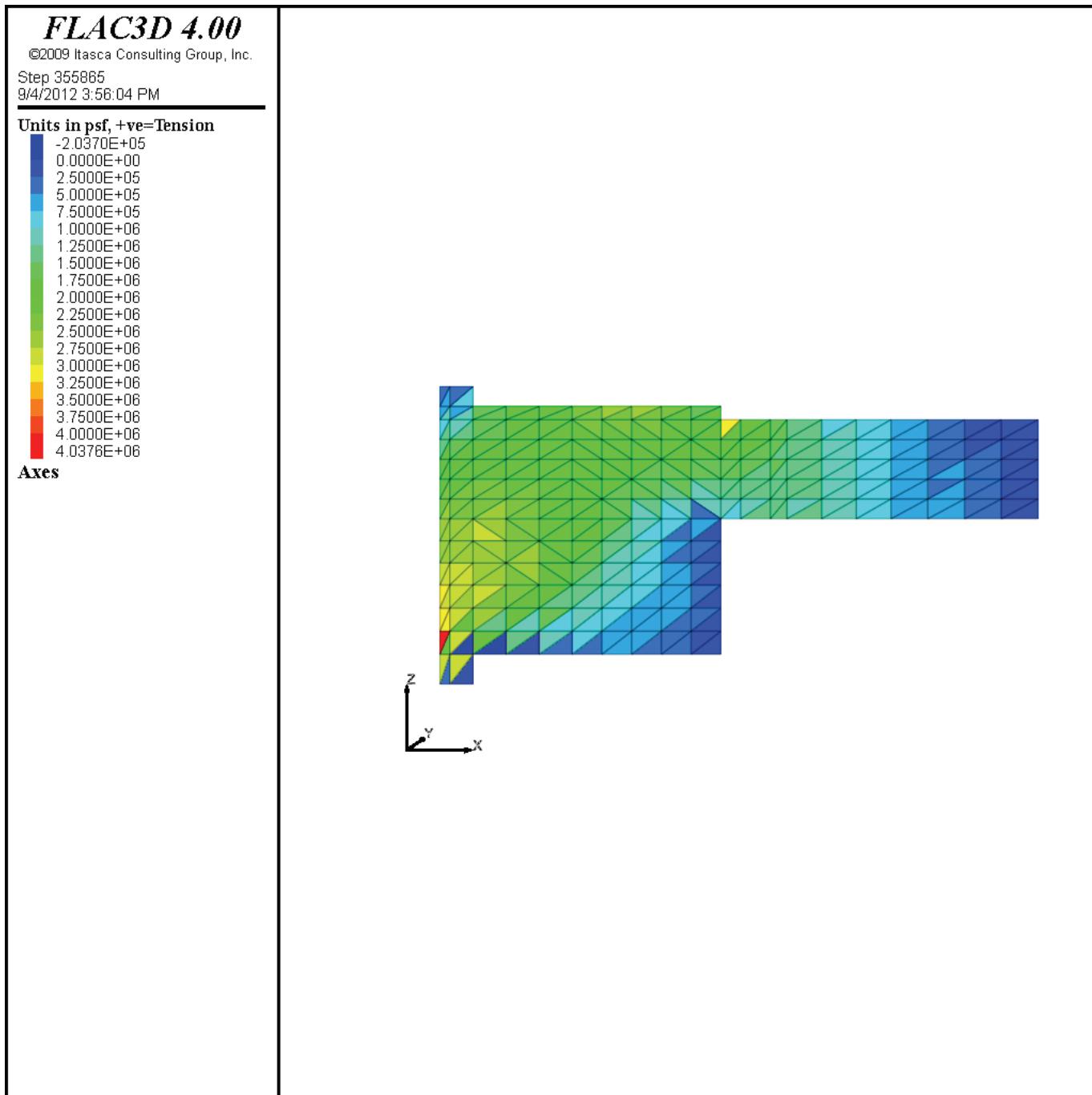


Figure F-1.1.4.a Tailwall Membrane Stress – As-Designed Snapshot At 20 Sec – Michoacan EQ Record

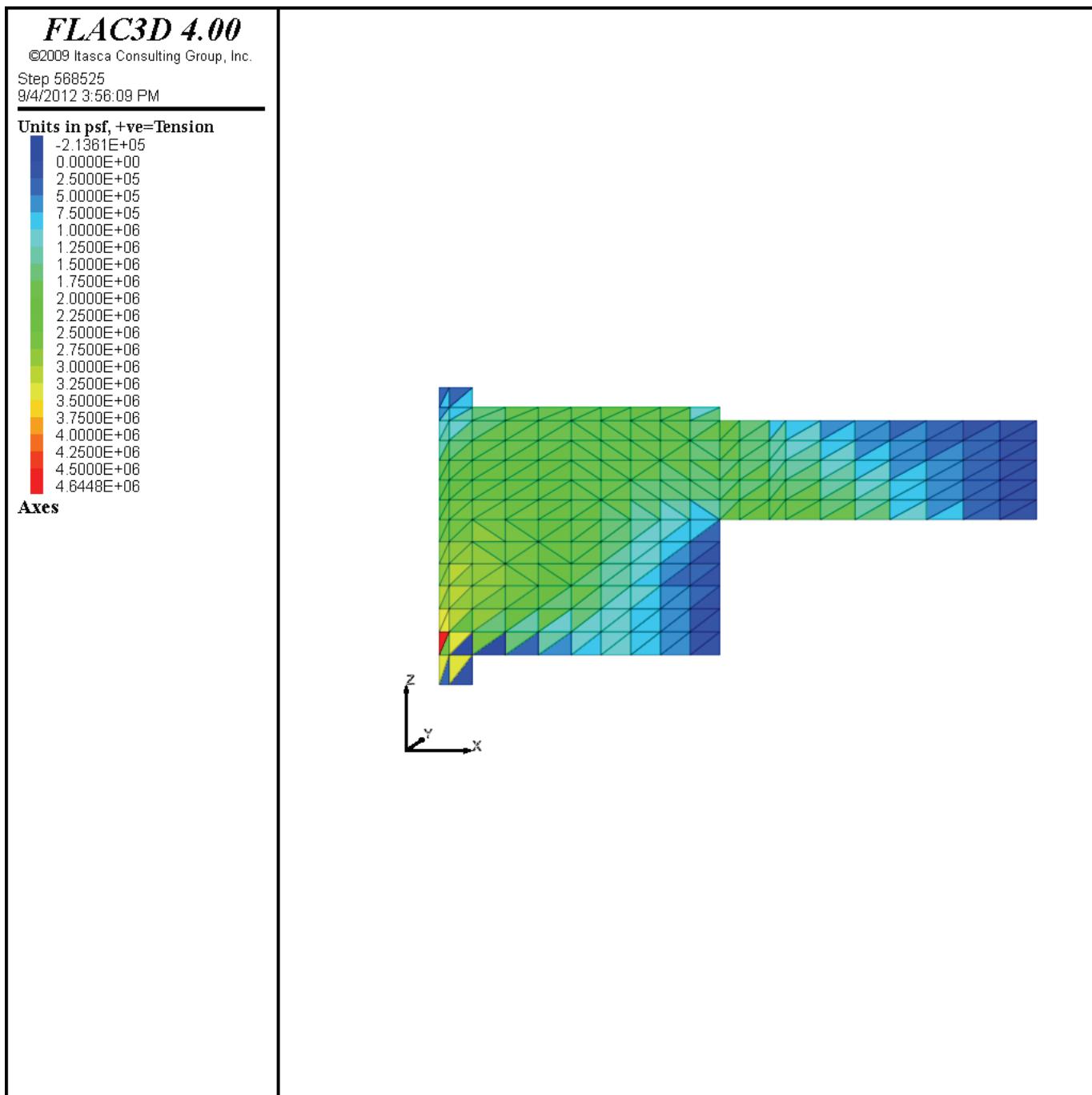


Figure F-1.1.5.a Tailwall Membrane Stress – As-Designed Snapshot At 40 Sec – Michoacan EQ Record

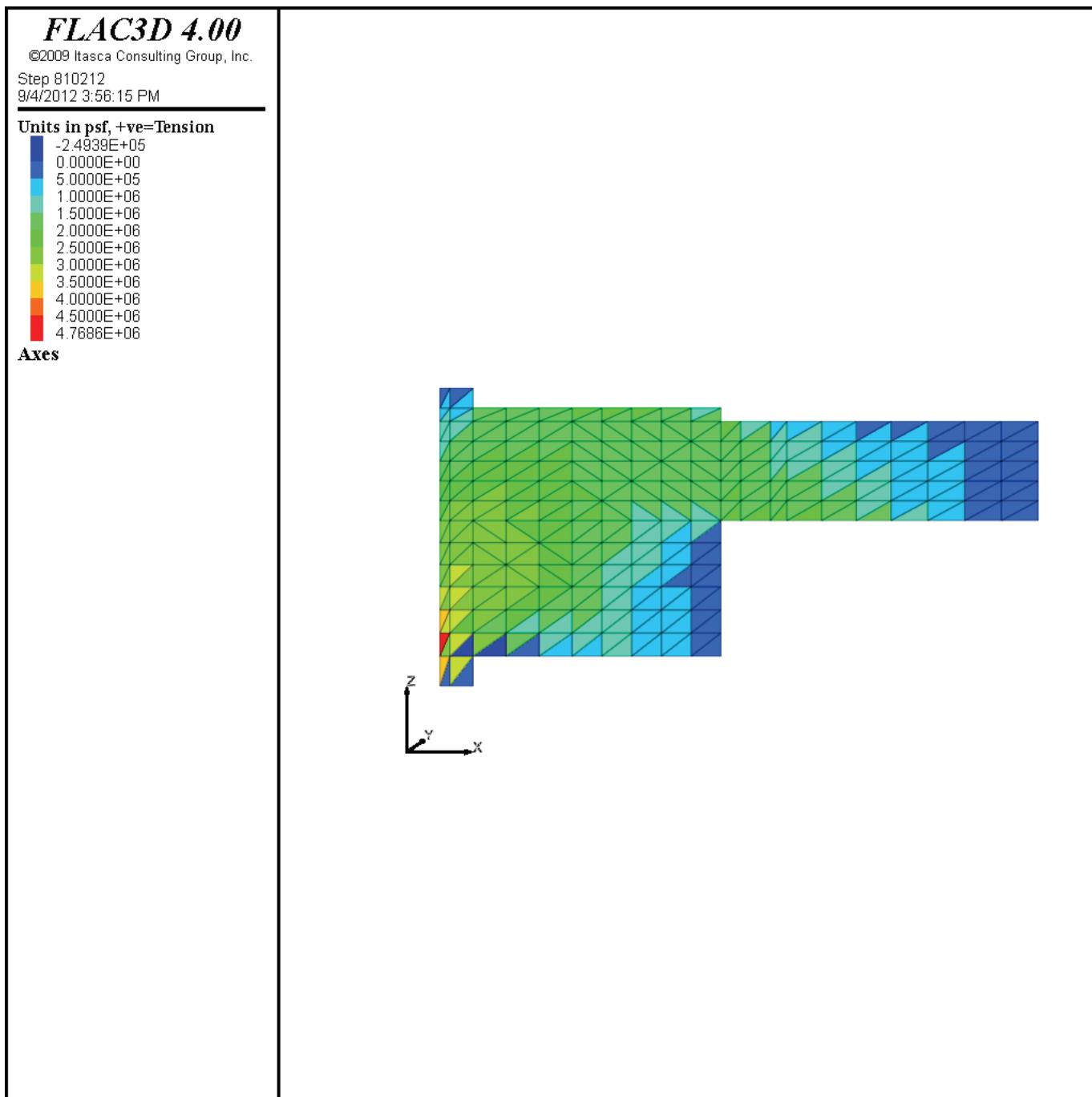


Figure F-1.1.6.a Tailwall Membrane Stress – As-Designed Snapshot At 63 Sec – Michoacan EQ Record

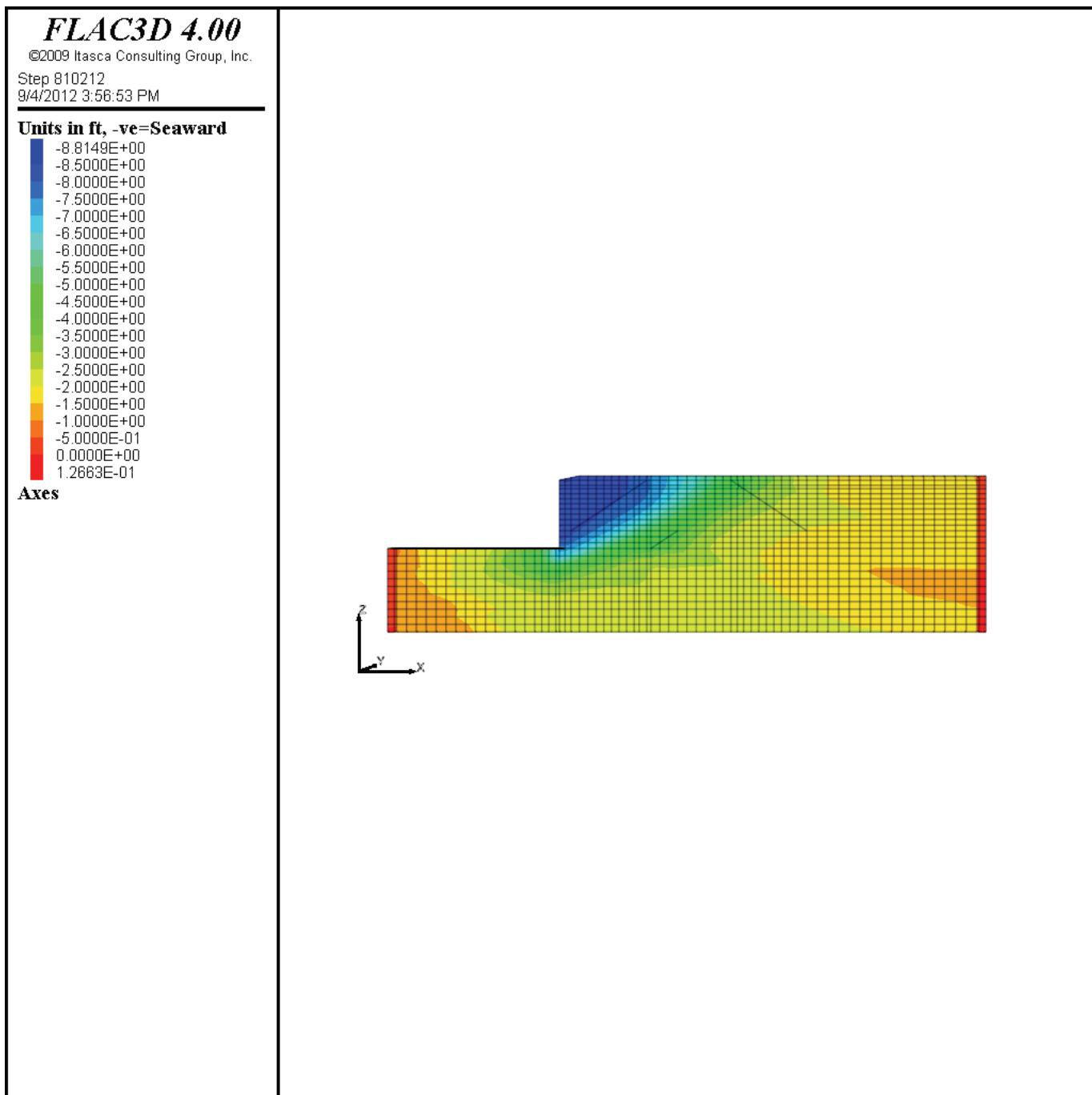


Figure F-1.1.7.a. Permanent Soil X-Displacement Contours – As-Designed – Michoacan EQ Record

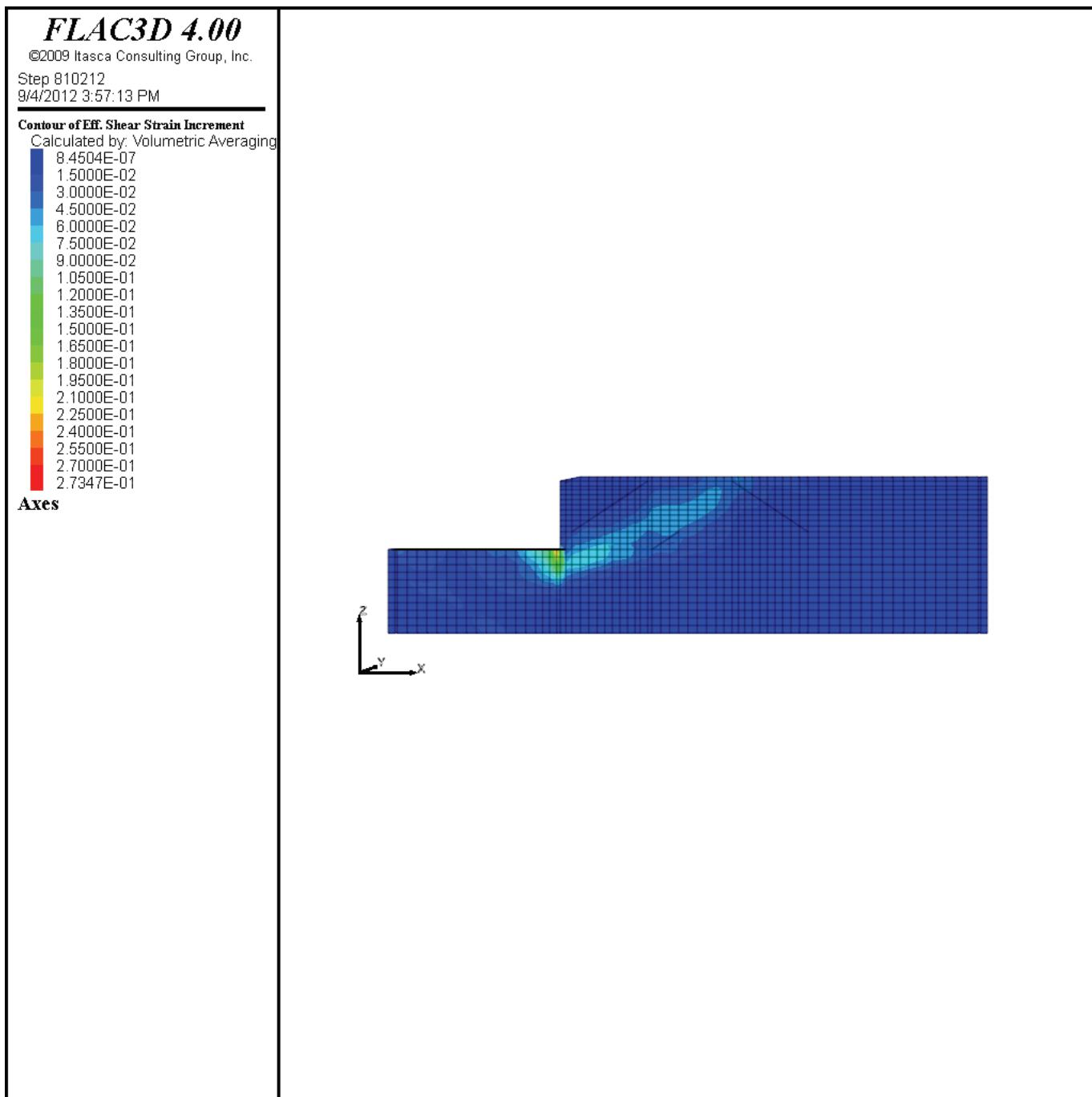


Figure F-1.1.8.a. Effective Shear Strain Contours – As-Designed – Michoacan EQ Record

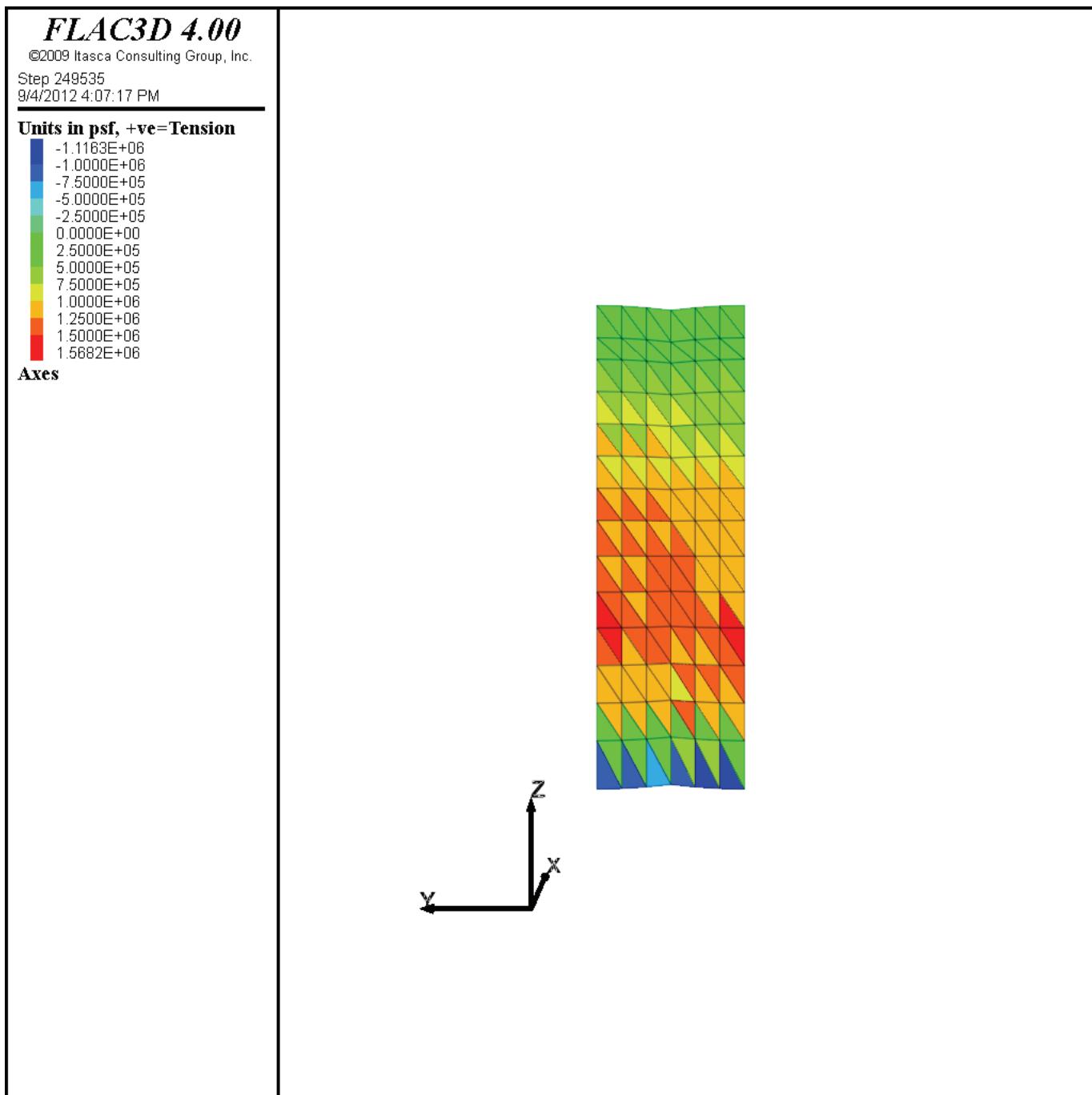


Figure F-1.1.1.b Facewall Membrane Stress – As-Designed Snapshot At 10 Sec – Nisqually P0 EQ Record

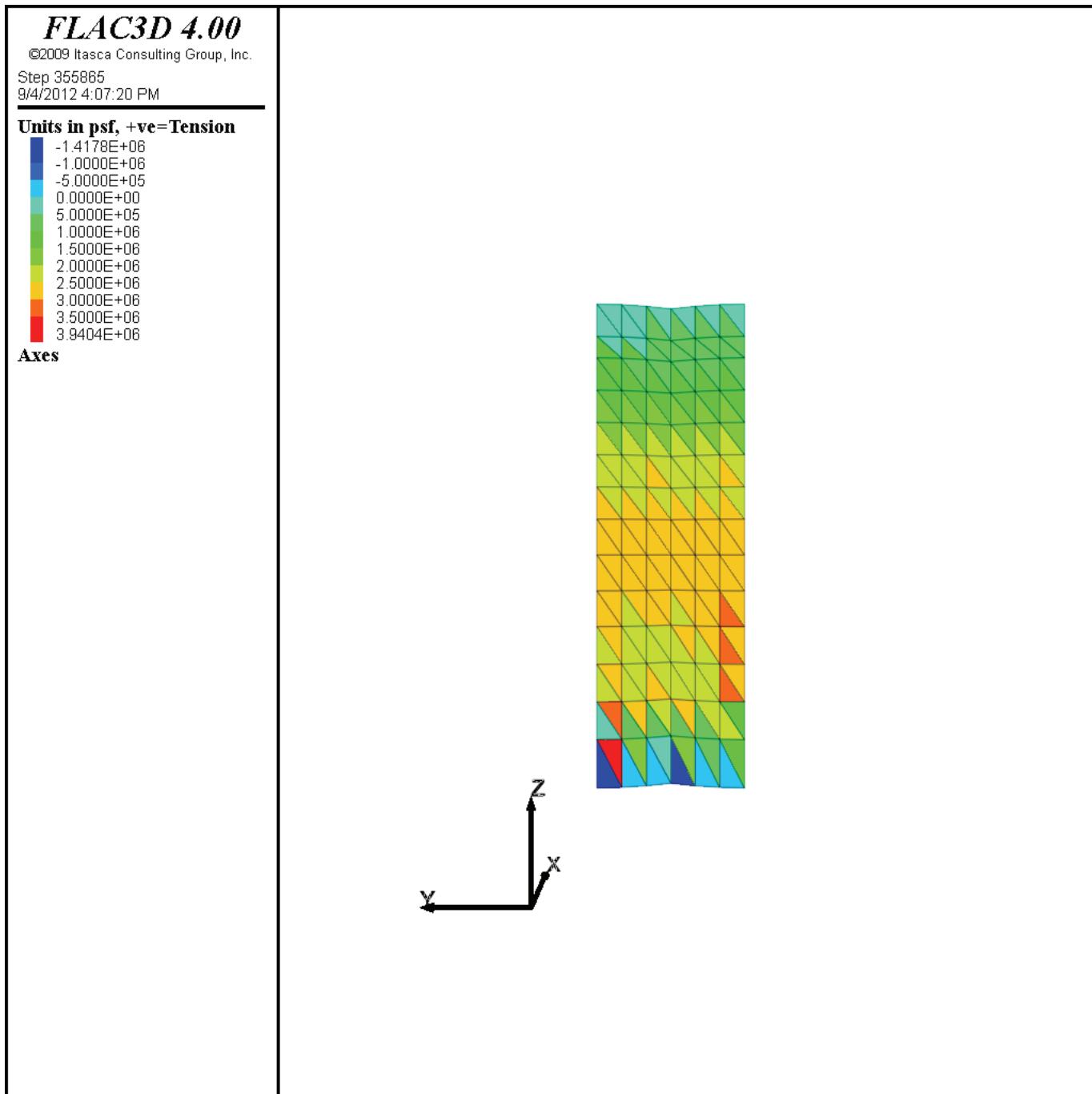


Figure F-1.1.2.b Facewall Membrane Stress – As-Designed Snapshot 20 Sec – Nisqually P0 EQ Record

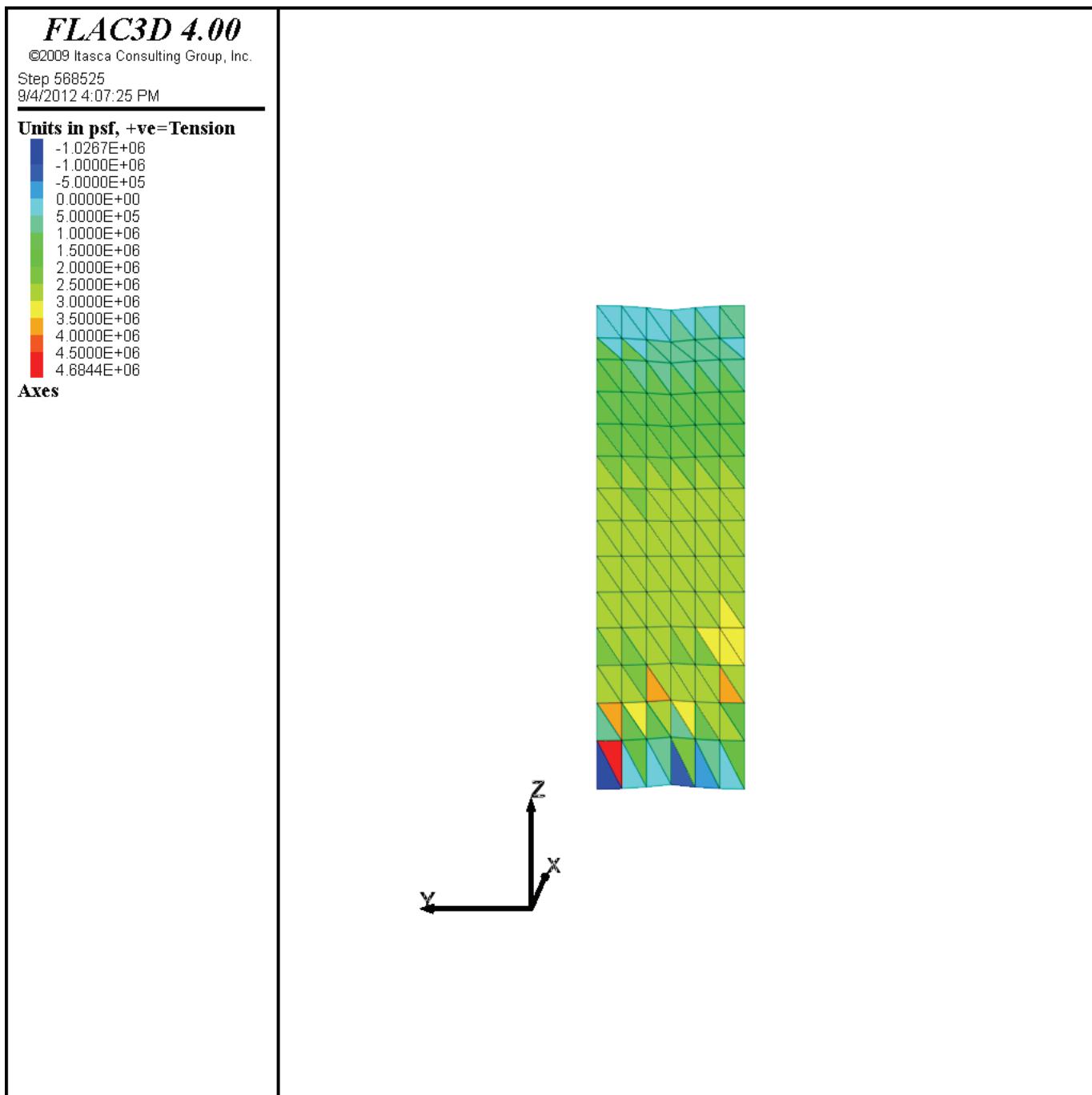


Figure F-1.1.3.b Facewall Membrane Stress – As-Designed Snapshot 40 Sec – Nisqually P0 EQ Record

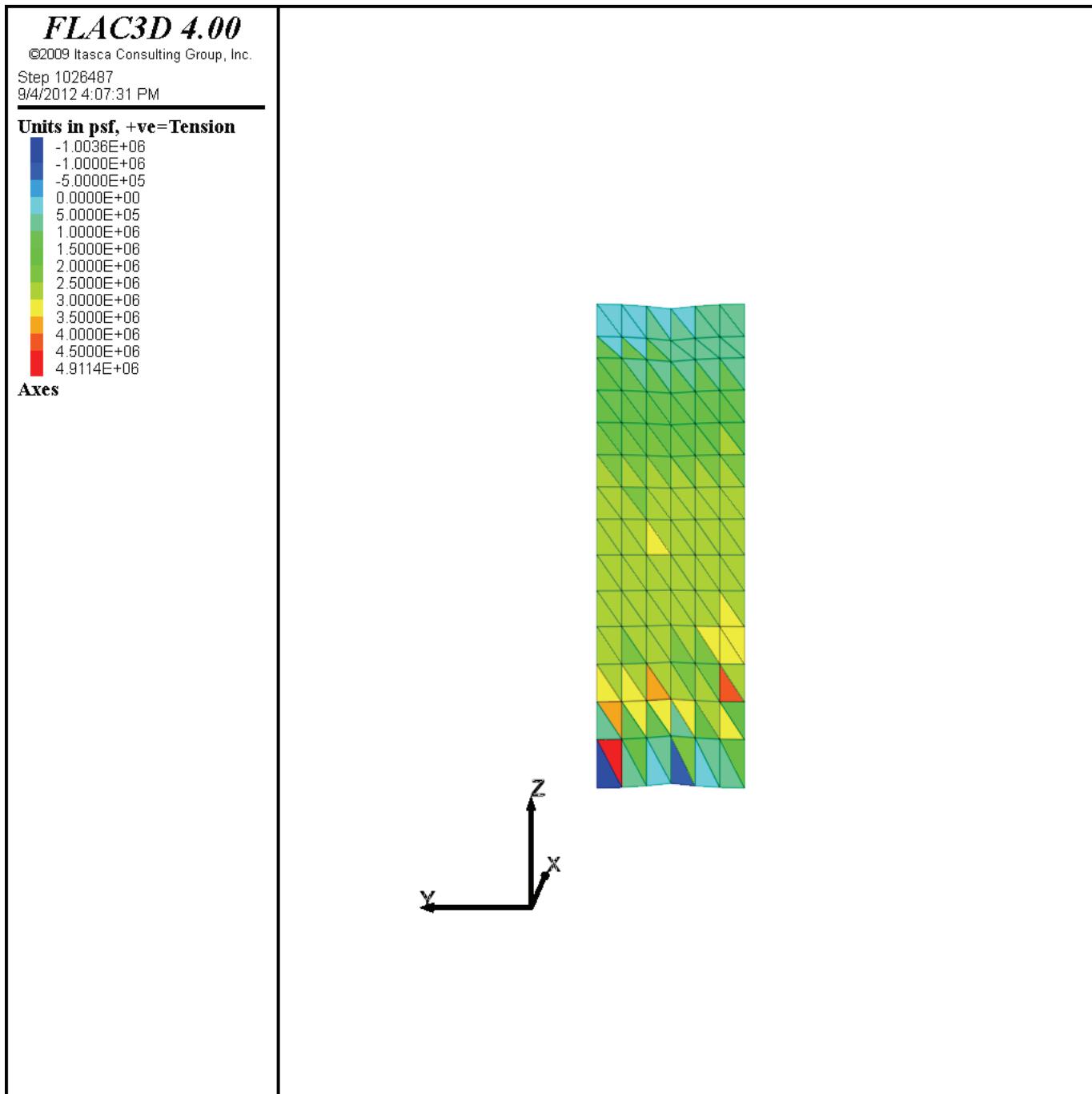


Figure F-1.1.4.b Facewall Membrane Stress – As-Designed Snapshot 83 Sec – Nisqually P0 EQ Record

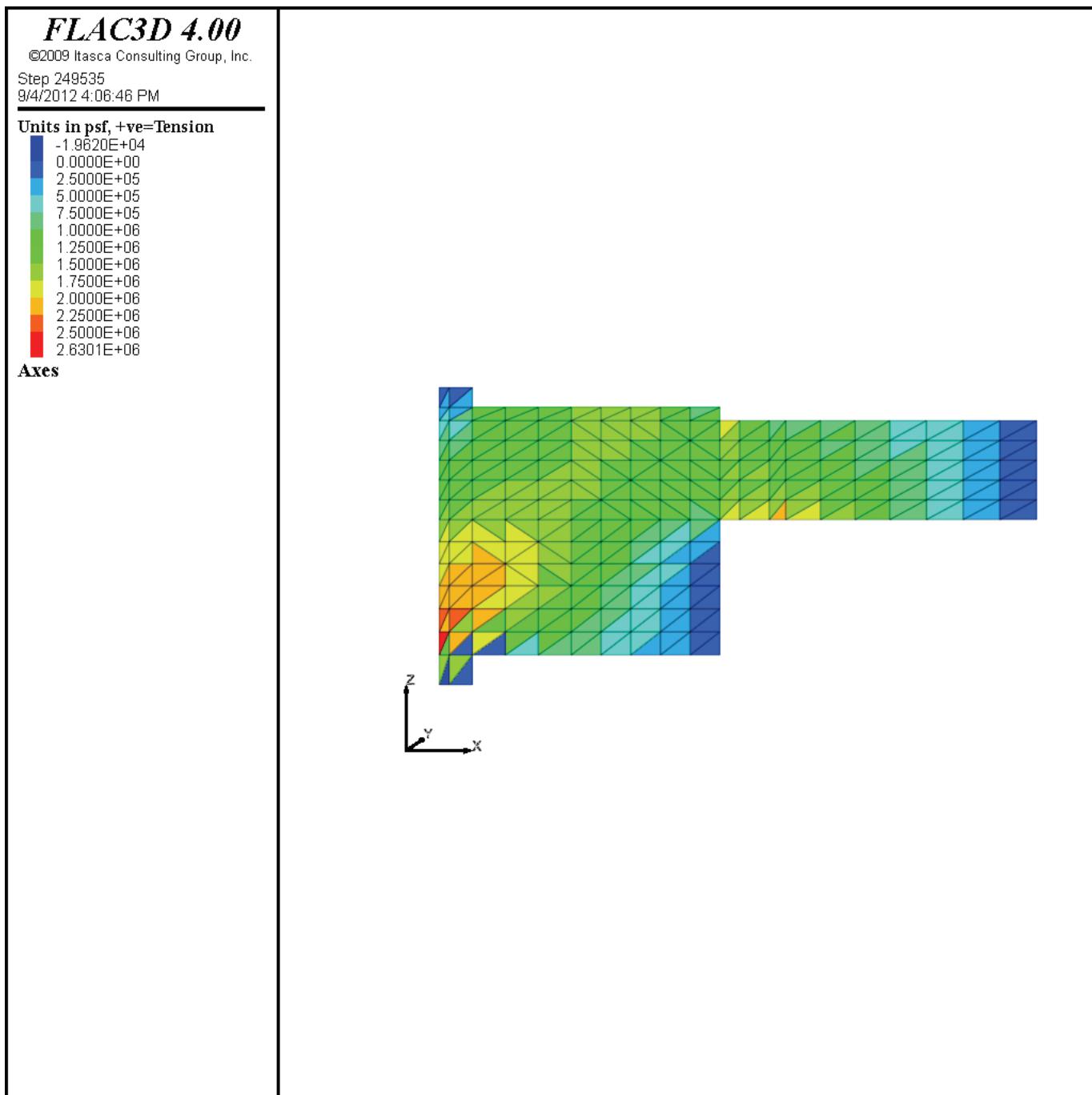


Figure F-1.1.5.b Tailwall Membrane Stress – As-Designed Snapshot 10 Sec – Nisqually P0 EQ Record

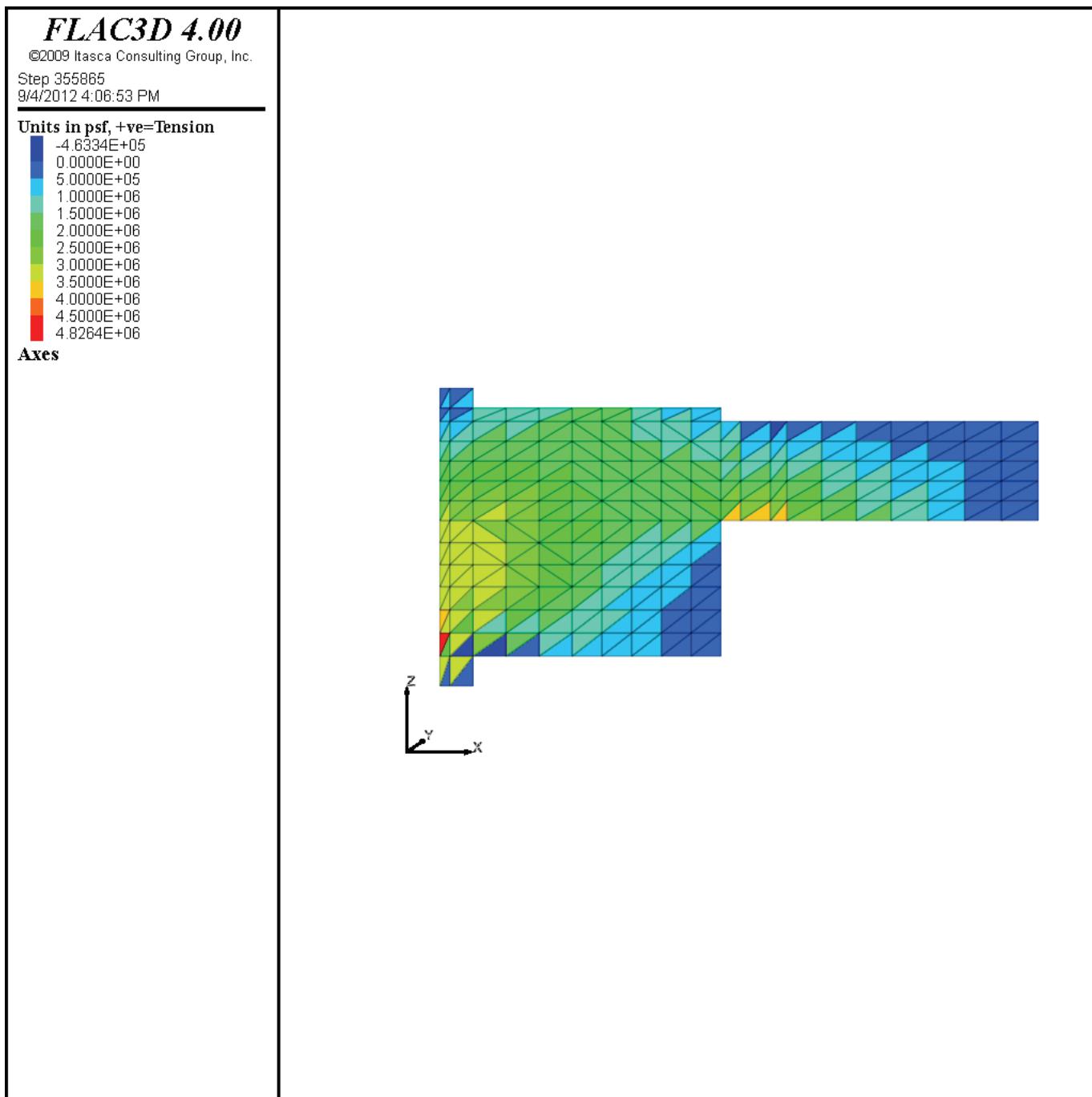


Figure F-1.1.6.b Tailwall Membrane Stress – As-Designed Snapshot 20 Sec – Nisqually P0 EQ Record

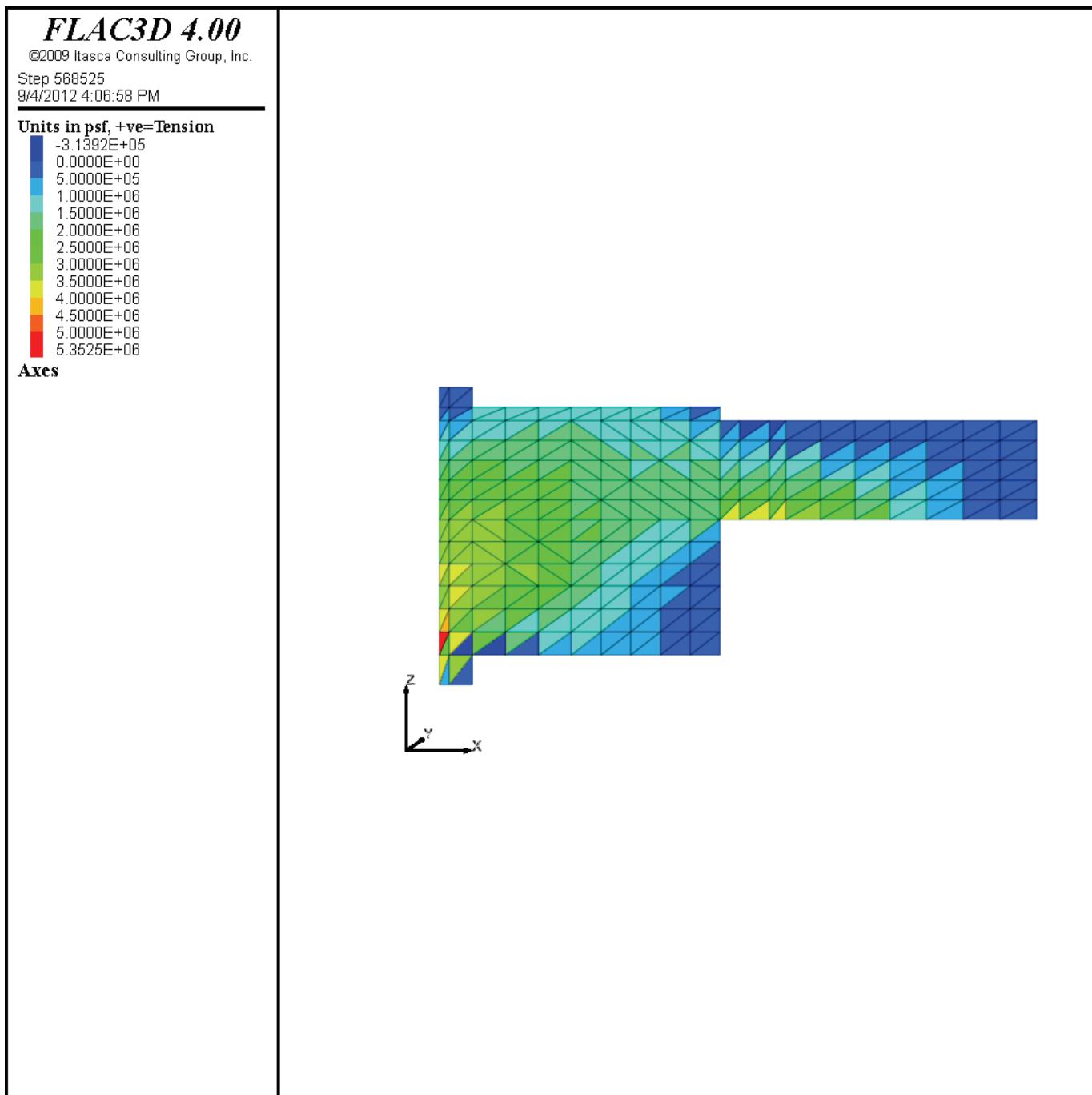


Figure F-1.1.7.b Tailwall Membrane Stress – As-Designed Snapshot 40 Sec – Nisqually P0 EQ Record

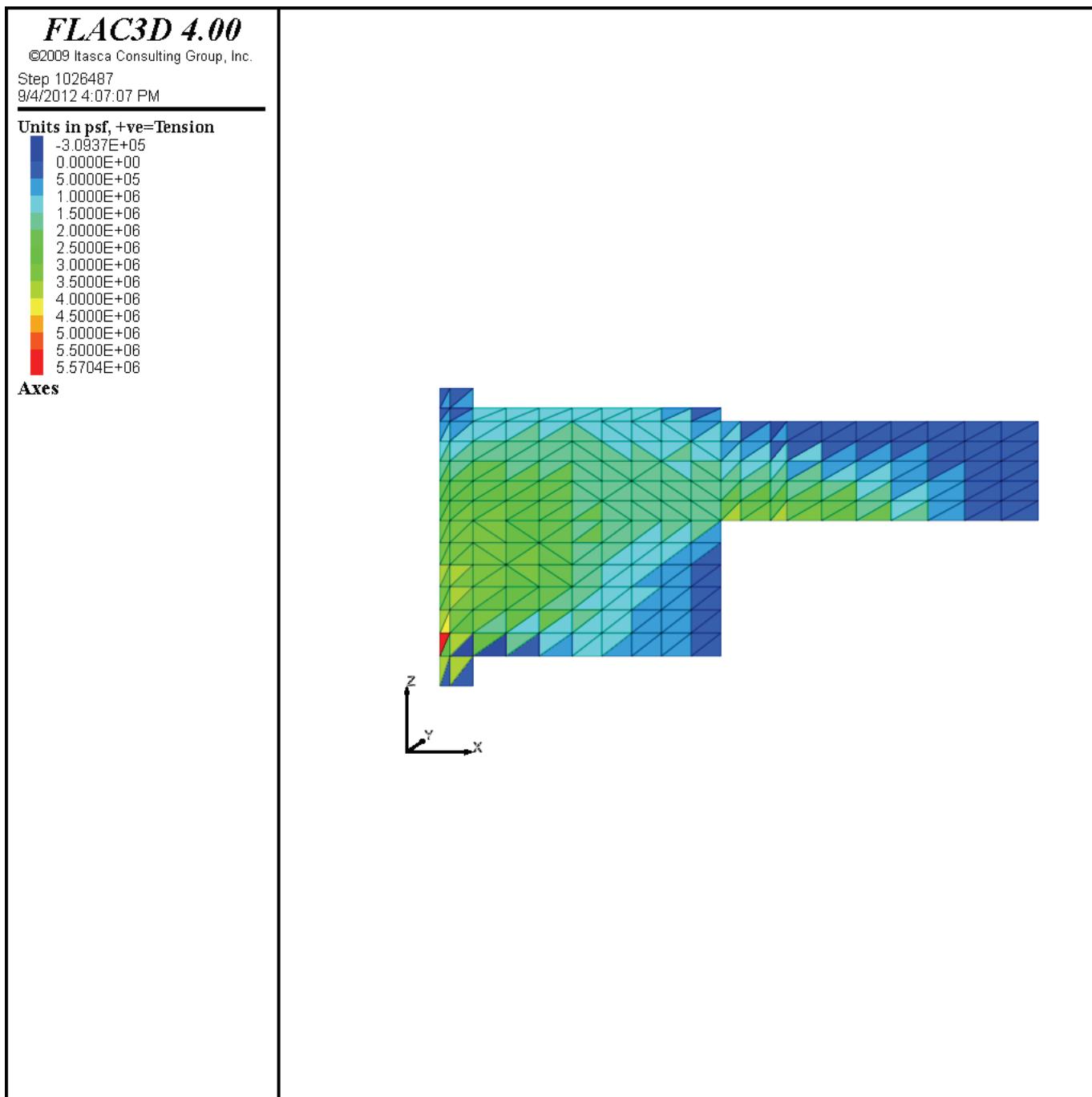


Figure F-1.1.8.b Tailwall Membrane Stress – As-Designed Snapshot 83 Sec – Nisqually P0 EQ Record

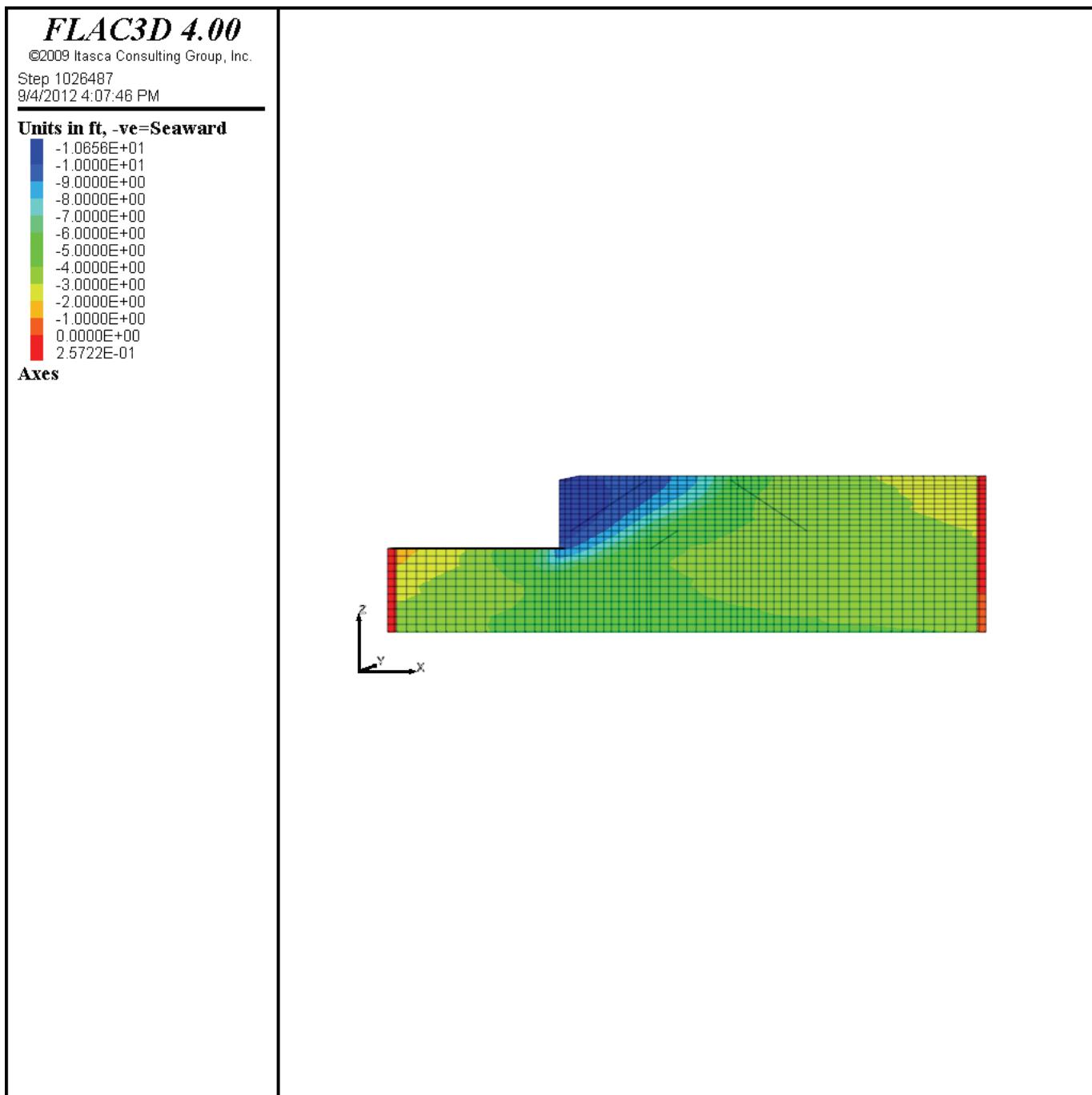


Figure F-1.1.9.b Permanent Soil X-Displacement Contours – As-Designed – Nisqually P0 EQ Record

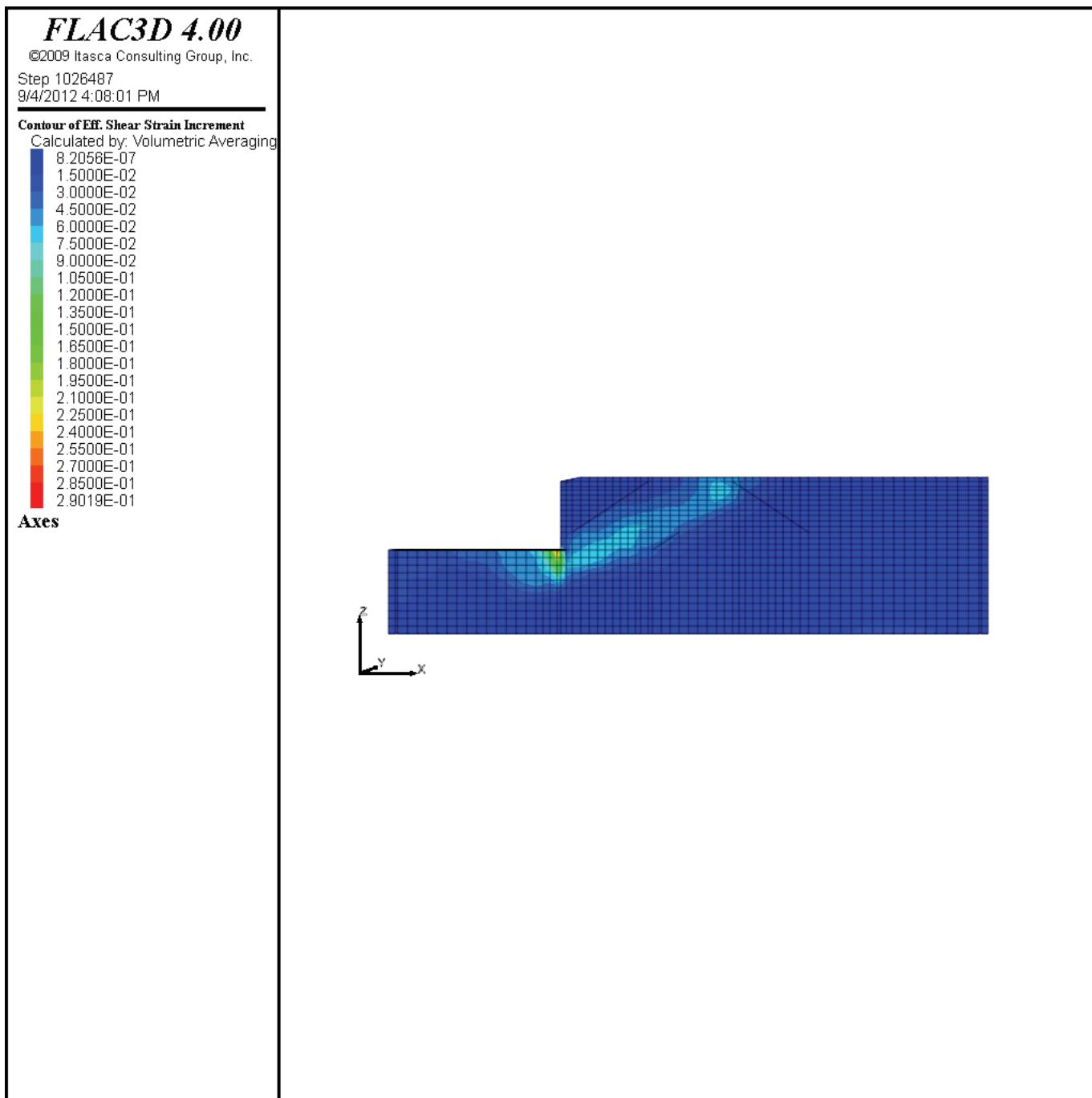


Figure F-1.1.10.b Effective Shear Strain Contours – As-Designed – Nisqually P0 EQ Record

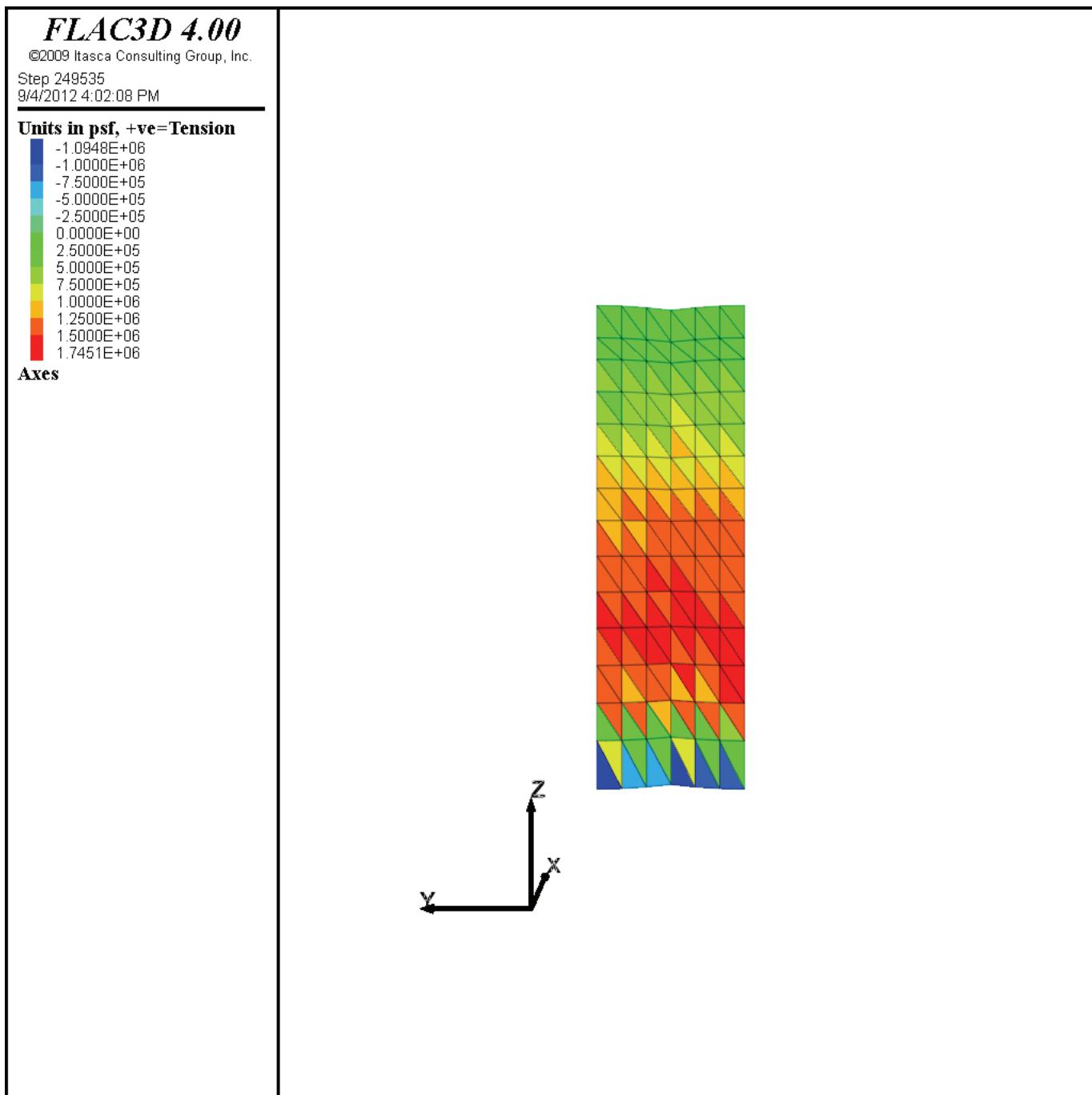


Figure F-1.1.1.c Facewall Membrane Stress – As-Designed Snapshot At 10 Sec – Nisqually P90 EQ Record

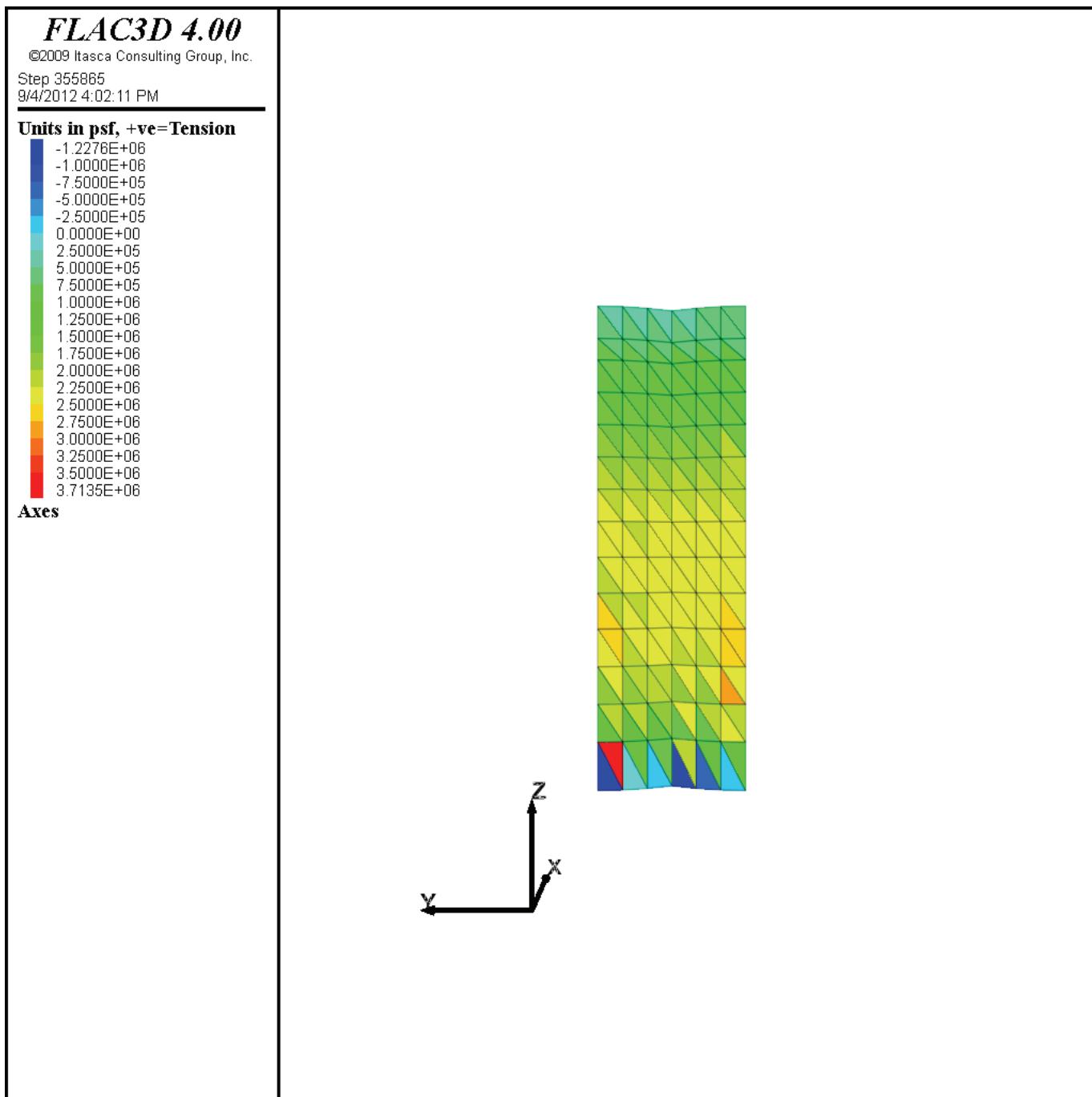


Figure F-1.1.2.c Facewall Membrane Stress – As-Designed Snapshot 20 Sec – Nisqually P90 EQ Record

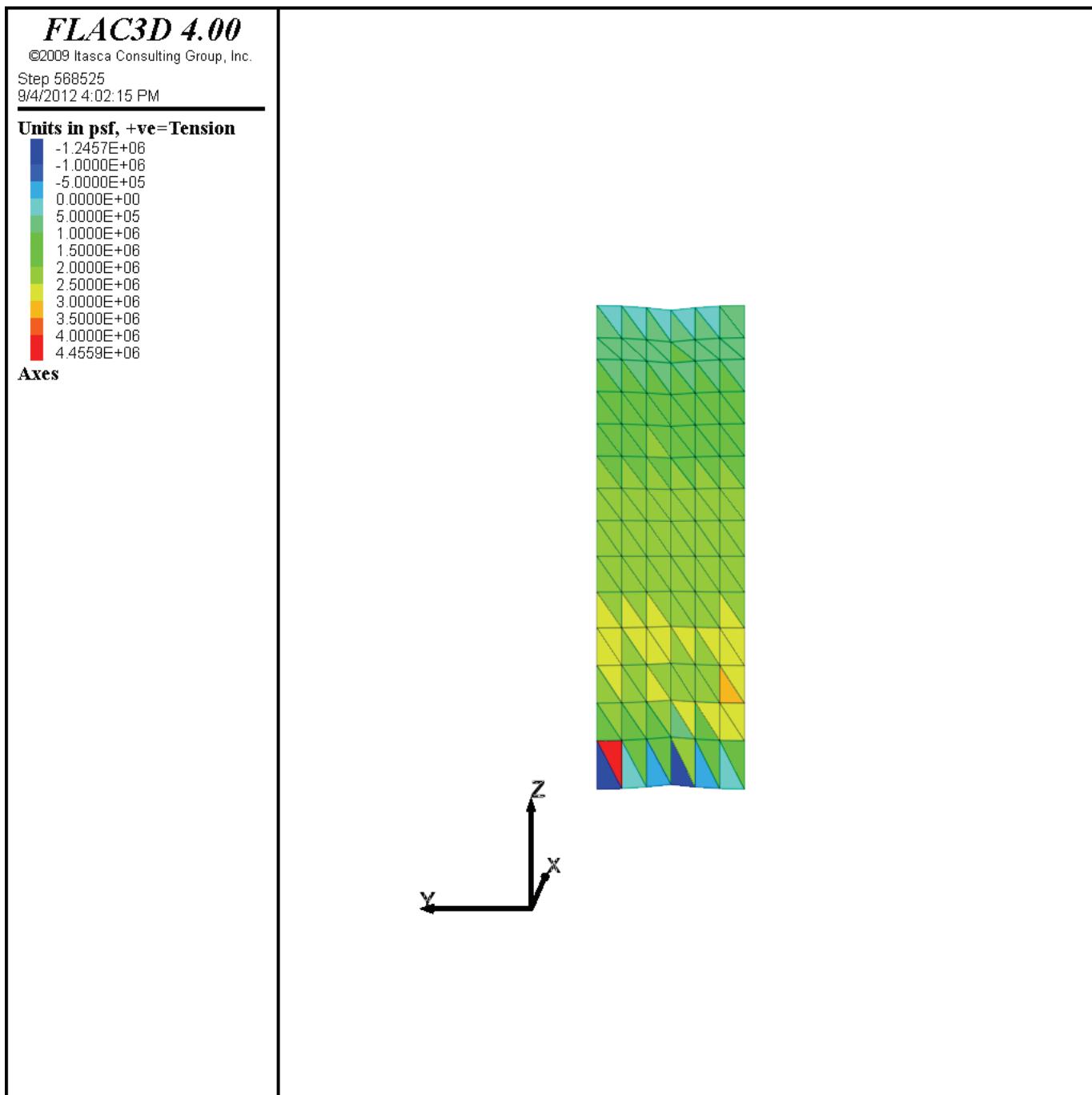


Figure F-1.1.3.c Facewall Membrane Stress – As-Designed Snapshot 40 Sec – Nisqually P90 EQ Record

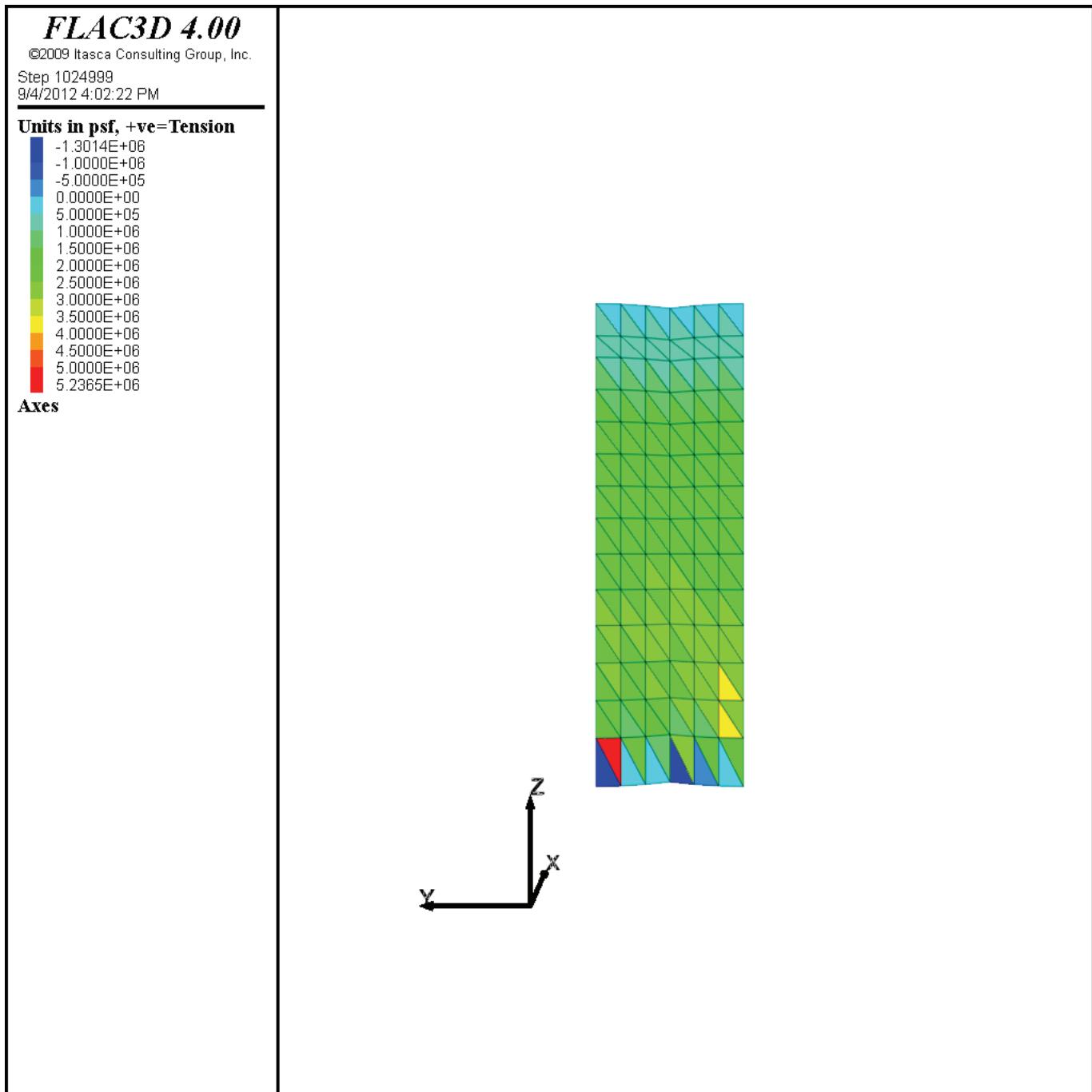


Figure F-1.1.4.c Facewall Membrane Stress – As-Designed Snapshot 83 Sec – Nisqually P90 EQ Record

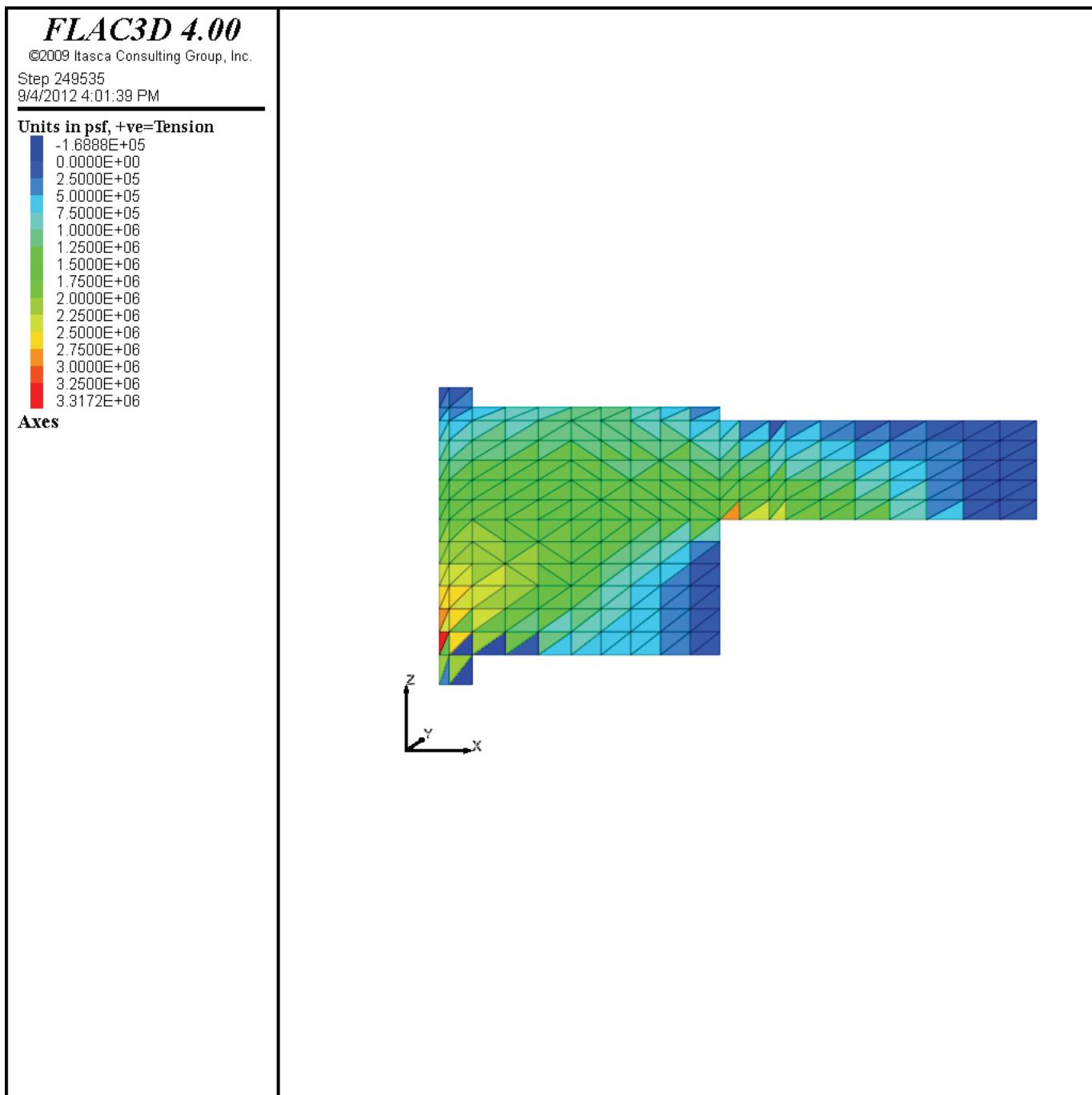


Figure F-1.1.5.c Tailwall Membrane Stress – As-Designed Snapshot 10 Sec – Nisqually P90 EQ Record

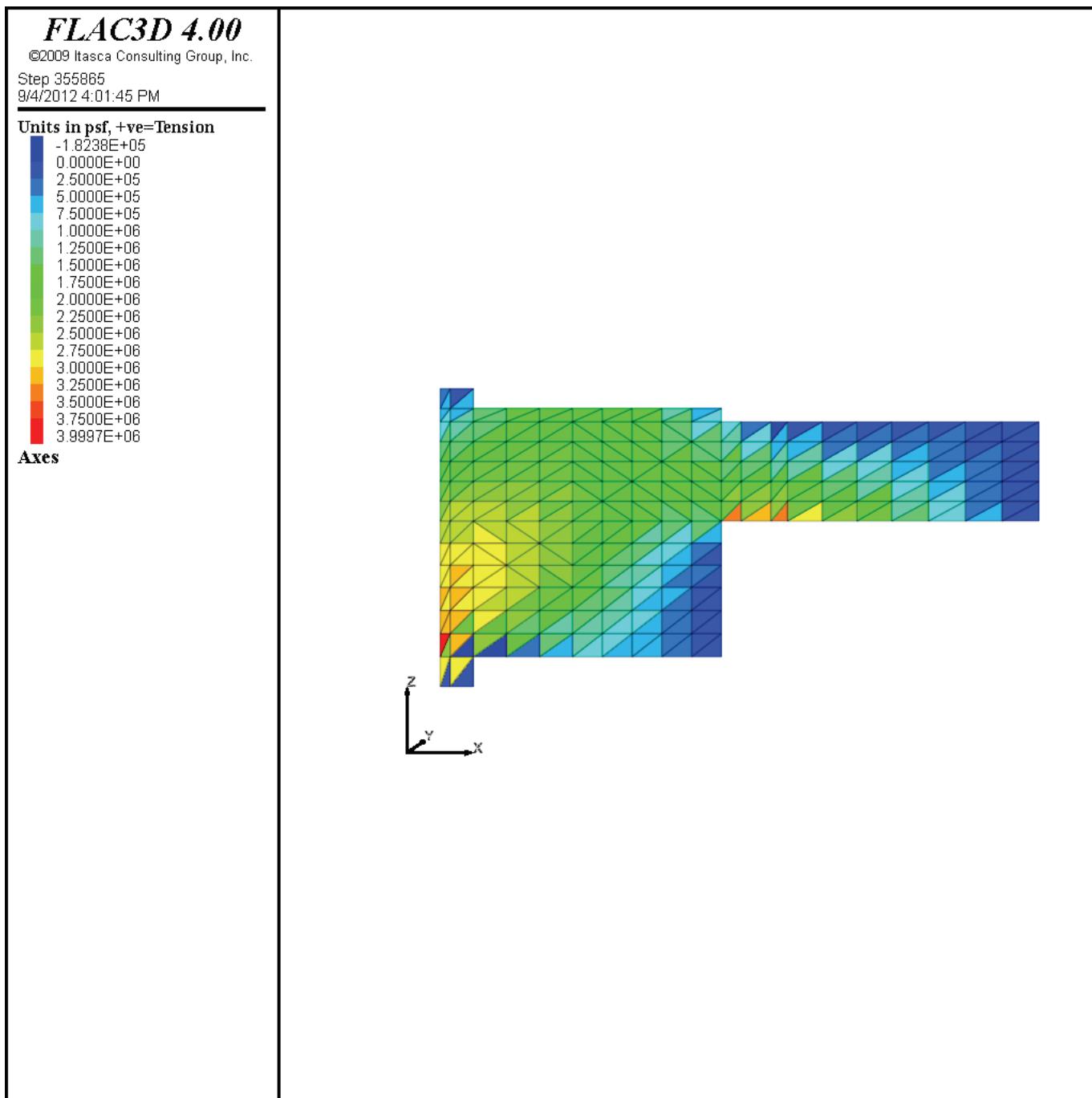


Figure F-1.1.6.c Tailwall Membrane Stress – As-Designed Snapshot 20 Sec – Nisqually P90 EQ Record

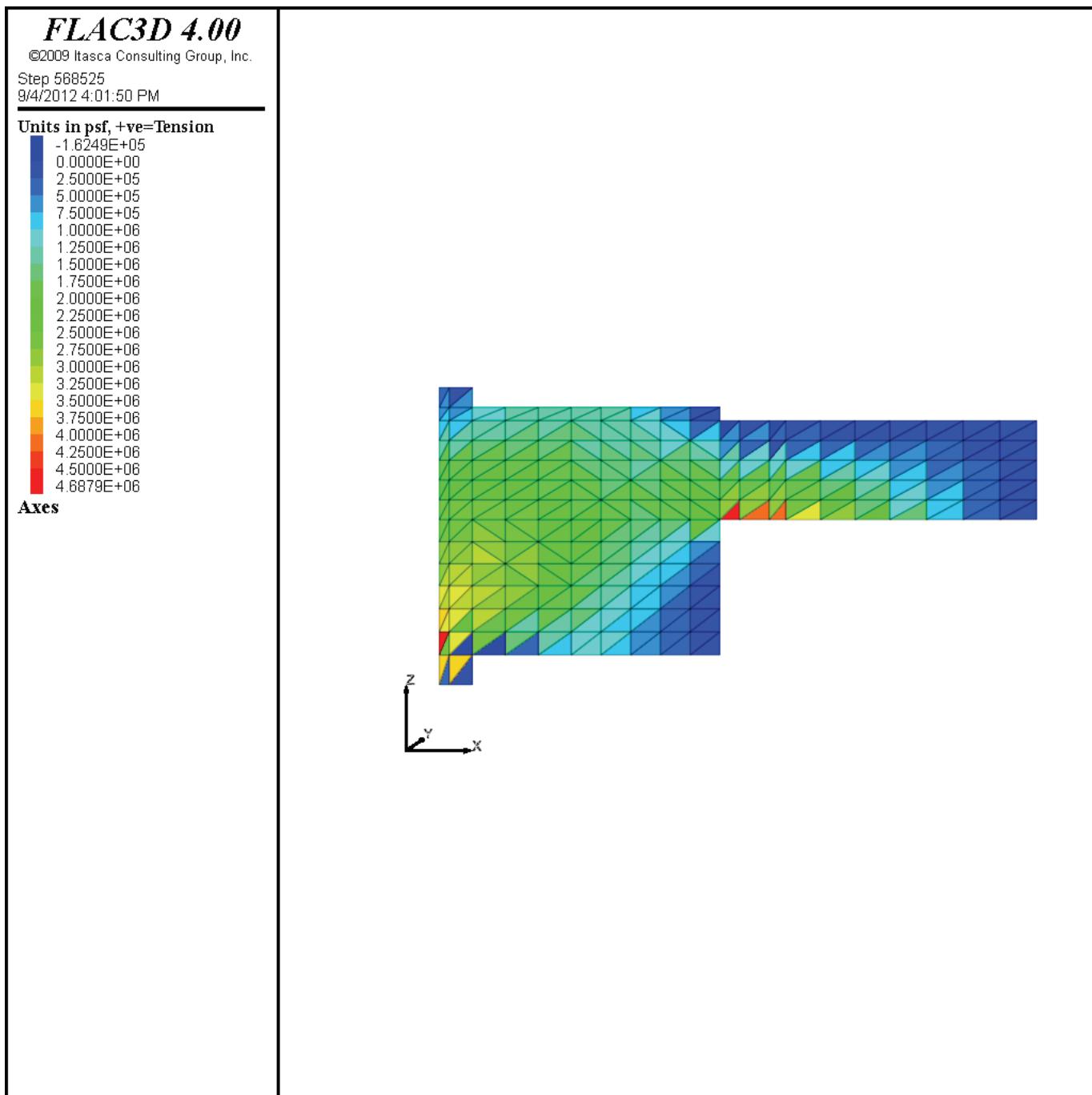


Figure F-1.1.7.c Tailwall Membrane Stress – As-Designed Snapshot 40 Sec – Nisqually P90 EQ Record

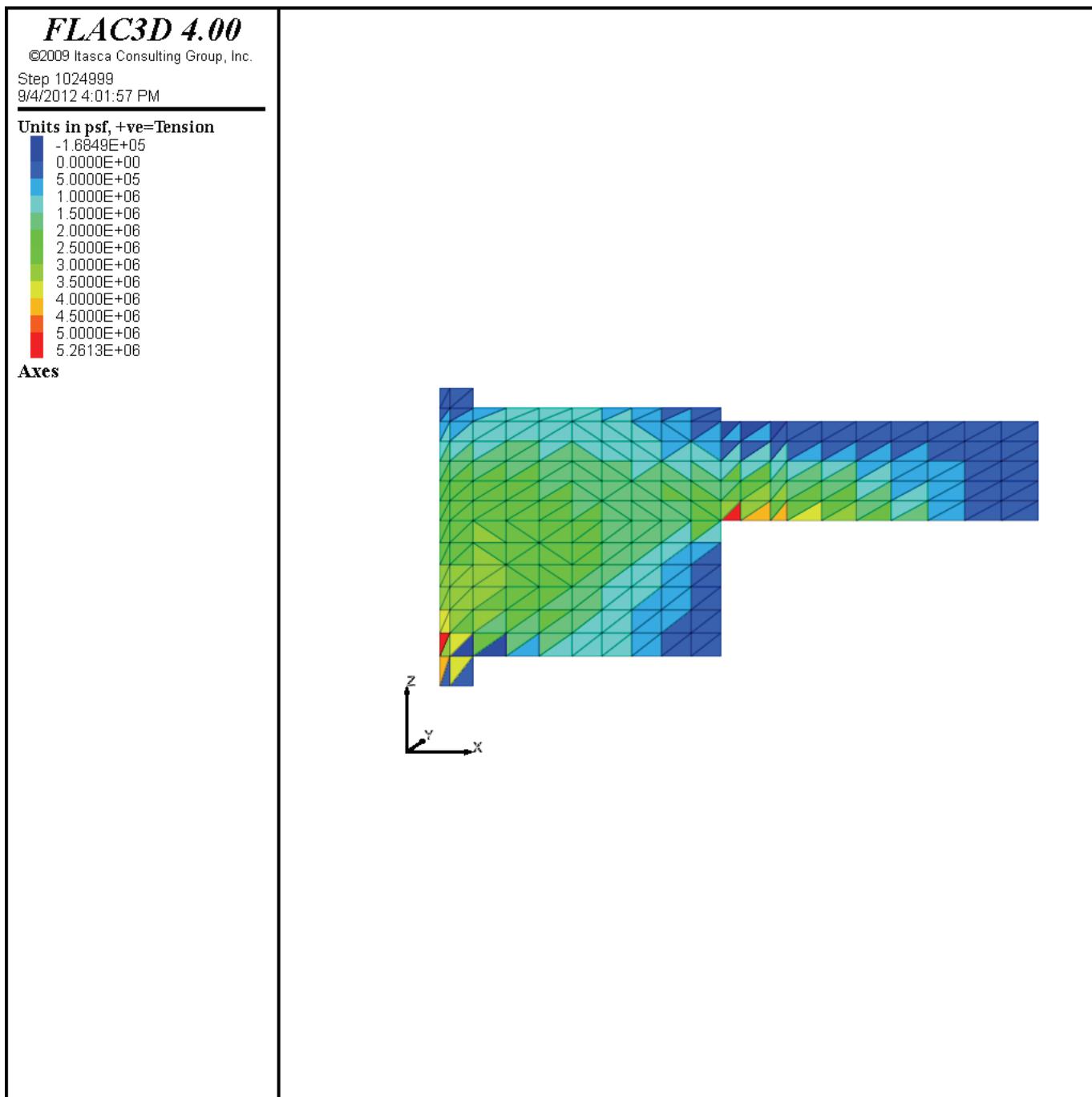


Figure F-1.1.8.c Tailwall Membrane Stress – As-Designed Snapshot 83 Sec – Nisqually P90 EQ Record

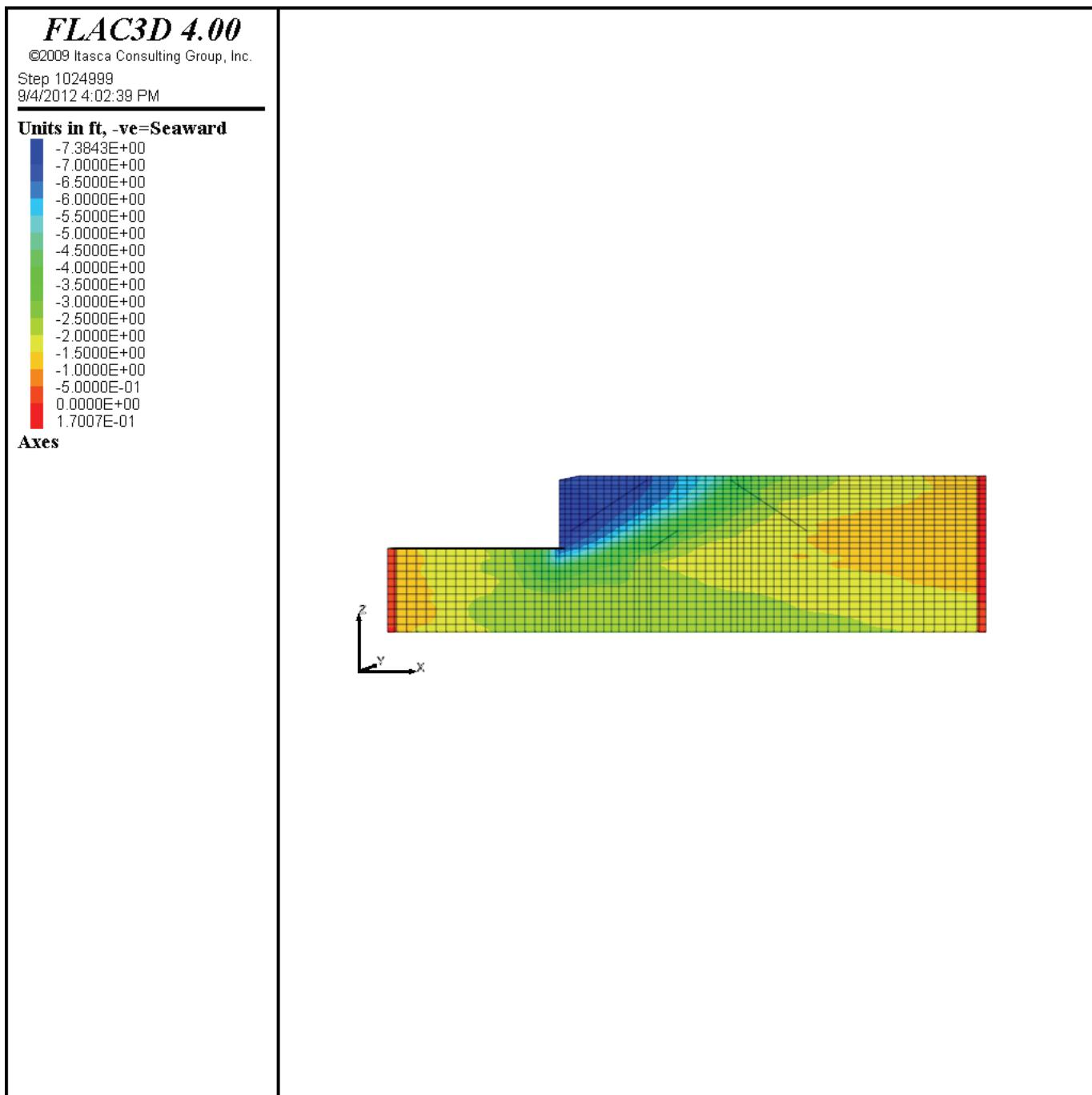


Figure F-1.19.c Permanent Soil X-Displacement Contours – As-Designed – Nisqually P90 EQ Record

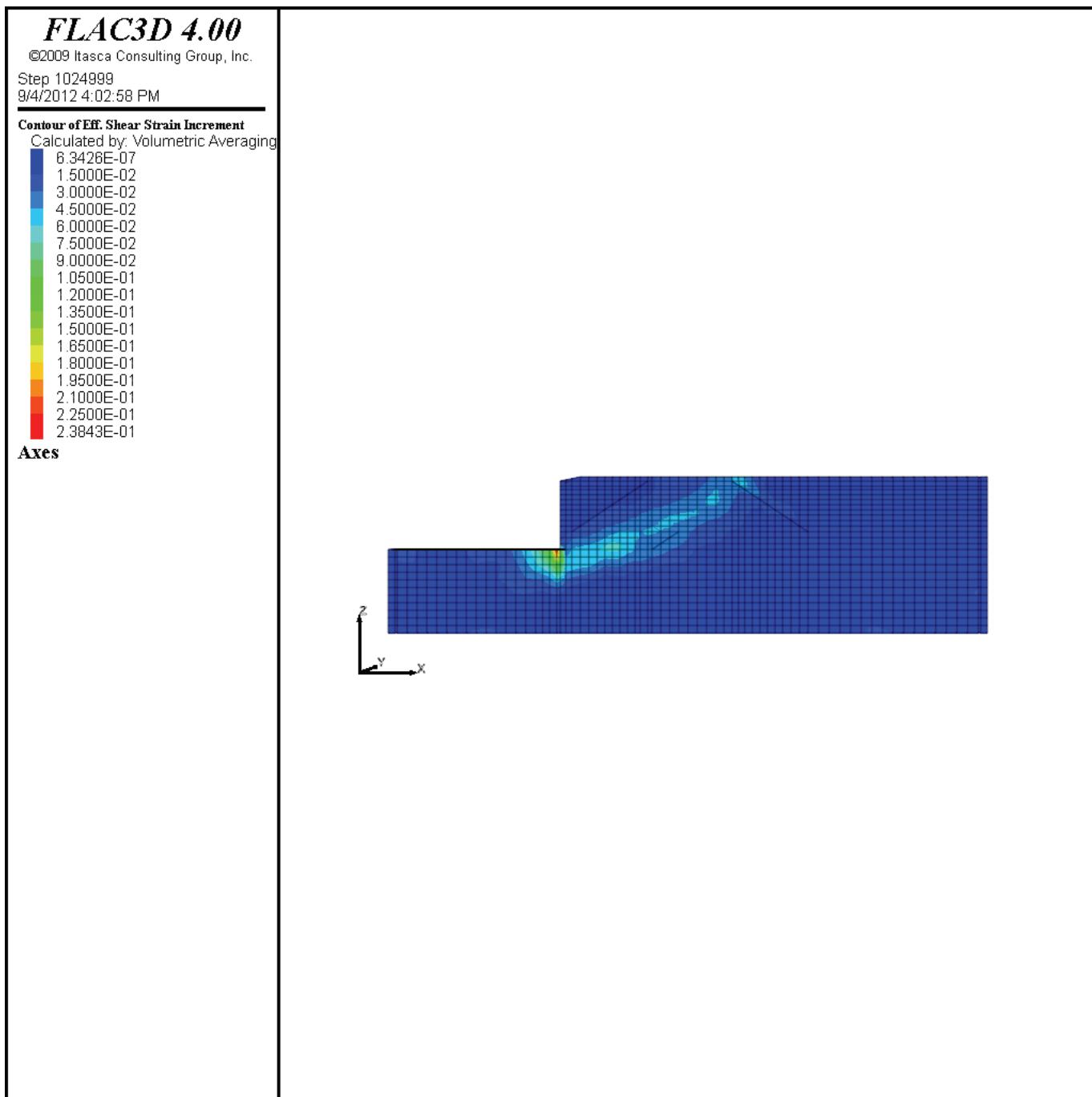


Figure F-1.1.10.c Effective Shear Strain Contours – As-Designed – Nisqually P90 EQ Record

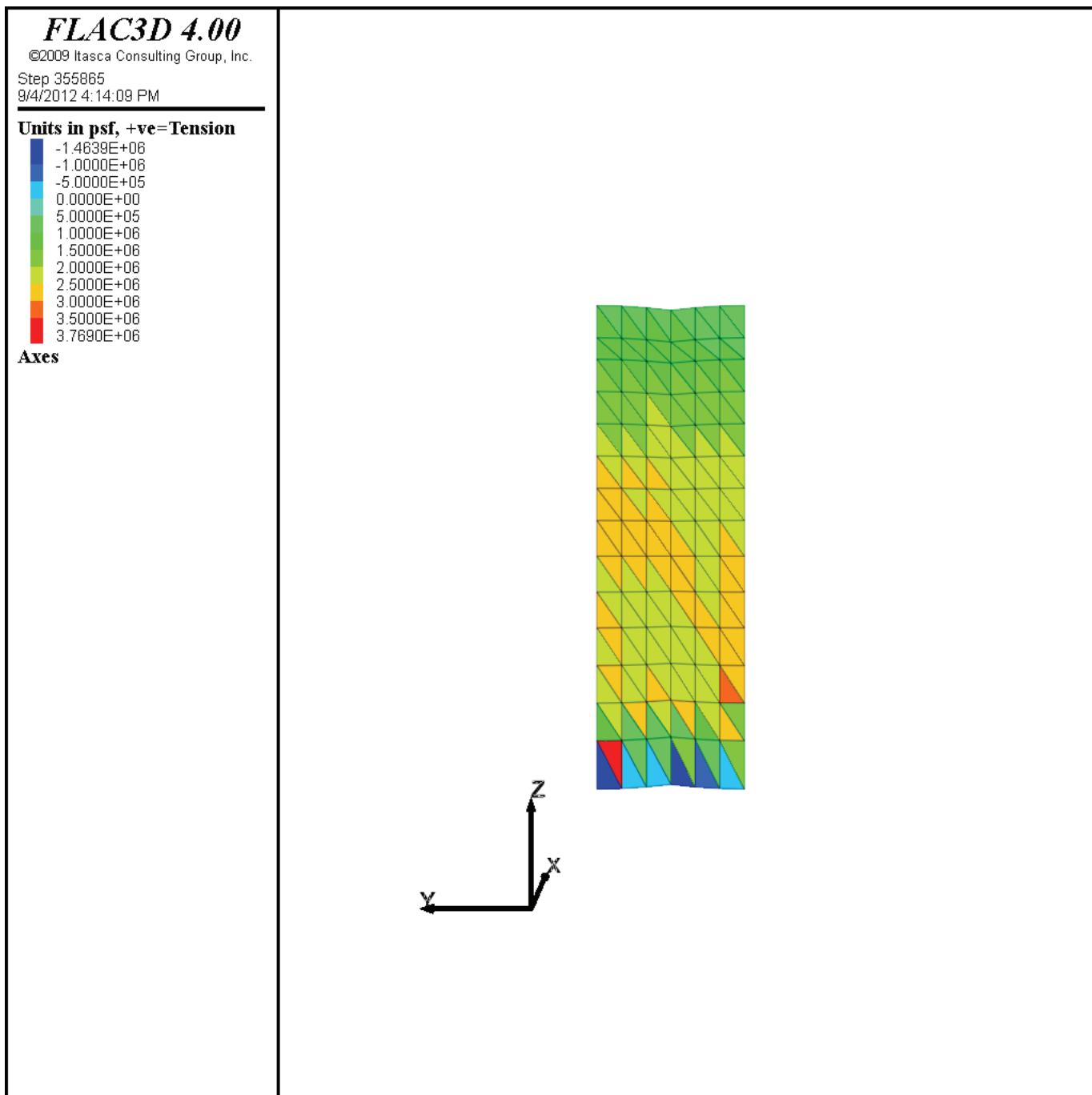


Figure F-1.1.1.d Facewall Membrane Stress – As-Designed Snapshot At 20 Sec – Western Washington EQ Record

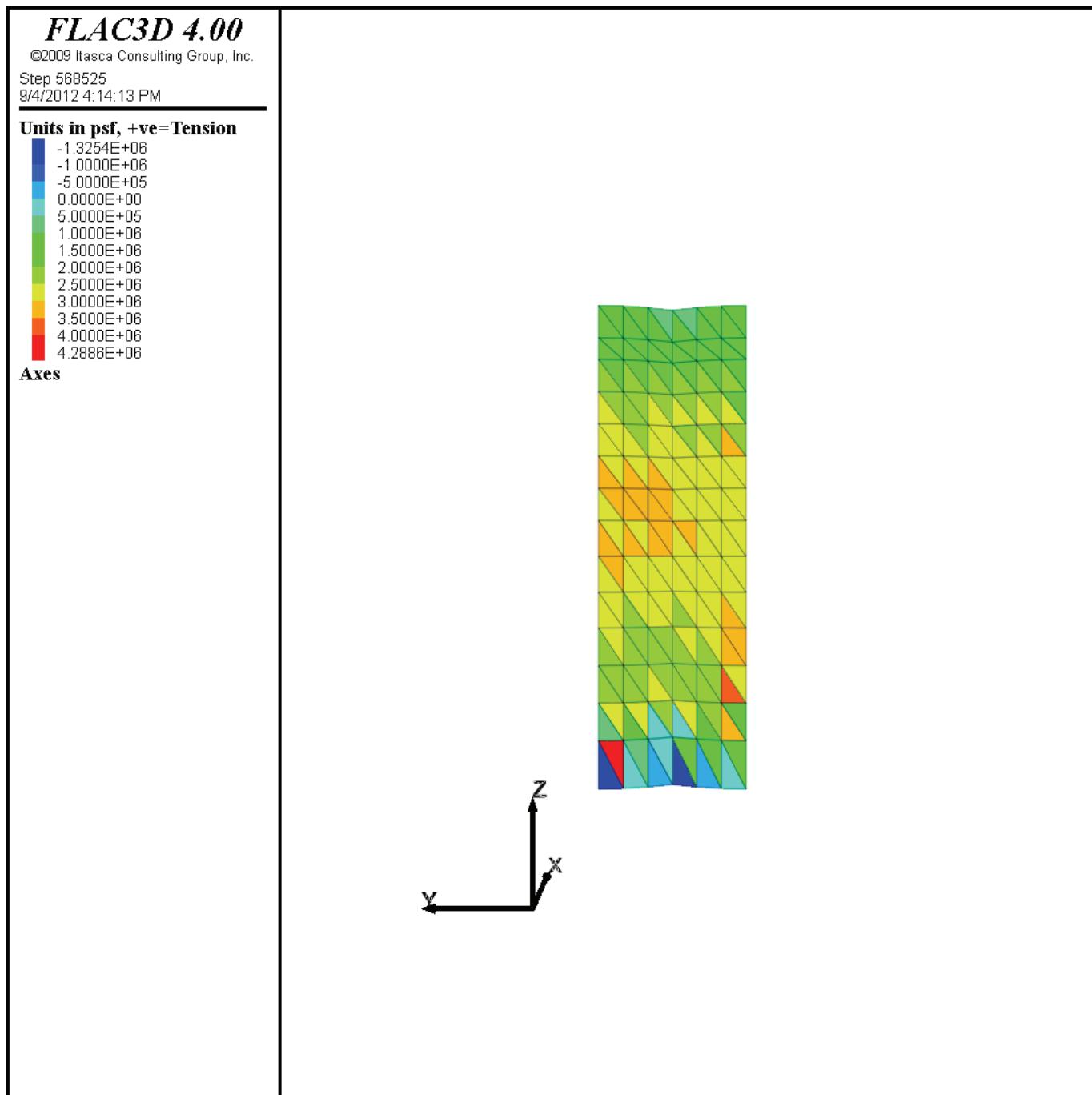


Figure F-1.1.2.d Facewall Membrane Stress – As-Designed Snapshot 40 Sec – Western Washington EQ Record

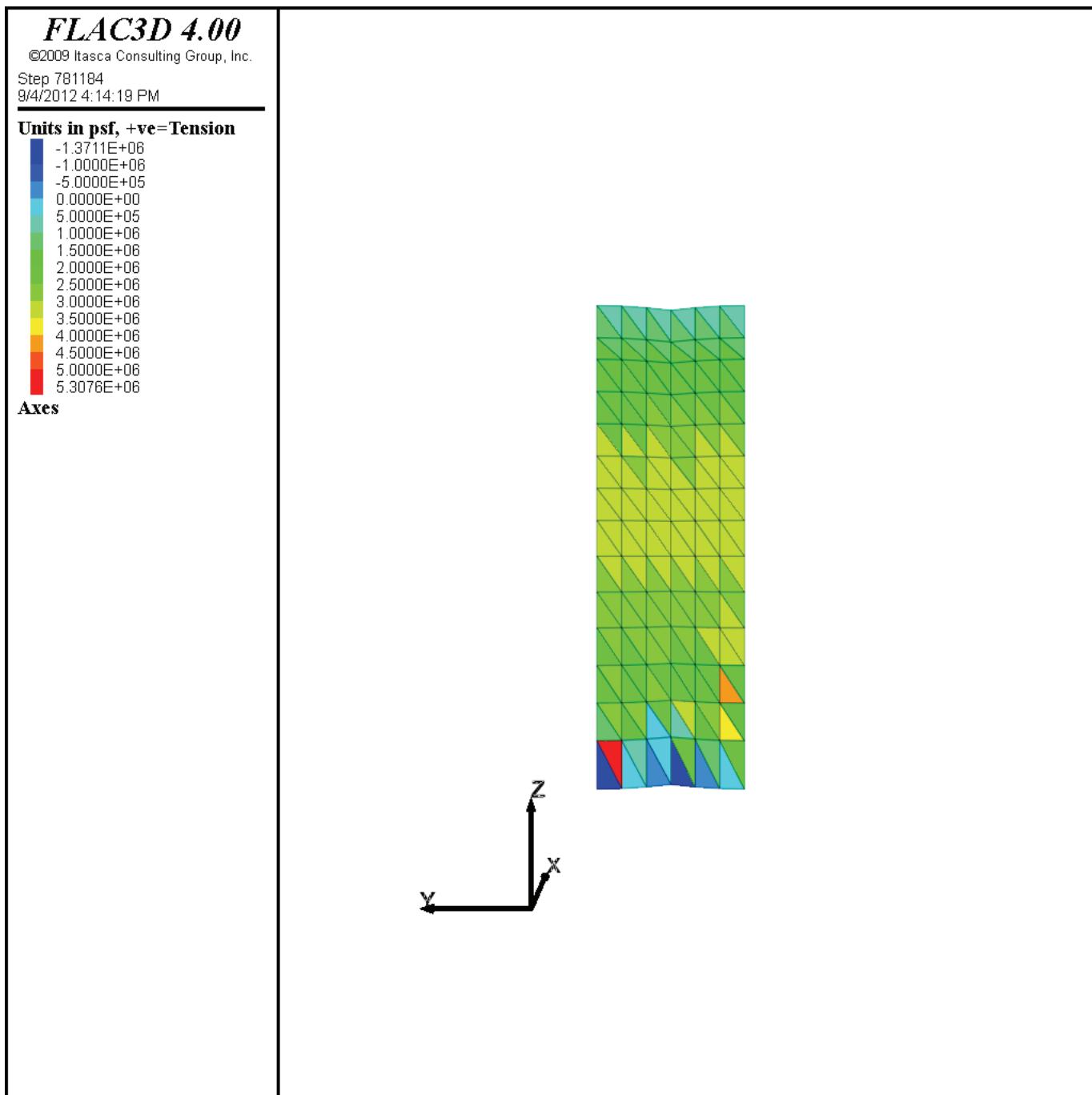


Figure F-1.1.3.d Facewall Membrane Stress – As-Designed Snapshot 60 Sec – Western Washington EQ Record

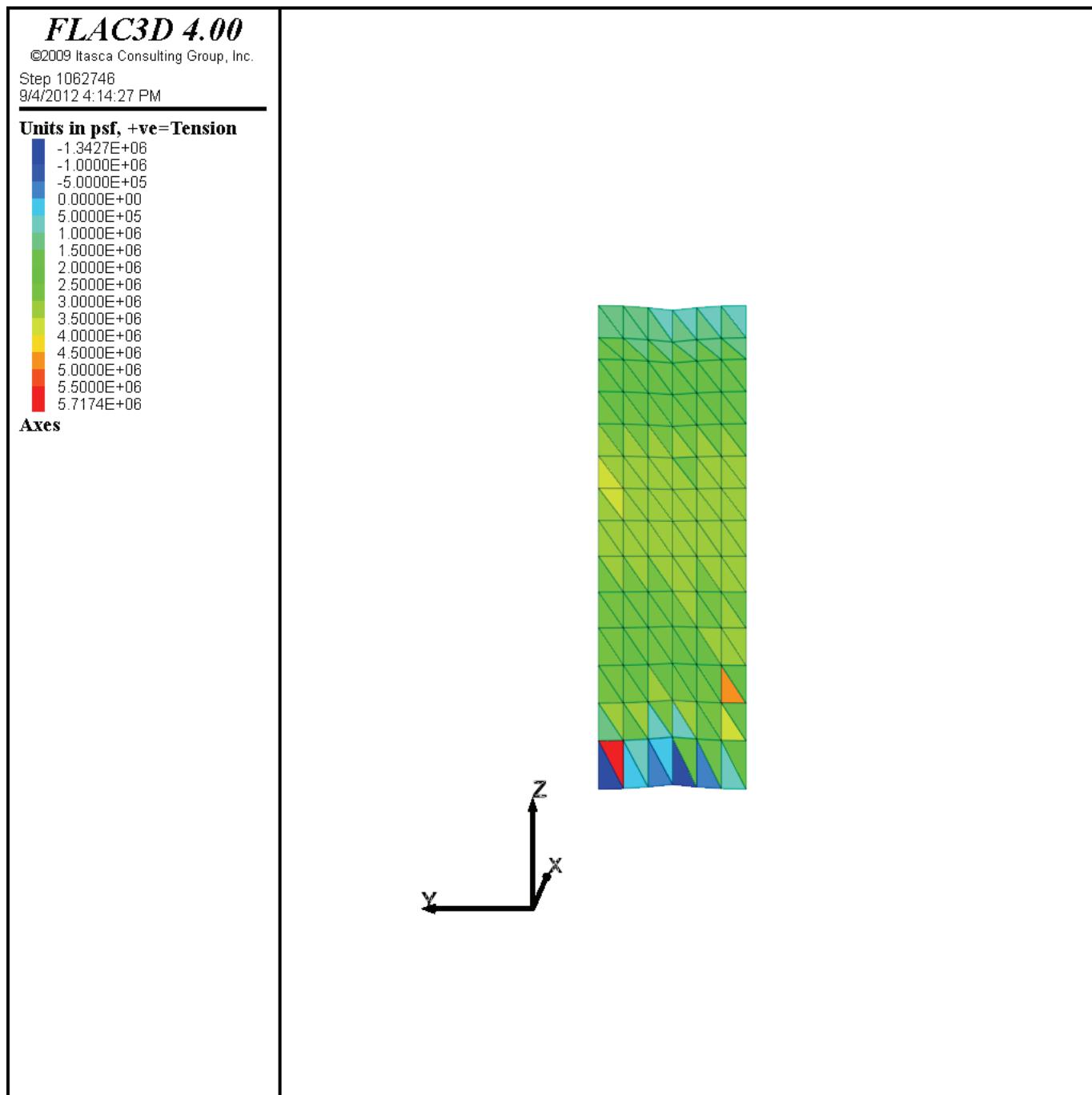


Figure F-1.1.4.d Facewall Membrane Stress – As-Designed Snapshot 86 Sec – Western Washington EQ Record

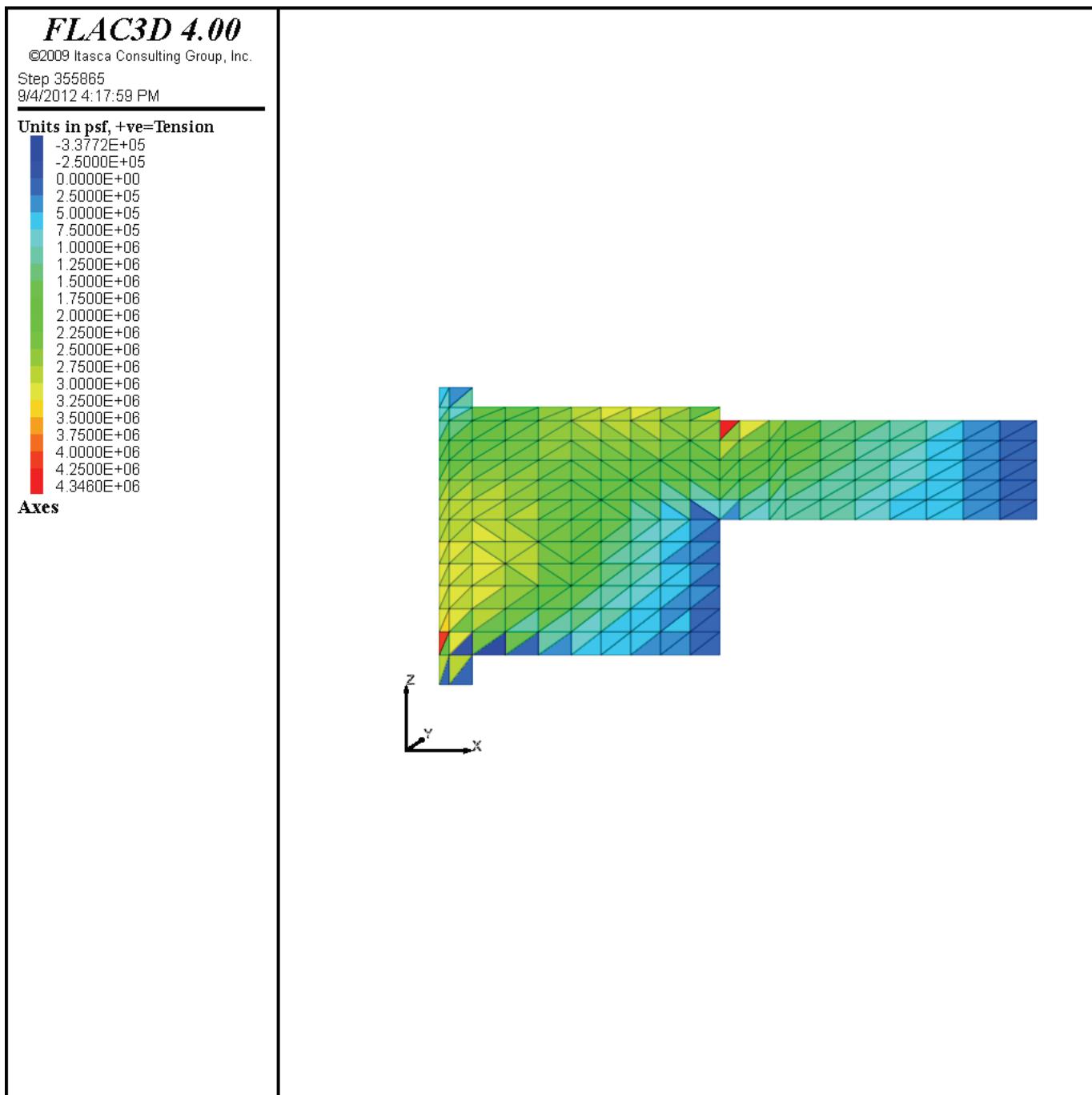


Figure F-1.1.5.d Tailwall Membrane Stress – As-Designed Snapshot 20 Sec – Western Washington EQ Record

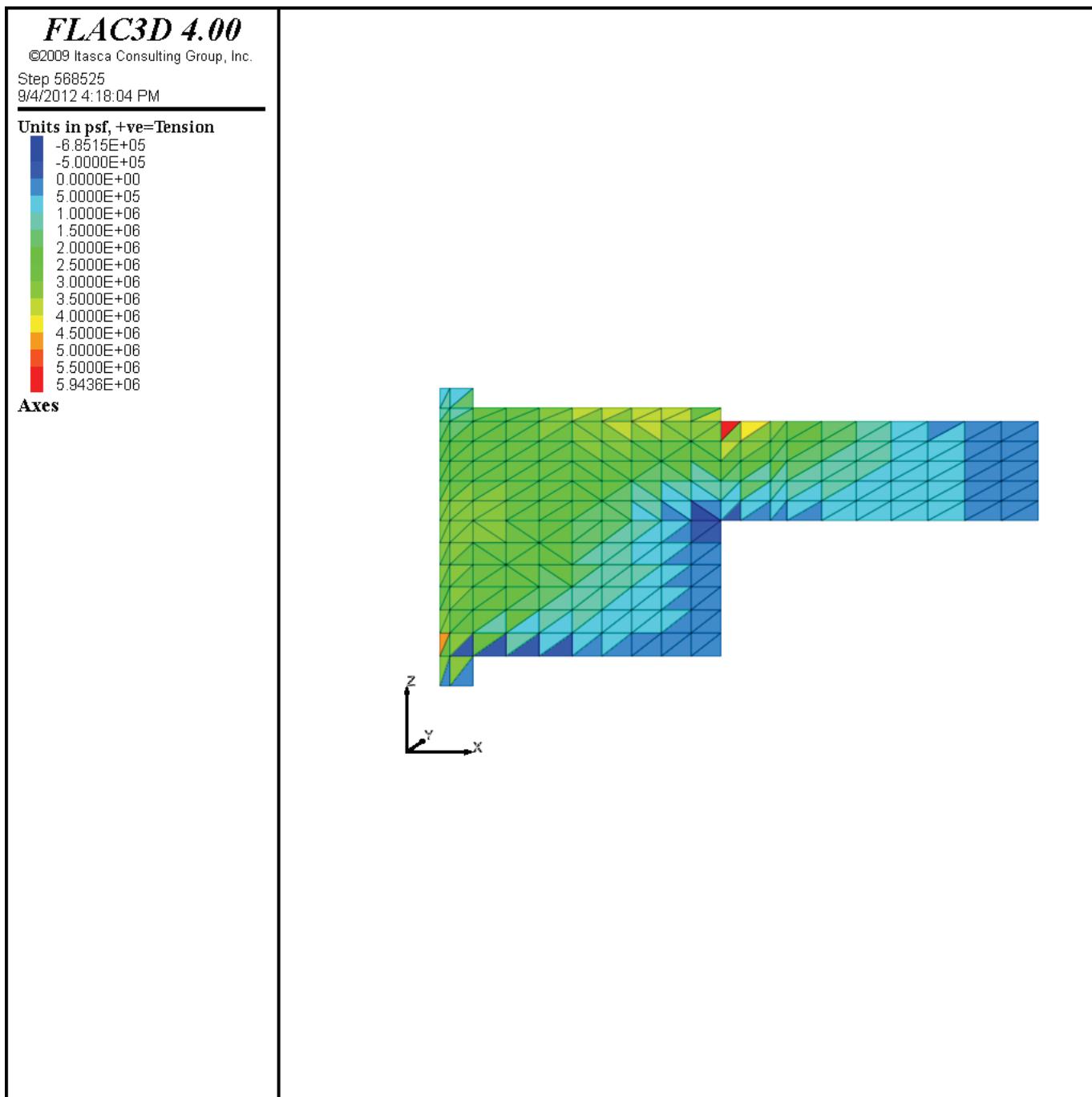


Figure F-1.1.6.d Tailwall Membrane Stress – As-Designed Snapshot 40 Sec – Western Washington EQ Record

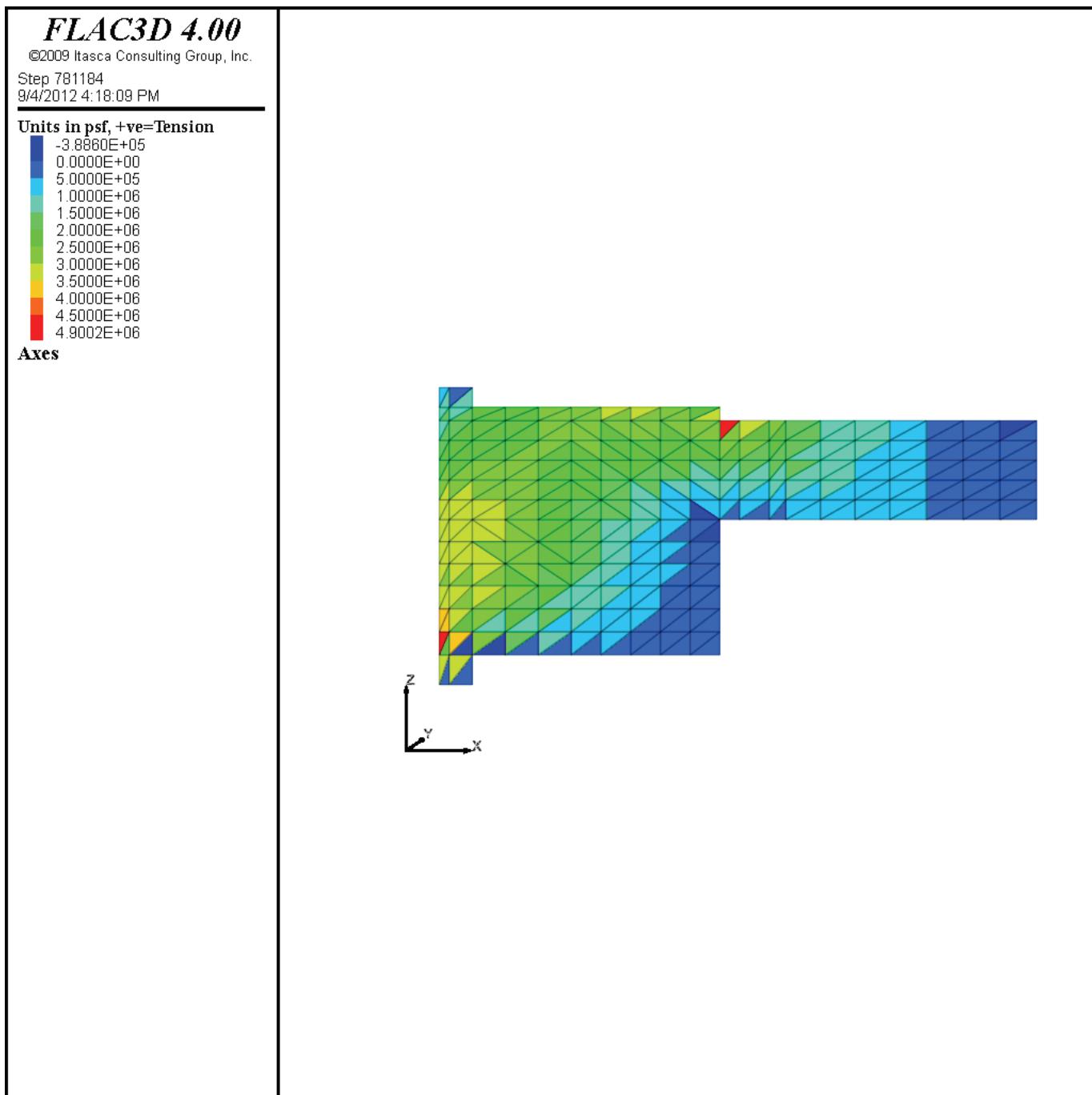


Figure F-1.1.7.d Tailwall Membrane Stress – As-Designed Snapshot 60 Sec – Western Washington EQ Record

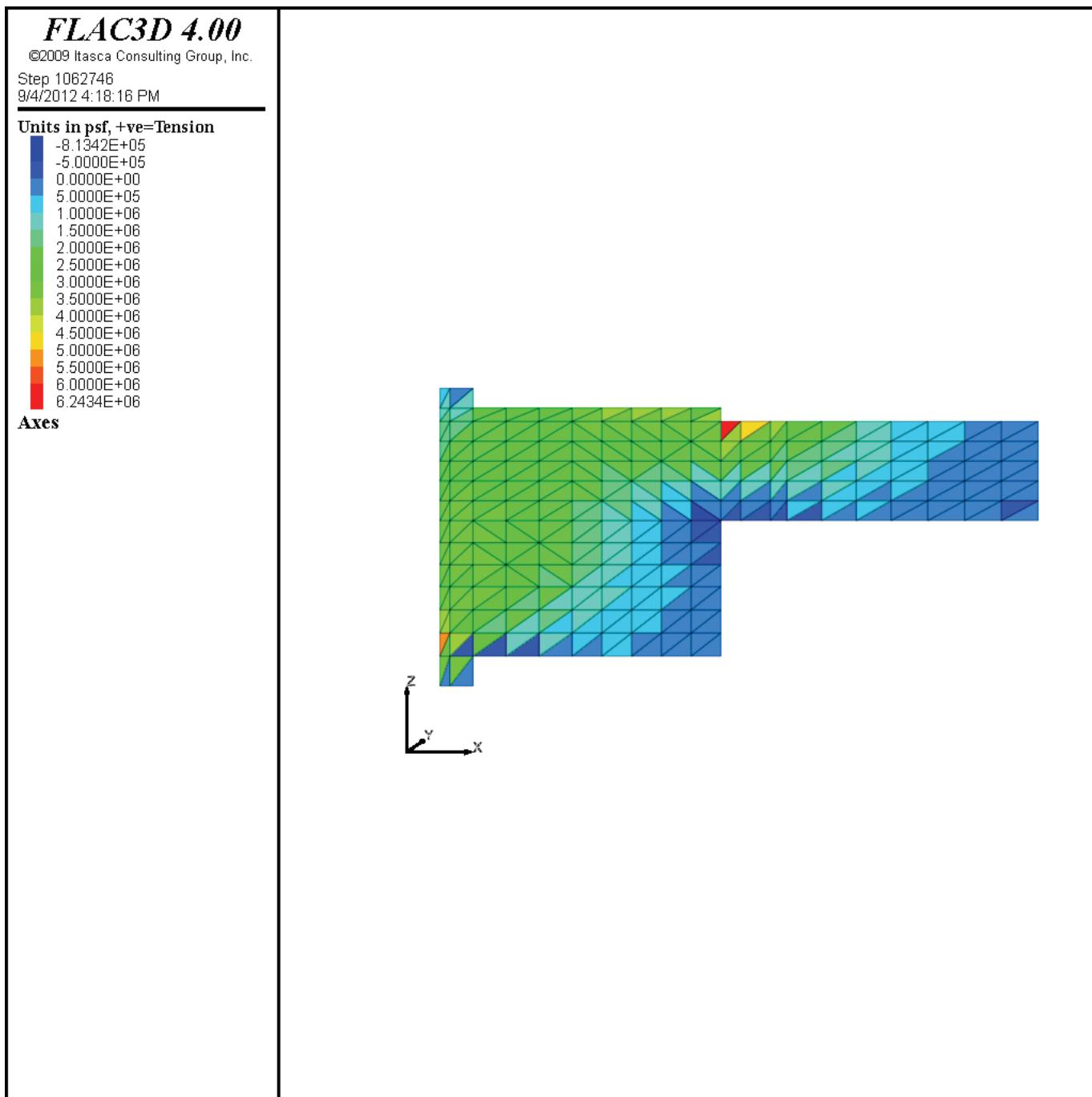


Figure F-1.1.8.d Tailwall Membrane Stress – As-Designed Snapshot 86 Sec – Western Washington EQ Record

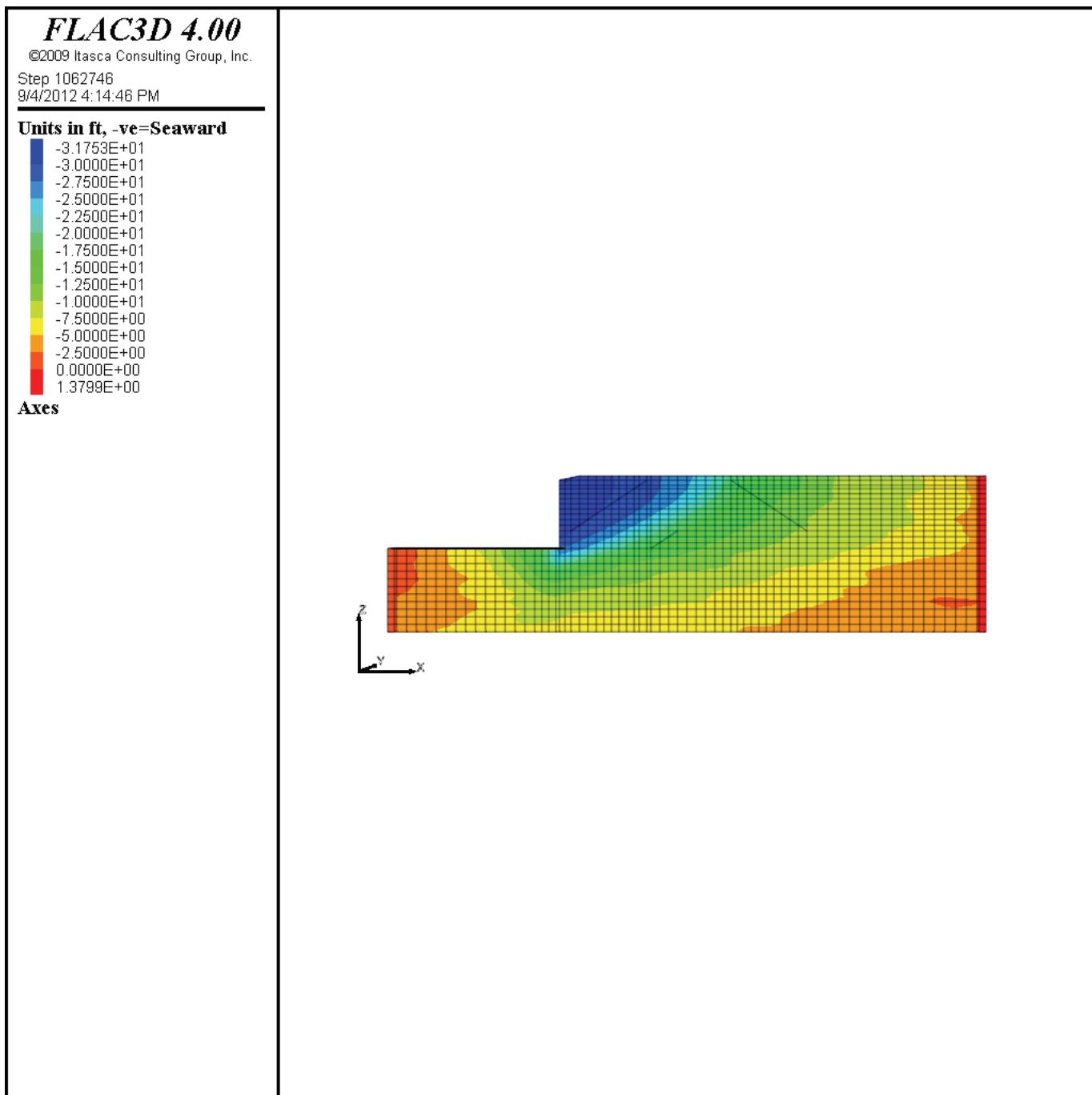


Figure F-1.1.9.d Permanent Soil X-Displacement Contours – As-Designed – Western Washington EQ Record

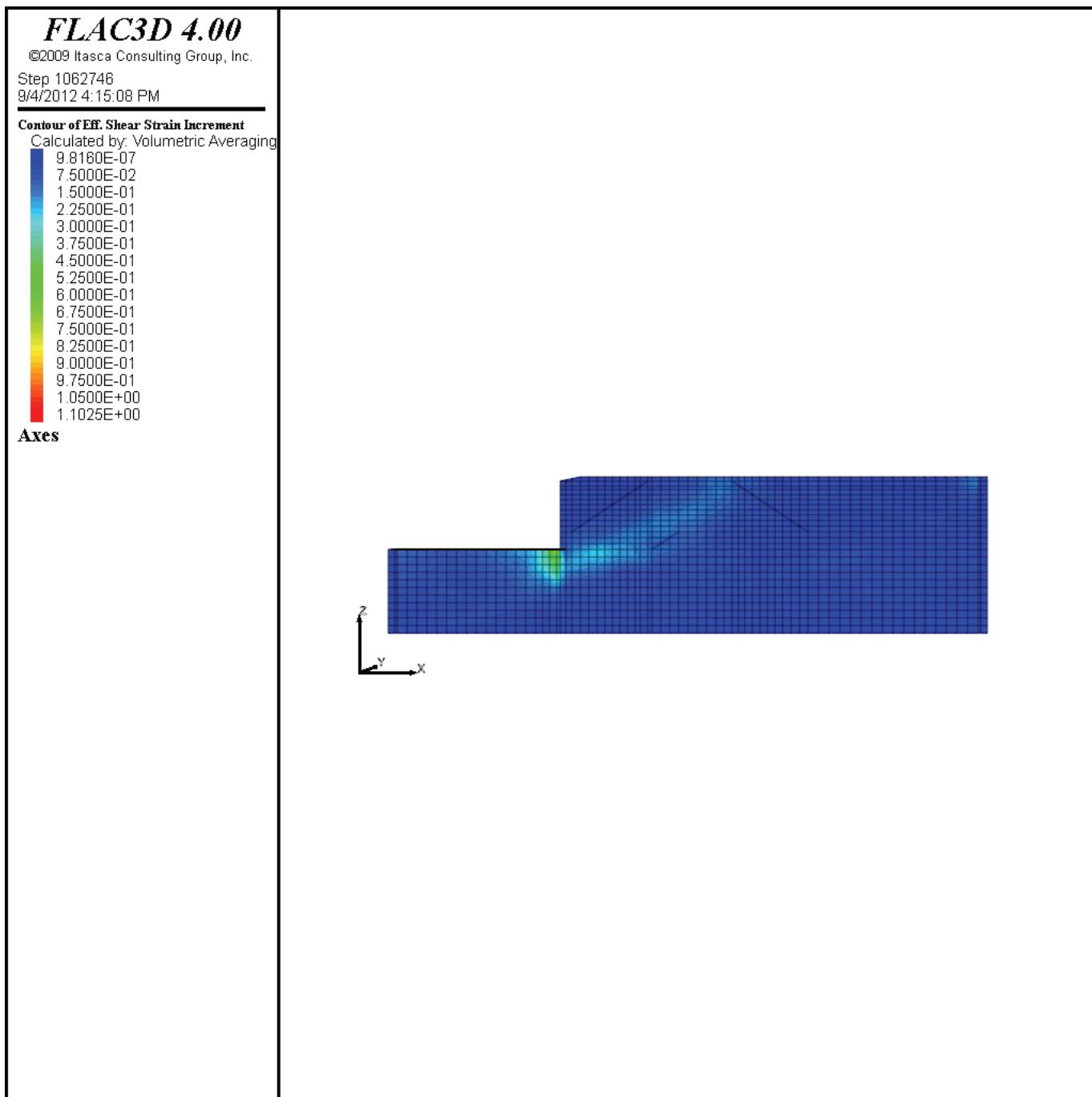


Figure F-1.1.10.d Effective Shear Strain Contours – As-Designed – Western Washington EQ Record

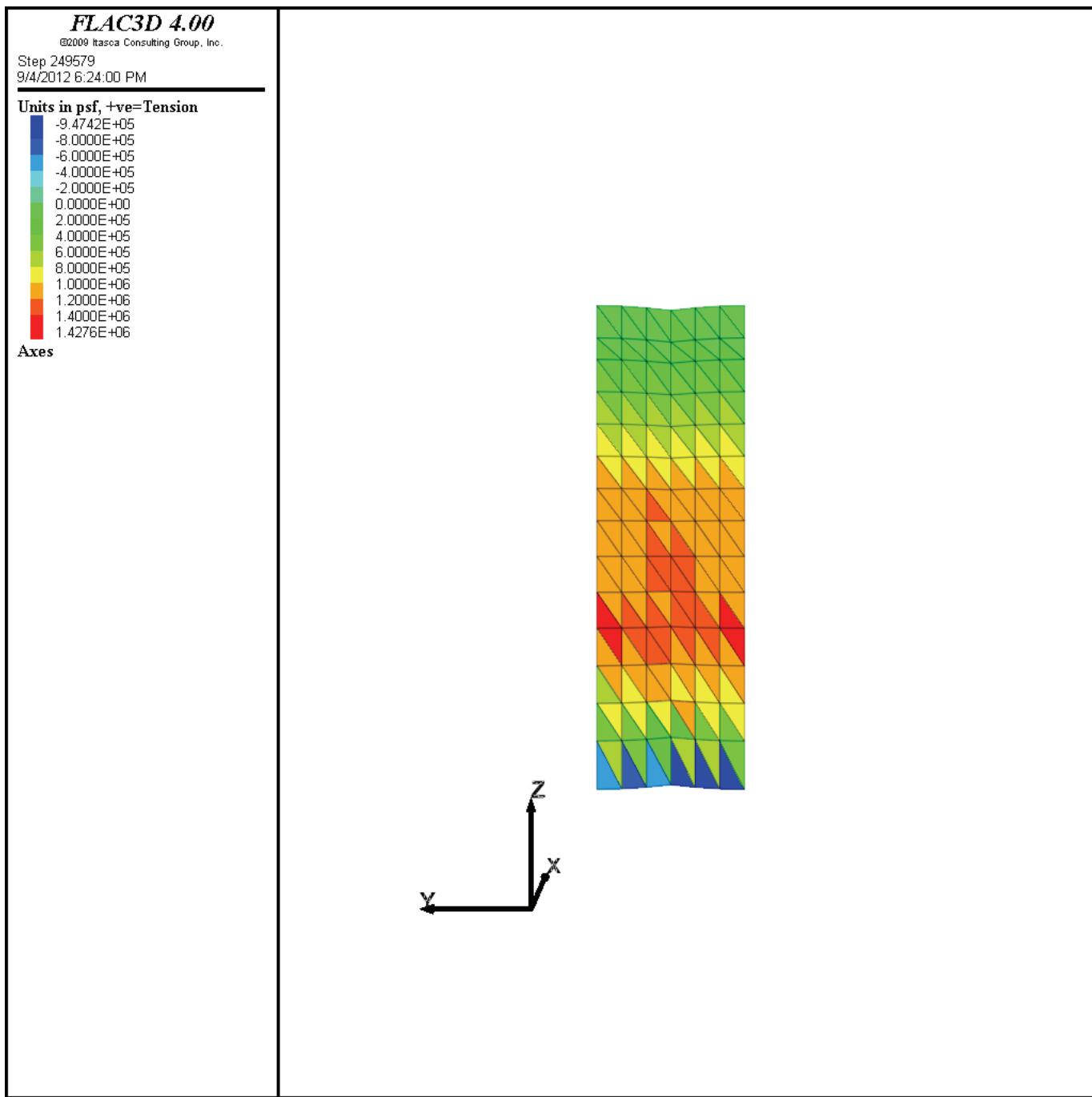


Figure F-1.2.1.a Facewall Membrane Stress – As-Designed Snapshot At 10 Sec – Michoacan EQ Record

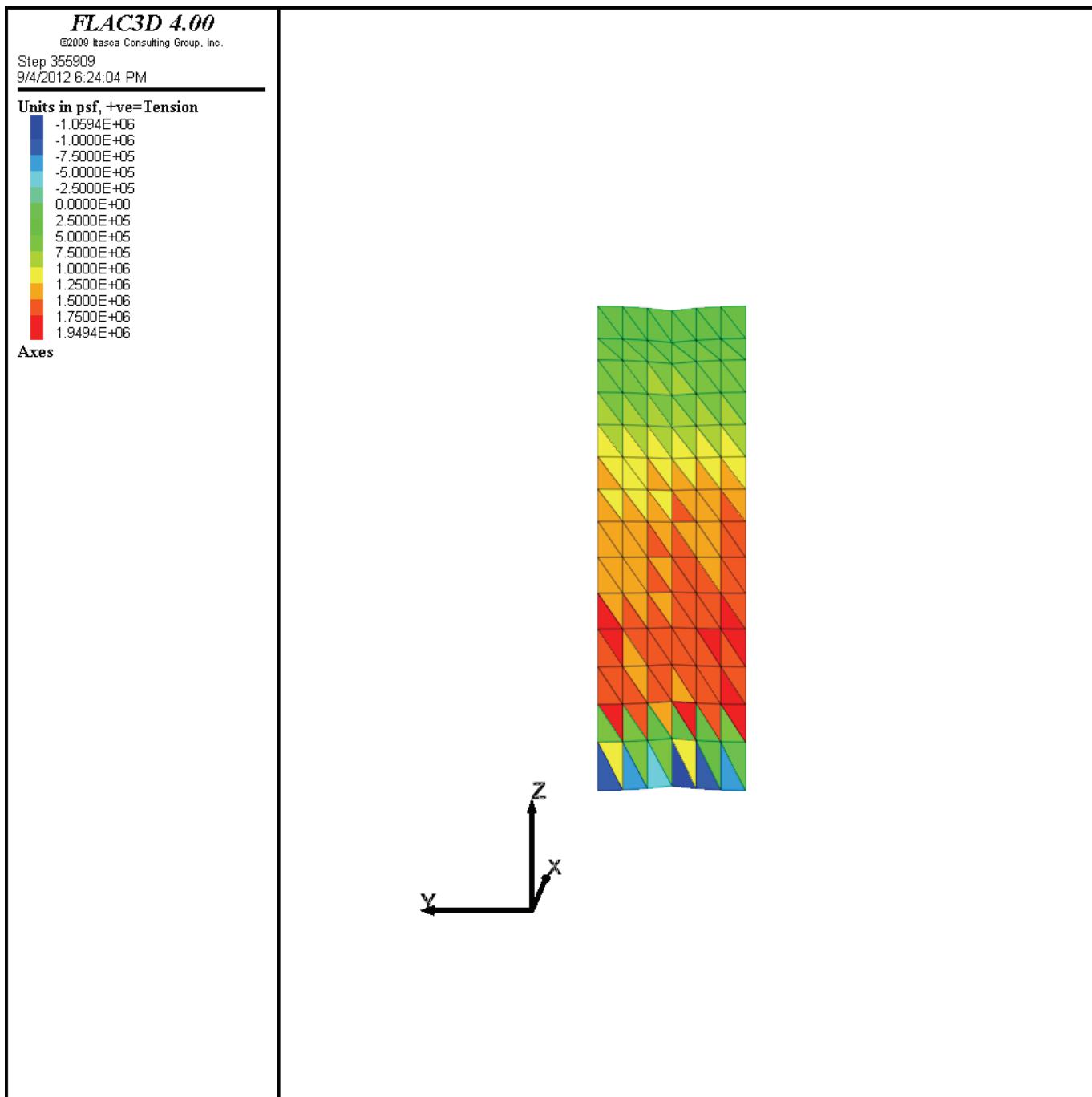


Figure F-1.2.2.a Facewall Membrane Stress – As-Designed Snapshot 20 Sec – Michoacan EQ Record

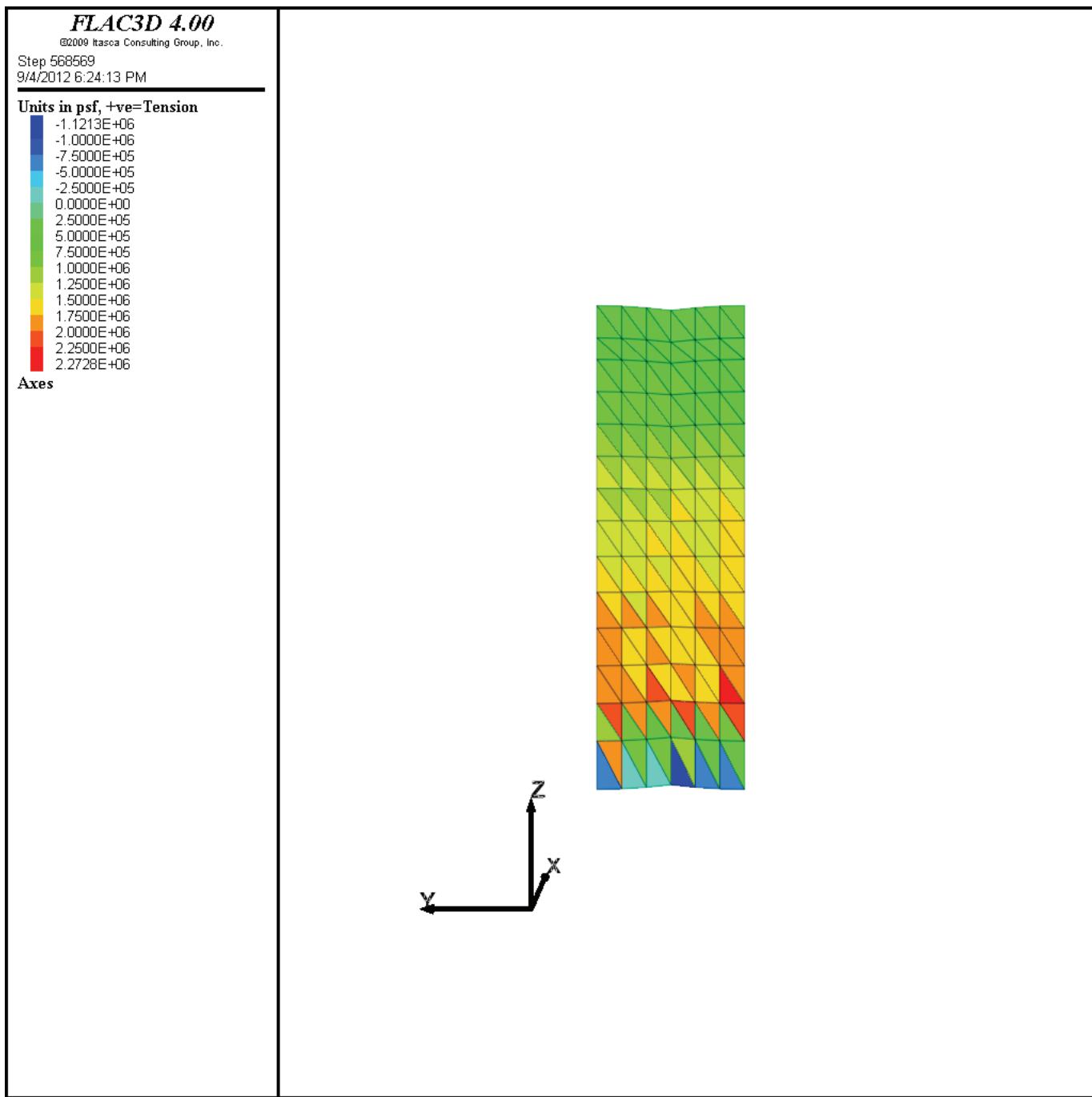


Figure F-1.2.3.a Facewall Membrane Stress – As-Designed Snapshot 40 Sec – Michoacan EQ Record

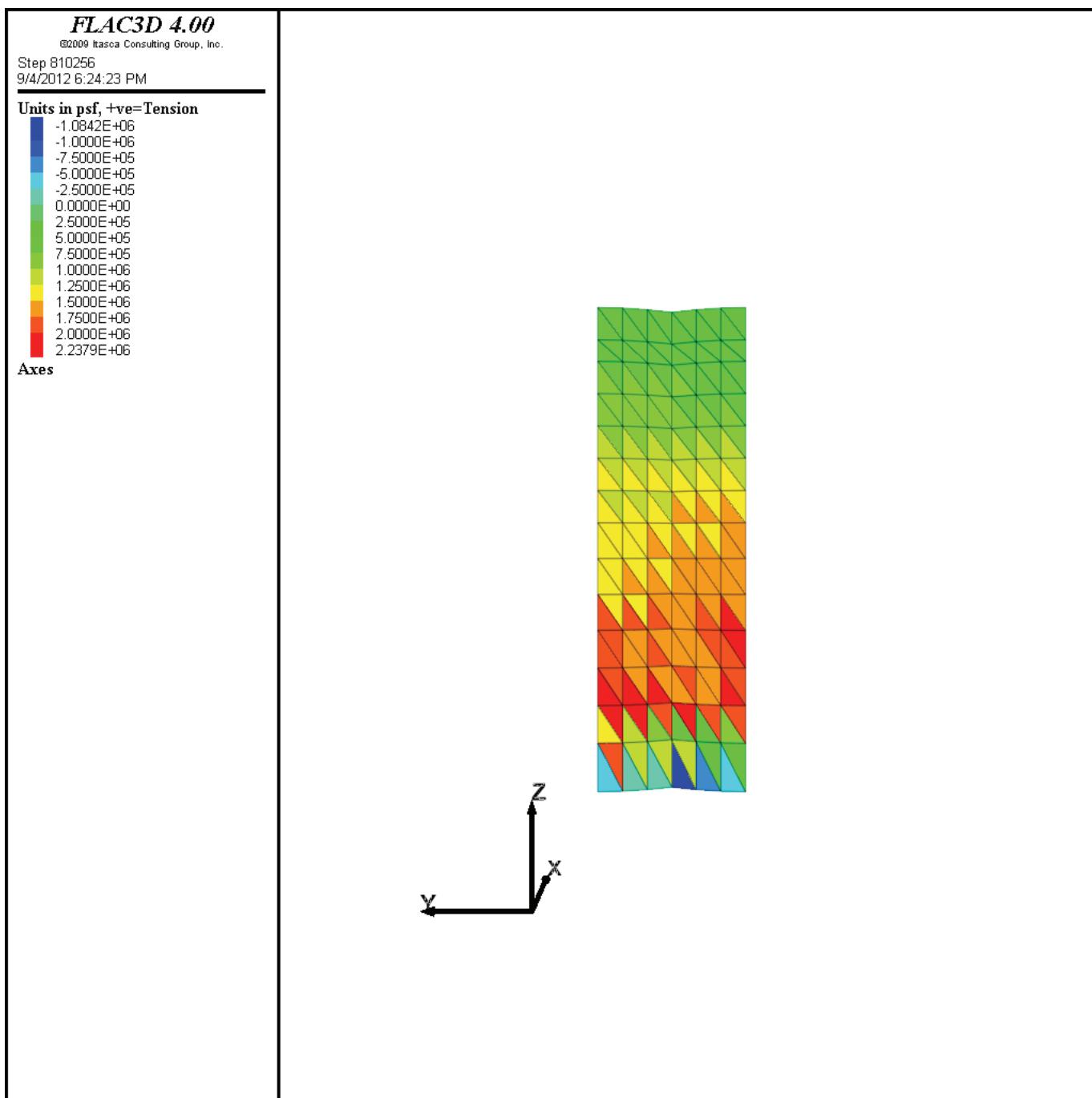


Figure F-1.2.4.a Facewall Membrane Stress – As-Designed Snapshot 63 Sec – Michoacan EQ Record

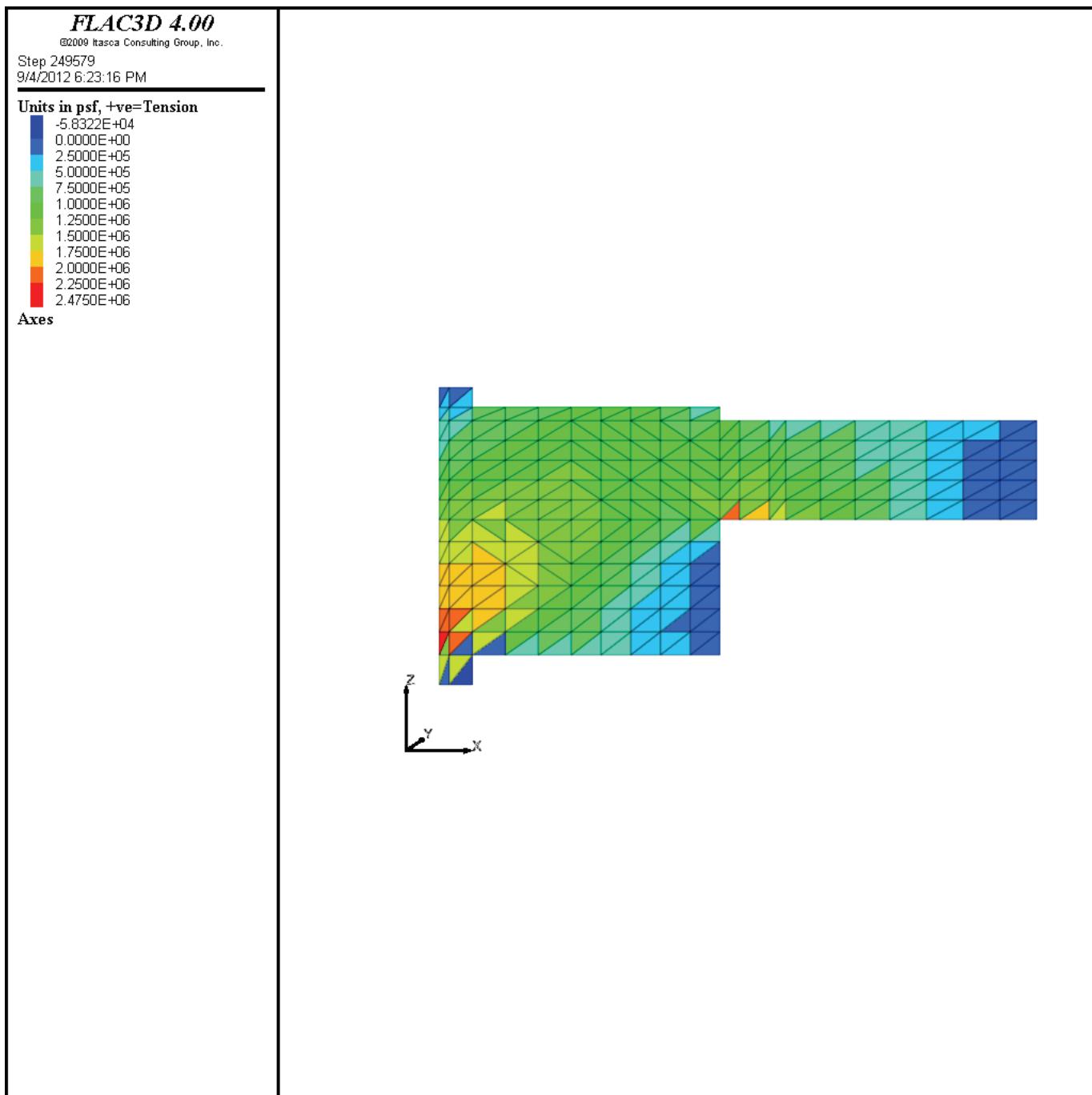


Figure F-1.2.5.a Tailwall Membrane Stress – As-Designed Snapshot 10 Sec – Michoacan EQ Record

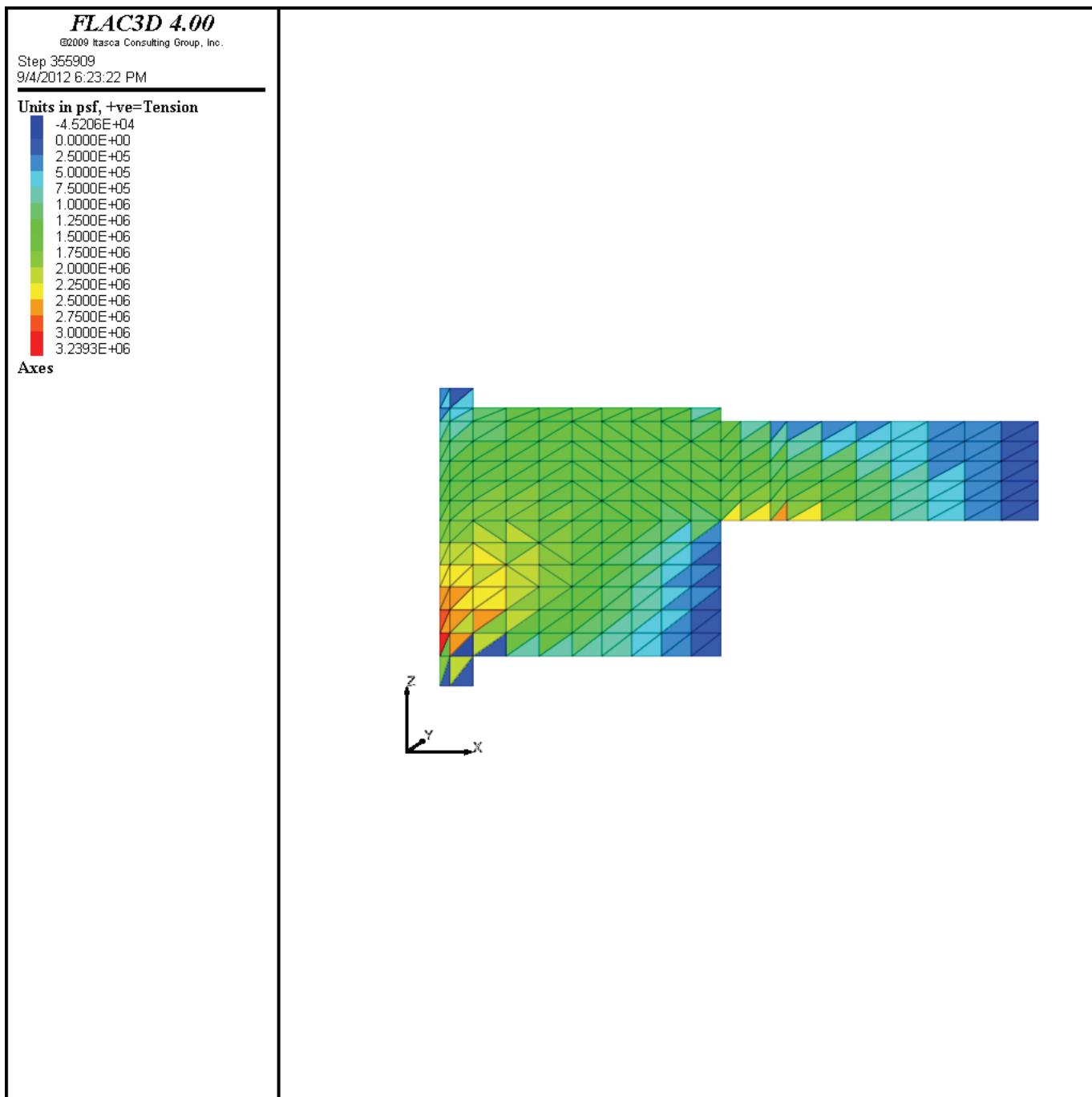


Figure F-1.2.6.a Tailwall Membrane Stress – As-Designed Snapshot 20 Sec – Michoacan EQ Record

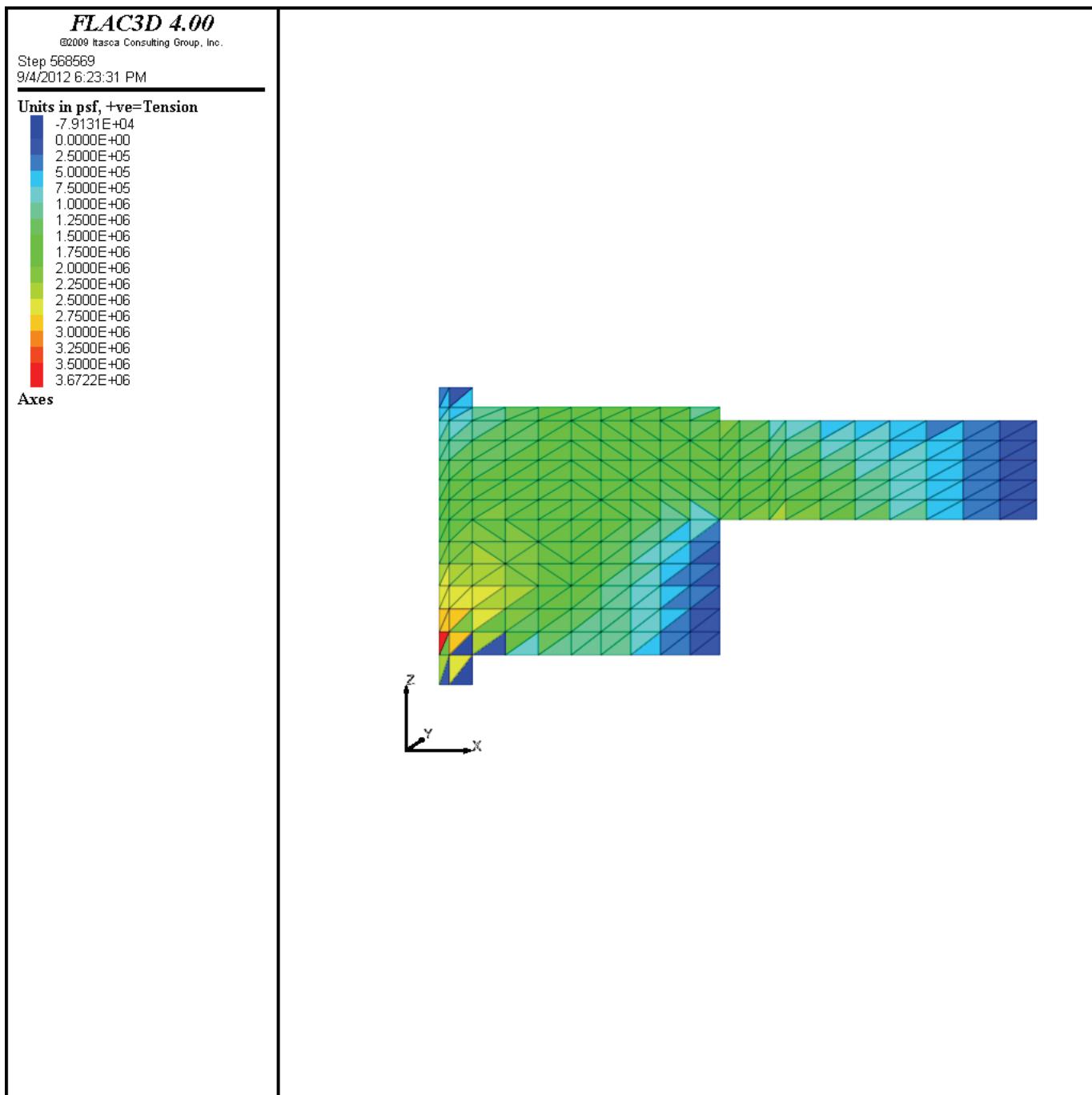


Figure F-1.2.7.a Tailwall Membrane Stress – As-Designed Snapshot 40 Sec – Michoacan EQ Record

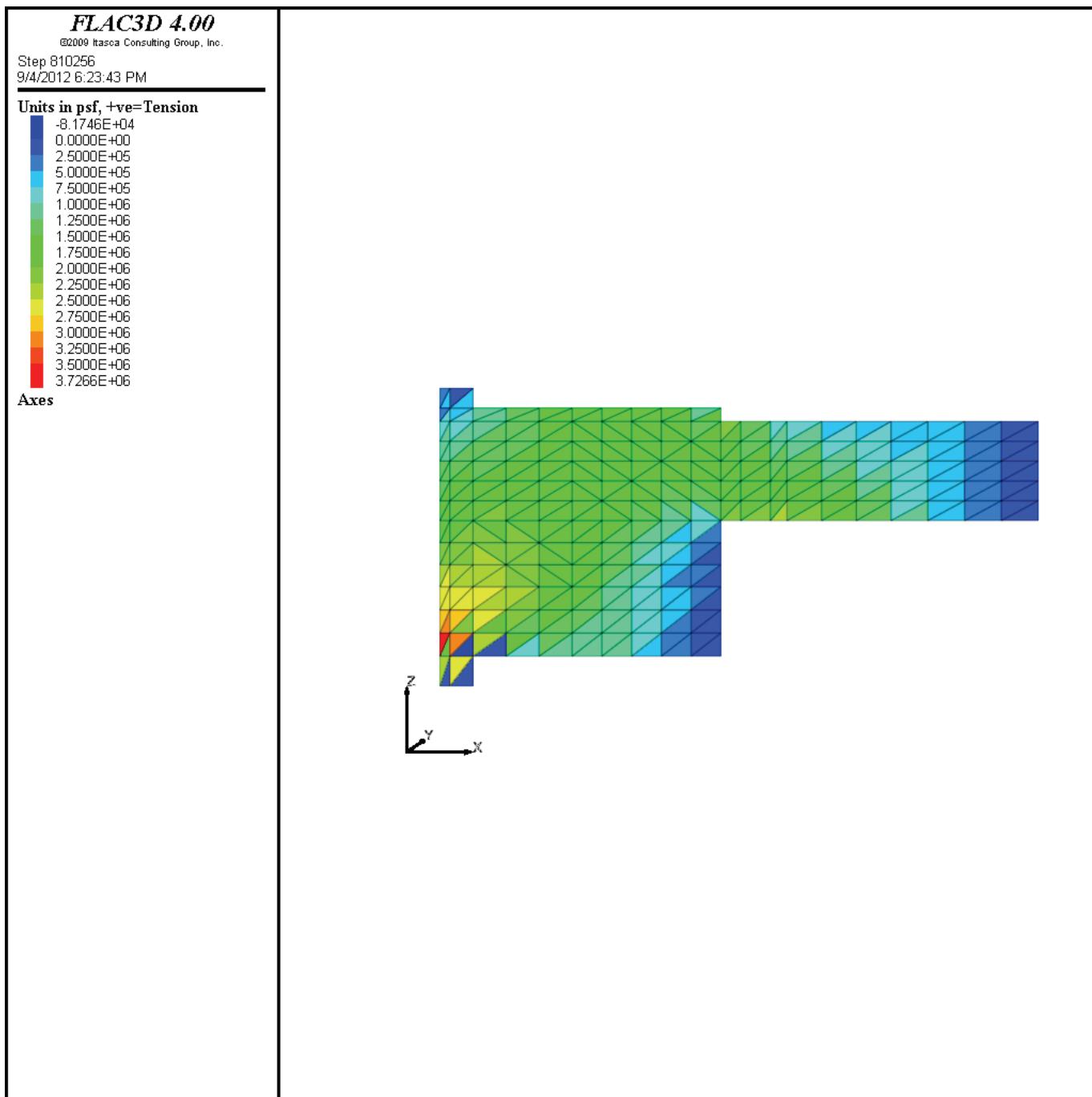


Figure F-1.2.8.a Tailwall Membrane Stress – As-Designed Snapshot 63 Sec – Michoacan EQ Record

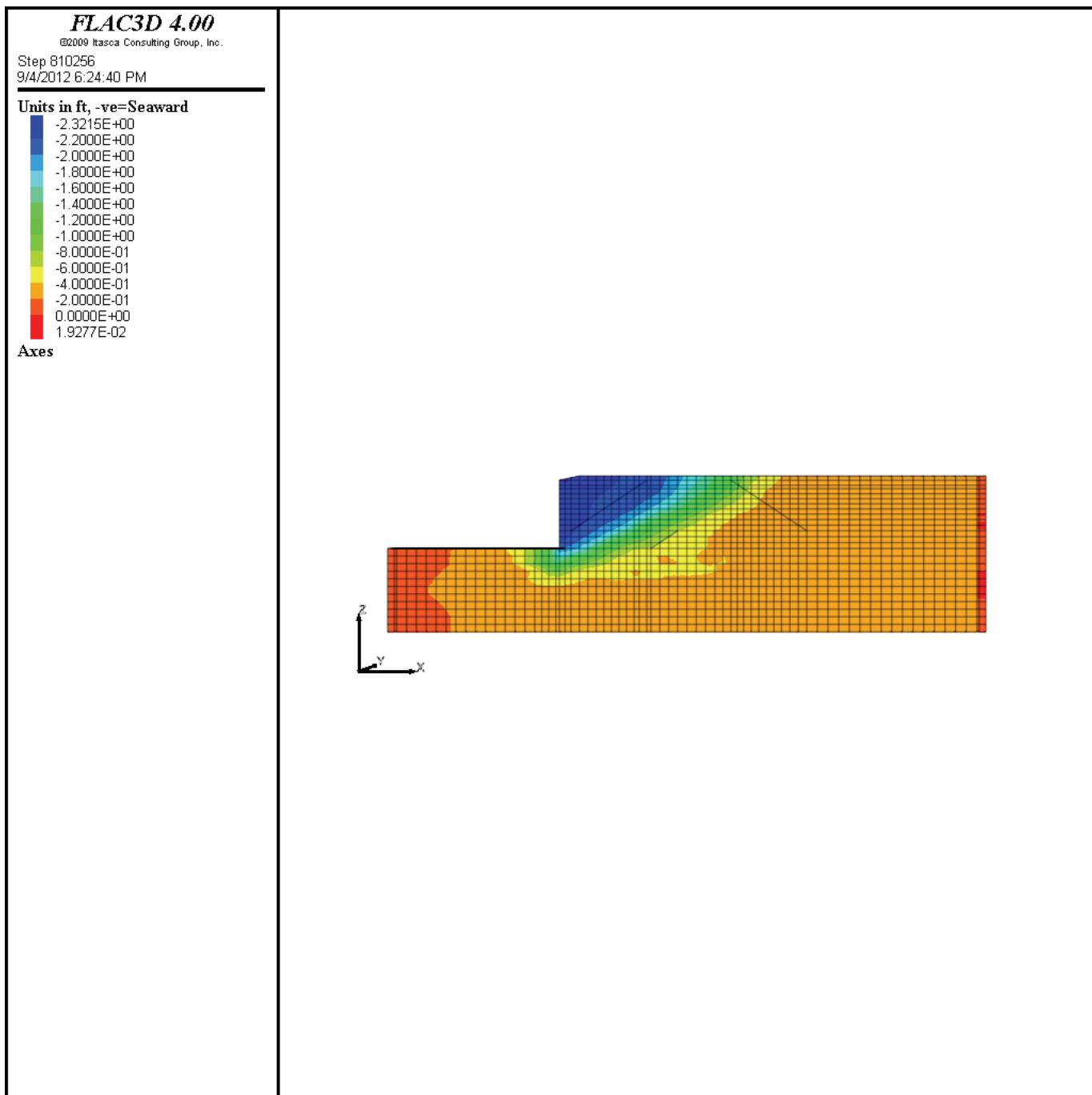


Figure F-1.2.9.a Permanent Soil X-Displacement Contours – As-Designed – Michoacan EQ Record

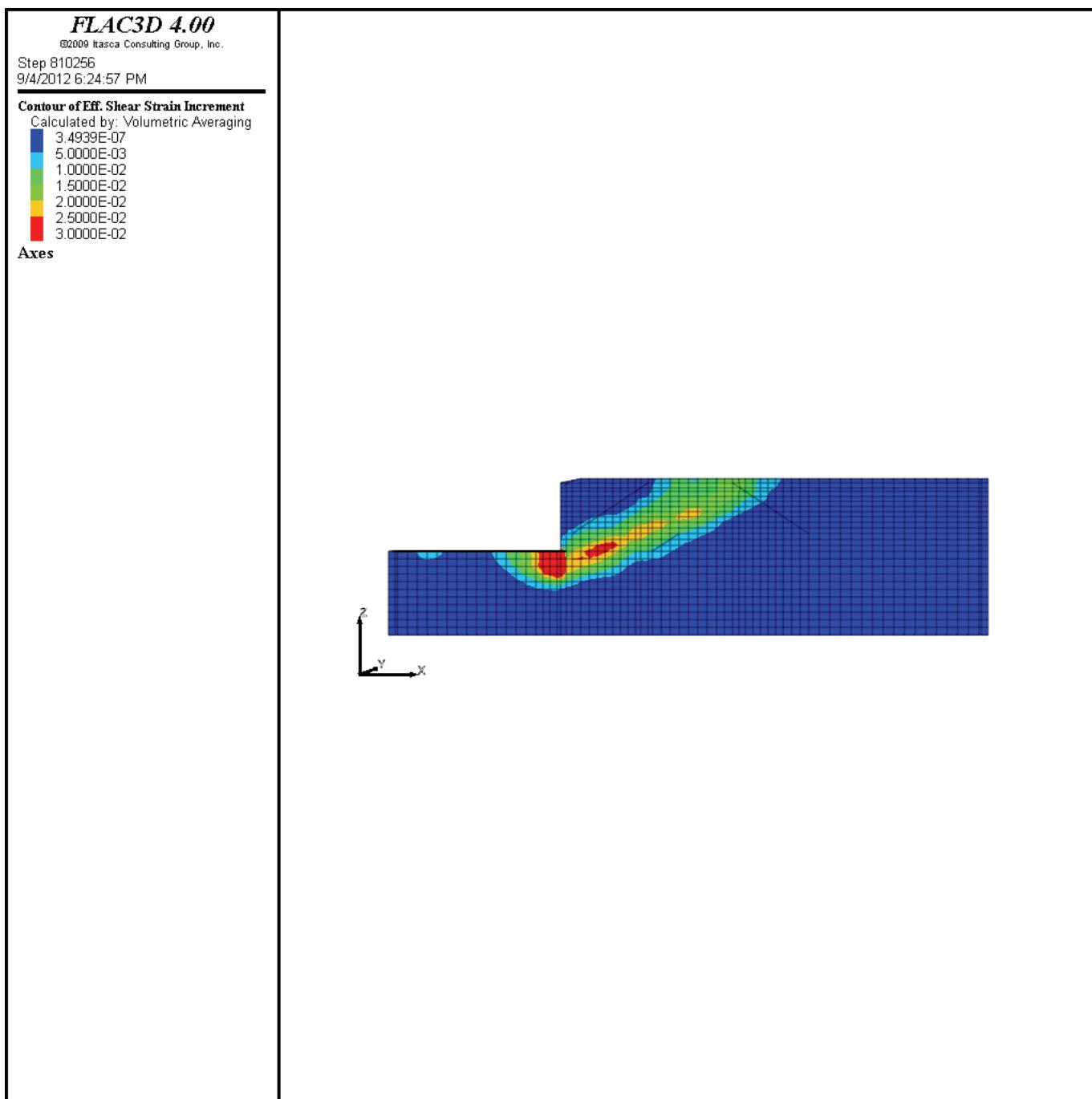


Figure F-1.2.10.a Effective Shear Strain Contours – As-Designed – Michoacan EQ Record

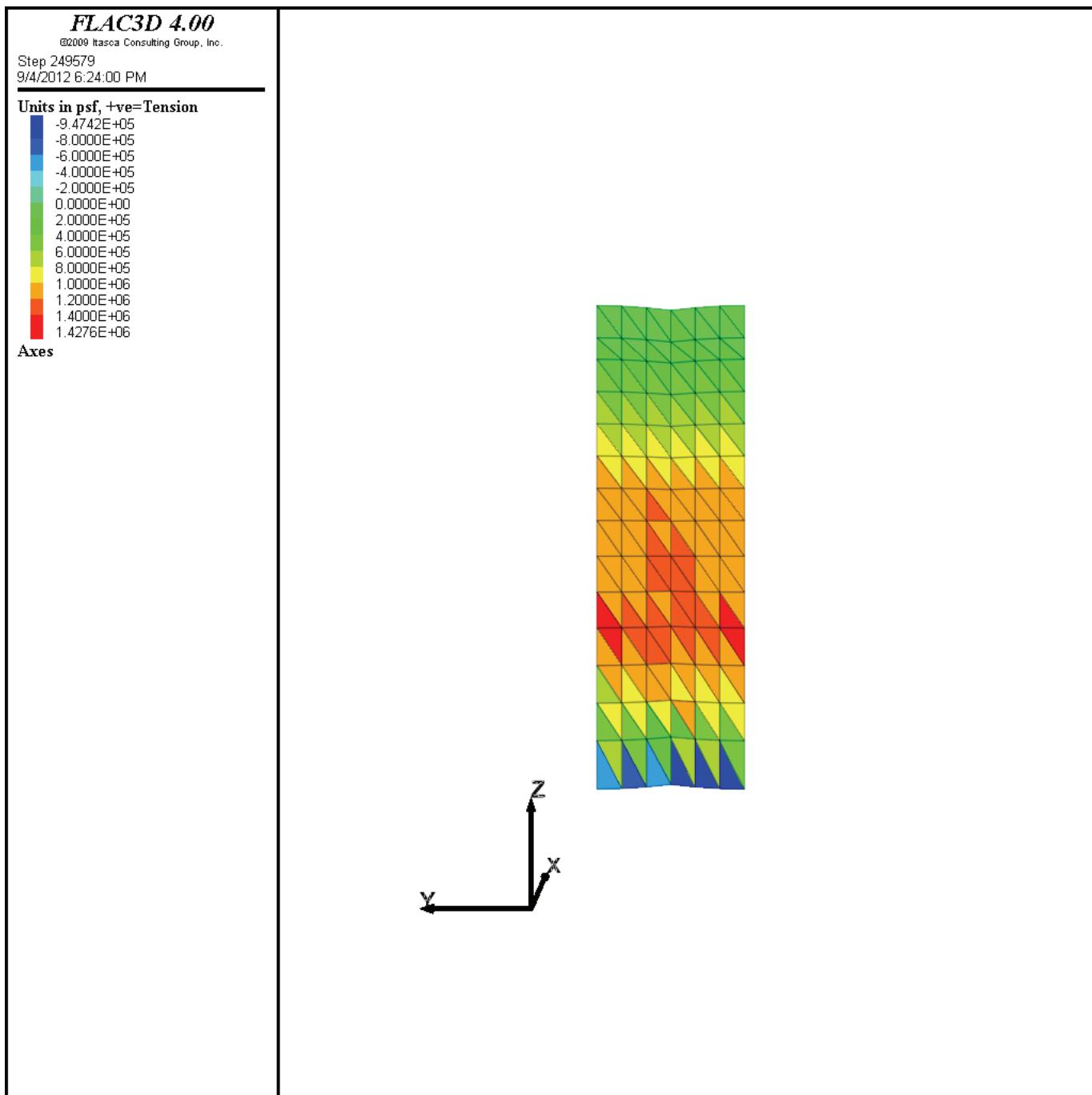


Figure F-1.2.1.b Facewall Membrane Stress – As-Designed Snapshot At 10 Sec – Nisqually P0 EQ Record

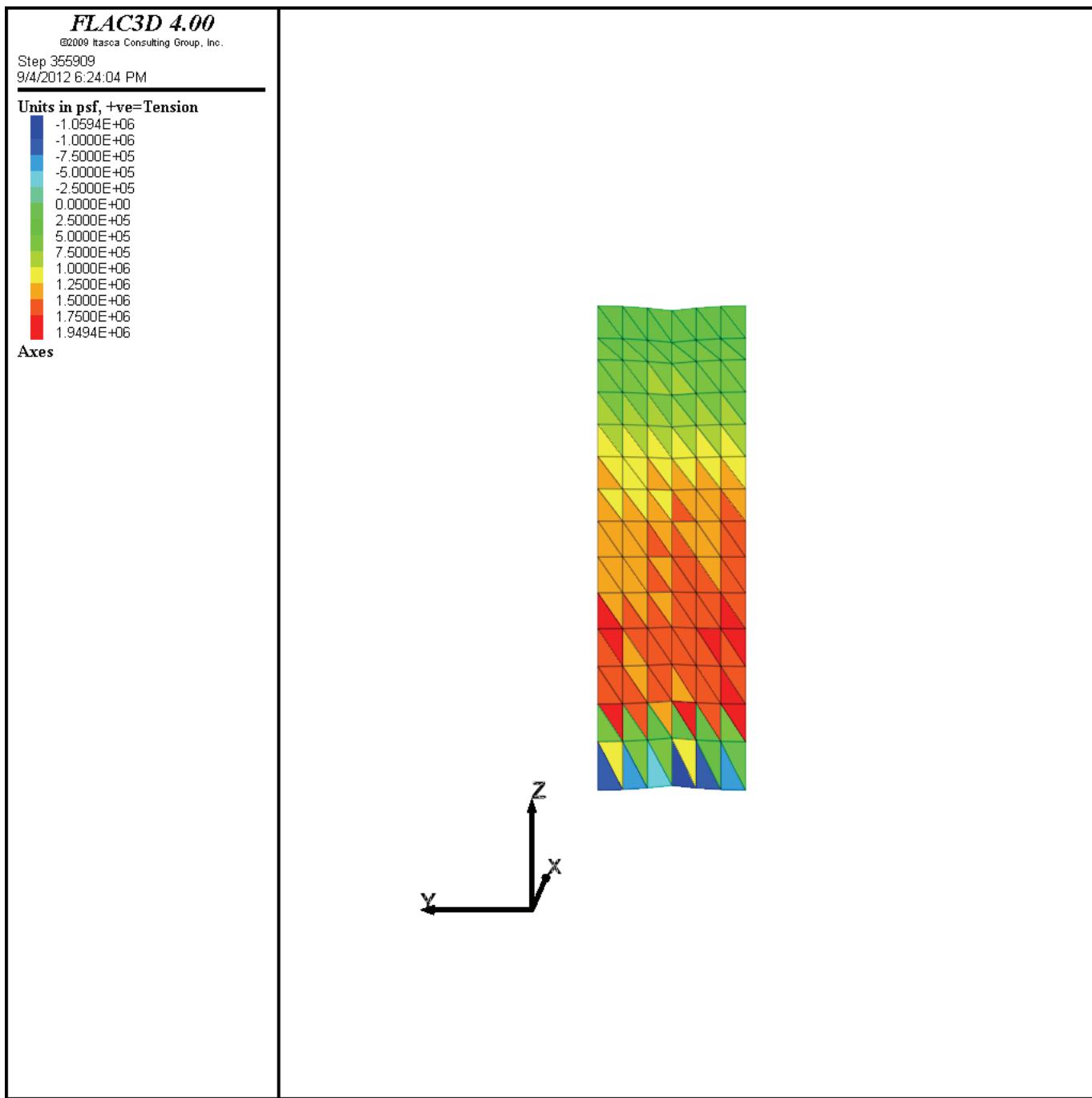


Figure F-1.2.2.b Facewall Membrane Stress – As-Designed Snapshot 20 Sec – Nisqually P0 EQ Record

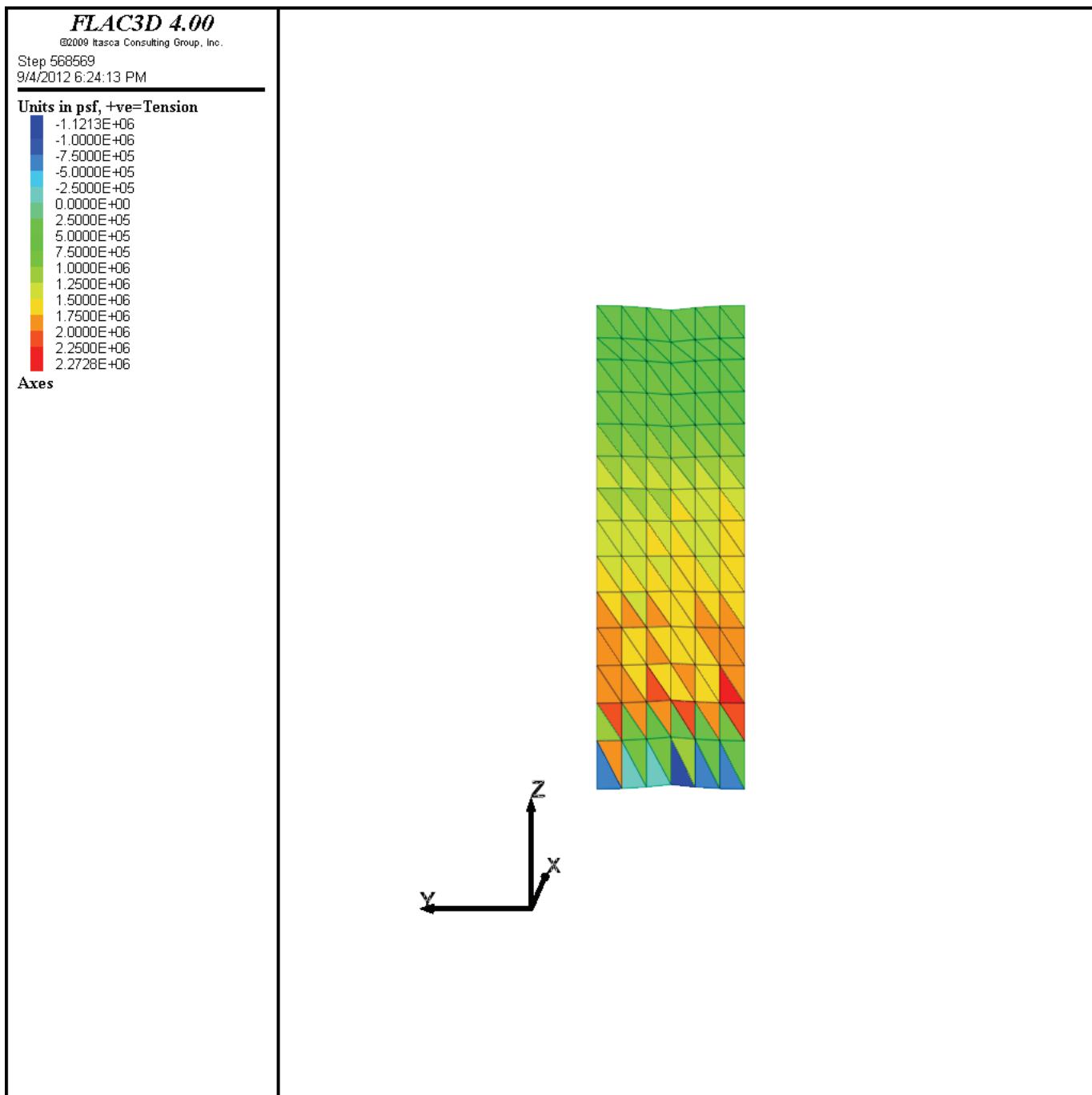


Figure F-1.2.3.b Facewall Membrane Stress – As-Designed Snapshot 40 Sec – Nisqually P0 EQ Record

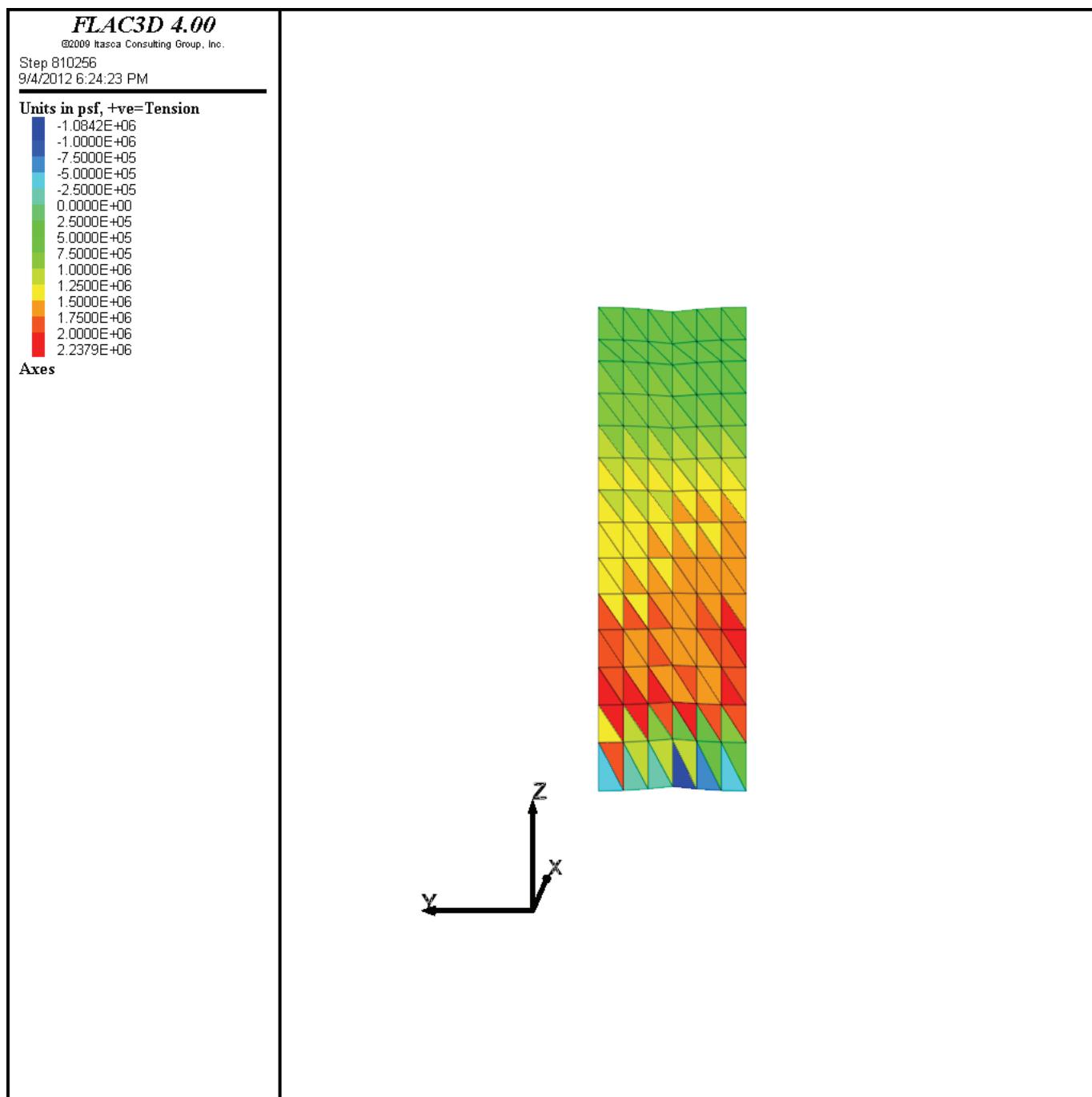


Figure F-1.2.4.b Facewall Membrane Stress – As-Designed Snapshot 83 Sec – Nisqually P0 EQ Record

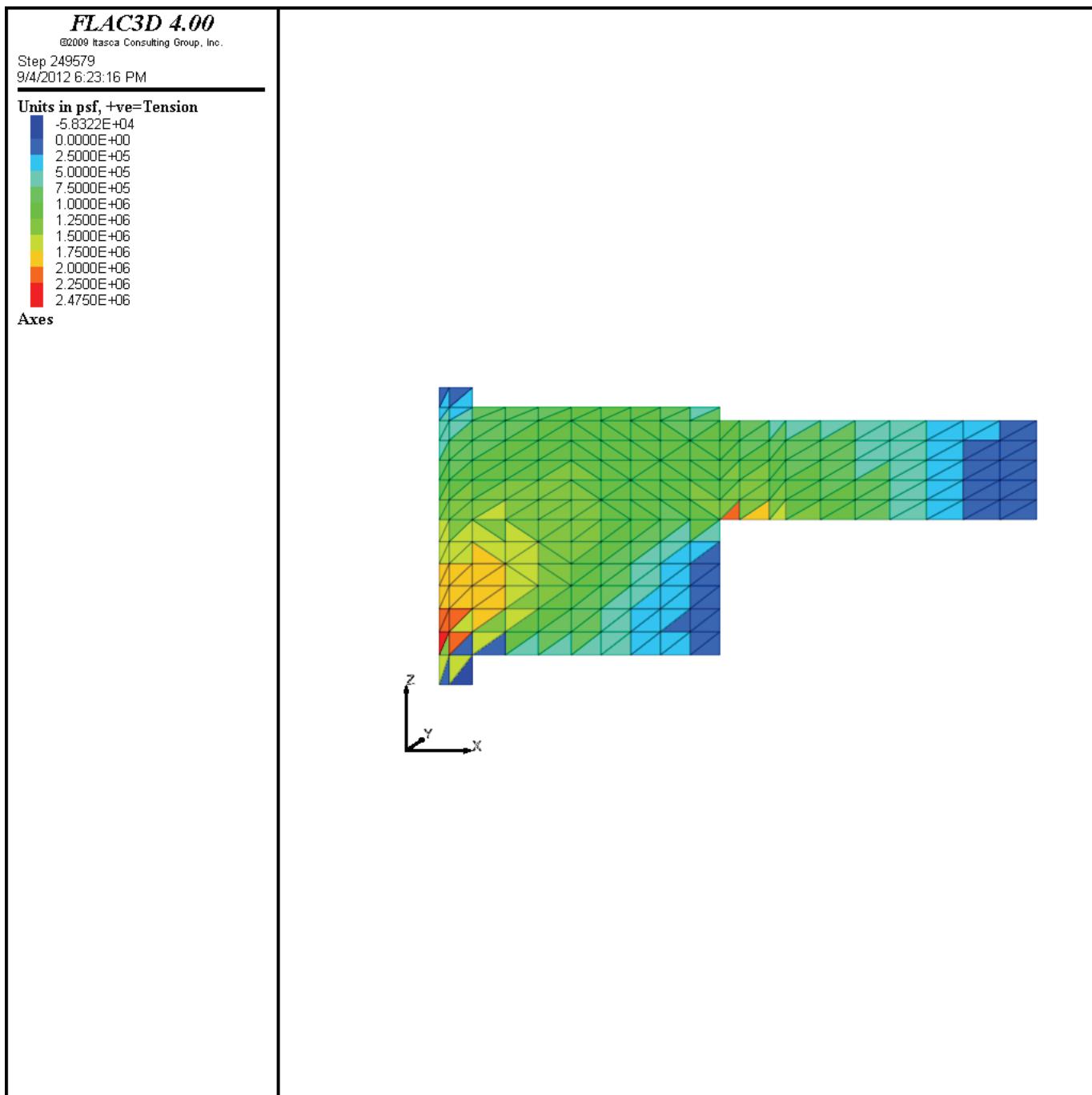


Figure F-1.2.5.b Tailwall Membrane Stress – As-Designed Snapshot 10 Sec – Nisqually P0 EQ Record

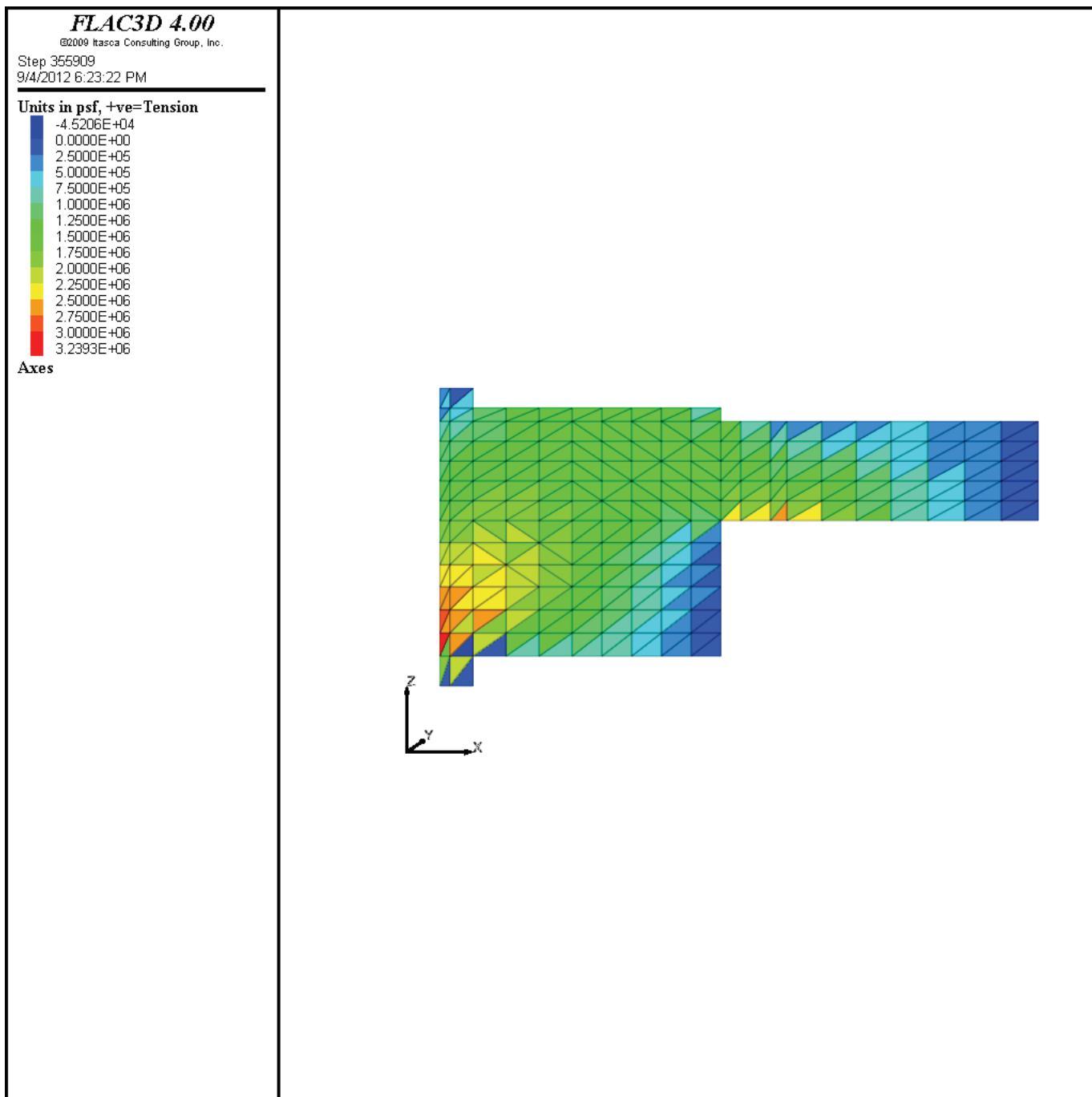


Figure F-1.2.6.b Tailwall Membrane Stress – As-Designed Snapshot 20 Sec – Nisqually P0 EQ Record

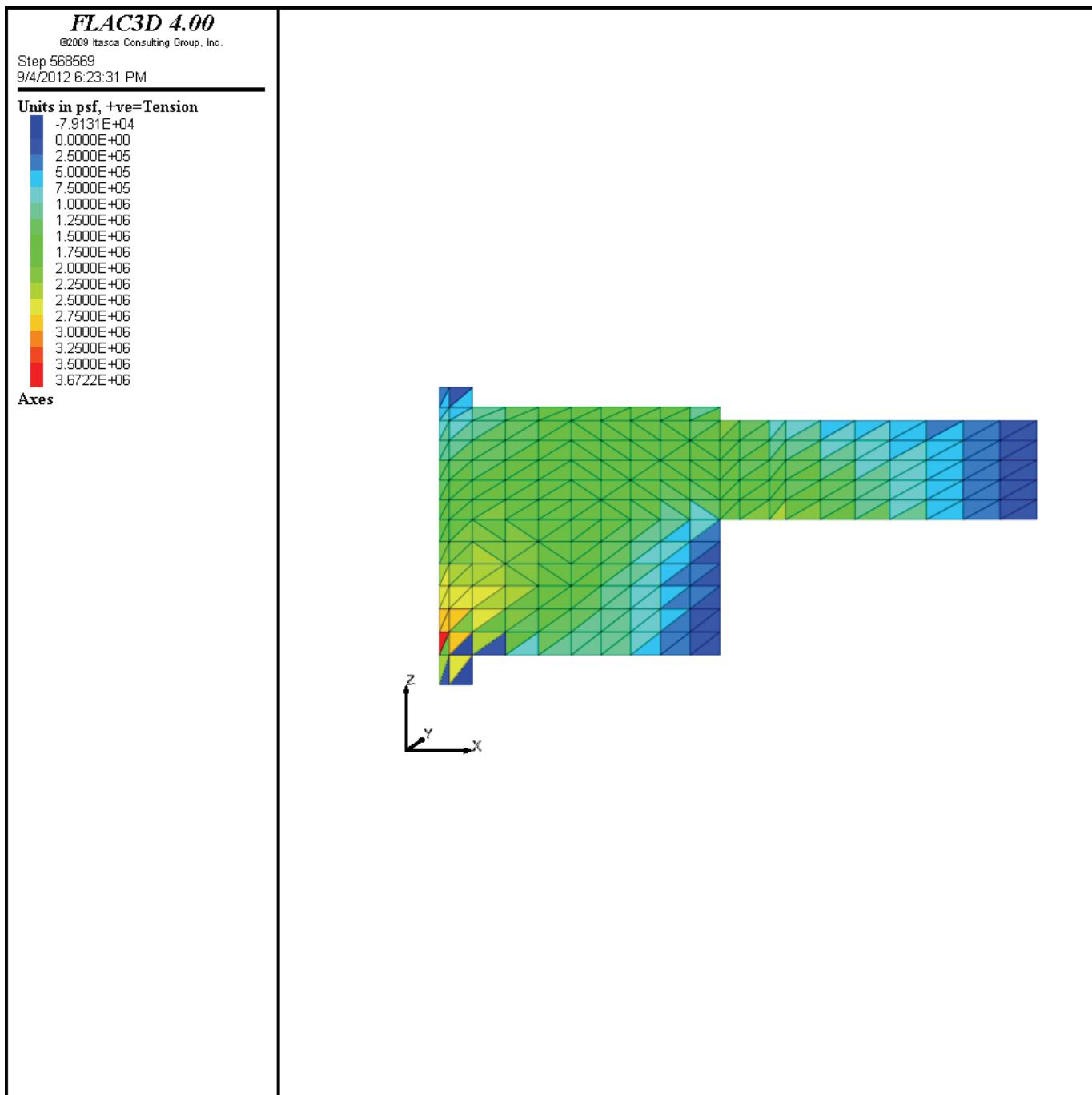


Figure F-1.2.7.b Tailwall Membrane Stress – As-Designed Snapshot 40 Sec – Nisqually P0 EQ Record

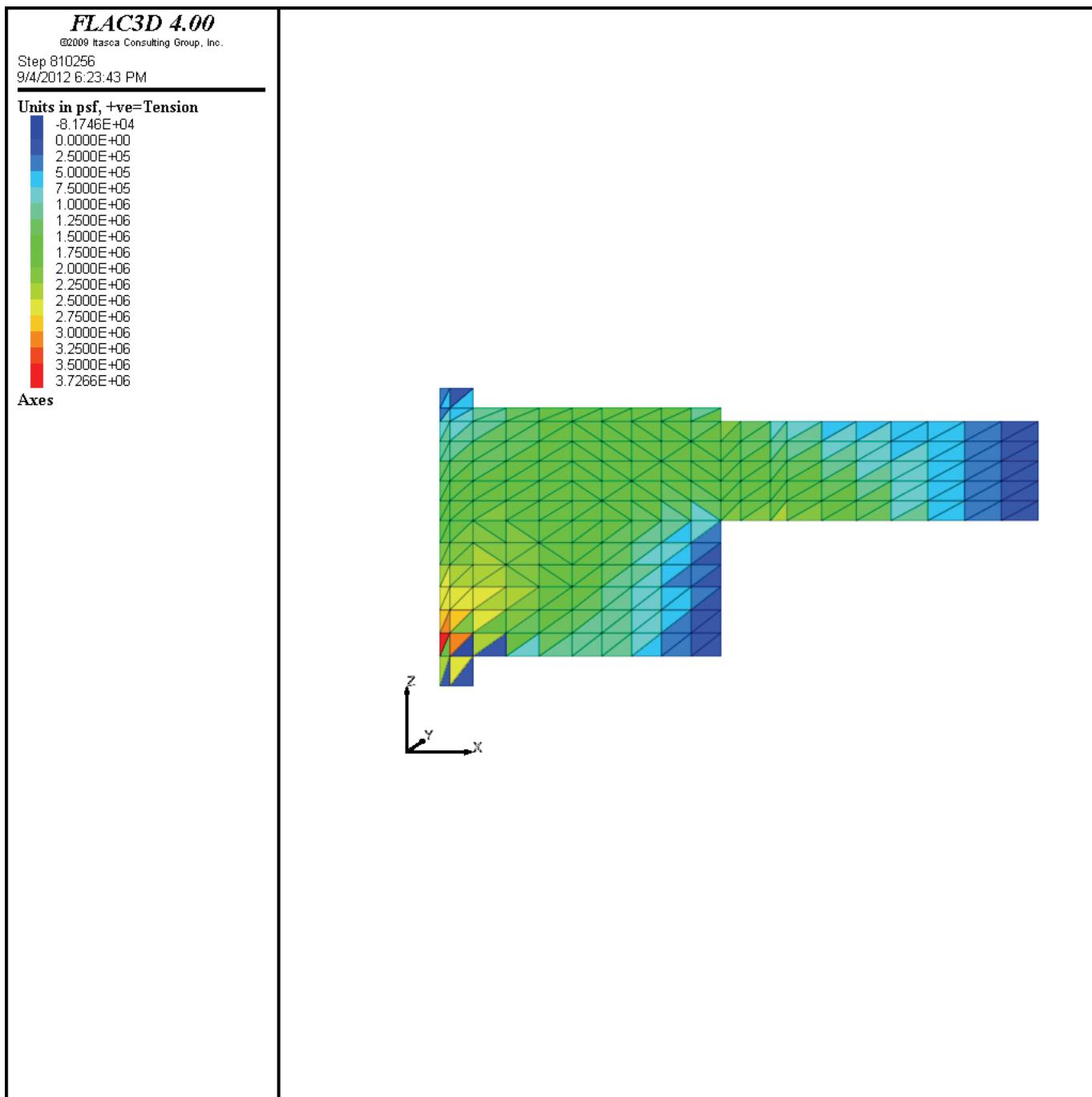


Figure F-1.2.8.b Tailwall Membrane Stress – As-Designed Snapshot 83 Sec – Nisqually P0 EQ Record

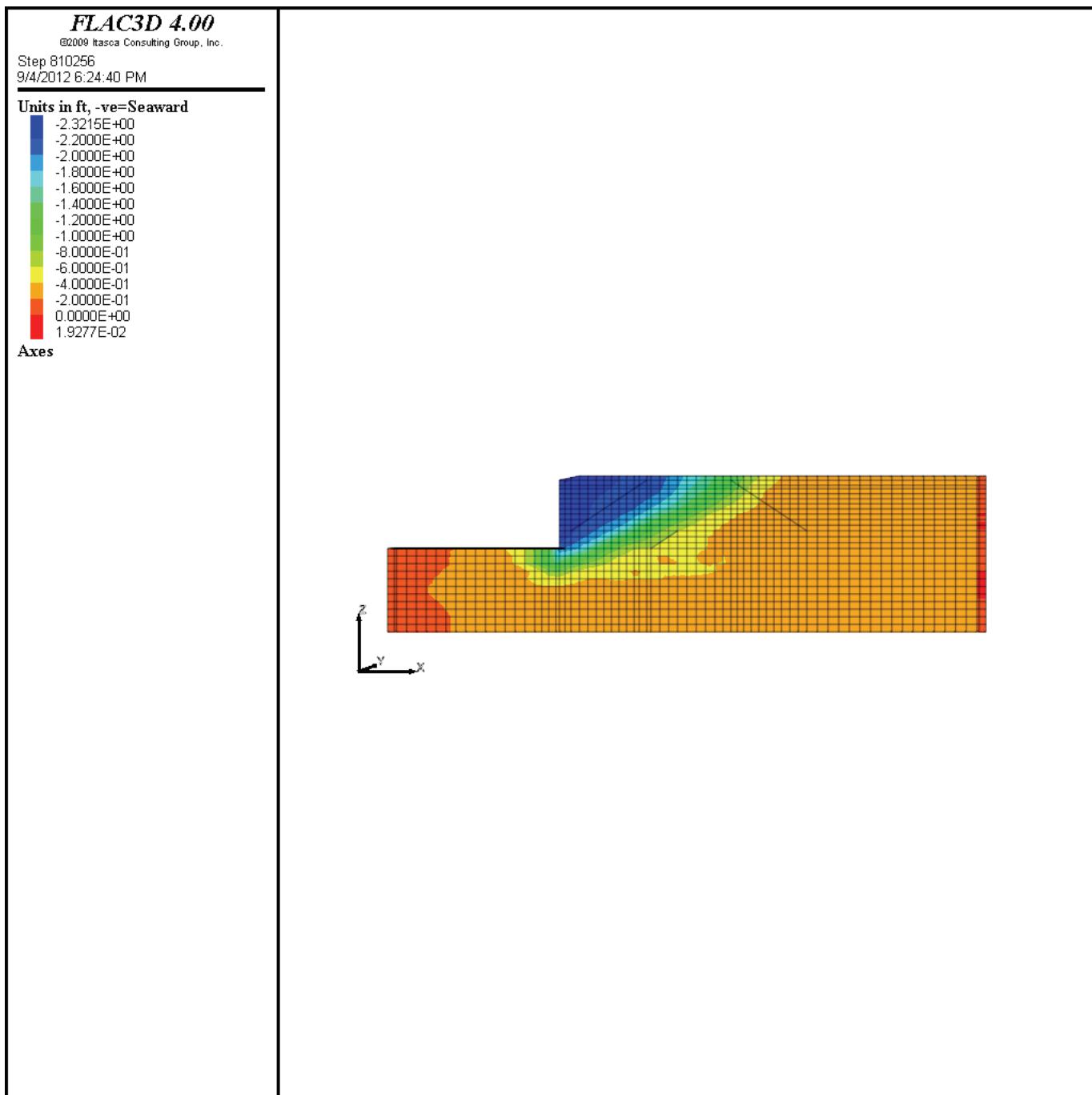


Figure F-1.2.9.b Permanent Soil X-Displacement Contours – As-Designed – Nisqually P0 EQ Record

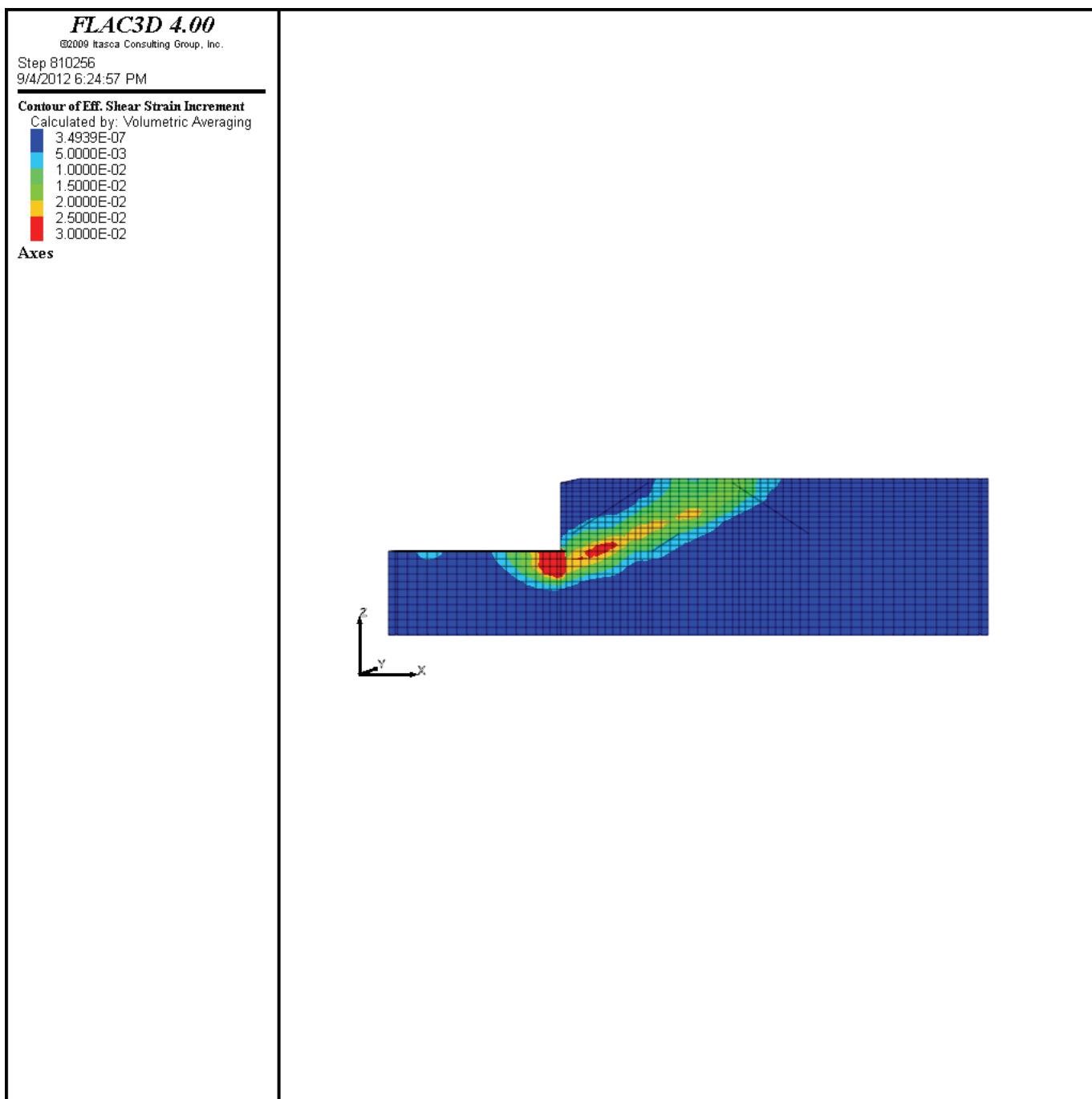


Figure F-1.2.10.b Effective Shear Strain Contours – As-Designed – Nisqually P0 EQ Record

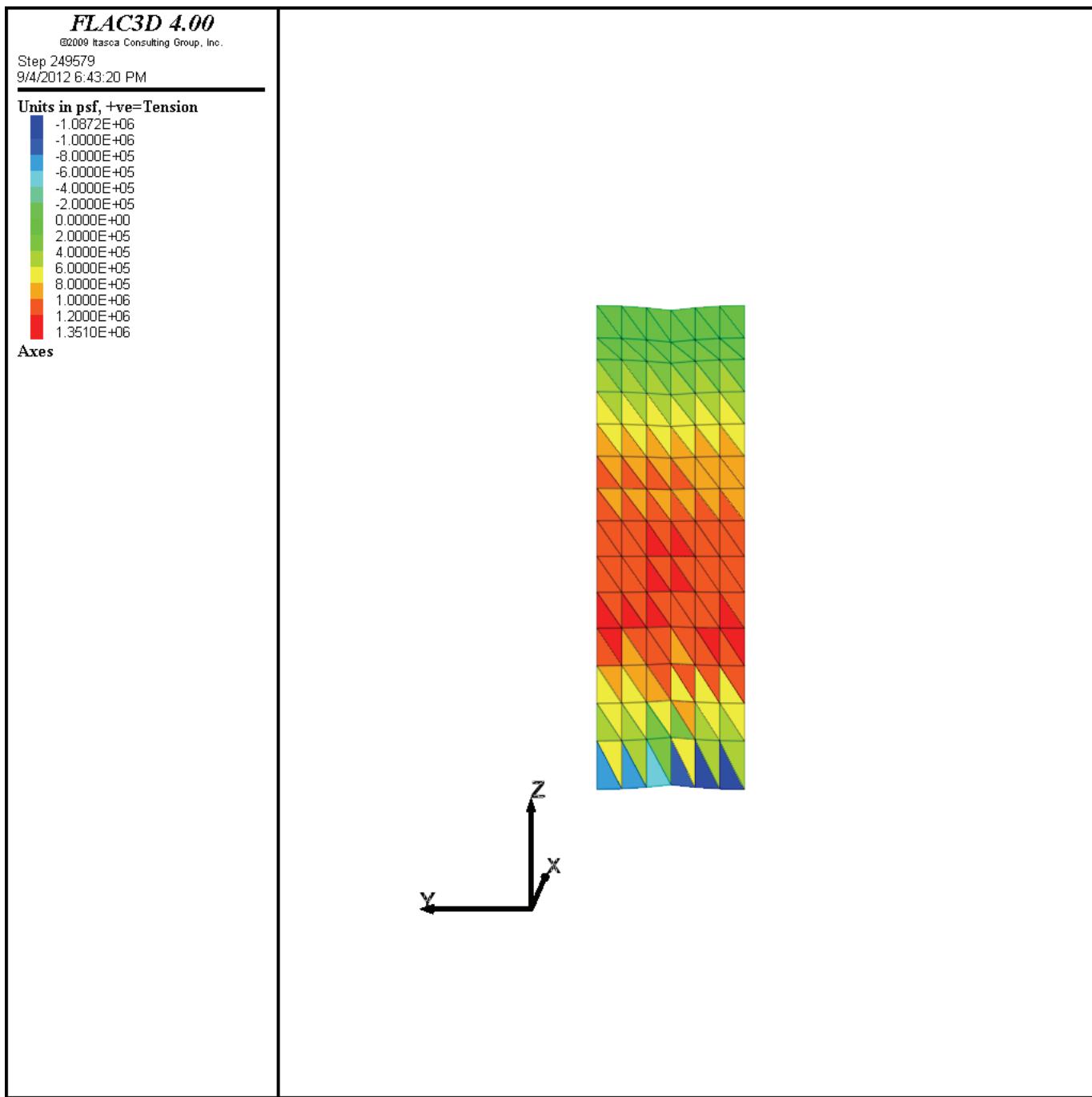


Figure F-1.2.1.c Facewall Membrane Stress – As-Designed Snapshot At 10 Sec – Nisqually P90 EQ Record

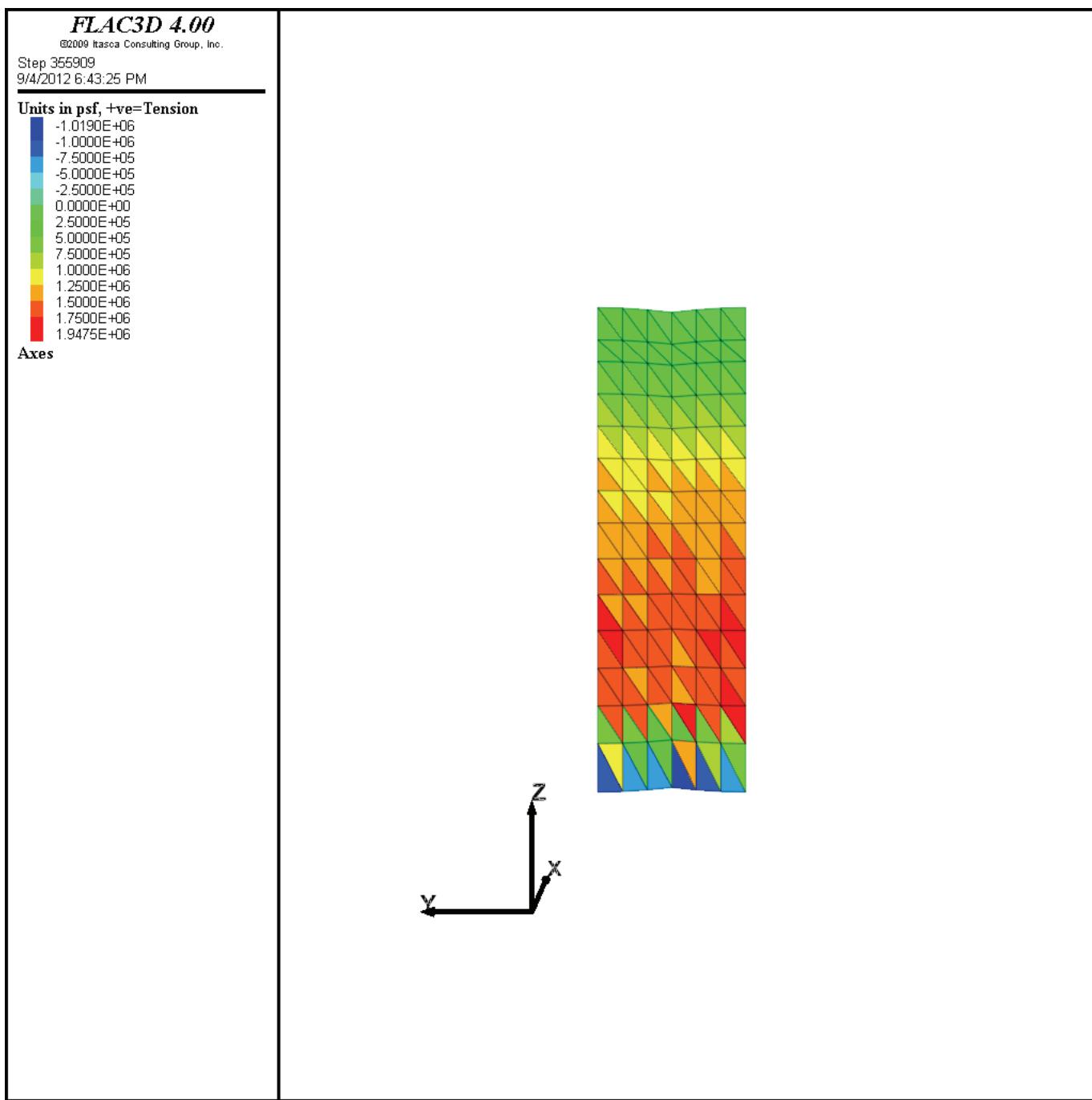


Figure F-1.2.2.c Facewall Membrane Stress – As-Designed Snapshot 20 Sec – Nisqually P90 EQ Record

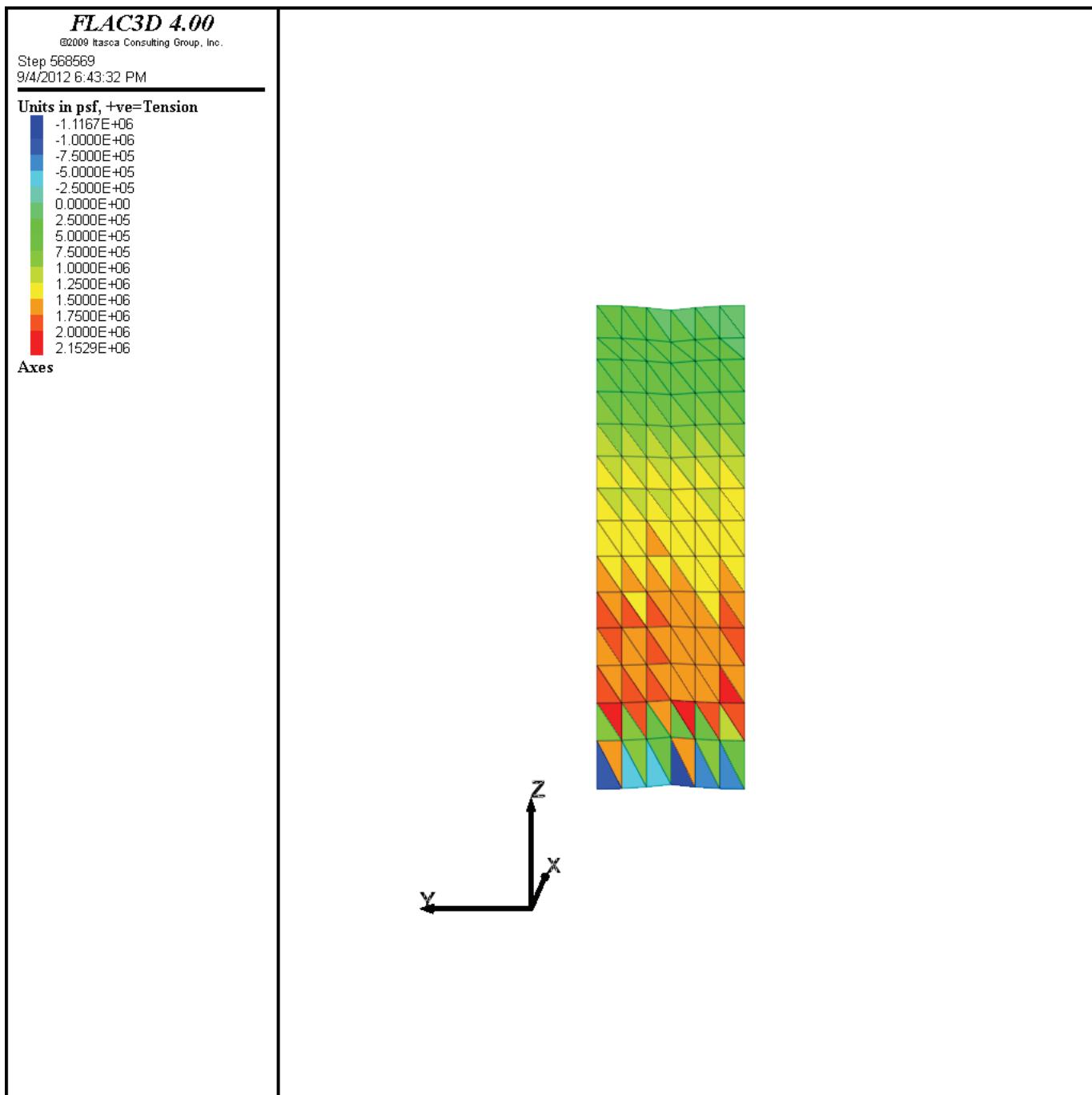


Figure F-1.2.3.c Facewall Membrane Stress – As-Designed Snapshot 40 Sec – Nisqually P90 EQ Record

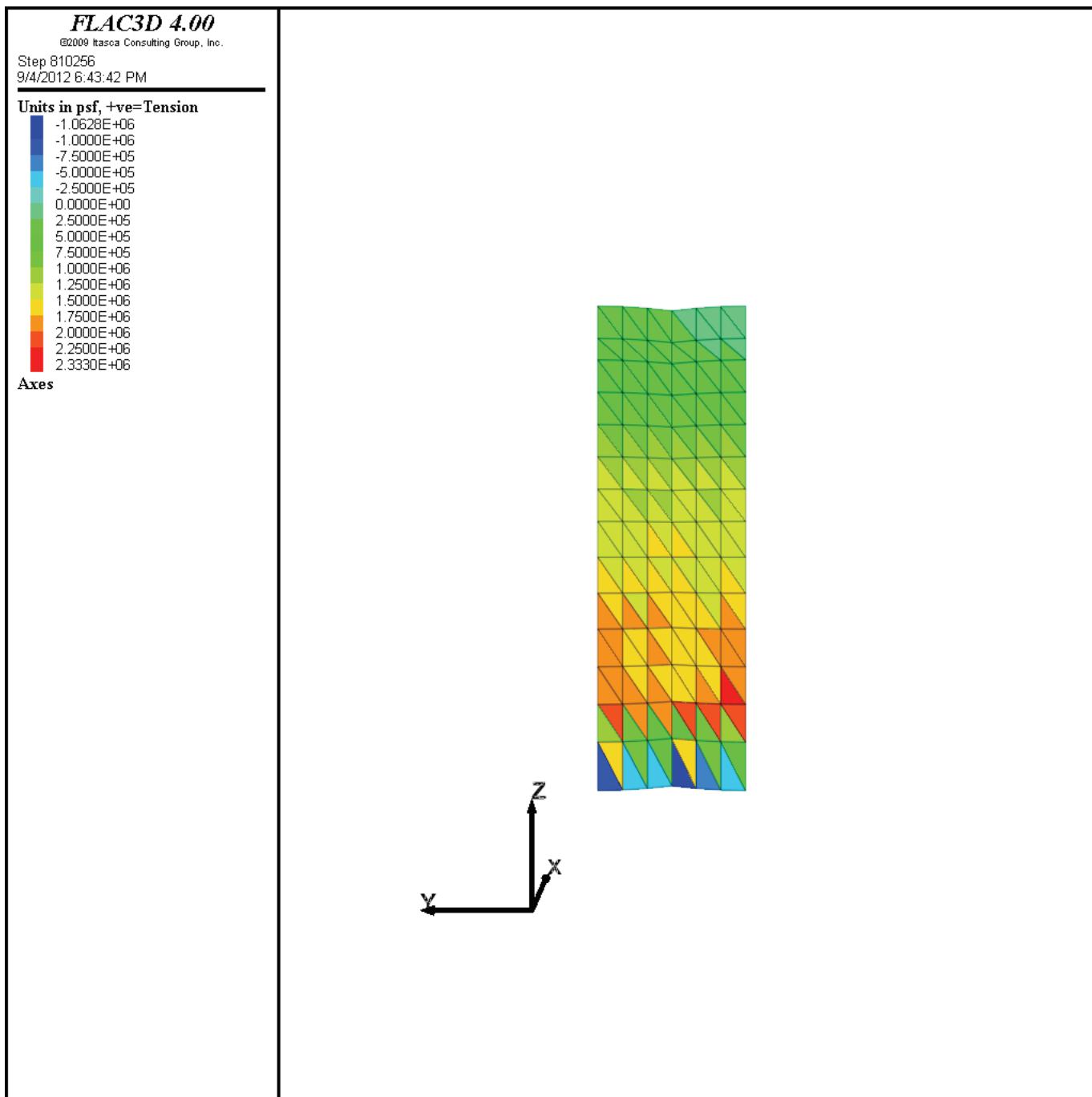


Figure F-1.2.4.c Facewall Membrane Stress – As-Designed Snapshot 63 Sec – Nisqually P90 EQ Record

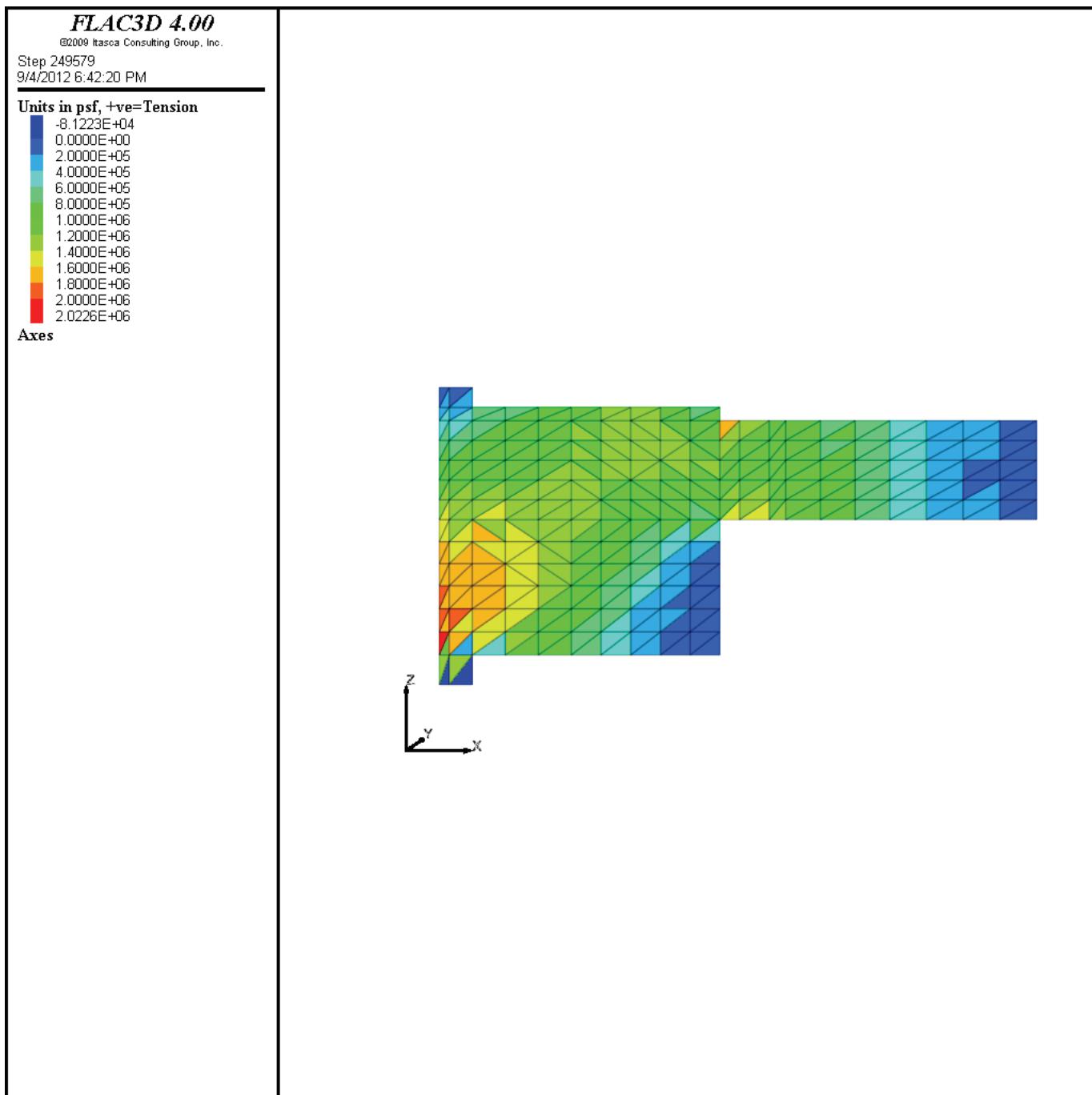


Figure F-1.2.5.c Tailwall Membrane Stress – As-Designed Snapshot 10 Sec – Nisqually P90 EQ Record

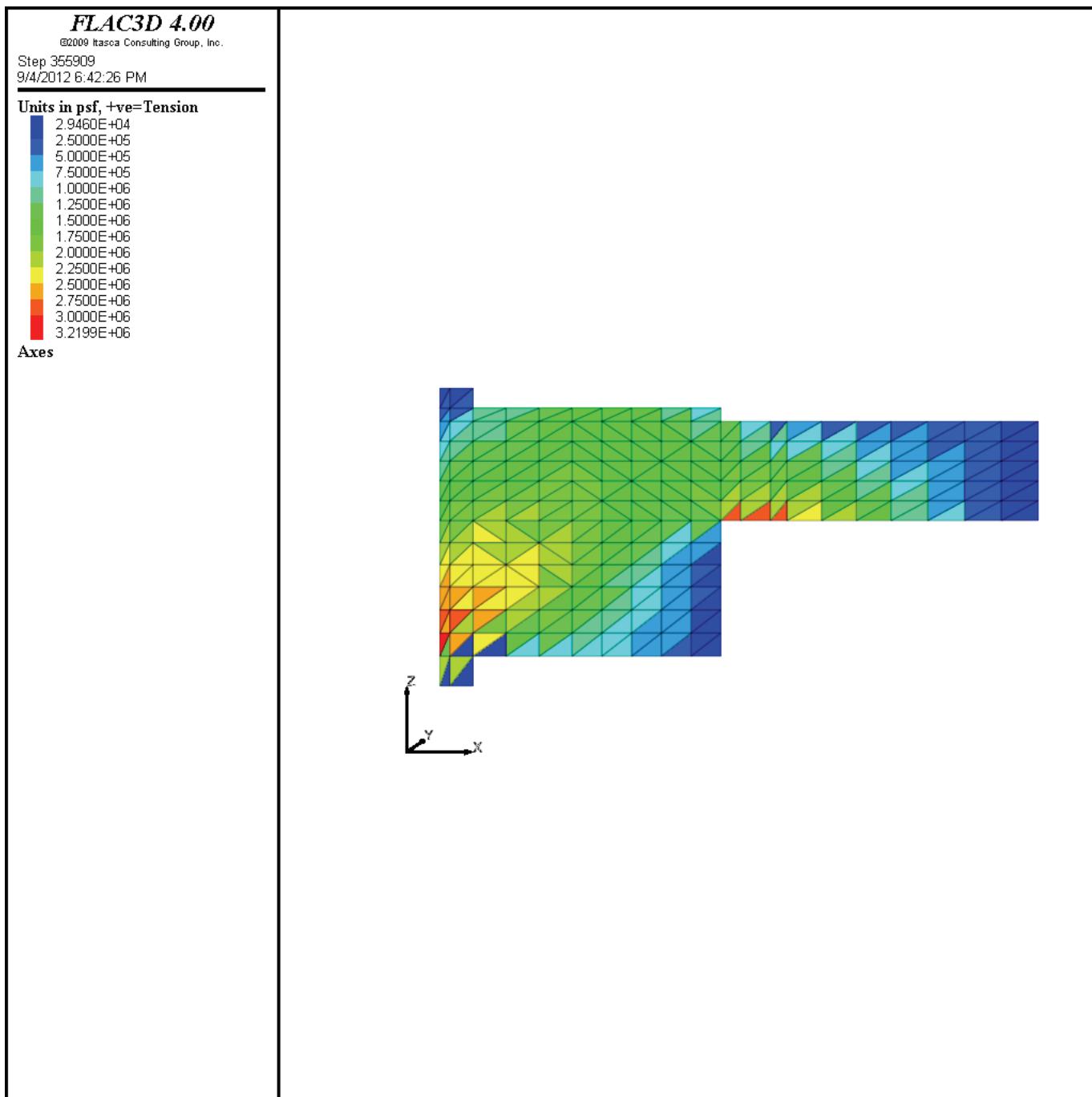


Figure F-1.2.6.c Tailwall Membrane Stress – As-Designed Snapshot 20 Sec – Nisqually P90 EQ Record

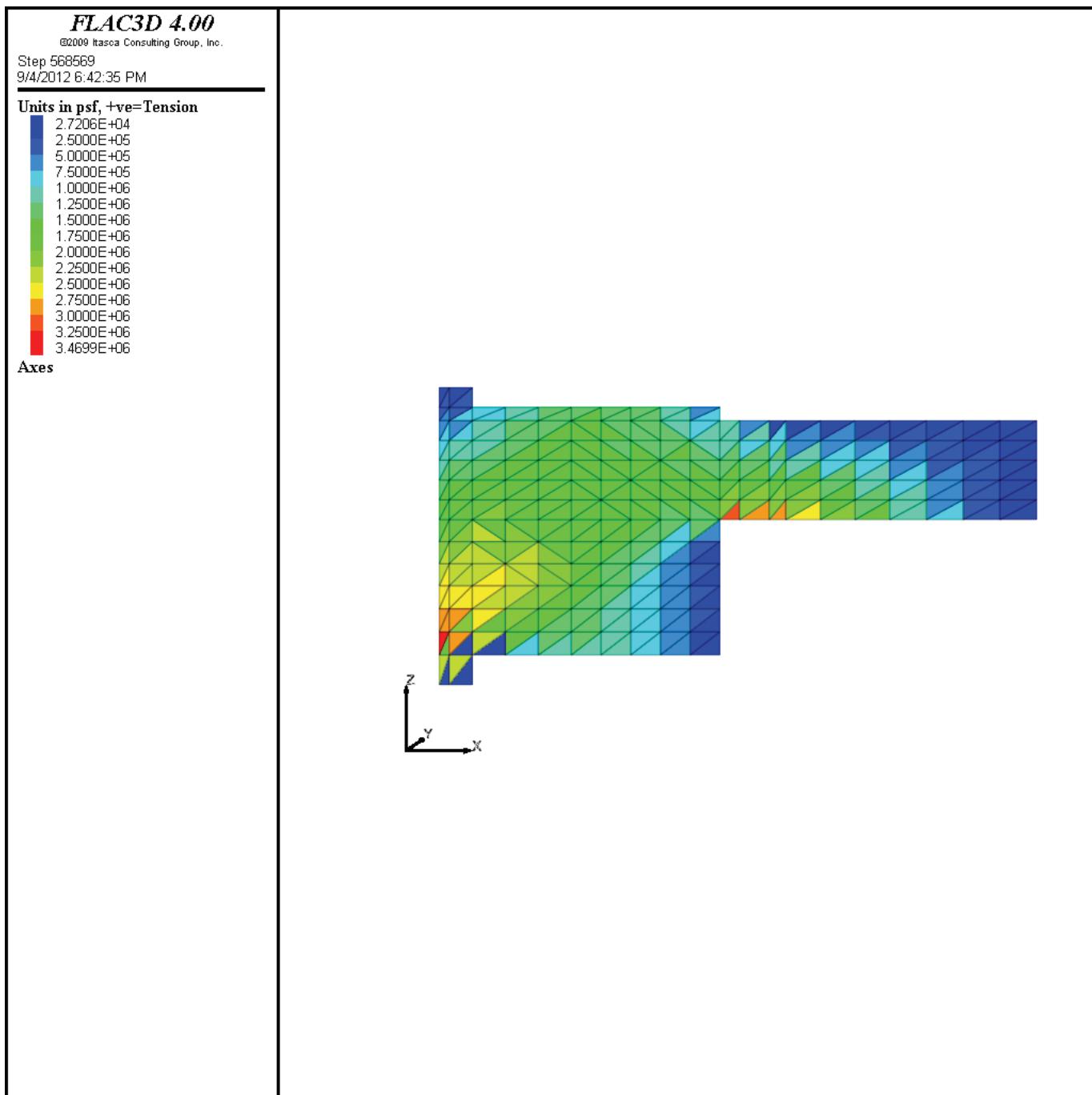


Figure F-1.2.7.c Tailwall Membrane Stress – As-Designed Snapshot 40 Sec – Nisqually P90 EQ Record

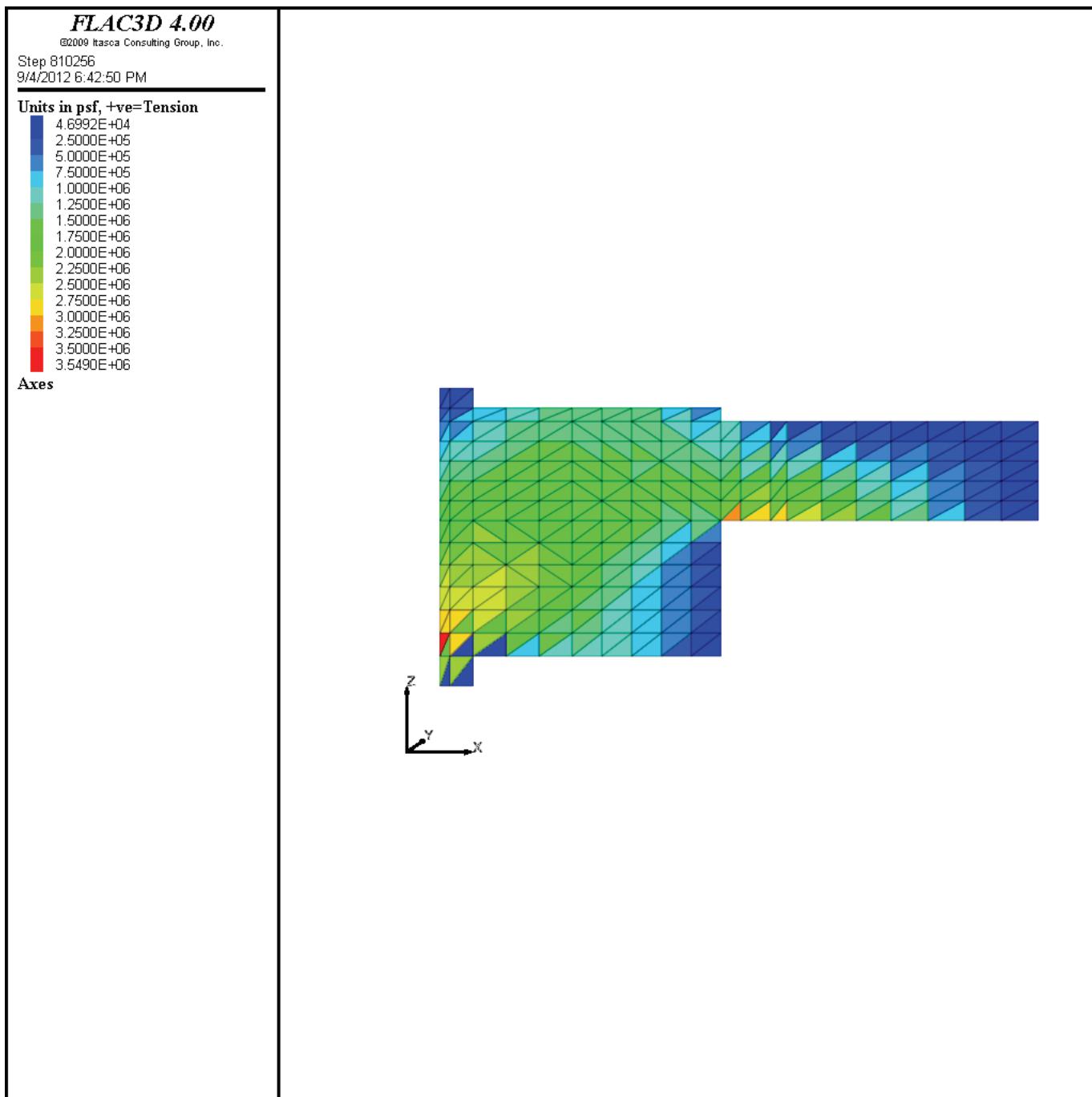


Figure F-1.2.8.c Tailwall Membrane Stress – As-Designed Snapshot 63 Sec – Nisqually P90 EQ Record

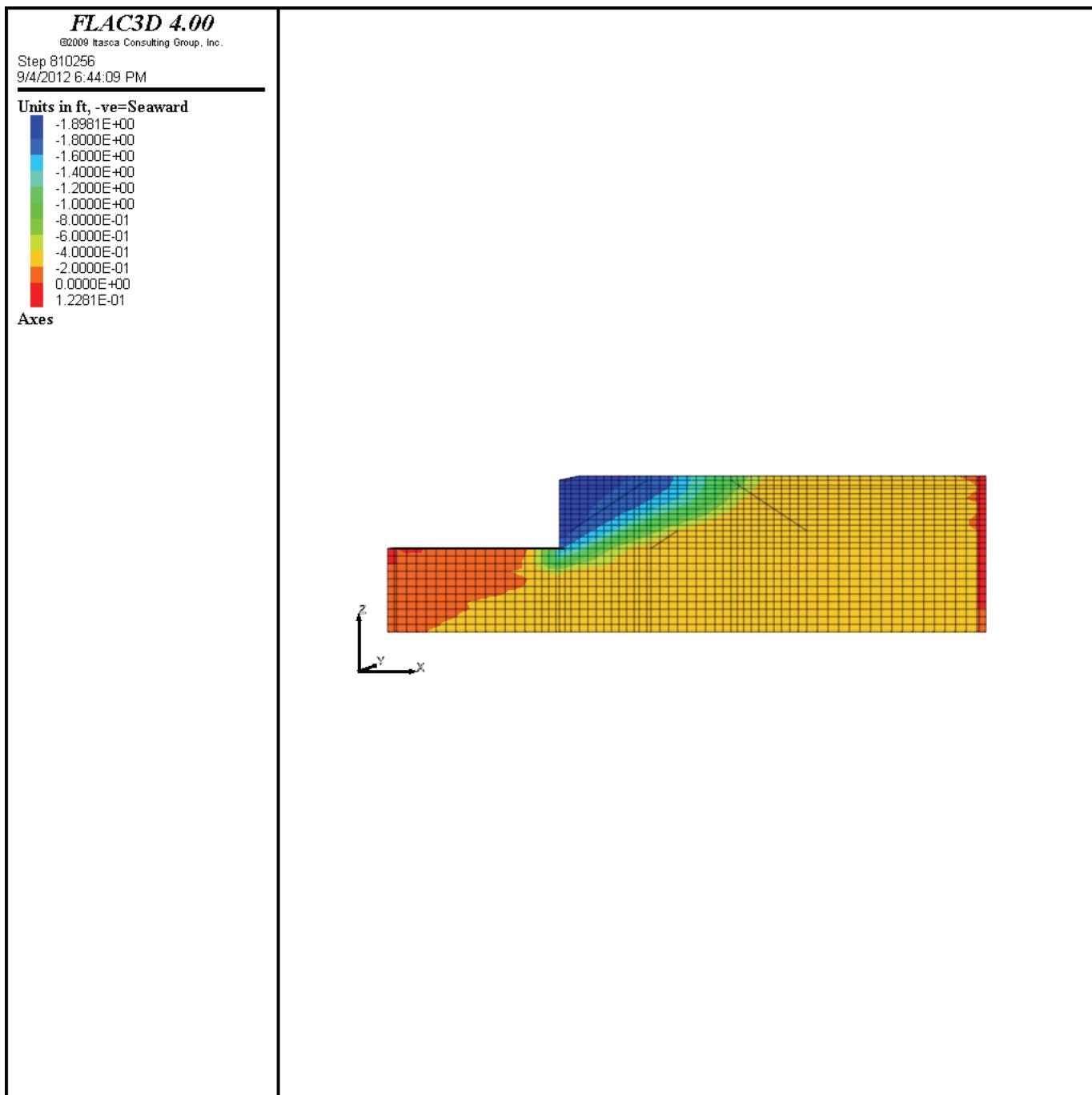


Figure F-1.2.9.c Permanent Soil X-Displacement Contours – As-Designed – Nisqually P90 EQ Record

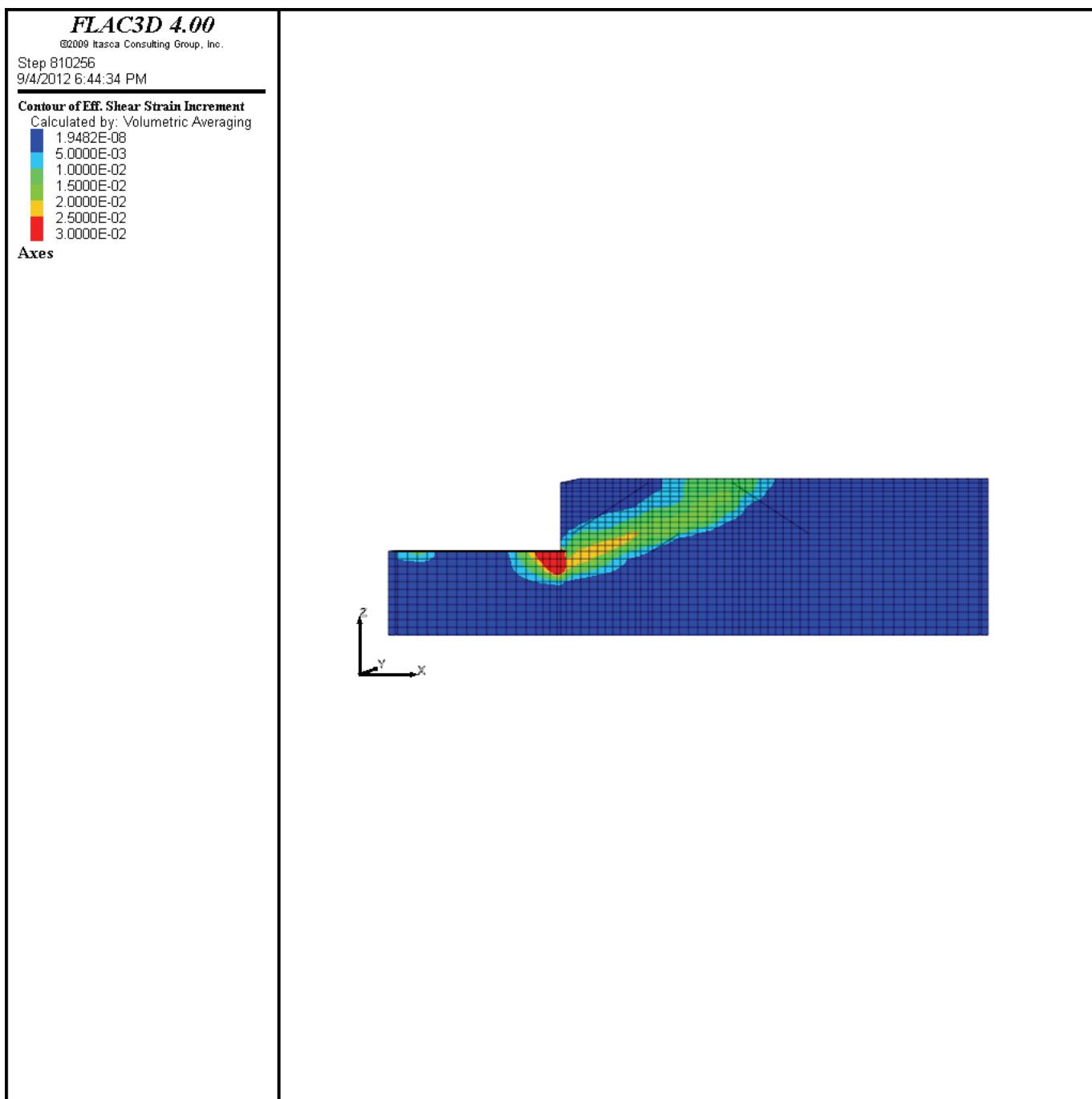


Figure F-1.2.10.c Effective Shear Strain Contours – As-Designed – Nisqually P90 EQ Record

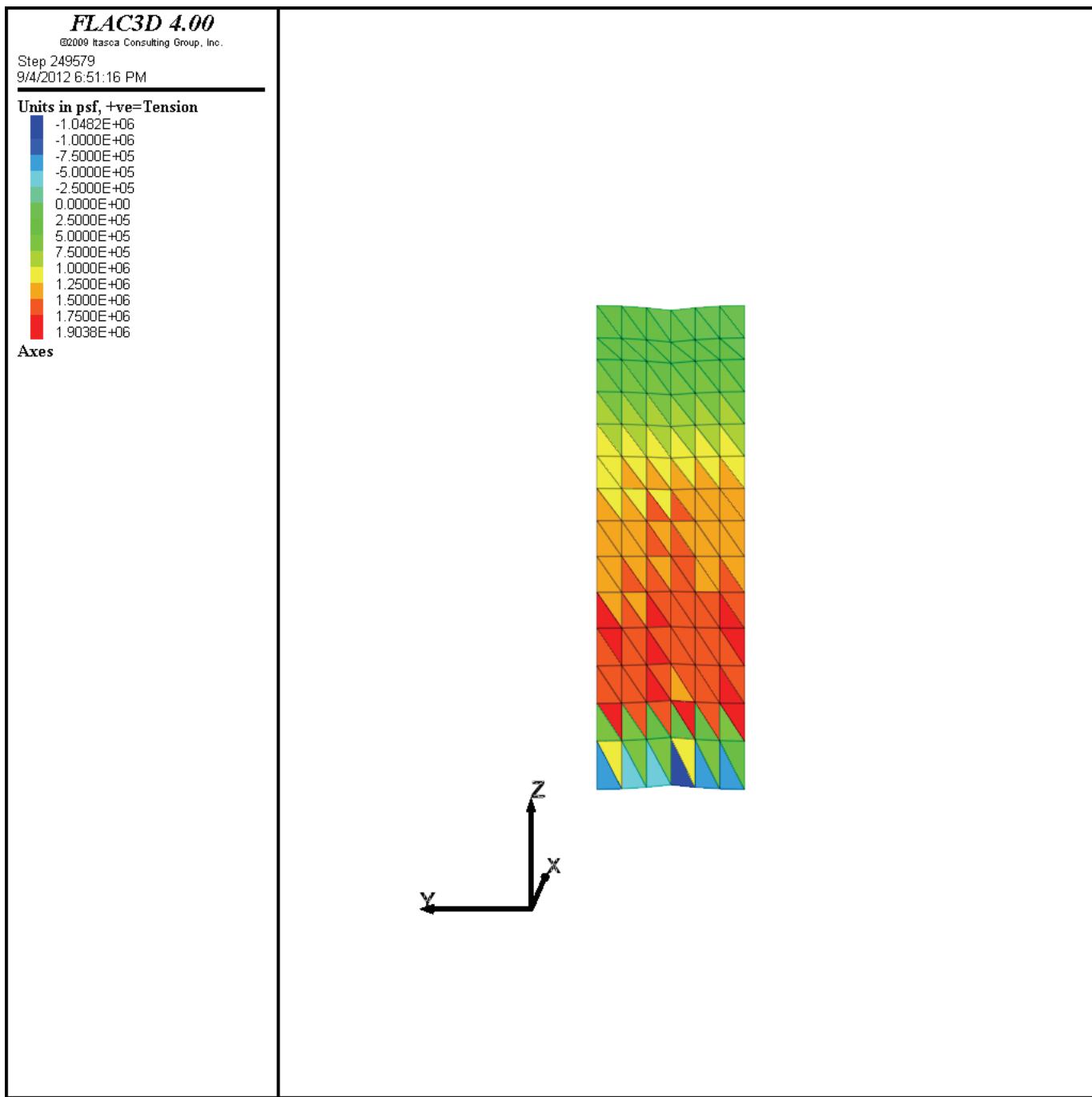


Figure F-1.2.1.d Facewall Membrane Stress – As-Designed Snapshot At 10 Sec – Western Washington EQ Record

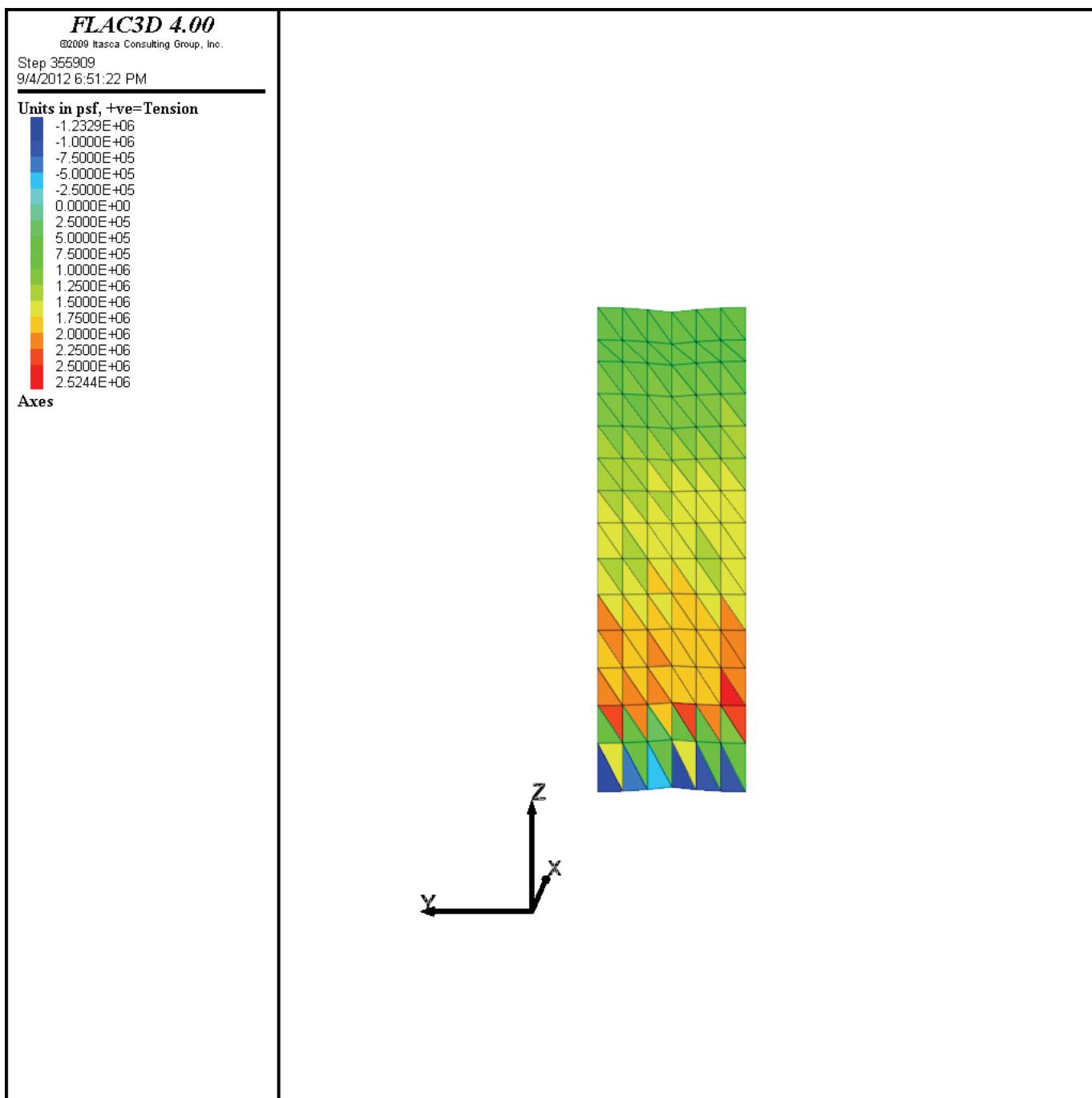


Figure F-1.2.2.d Facewall Membrane Stress – As-Designed Snapshot 20 Sec – Western Washington EQ Record

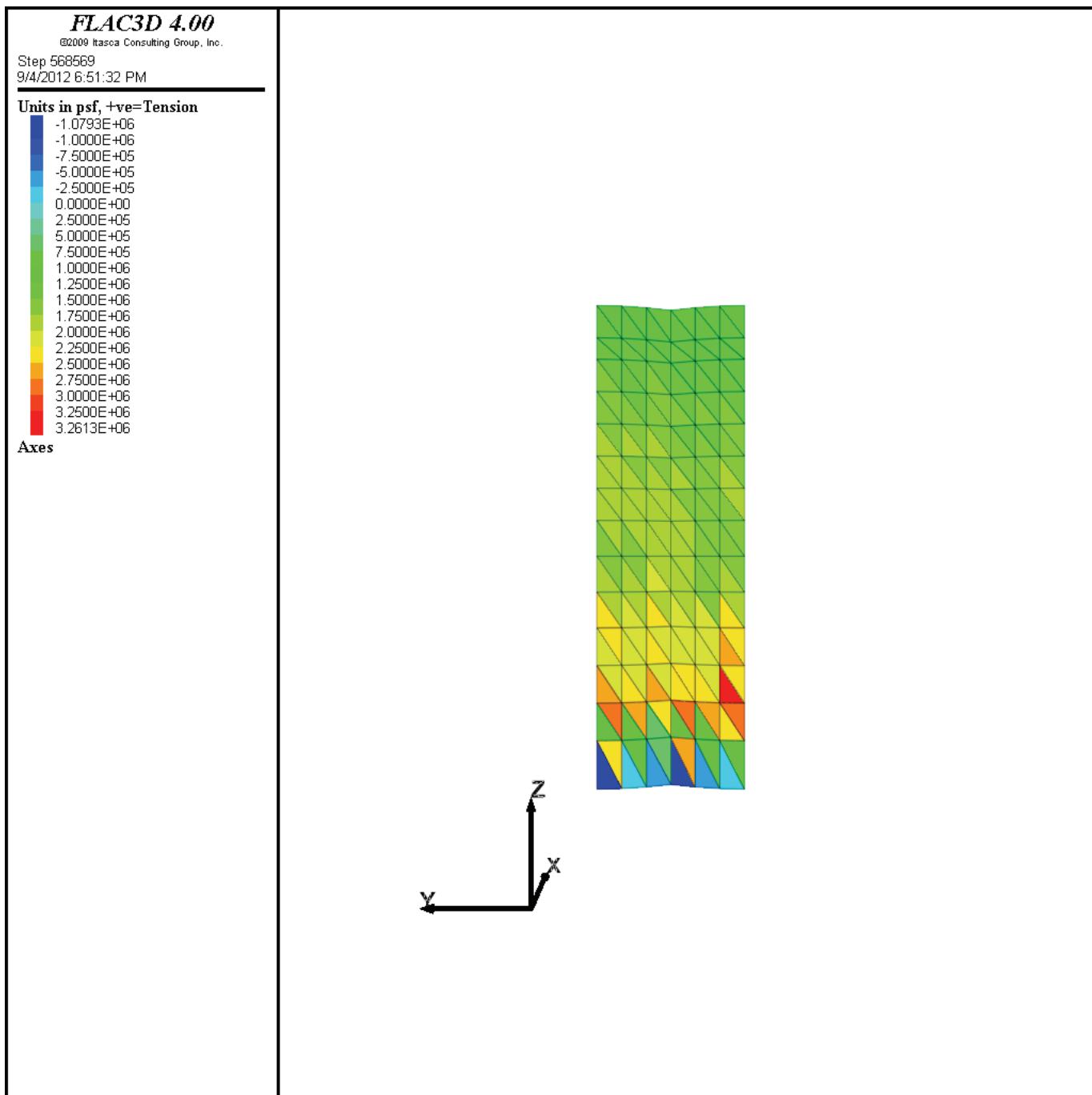


Figure F-1.2.3.d Facewall Membrane Stress – As-Designed Snapshot 40 Sec – Western Washington EQ Record

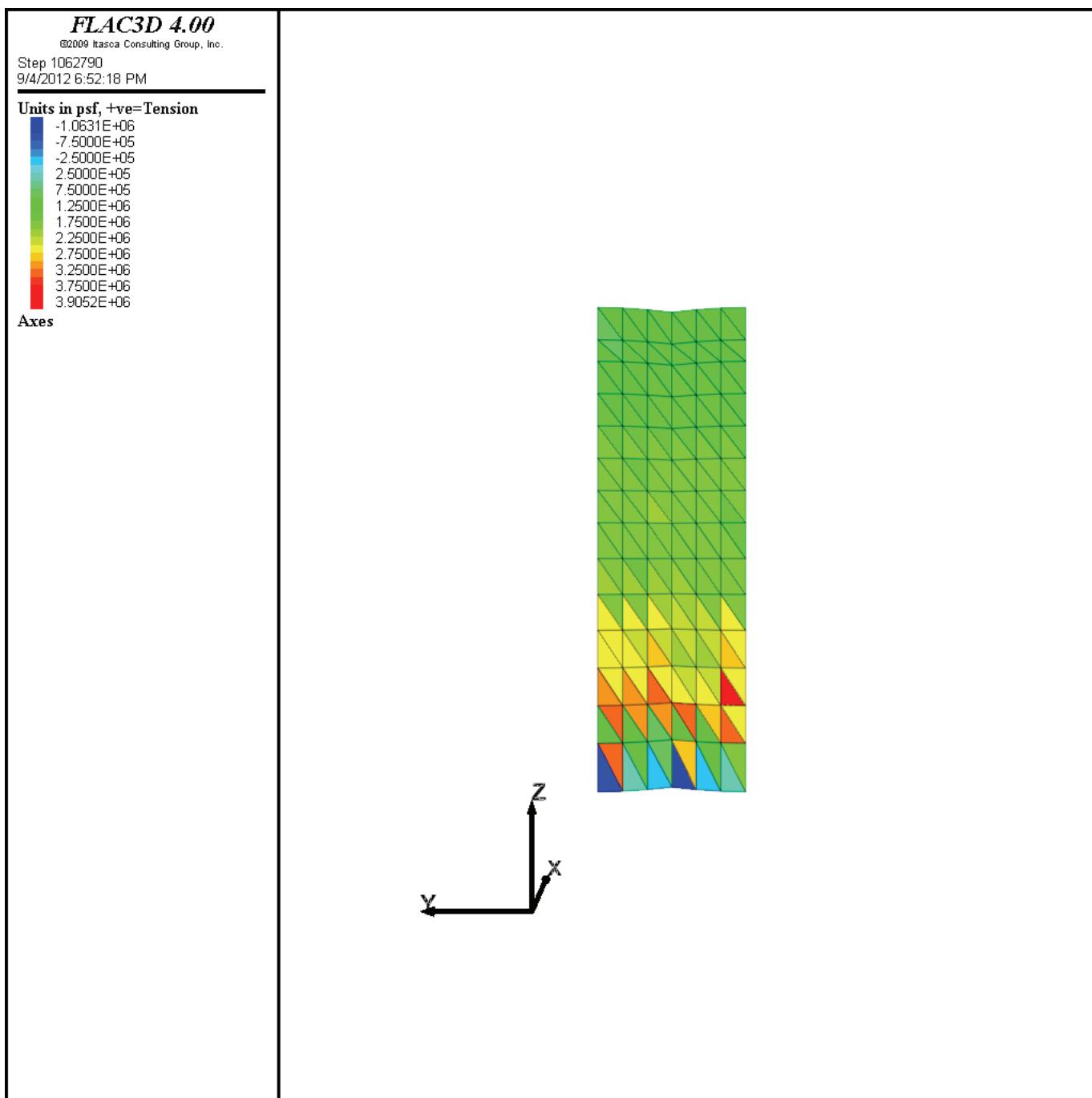


Figure F-1.2.4.d Facewall Membrane Stress – As-Designed Snapshot 86 Sec – Western Washington EQ Record

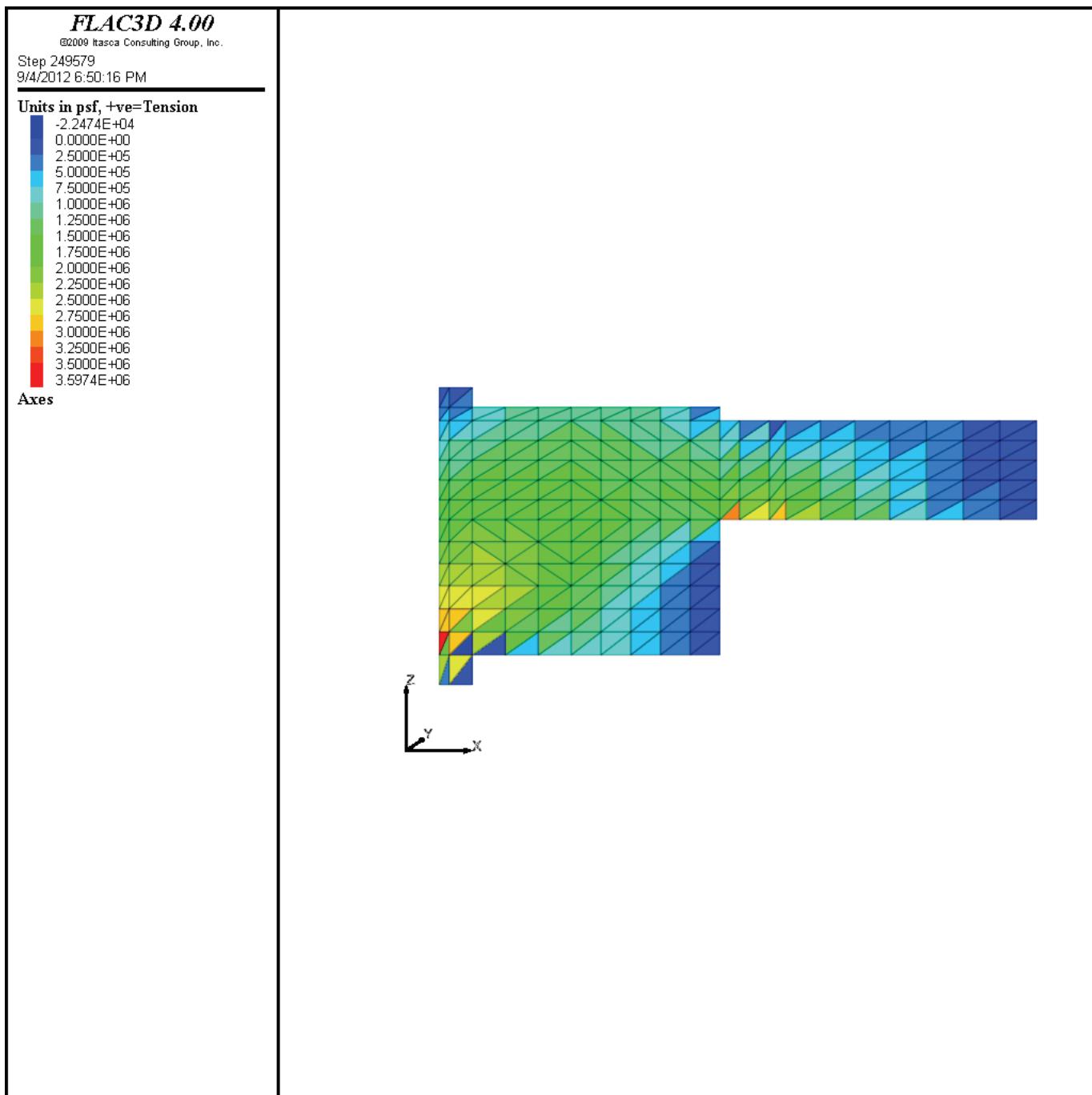


Figure F-1.2.5.d Tailwall Membrane Stress – As-Designed Snapshot 10 Sec – Western Washington EQ Record

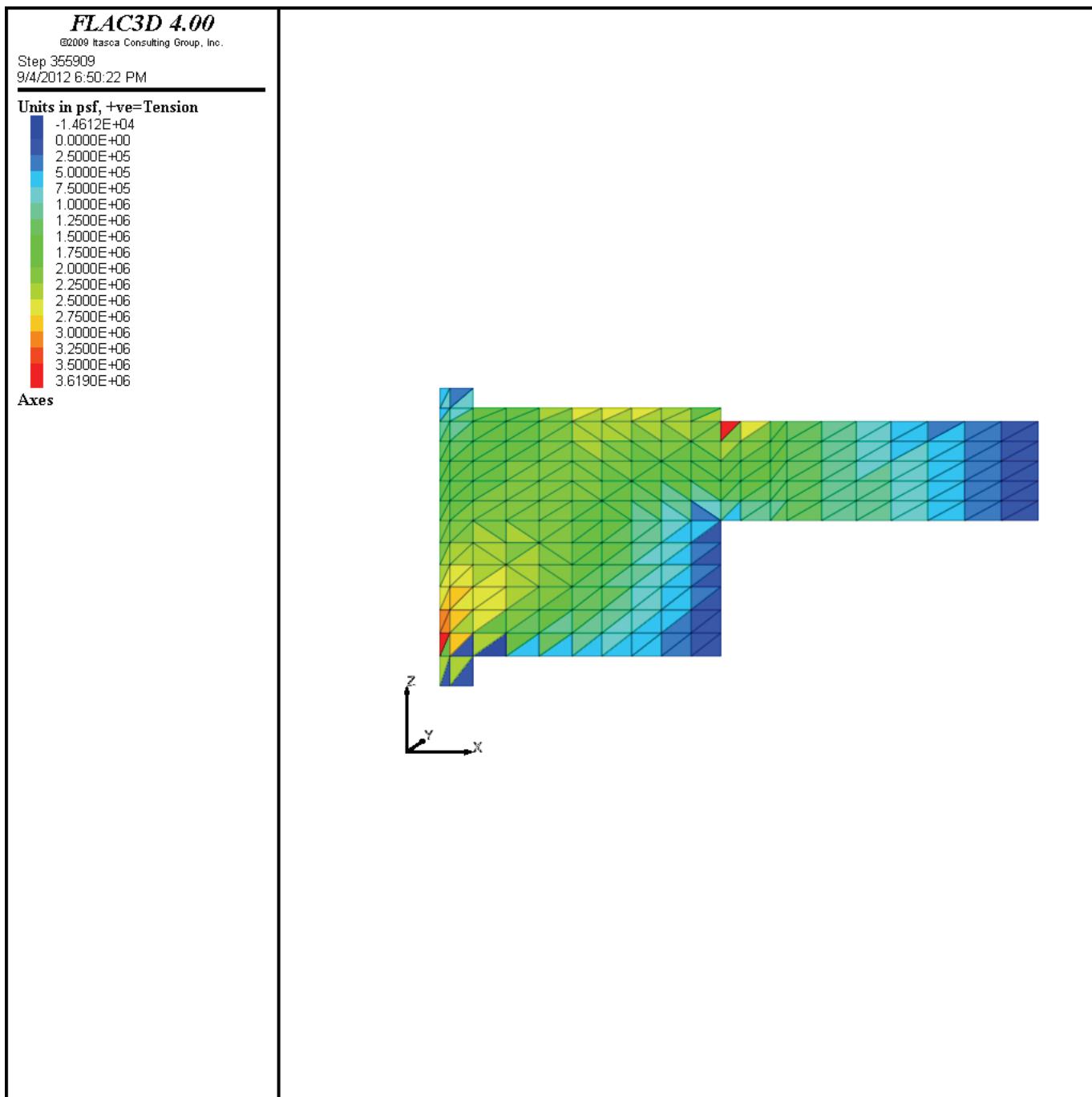


Figure F-1.2.6.d Tailwall Membrane Stress – As-Designed Snapshot 20 Sec – Western Washington EQ Record

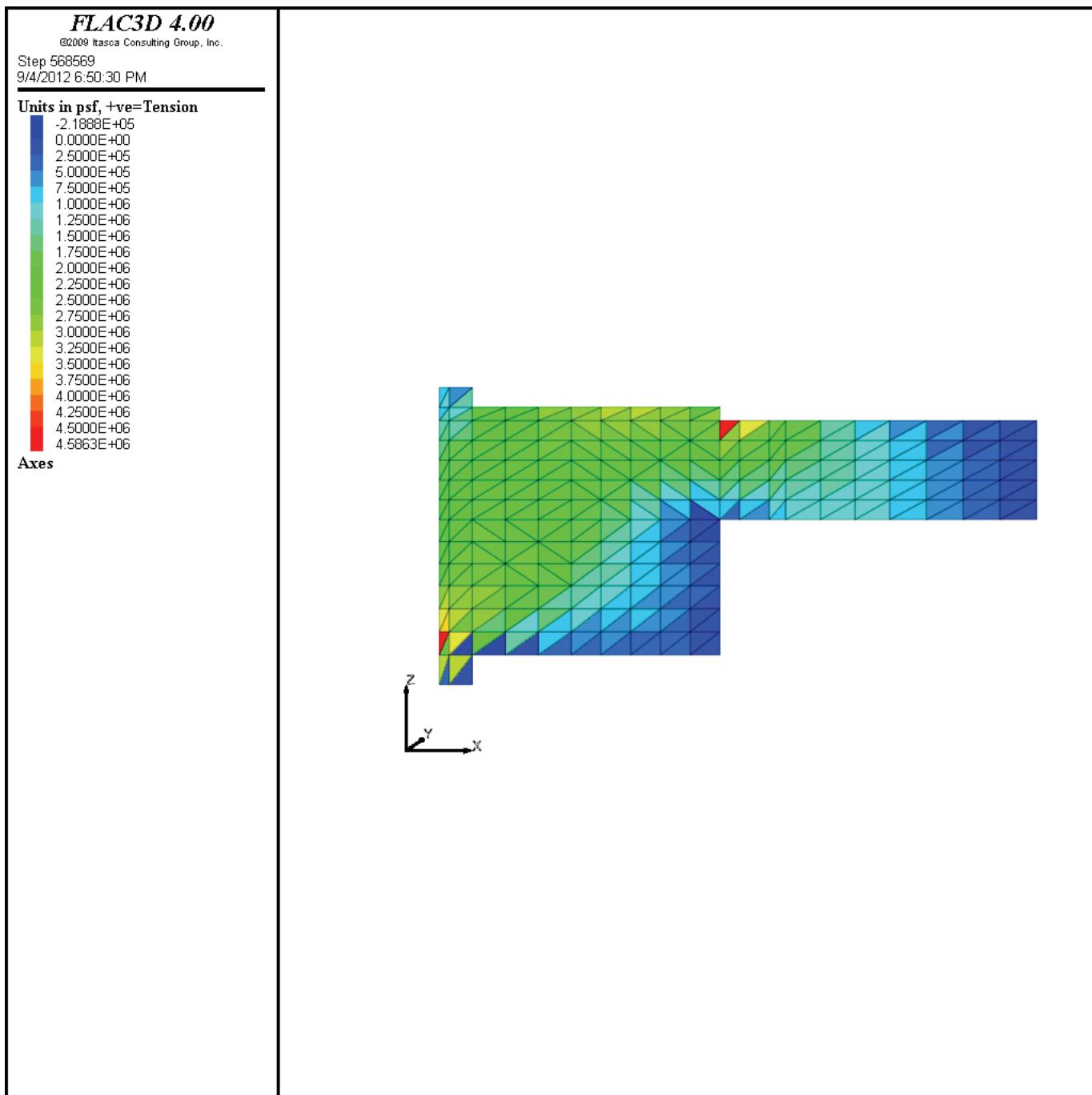


Figure F-1.2.7.d Tailwall Membrane Stress – As-Designed Snapshot 40 Sec – Western Washington EQ Record

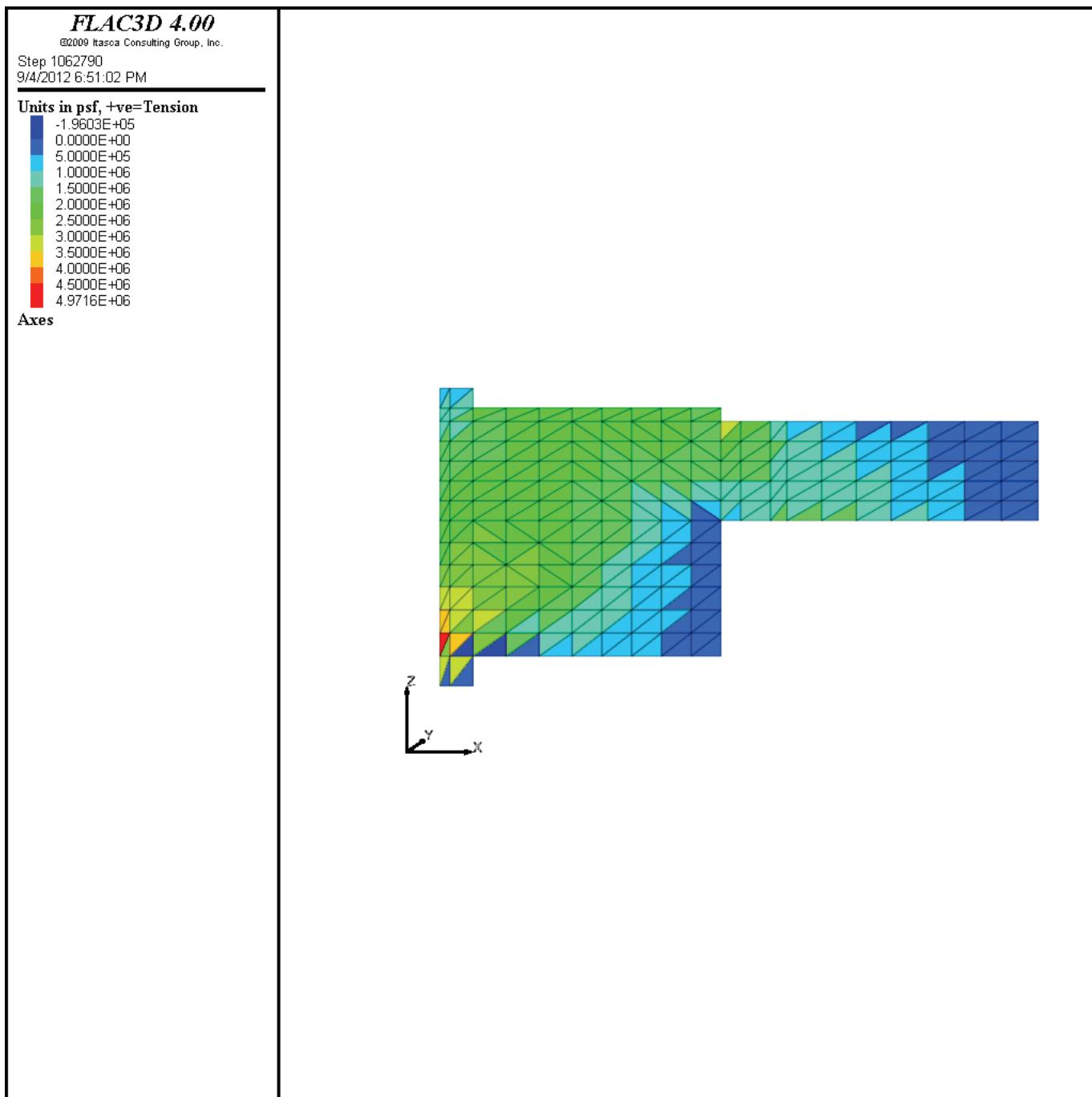


Figure F-1.2.8.d Tailwall Membrane Stress – As-Designed Snapshot 86 Sec – Western Washington EQ Record

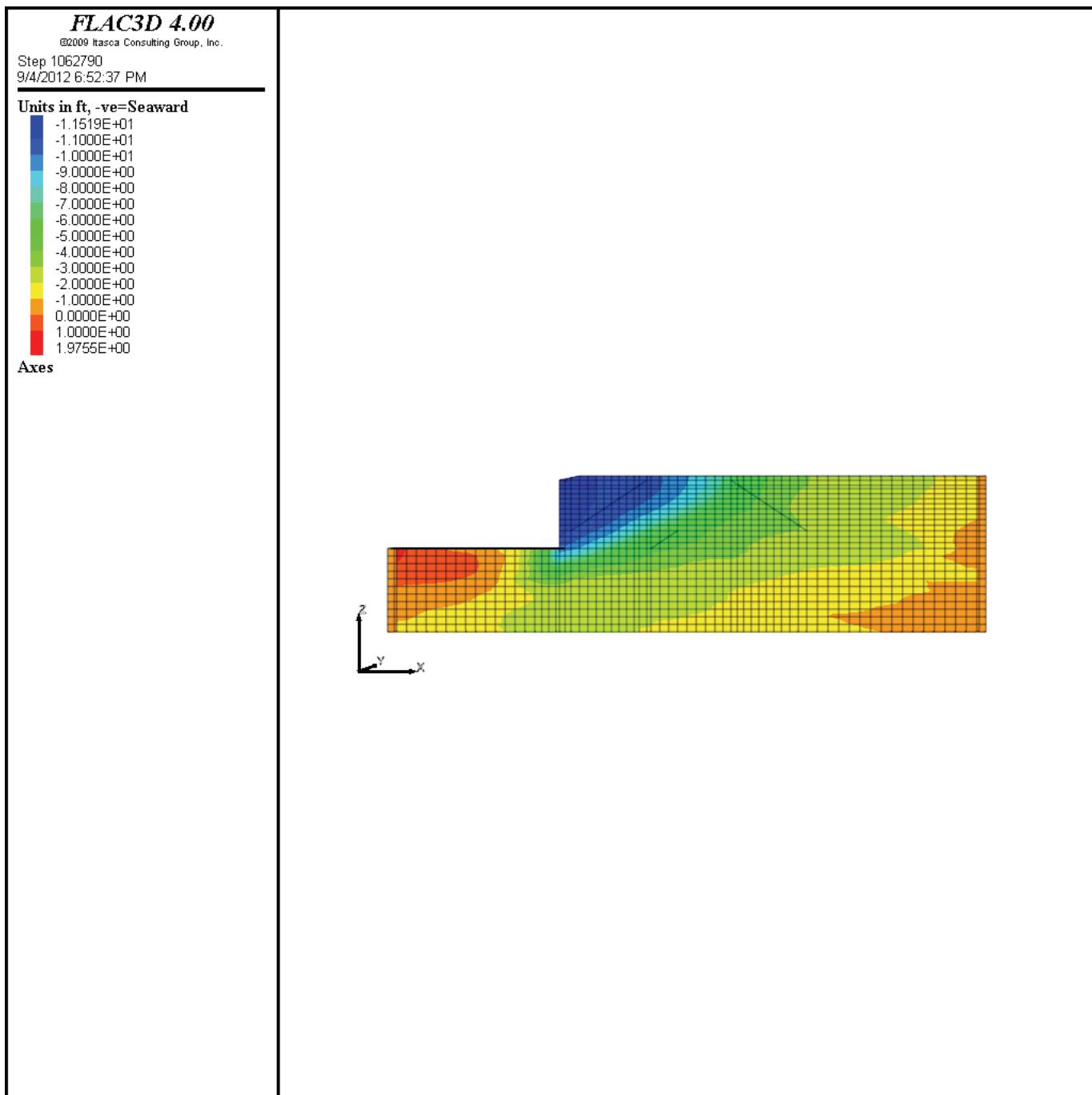


Figure F-1.2.9.d Permanent Soil X-Displacement Contours – As-Designed – Western Washington EQ Record

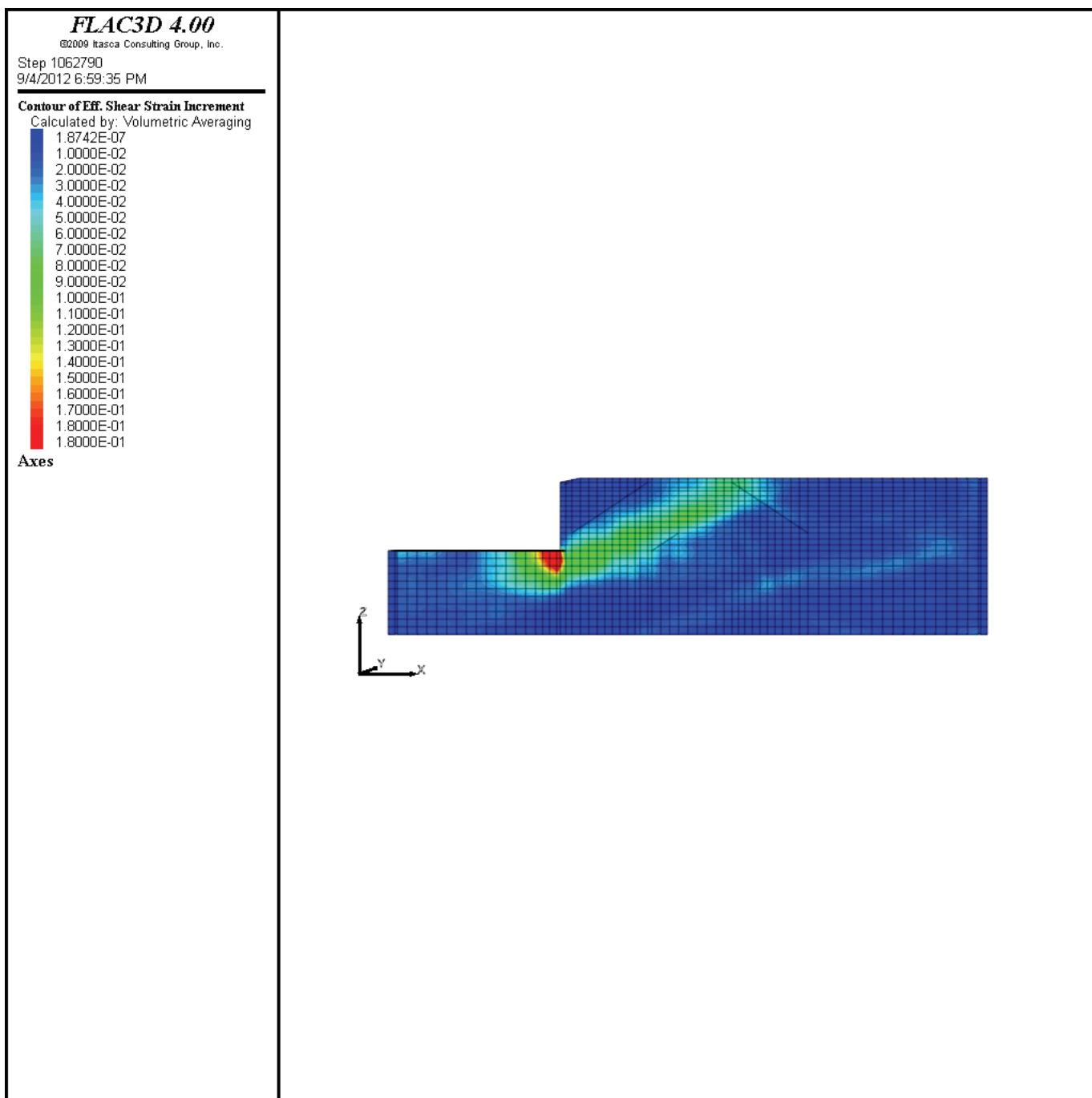


Figure F-1.2.10.d Effective Shear Strain Contours – As-Designed – Western Washington EQ Record

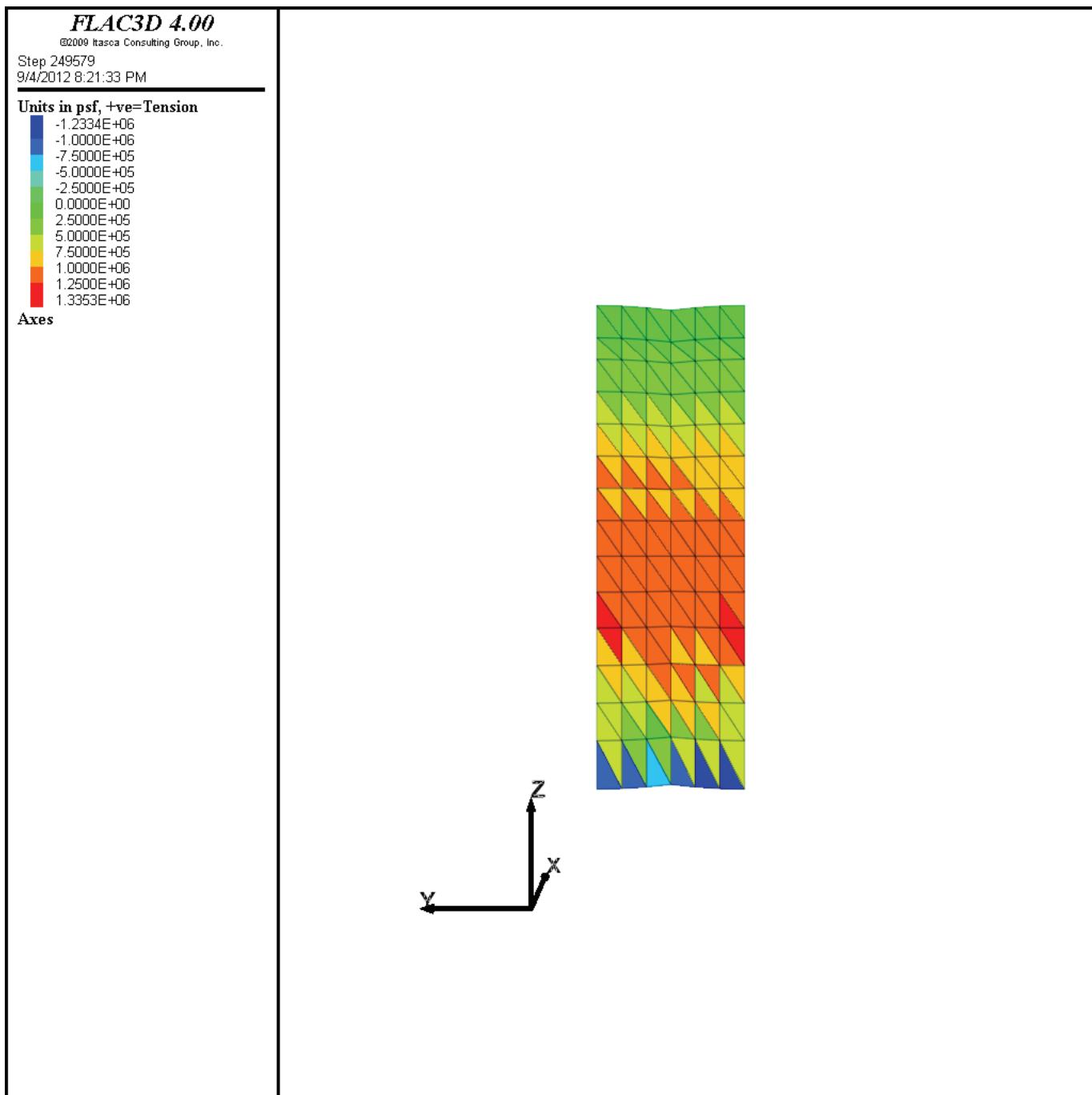


Figure F-1.3.1.a Facewall Membrane Stress – As-Designed Snapshot At 10 Sec – Michoacan EQ Record

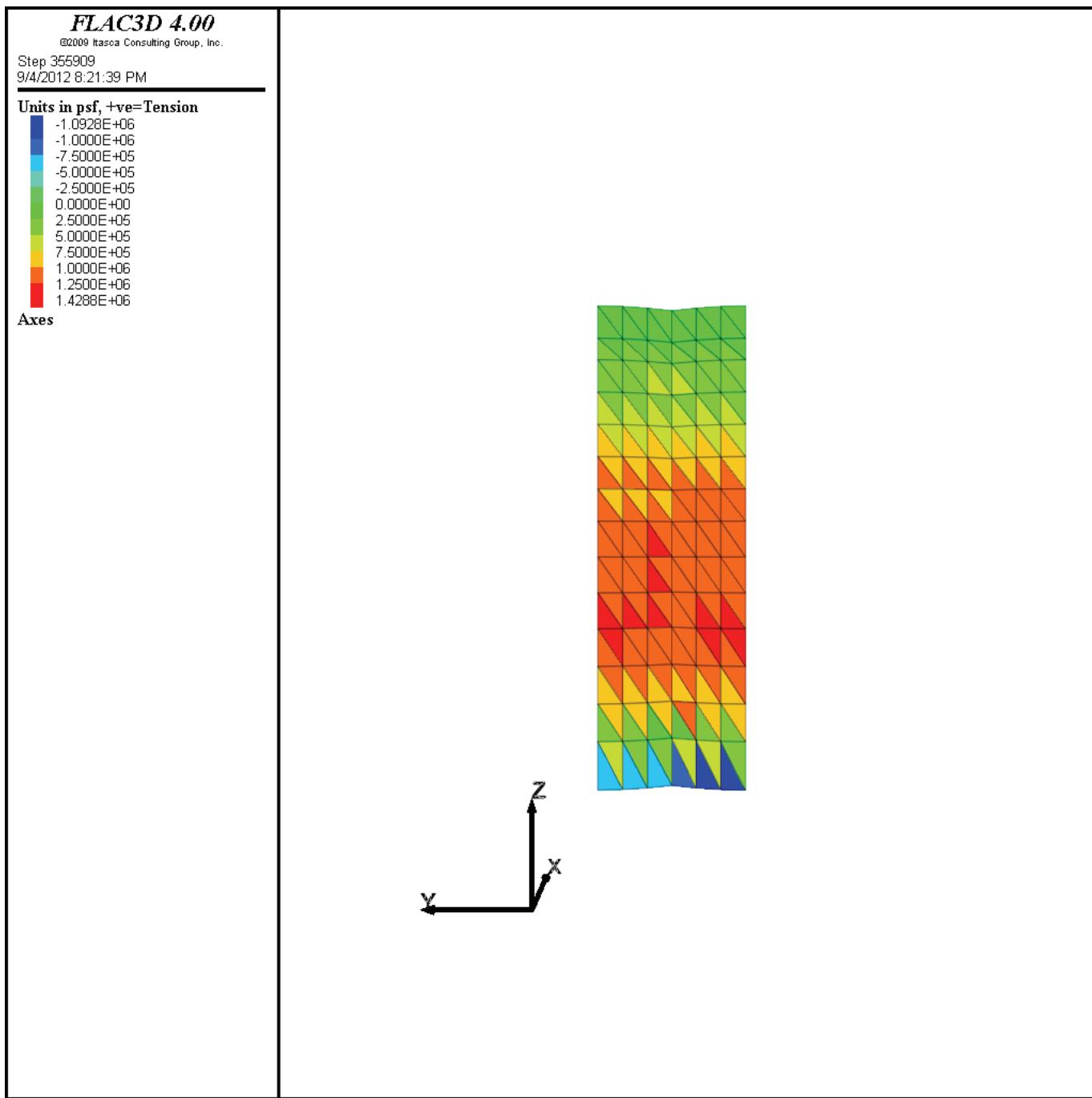


Figure F-1.3.2.a Facewall Membrane Stress – As-Designed Snapshot 20 Sec – Michoacan EQ Record

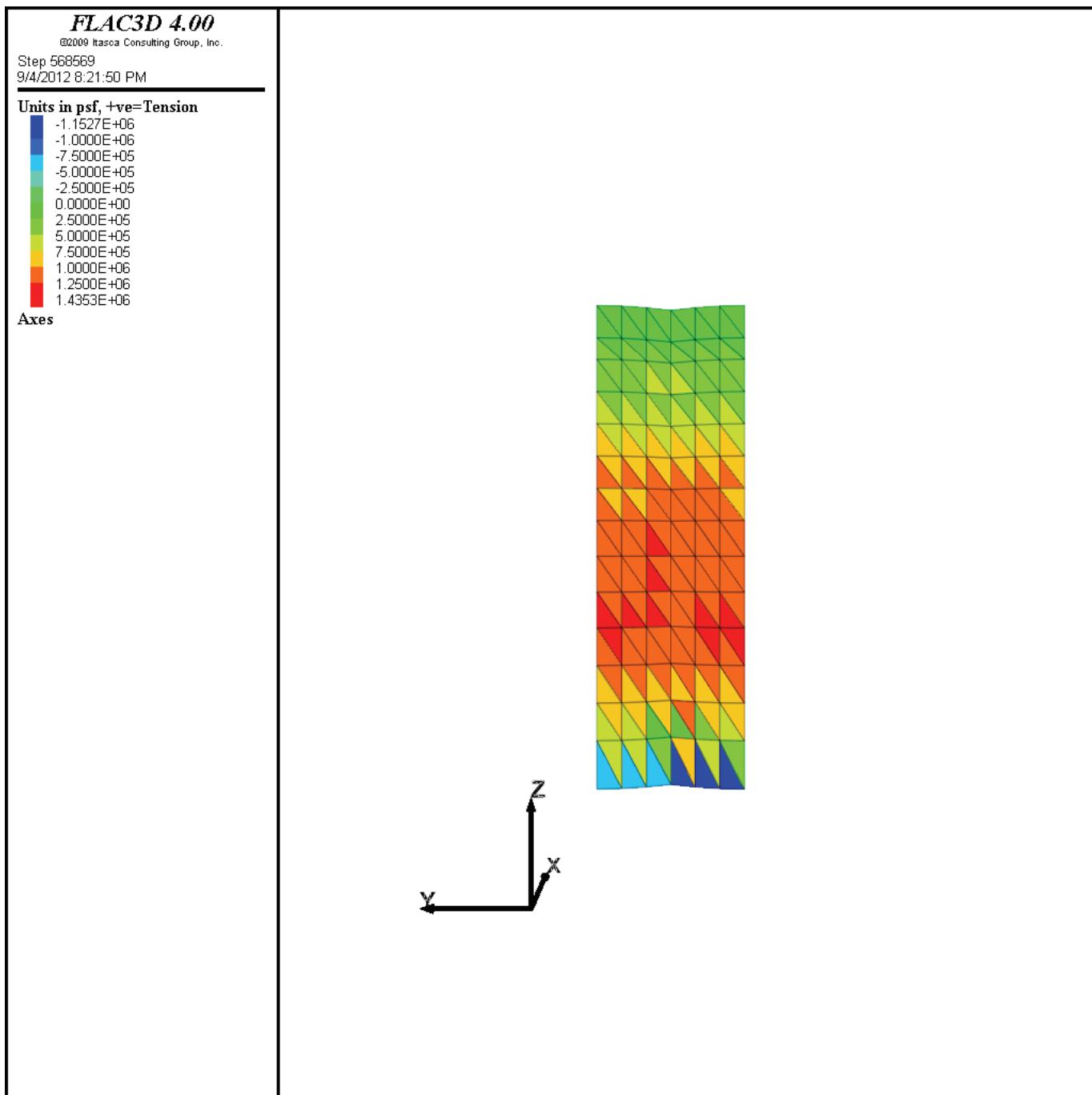


Figure F-1.3.3.a Facewall Membrane Stress – As-Designed Snapshot 40 Sec – Michoacan EQ Record

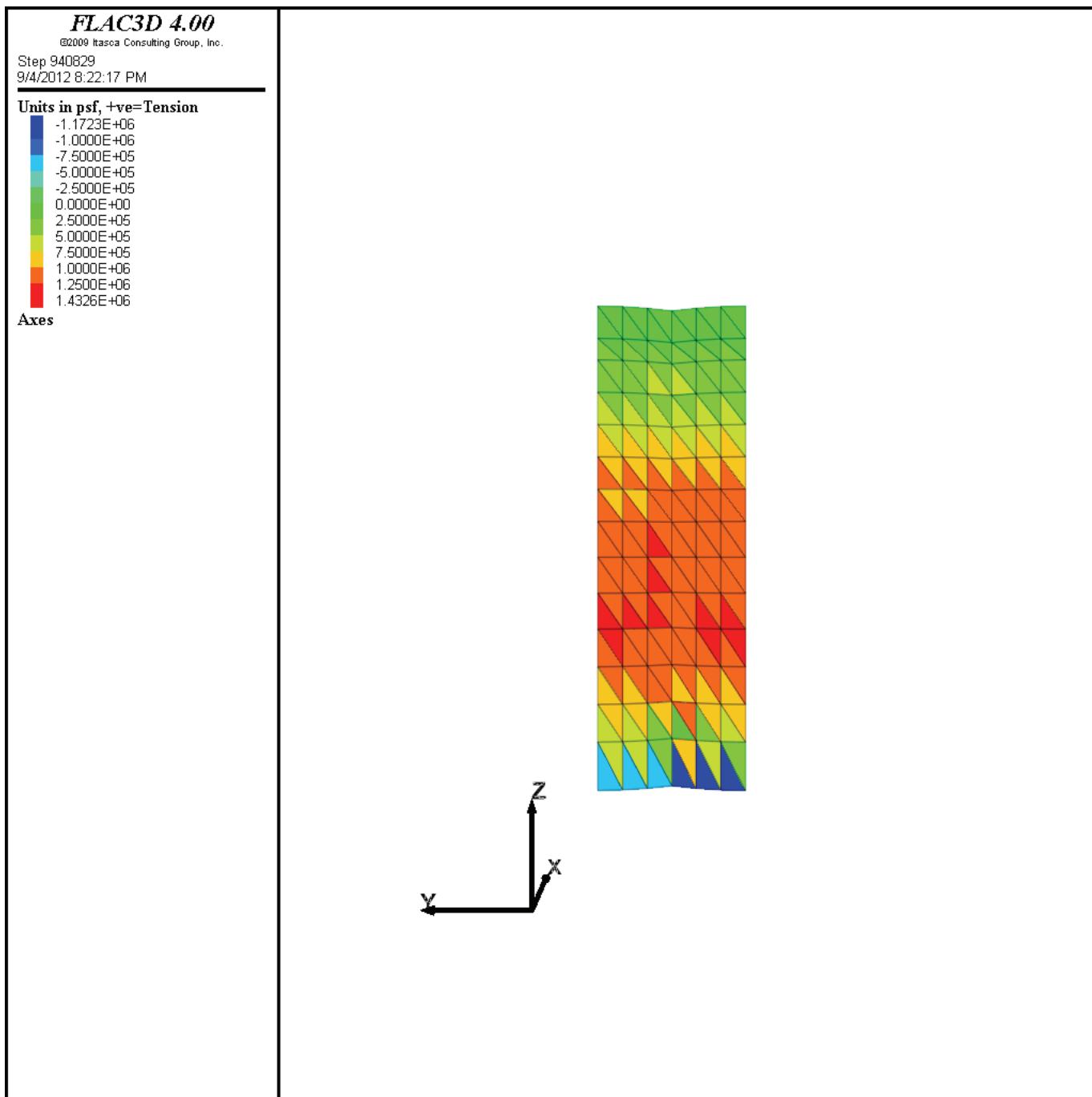


Figure F-1.3.4.a Facewall Membrane Stress – As-Designed Snapshot 75 Sec – Michoacan EQ Record

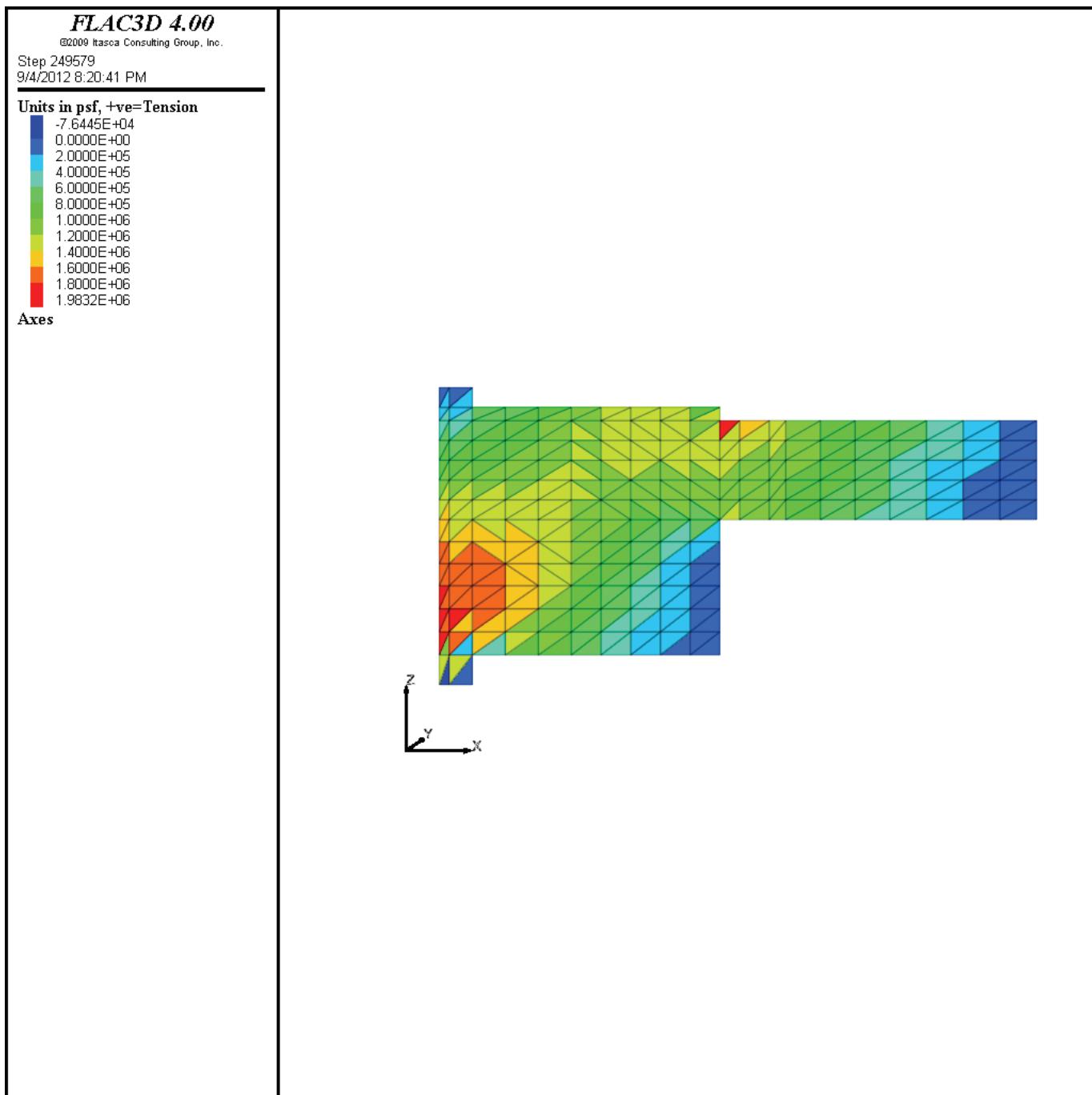


Figure F-1.3.5.a Tailwall Membrane Stress – As-Designed Snapshot 10 Sec – Michoacan EQ Record

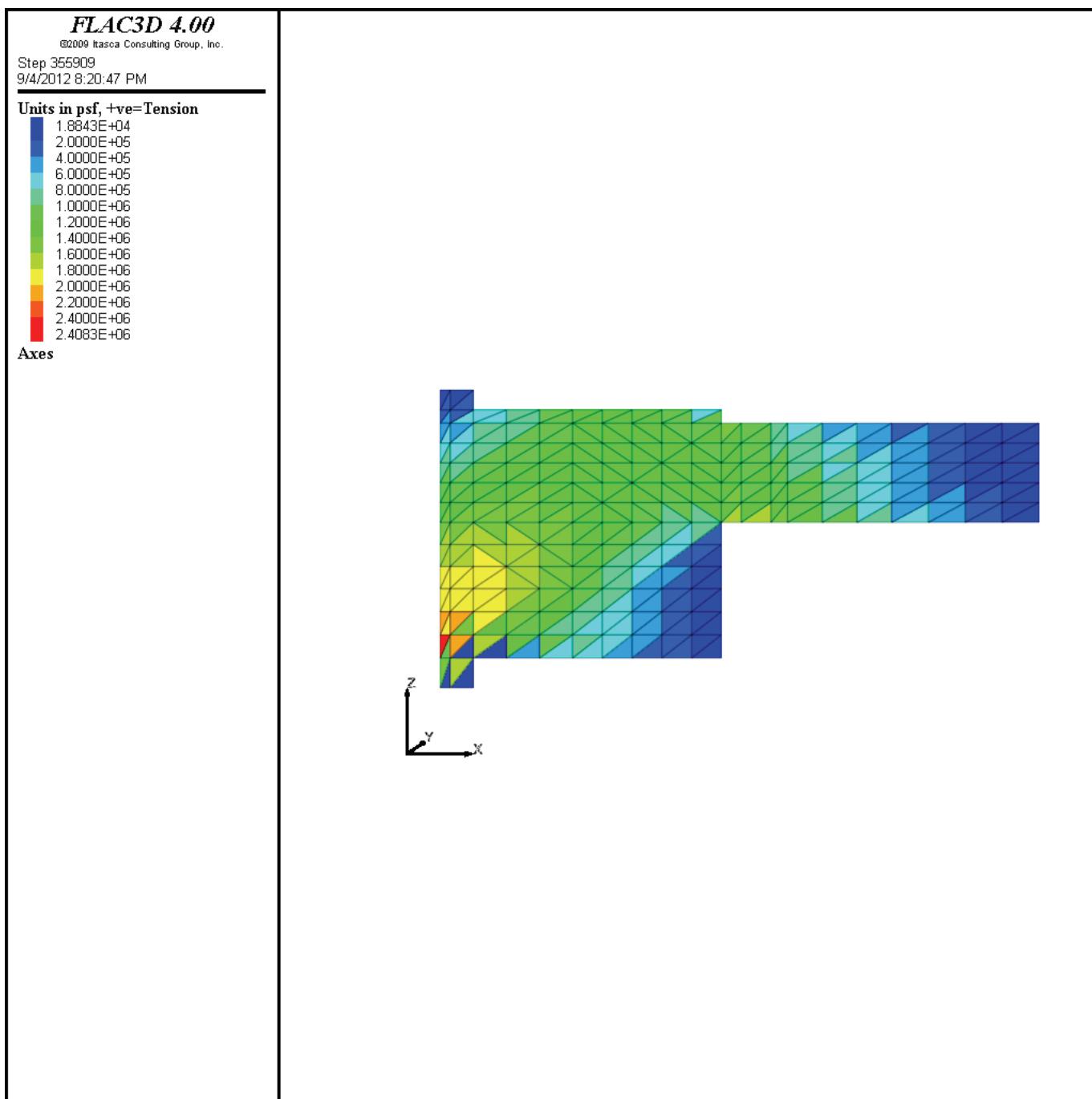


Figure F-1.3.6.a Tailwall Membrane Stress – As-Designed Snapshot 20 Sec – Michoacan EQ Record

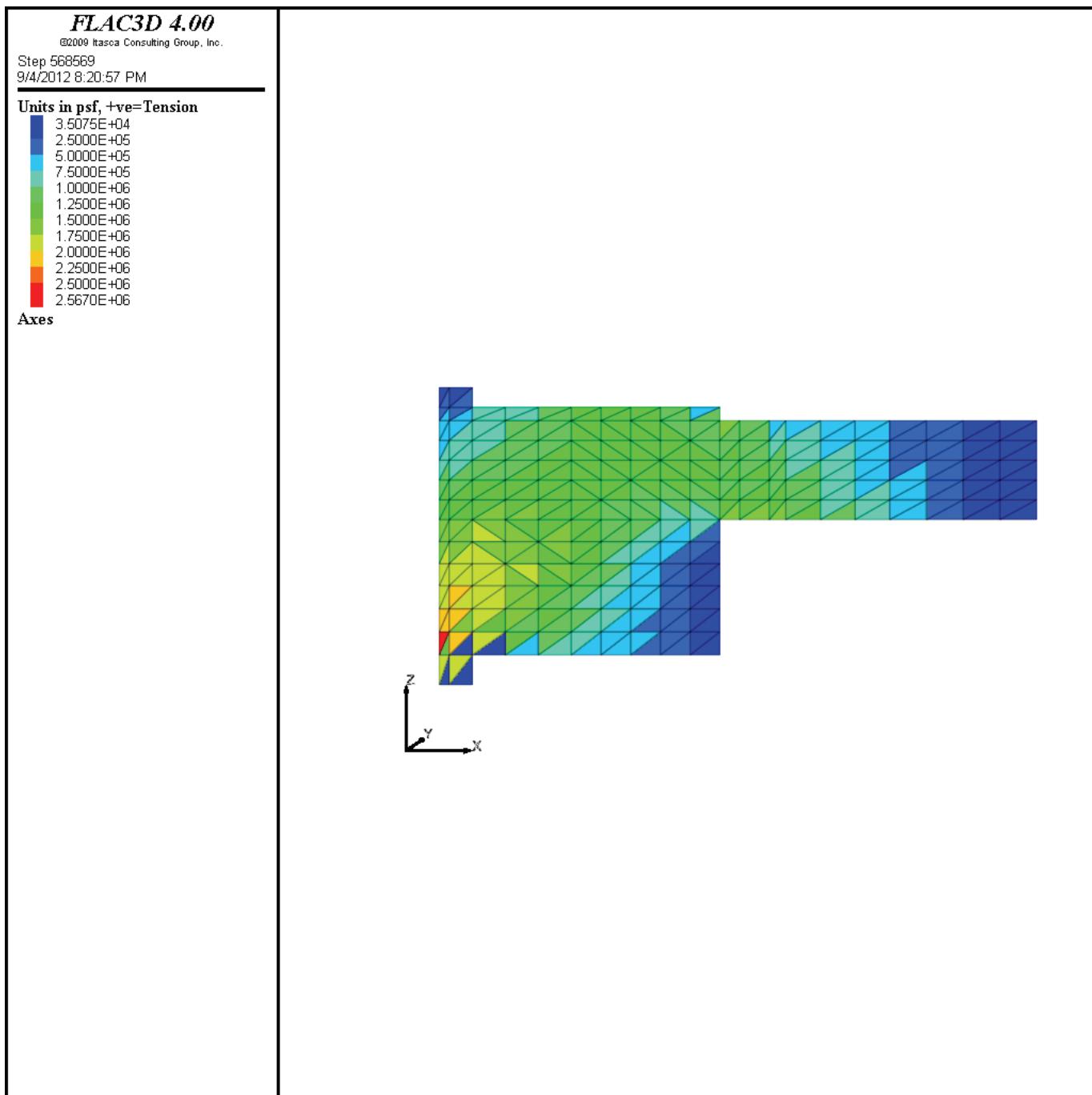


Figure F-1.3.7.a Tailwall Membrane Stress – As-Designed Snapshot 40 Sec – Michoacan EQ Record

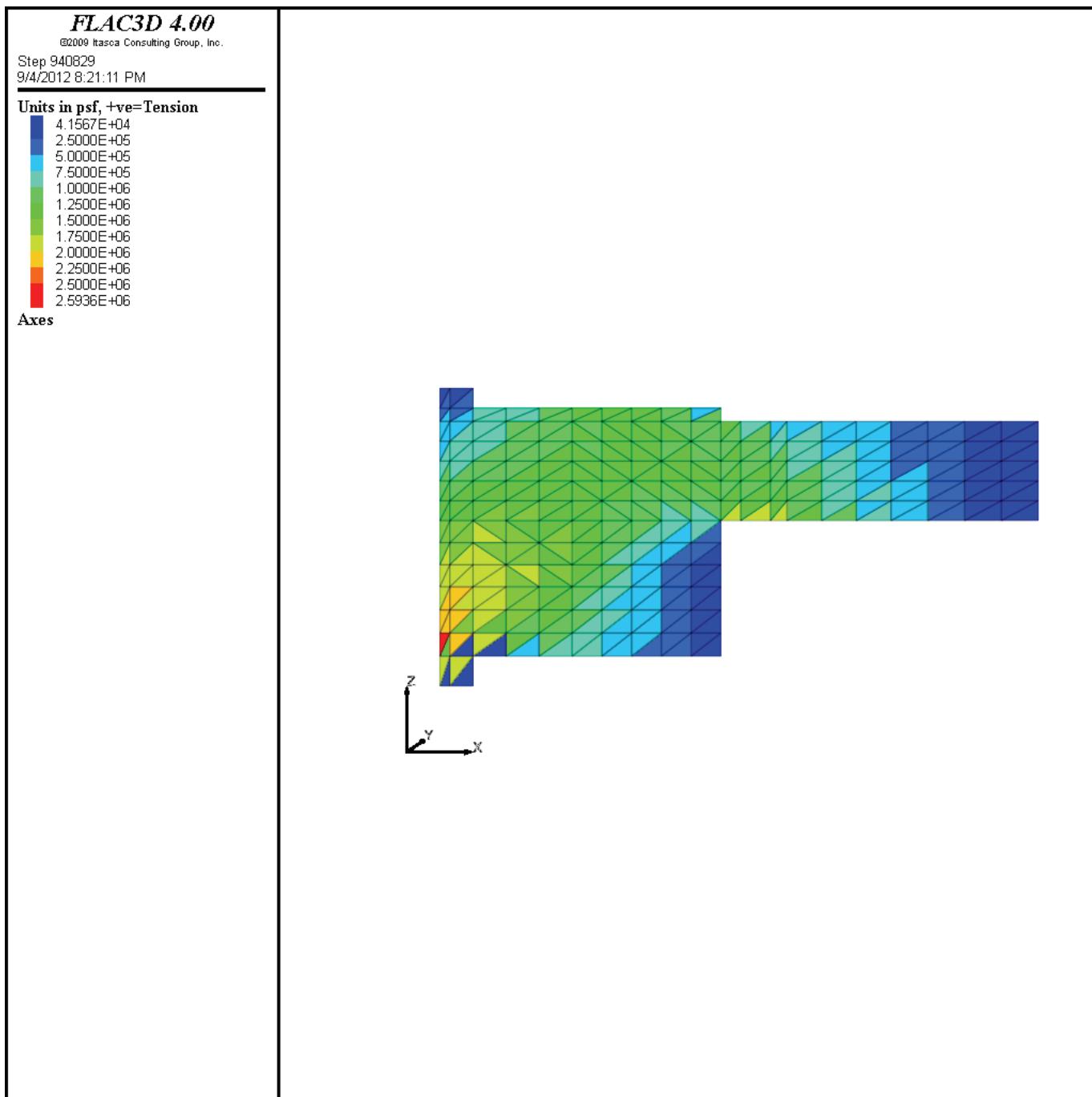


Figure F-1.3.8.a Tailwall Membrane Stress – As-Designed Snapshot 75 Sec – Michoacan EQ Record

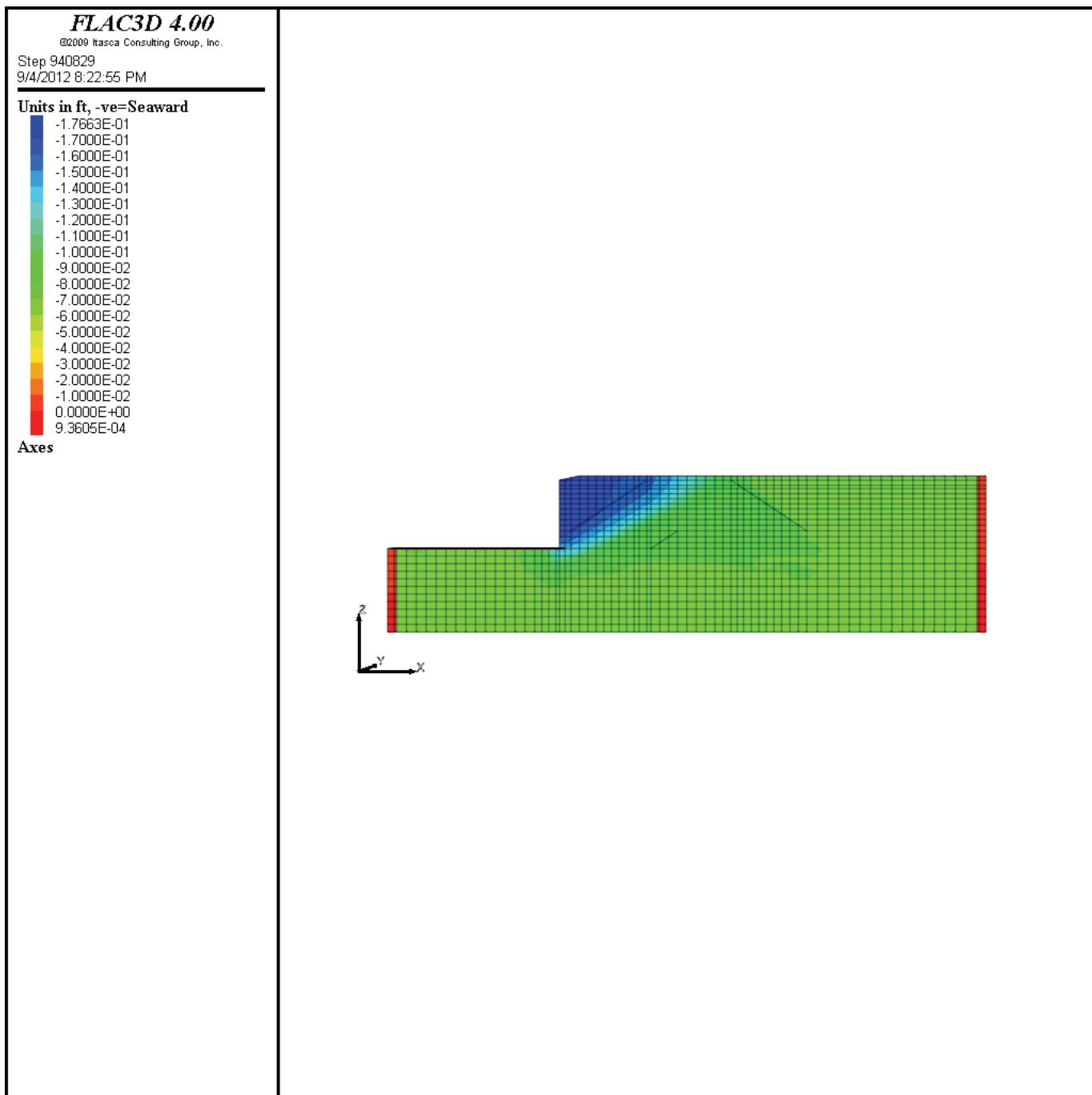


Figure F-1.3.9.a Permanent Soil X-Displacement Contours – As-Designed – Michoacan EQ Record

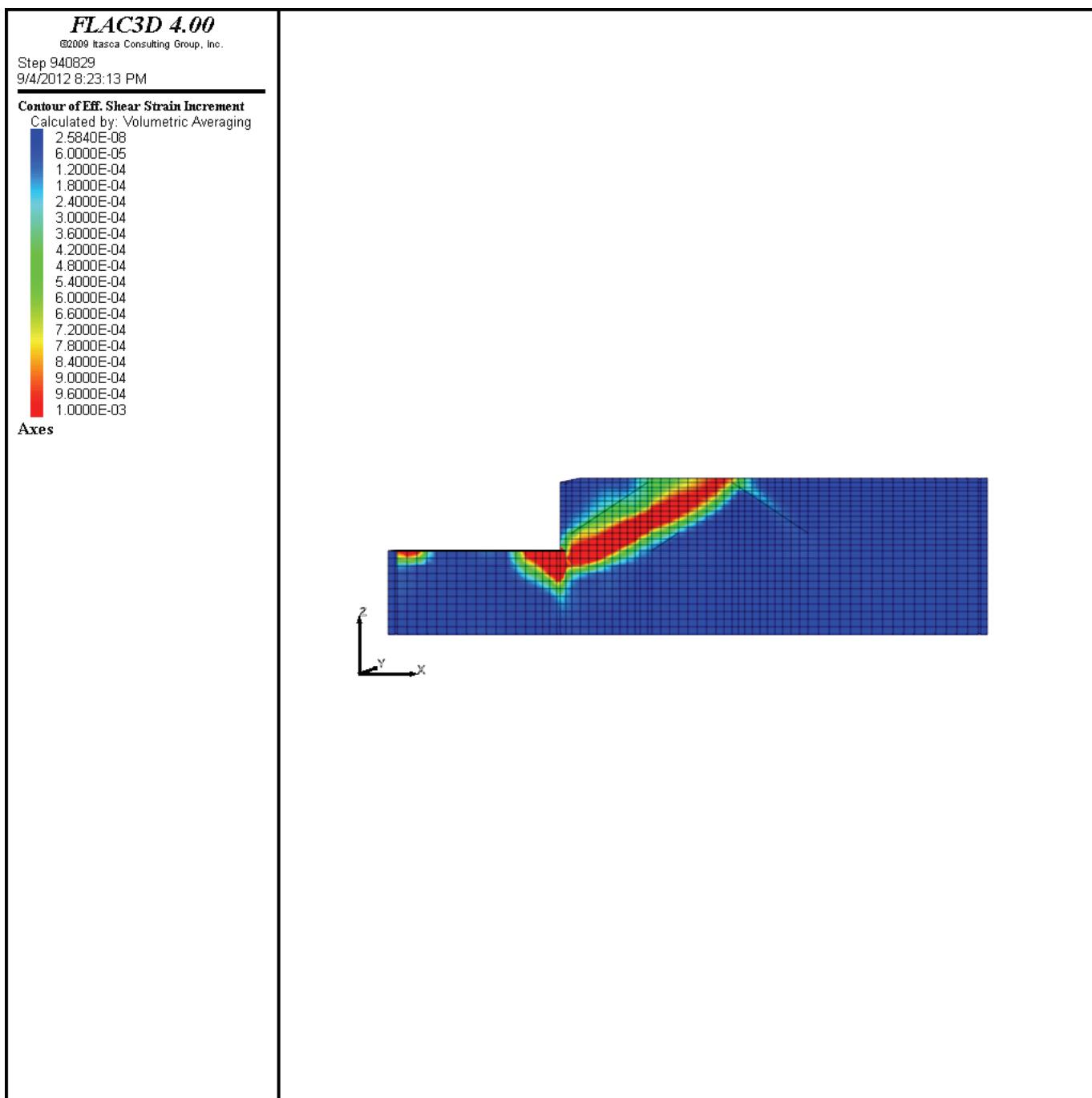


Figure F-1.3.10.a Effective Shear Strain Contours – As-Designed – Michoacan EQ Record

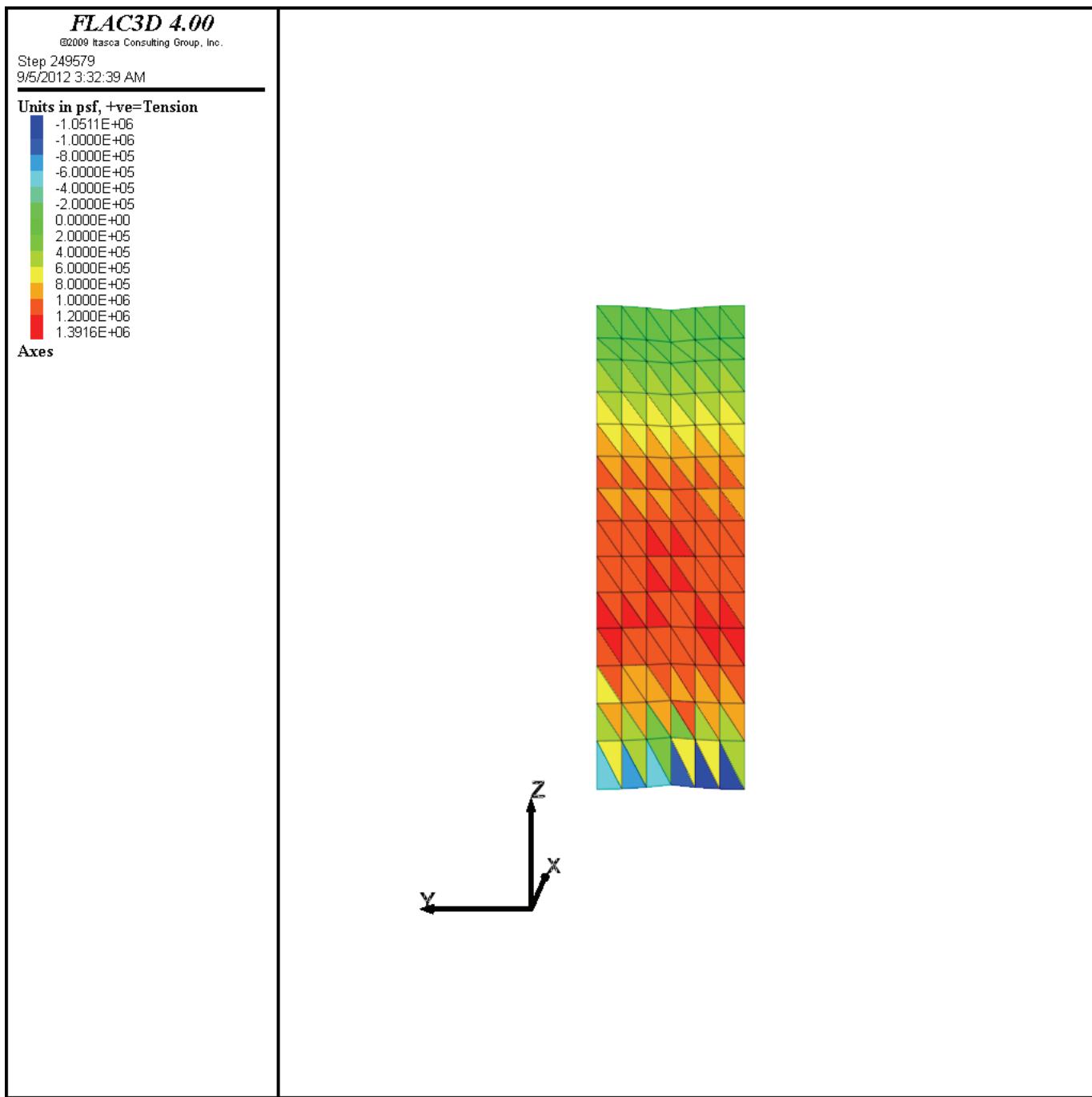


Figure F-1.3.1.b Facewall Membrane Stress – As-Designed Snapshot At 10 Sec – Puget Sound EQ Record

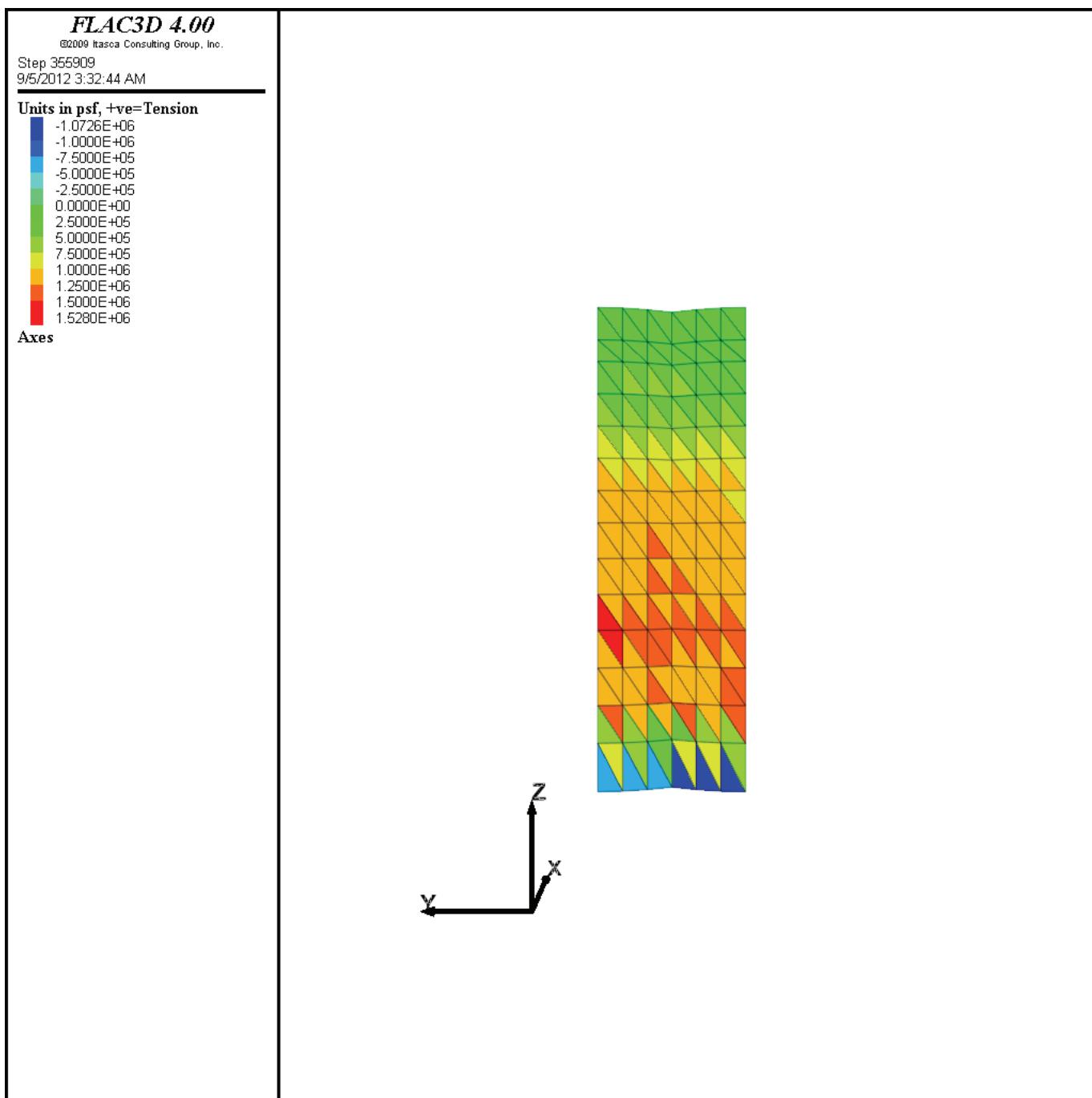


Figure F-1.3.2.b Facewall Membrane Stress – As-Designed Snapshot 20 Sec – Puget Sound EQ Record

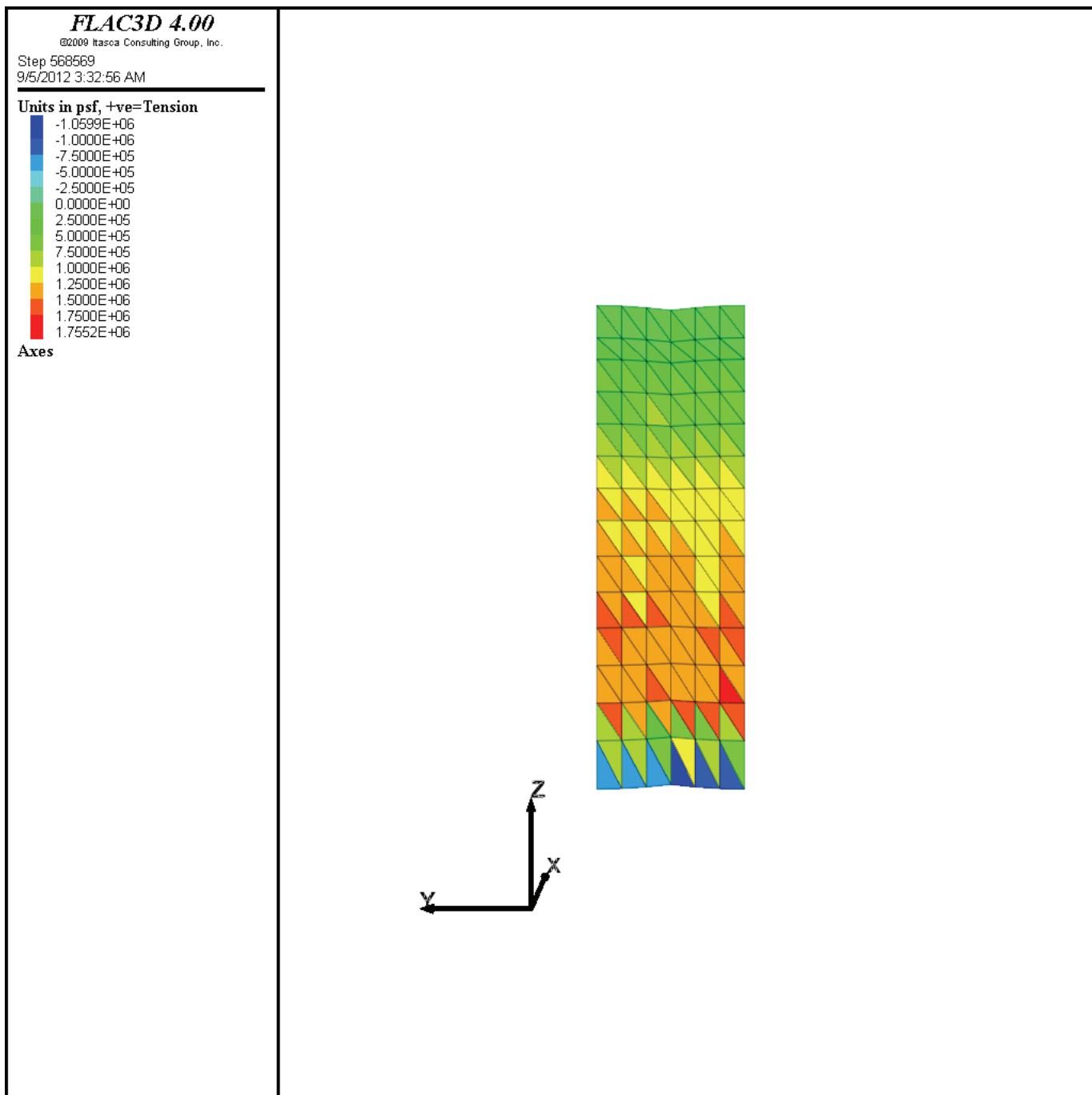


Figure F-1.3.3.b Facewall Membrane Stress – As-Designed Snapshot 40 Sec – Puget Sound EQ Record

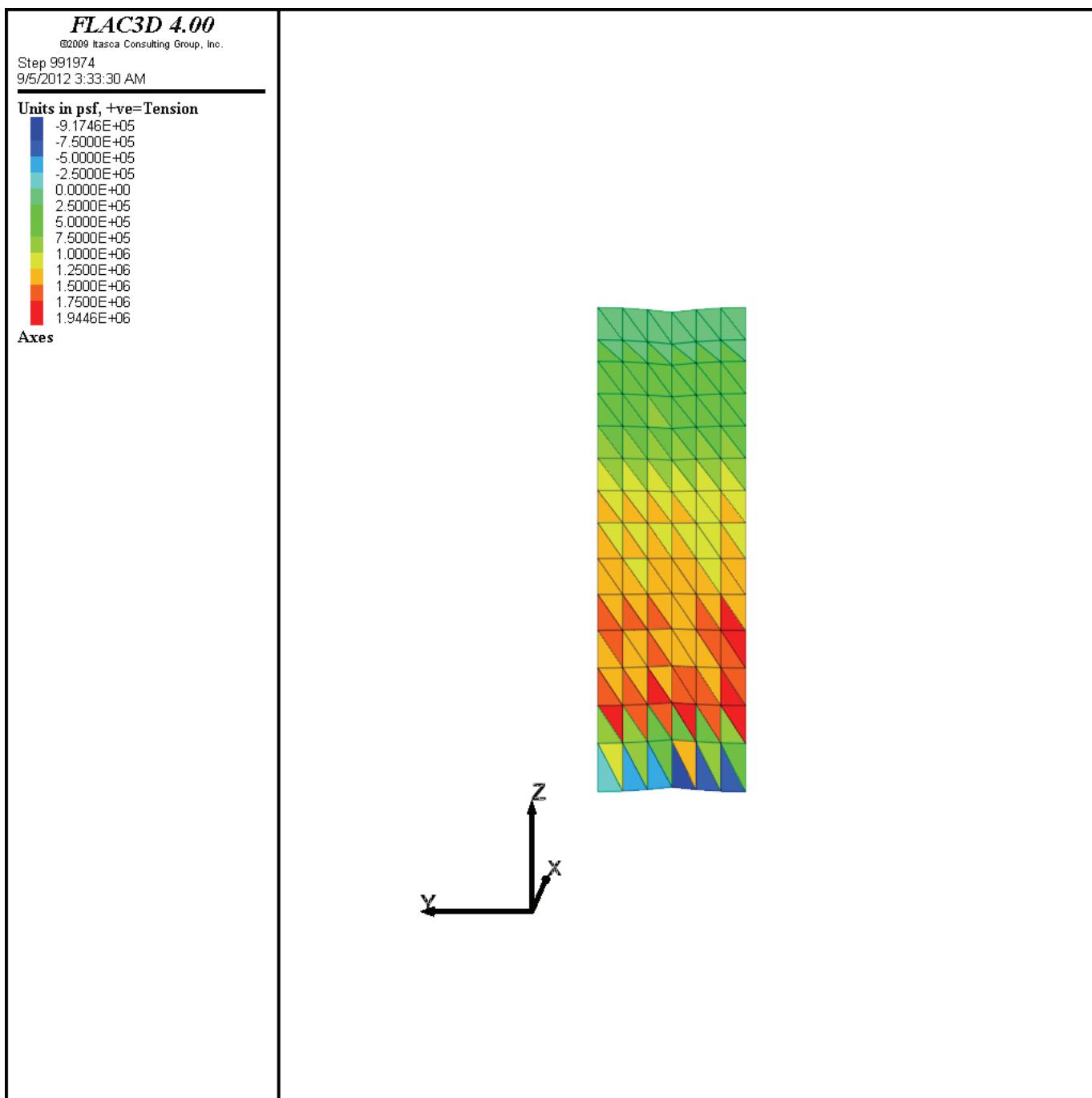


Figure F-1.3.4.b Facewall Membrane Stress – As-Designed Snapshot 80 Sec – Puget Sound EQ Record

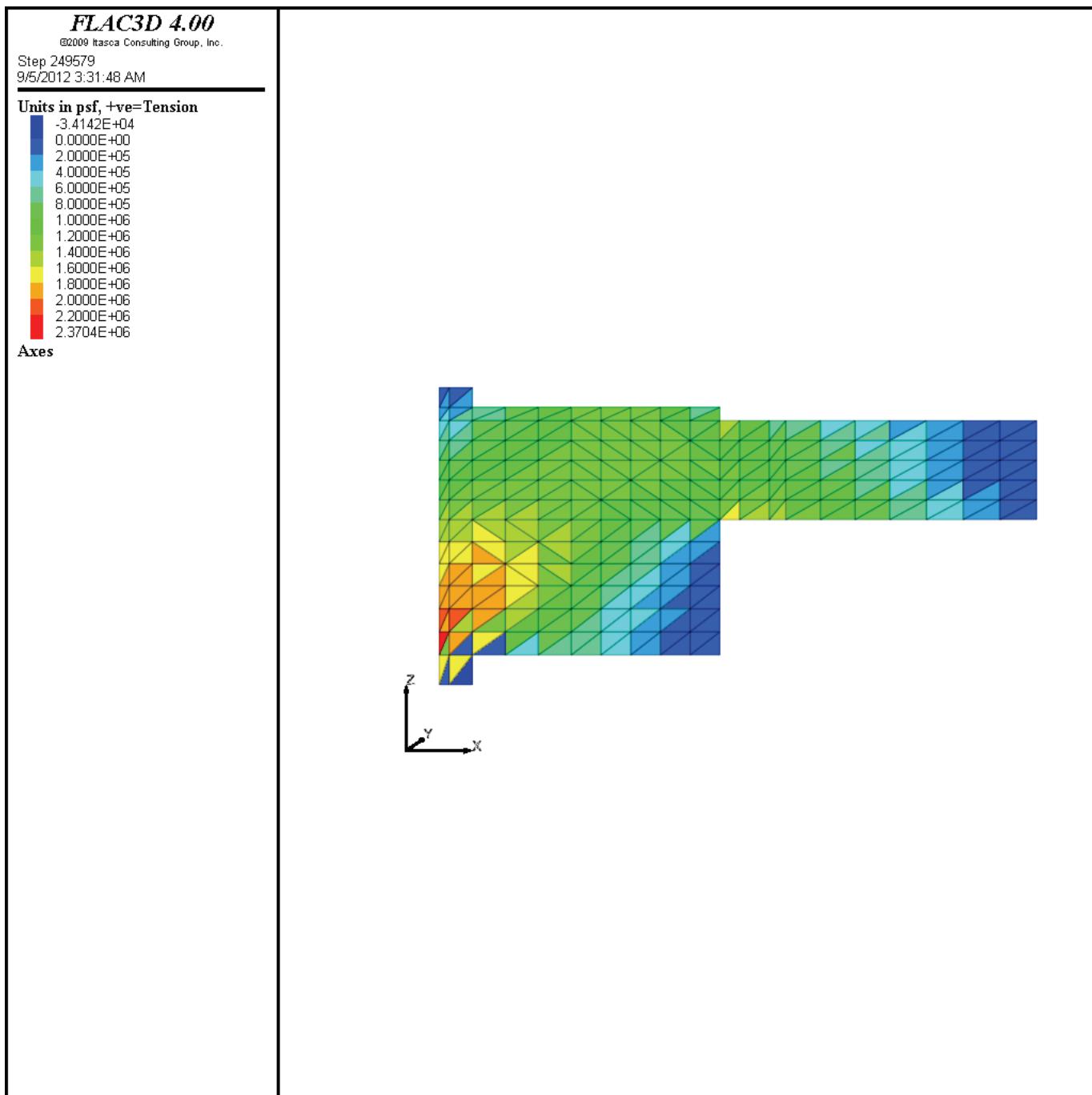


Figure F-1.3.5.b Tailwall Membrane Stress – As-Designed Snapshot 10 Sec – Puget Sound EQ Record

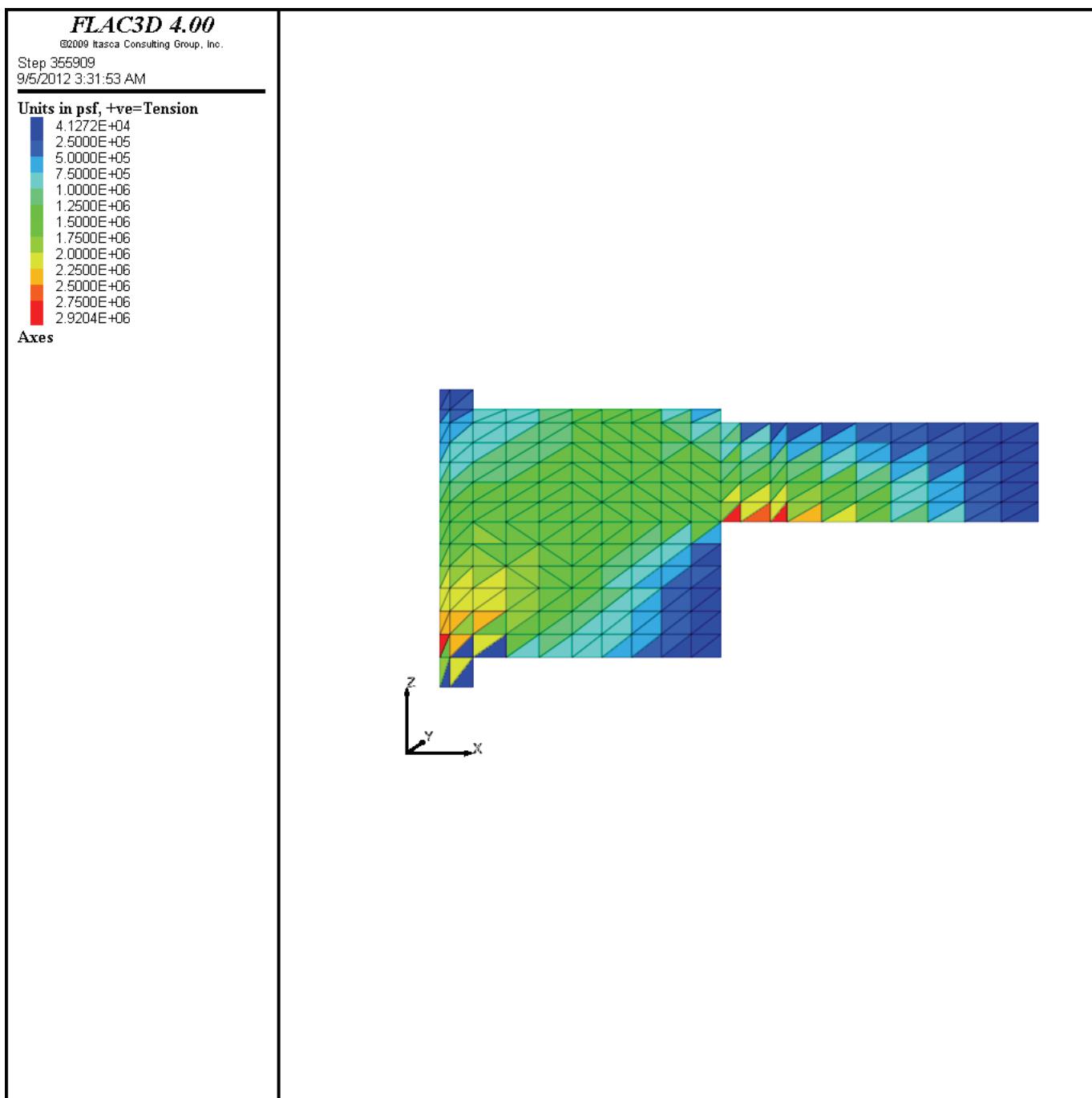


Figure F-1.3.6.b Tailwall Membrane Stress – As-Designed Snapshot 20 Sec – Puget Sound EQ Record

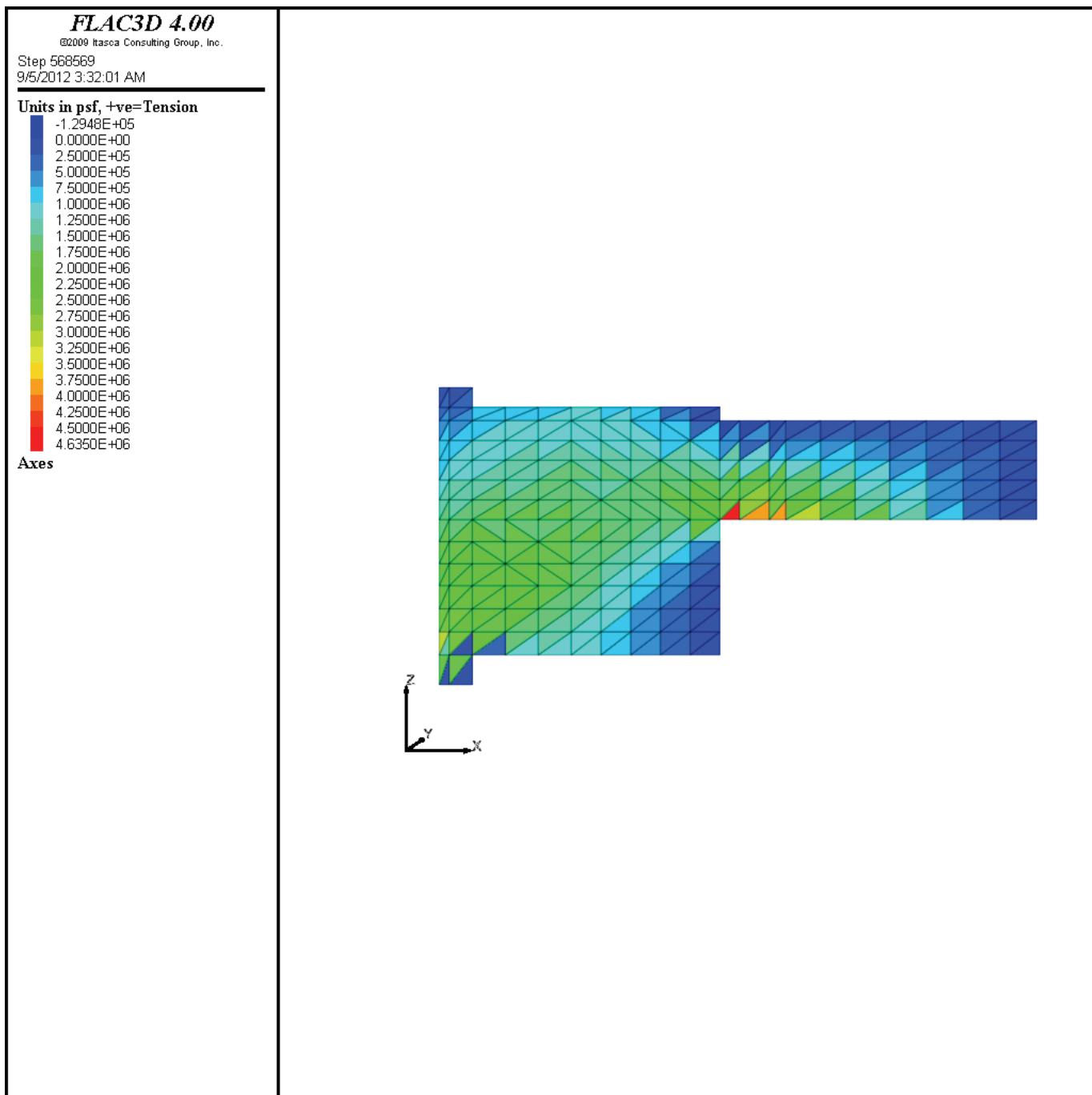


Figure F-1.3.7.b Tailwall Membrane Stress – As-Designed Snapshot 40 Sec – Puget Sound EQ Record

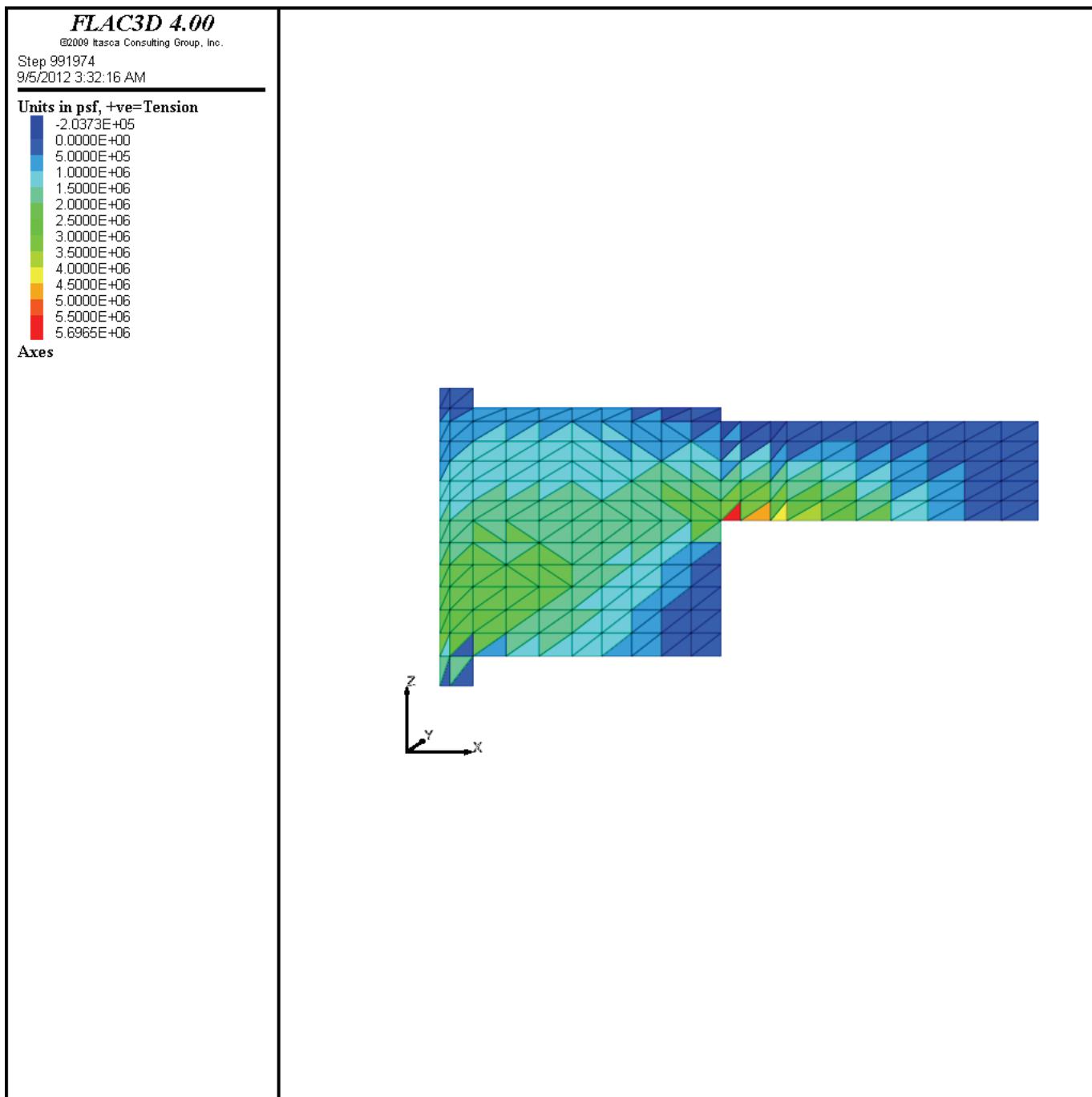


Figure F-1.3.8.b Tailwall Membrane Stress – As-Designed Snapshot 80 Sec – Puget Sound EQ Record

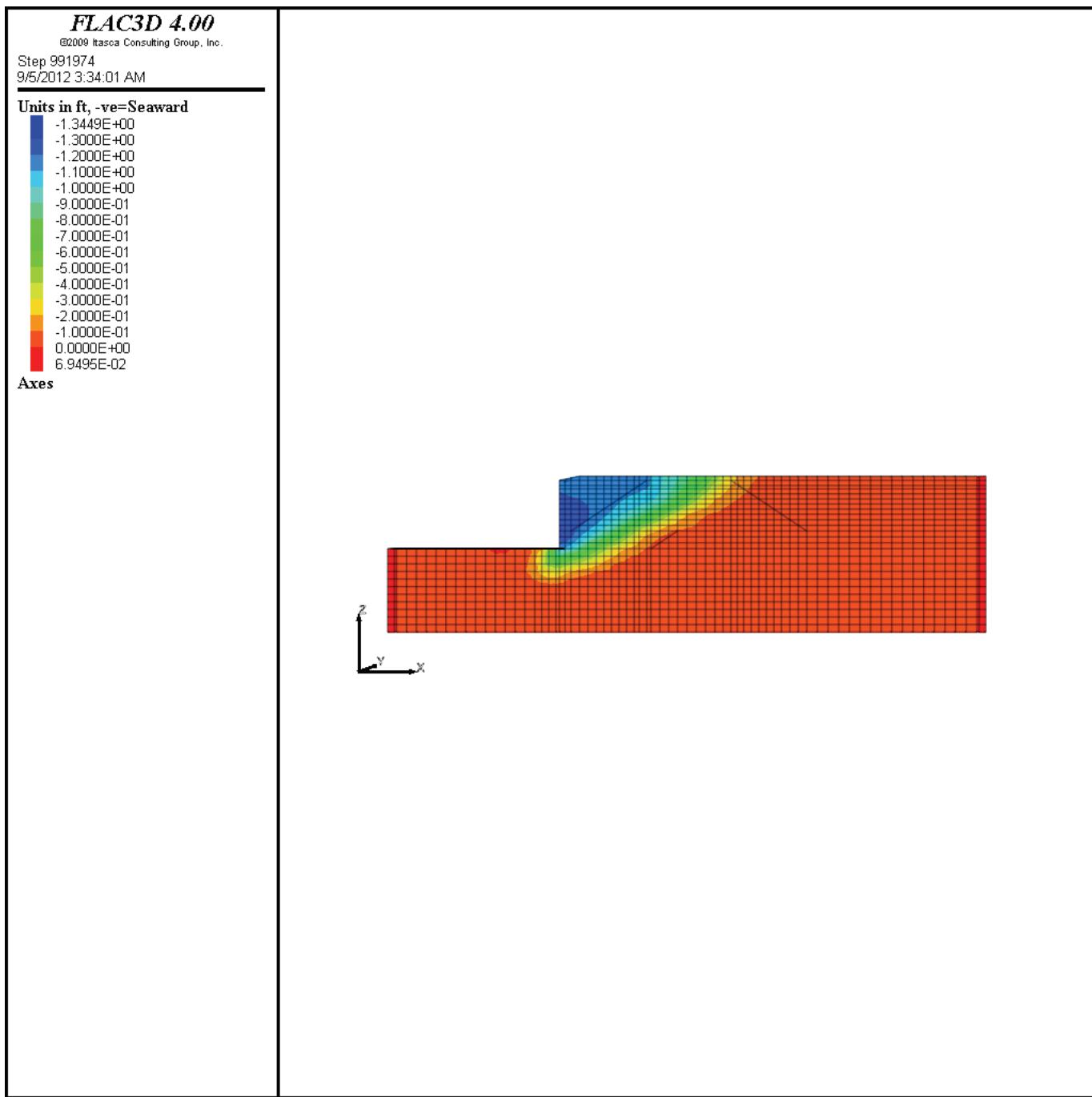


Figure F-1.3.9.b Permanent Soil X-Displacement Contours – As-Designed – Puget Sound EQ Record

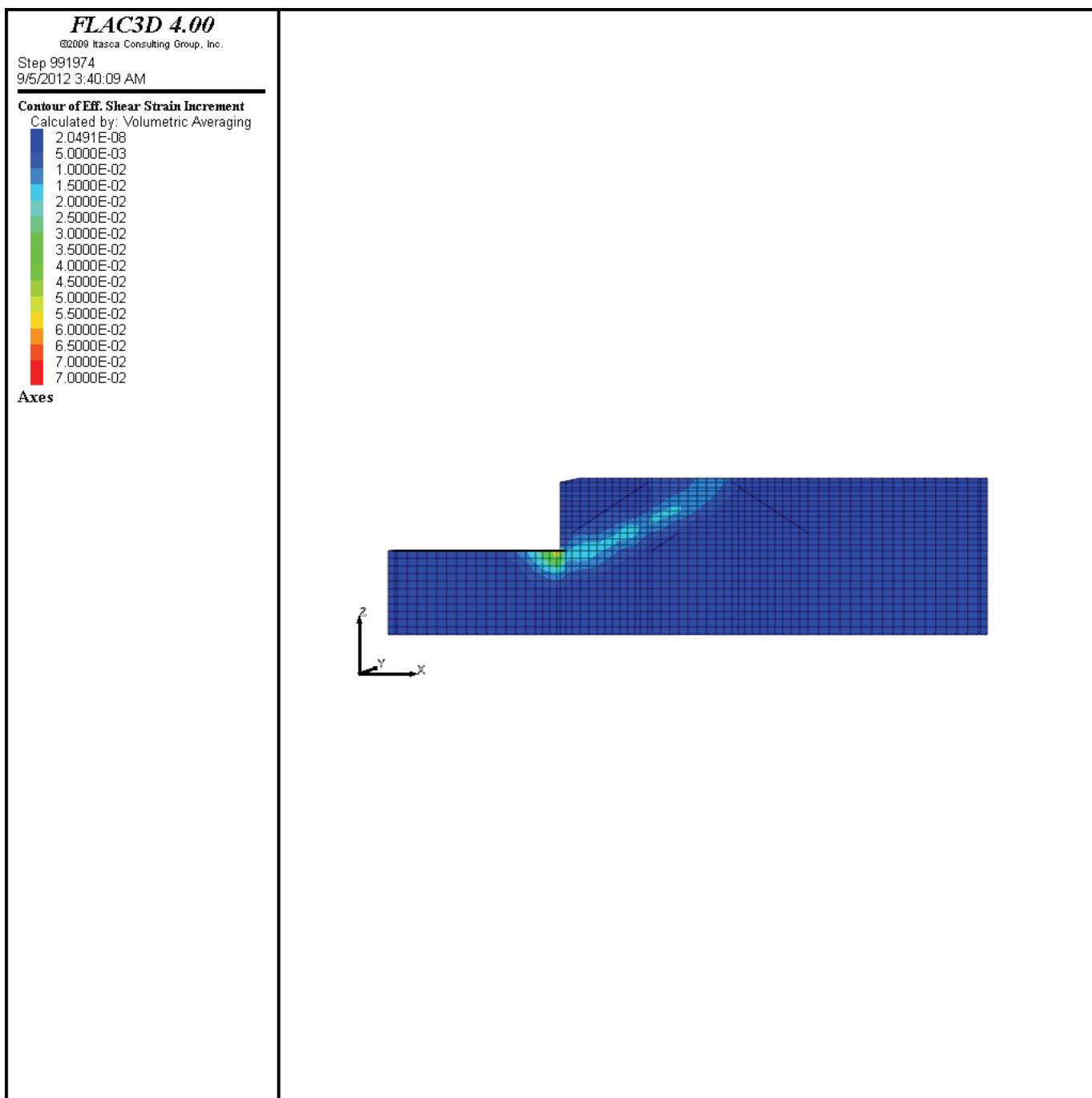


Figure F-1.3.10.b Effective Shear Strain Contours – As-Designed – Puget Sound EQ Record

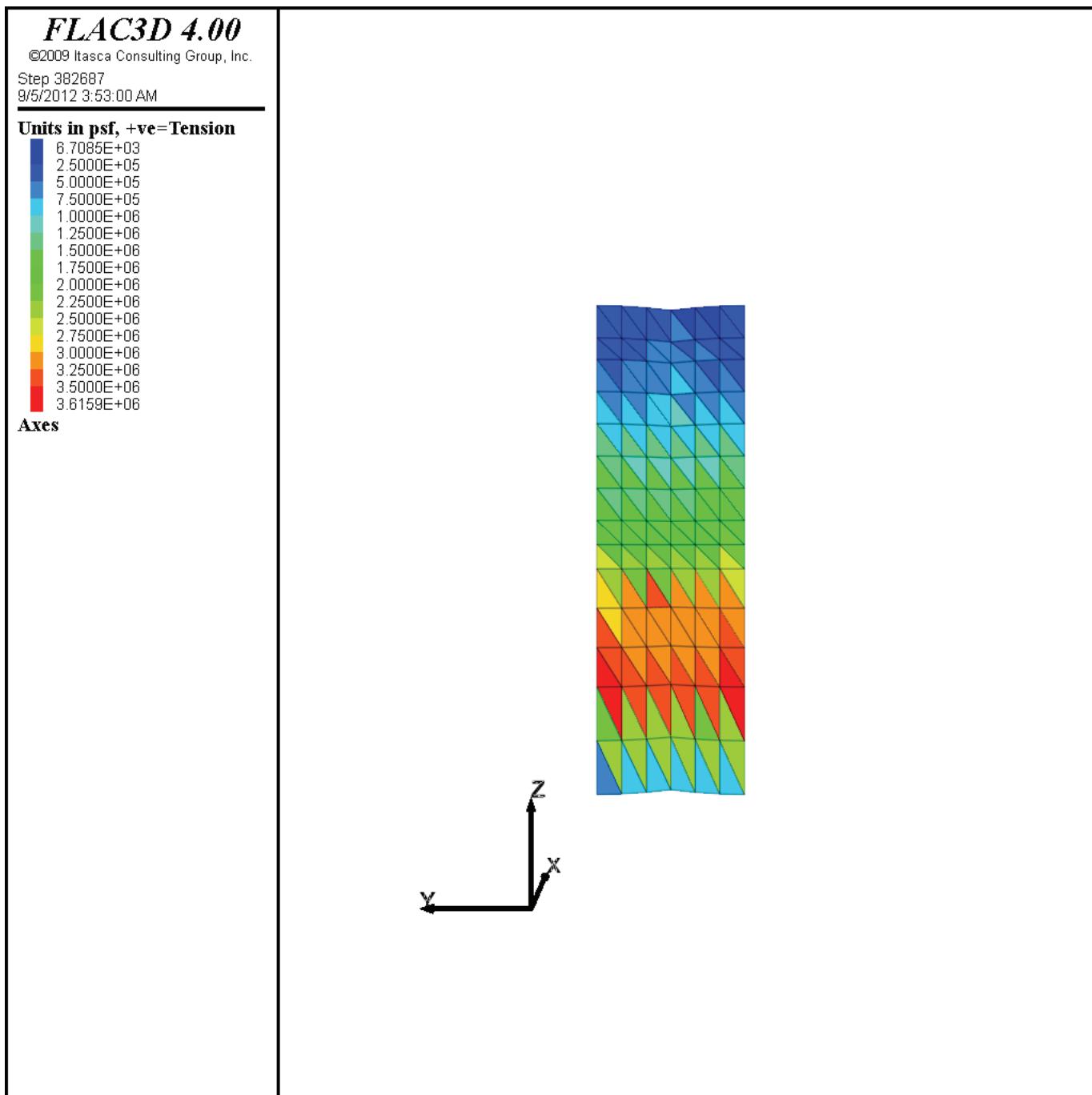


Figure F-2.1.1.a Facewall Membrane Stress – As-Built Snapshot At 10 Sec – Michoacan EQ Record

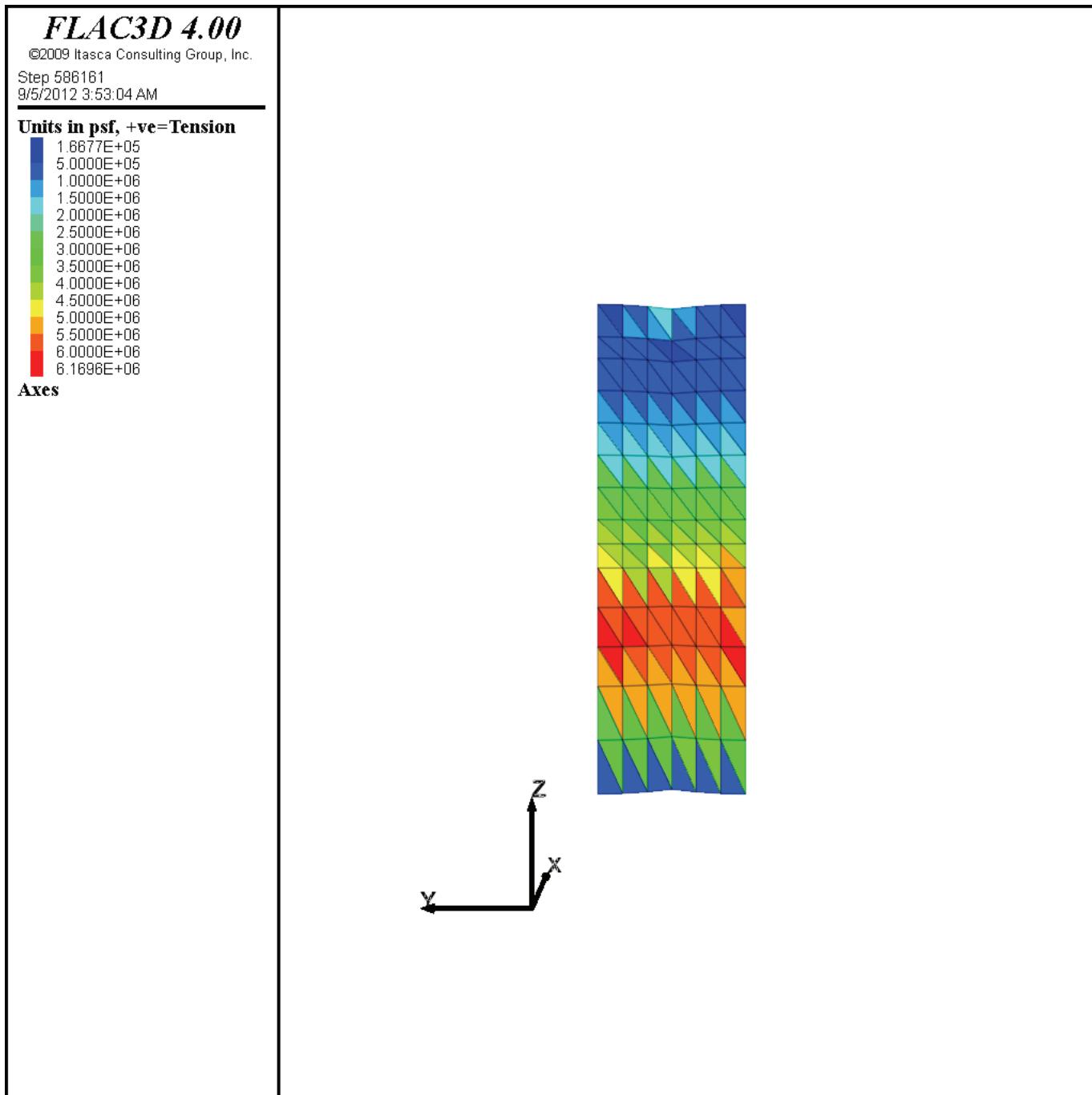


Figure F-2.1.2.a Facewall Membrane Stress – As-Built Snapshot 20 Sec – Michoacan EQ Record

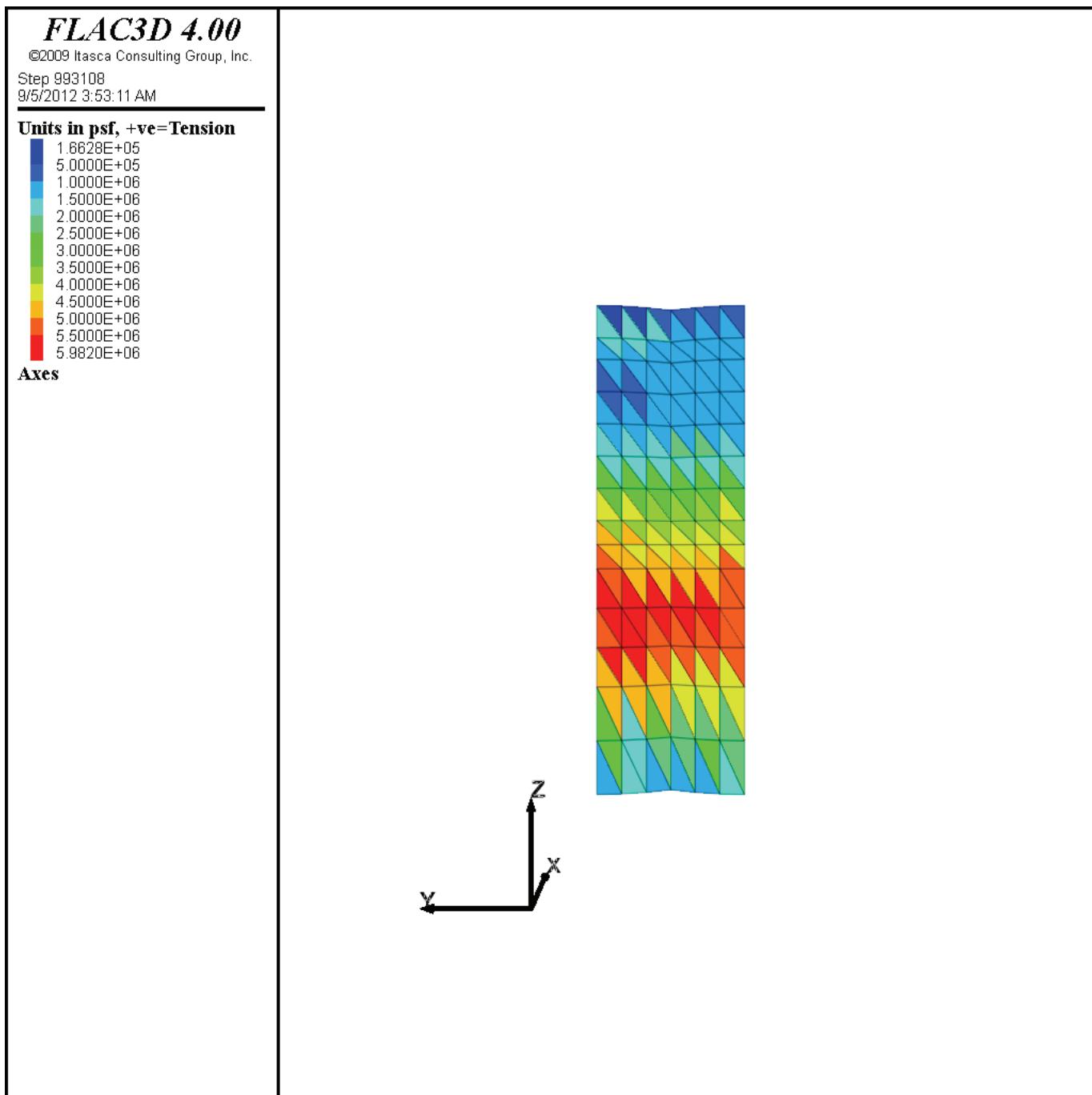


Figure F-2.1.3.a Facewall Membrane Stress – As-Built Snapshot 40 Sec – Michoacan EQ Record

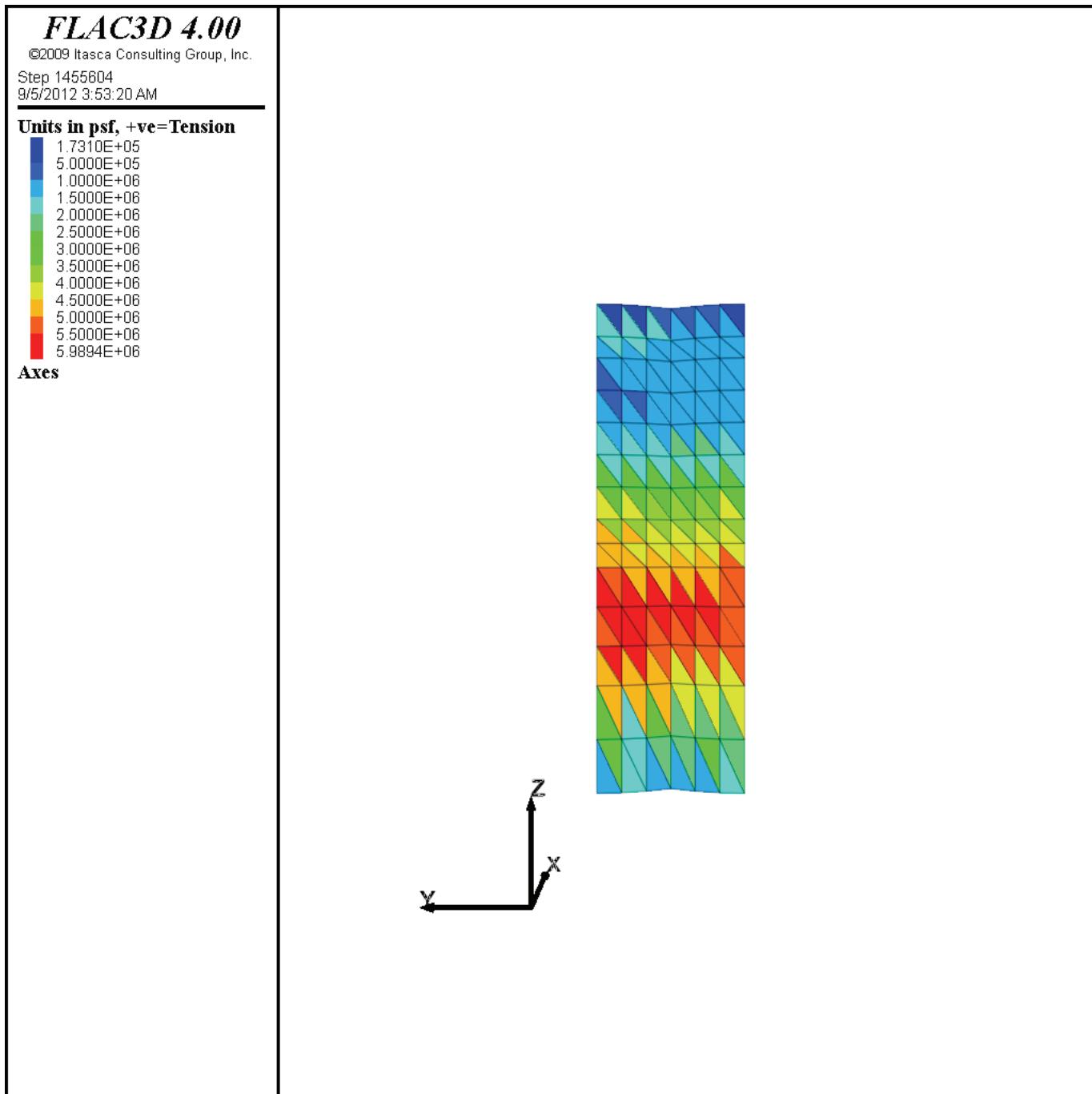


Figure F-2.1.4.a Facewall Membrane Stress – As-Built Snapshot 63 Sec – Michoacan EQ Record

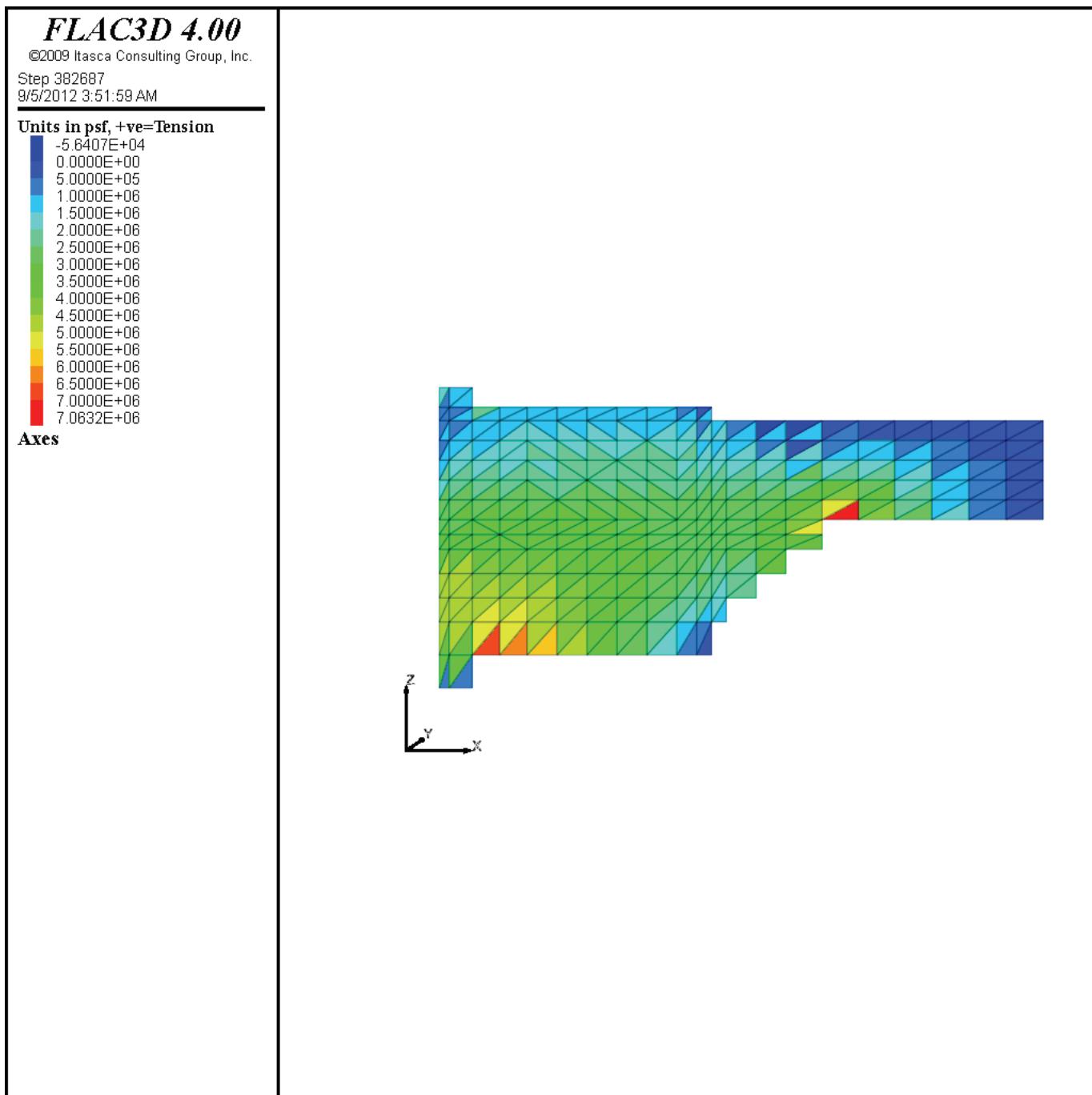


Figure F-2.1.5.a Tailwall Membrane Stress – As-Built Snapshot 10 Sec – Michoacan EQ Record

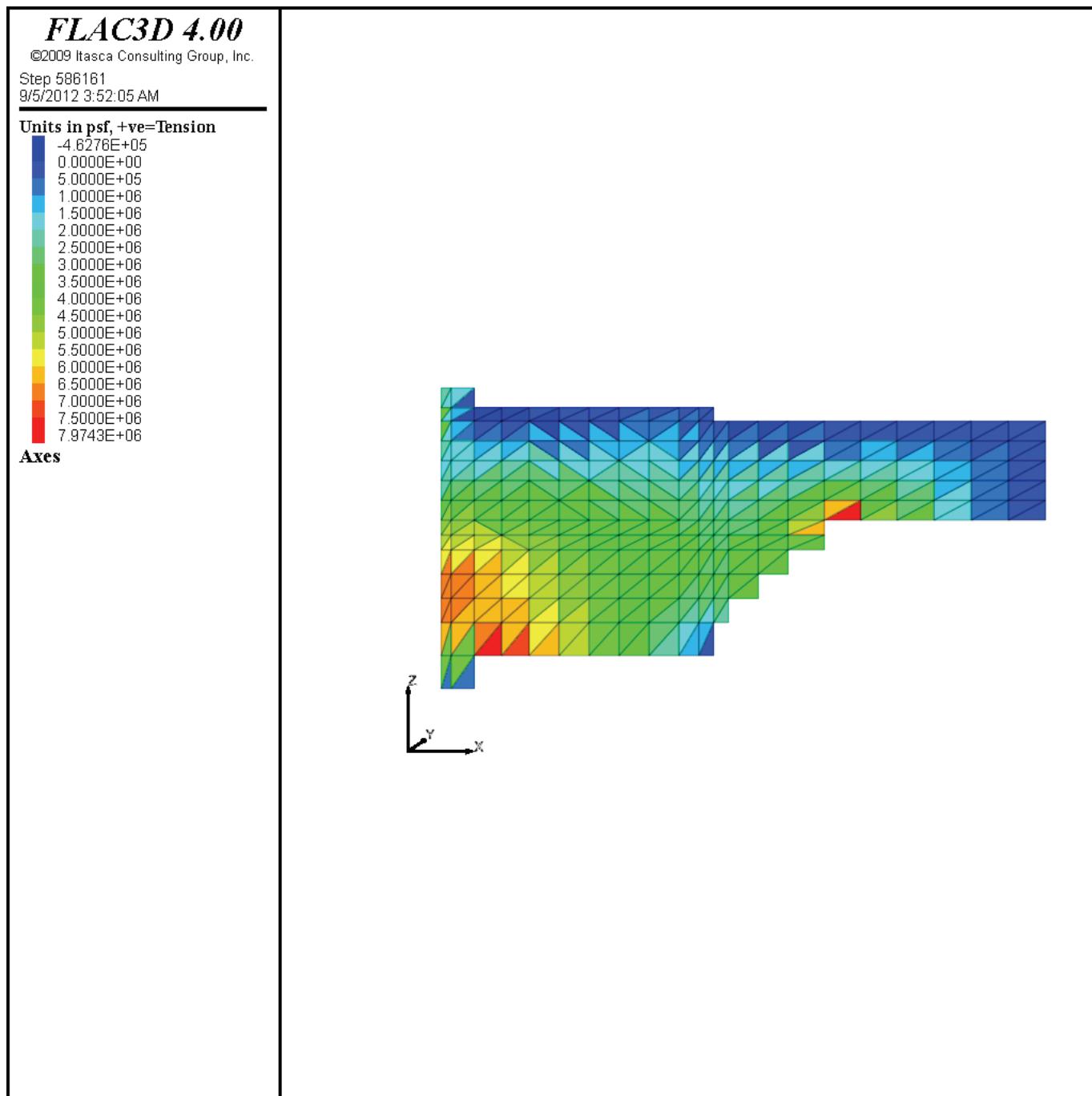


Figure F-2.1.6.a Tailwall Membrane Stress – As-Built Snapshot 20 Sec – Michoacan EQ Record

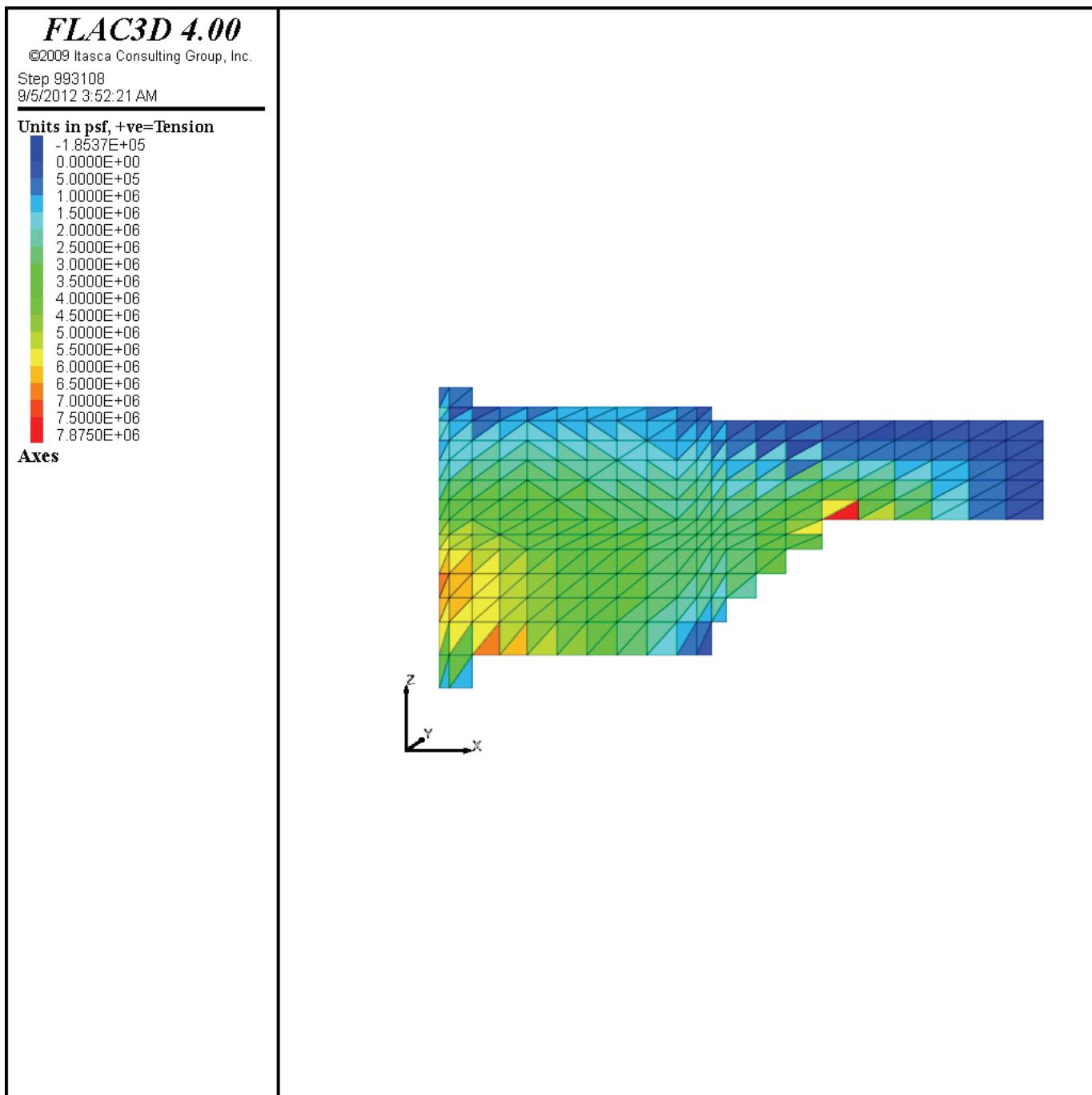


Figure F-2.1.7.a Tailwall Membrane Stress – As-Built Snapshot 40 Sec – Michoacan EQ Record

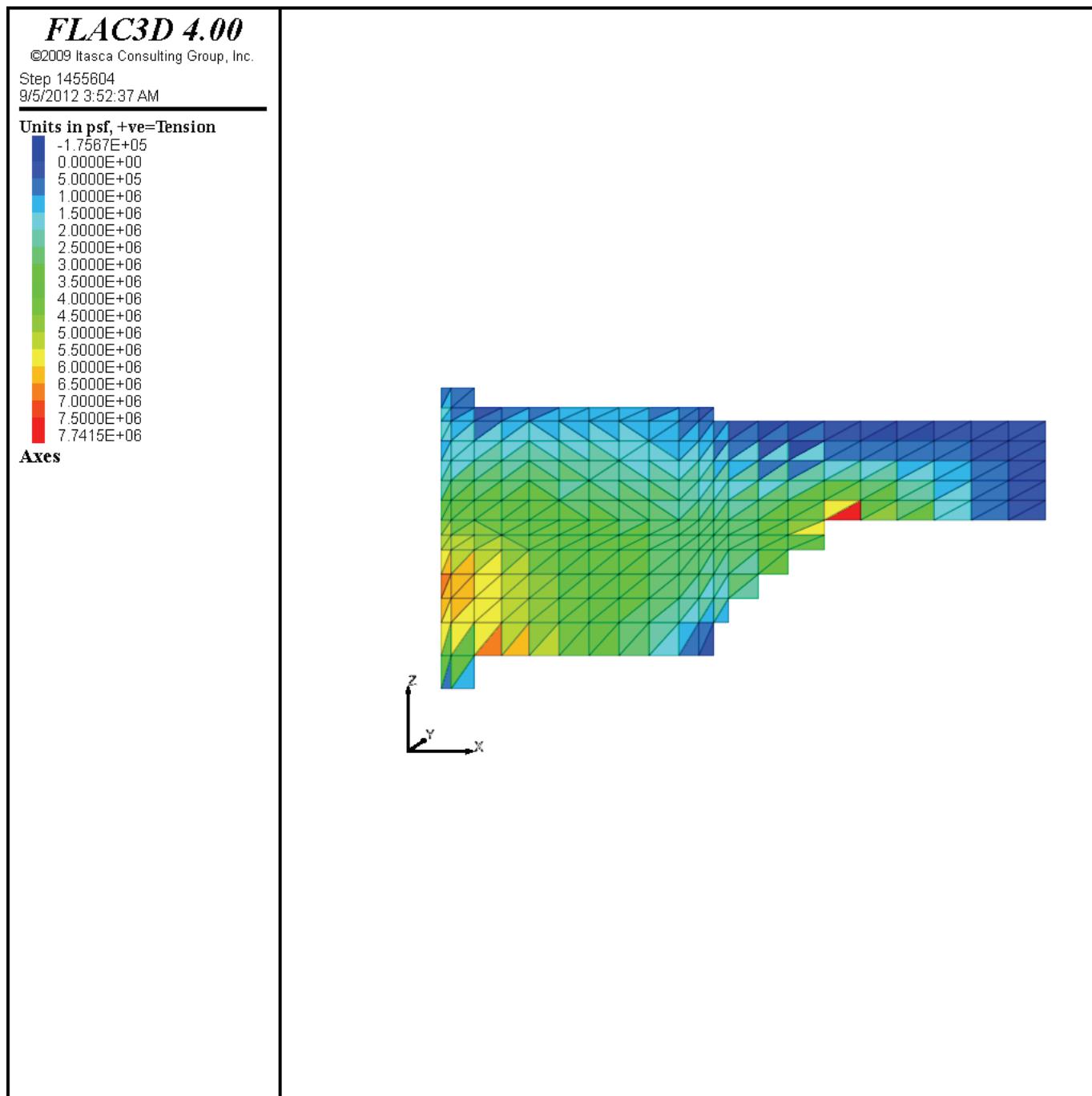


Figure F-2.1.8.a Tailwall Membrane Stress – As-Built Snapshot 63 Sec – Michoacan EQ Record

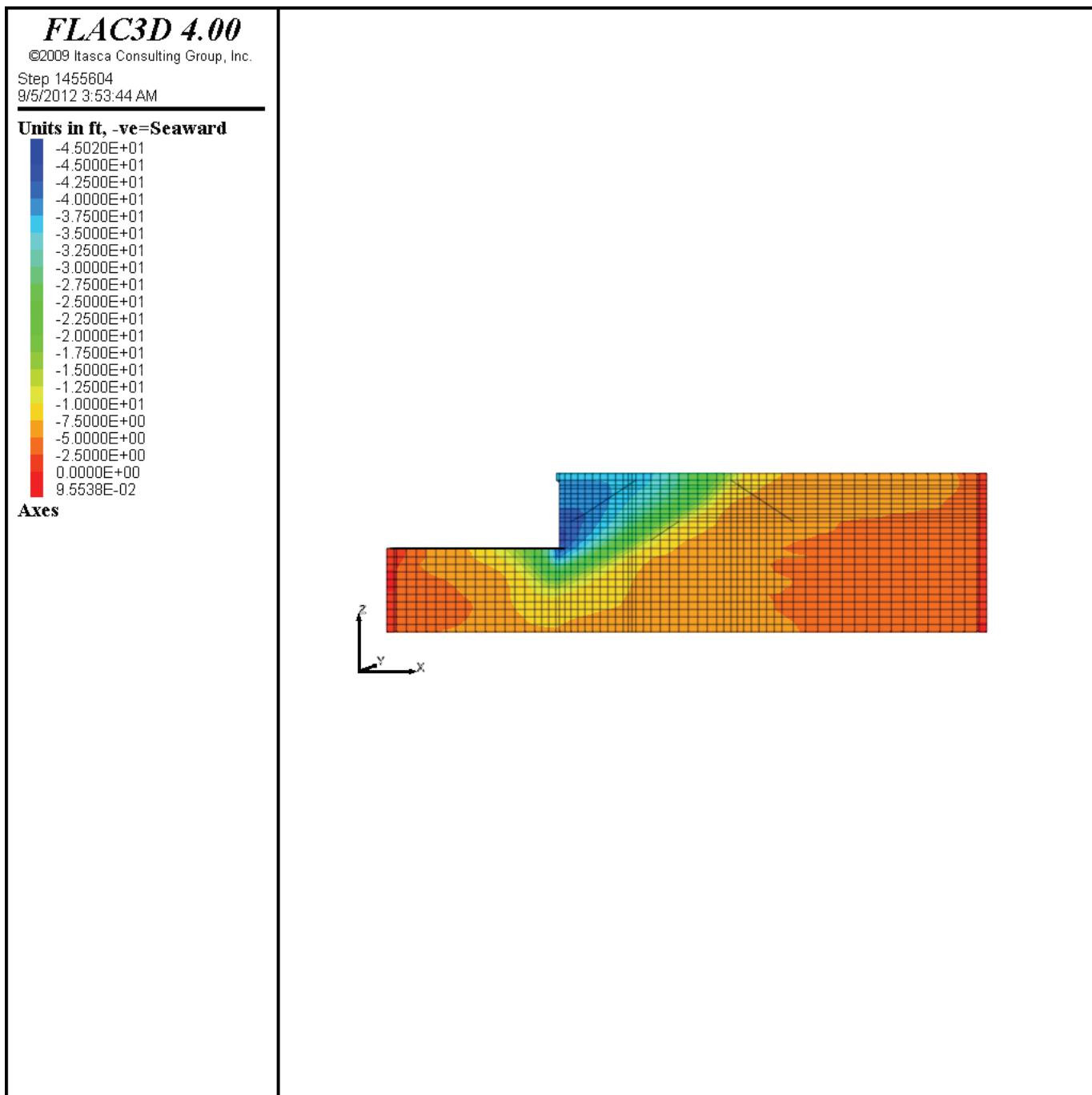


Figure F-2.1.9.a Permanent Soil X-Displacement Contours – As-Built – Michoacan EQ Record

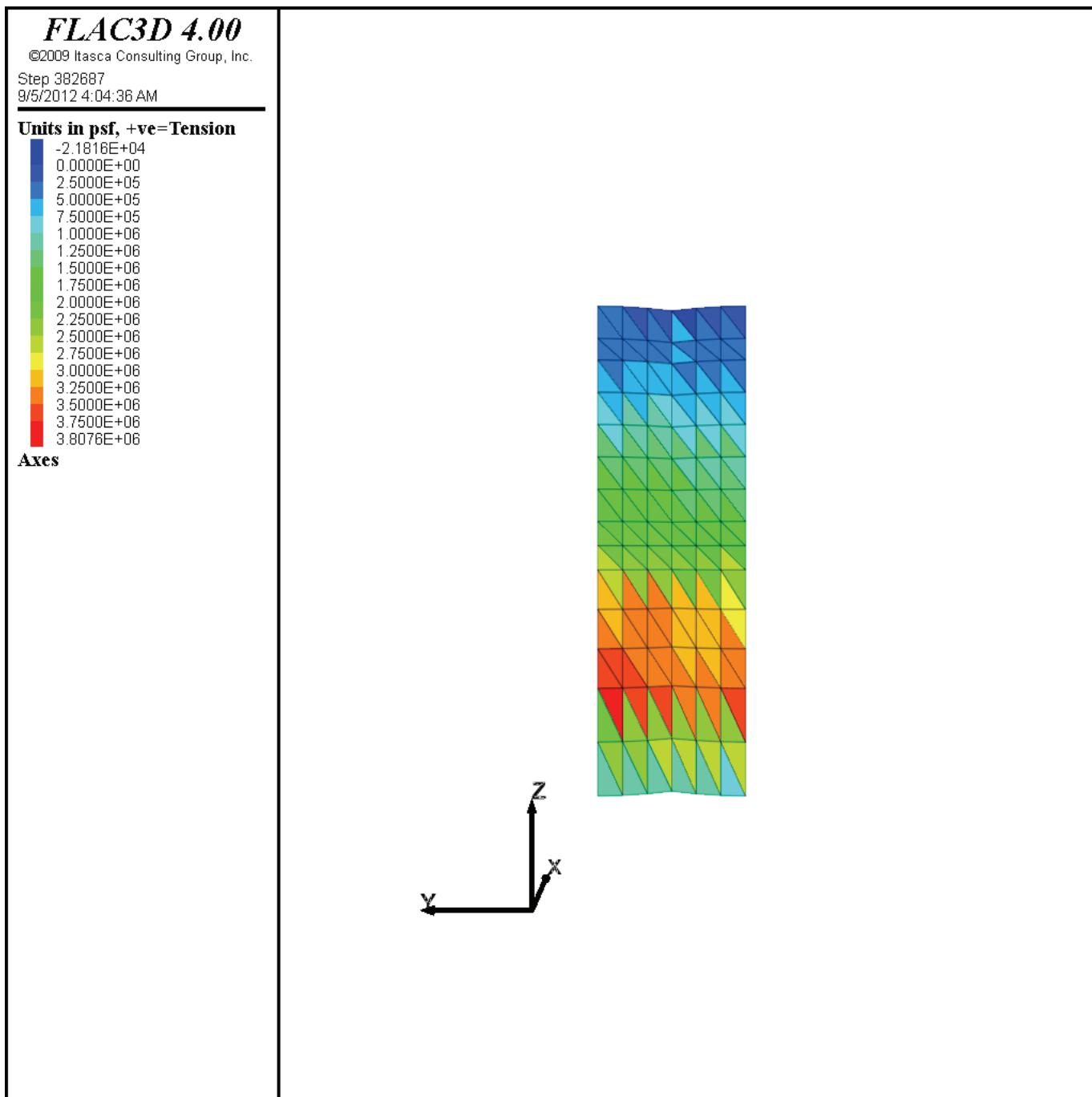


Figure F-2.1.1.b Facewall Membrane Stress – As-Built Snapshot At 10 Sec – Nisqually P0 EQ Record

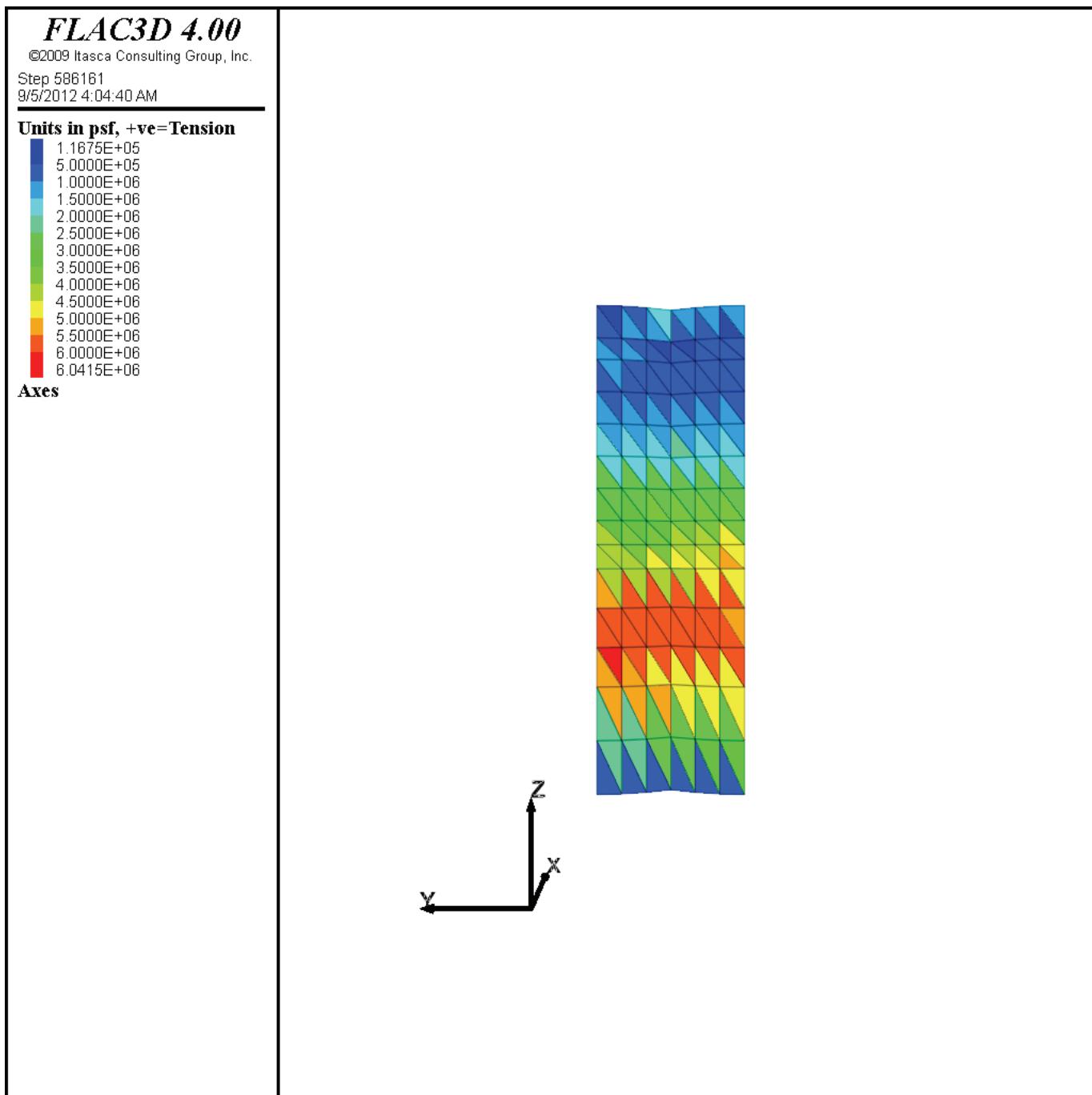


Figure F-2.1.2.b Facewall Membrane Stress – As-Built Snapshot 20 Sec – Nisqually P0 EQ Record

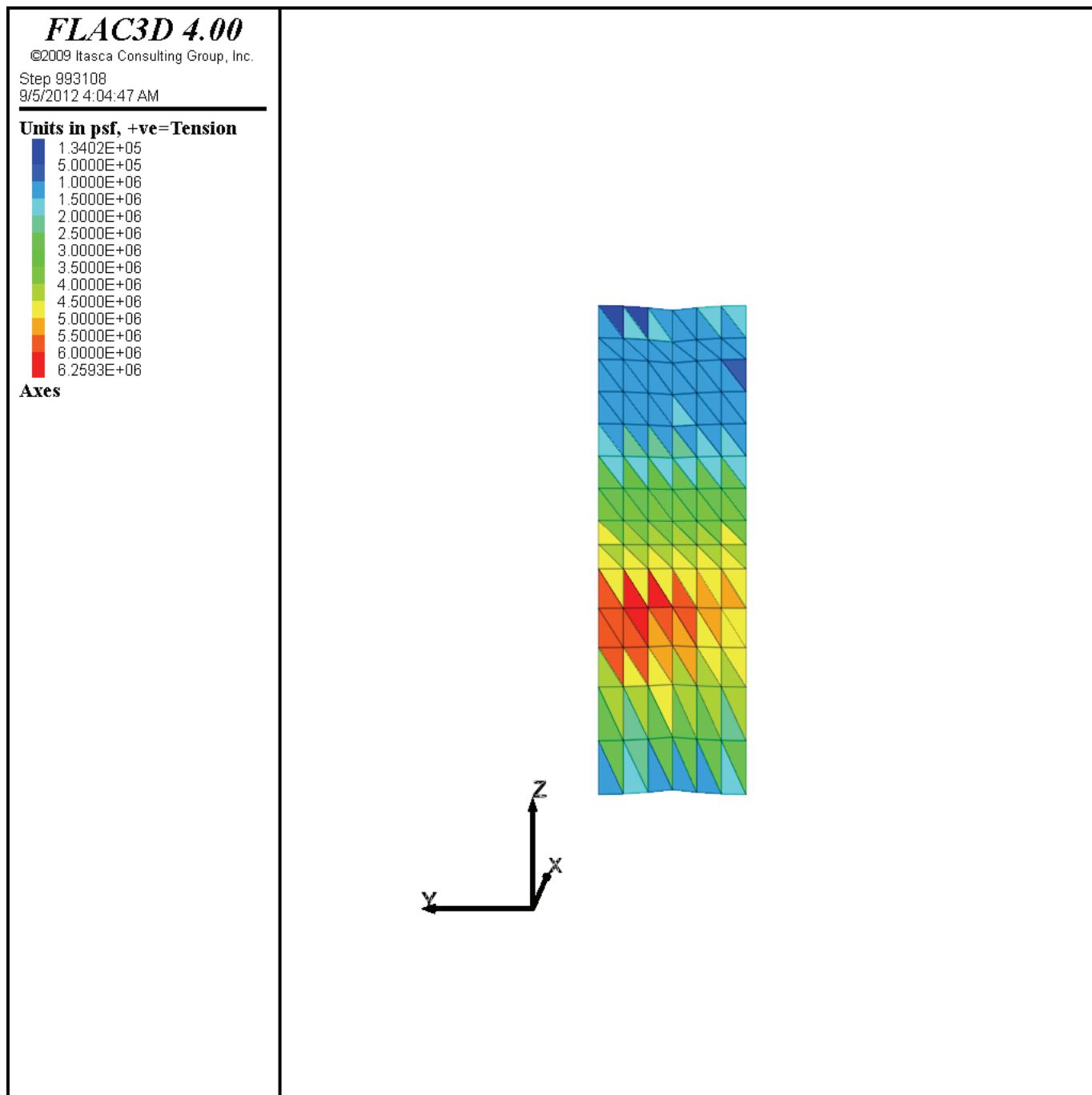


Figure F-2.1.3.b Facewall Membrane Stress – As-Built Snapshot 40 Sec – Nisqually P0 EQ Record

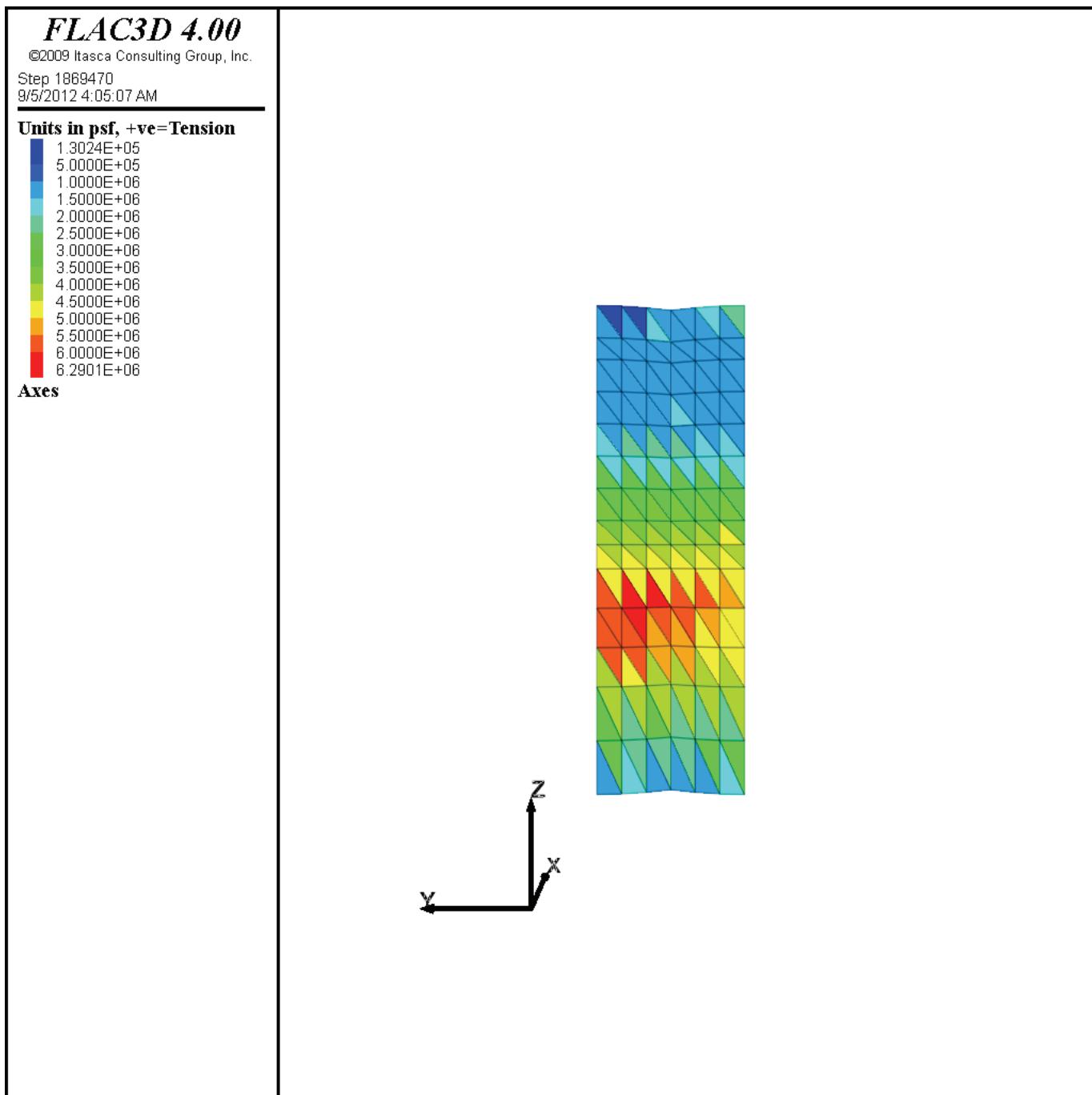


Figure F-2.1.4.b Facewall Membrane Stress – As-Built Snapshot 83 Sec – Nisqually P0 EQ Record

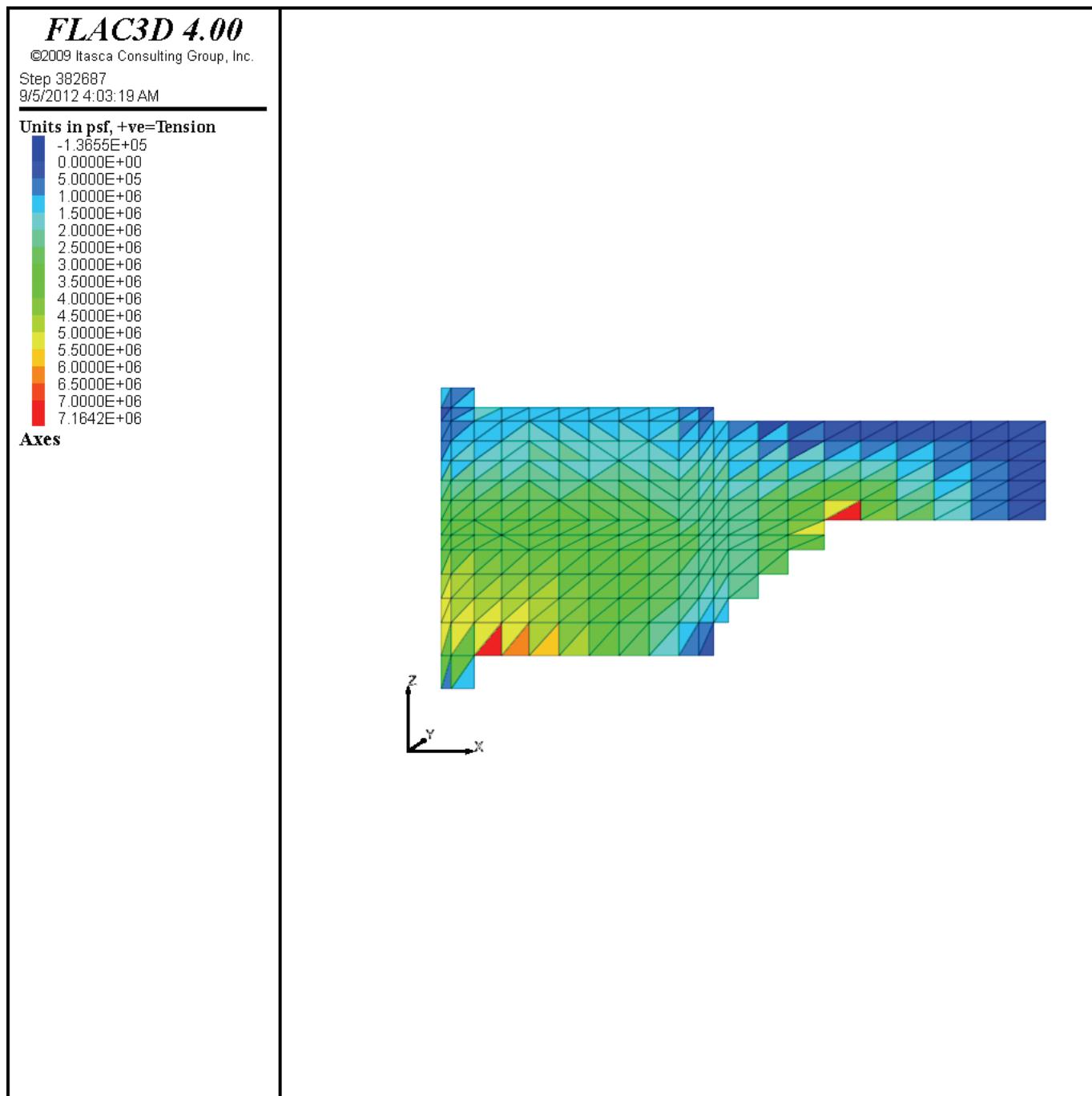


Figure F-2.1.5.b Tailwall Membrane Stress – As-Built Snapshot 10 Sec – Nisqually P0 EQ Record

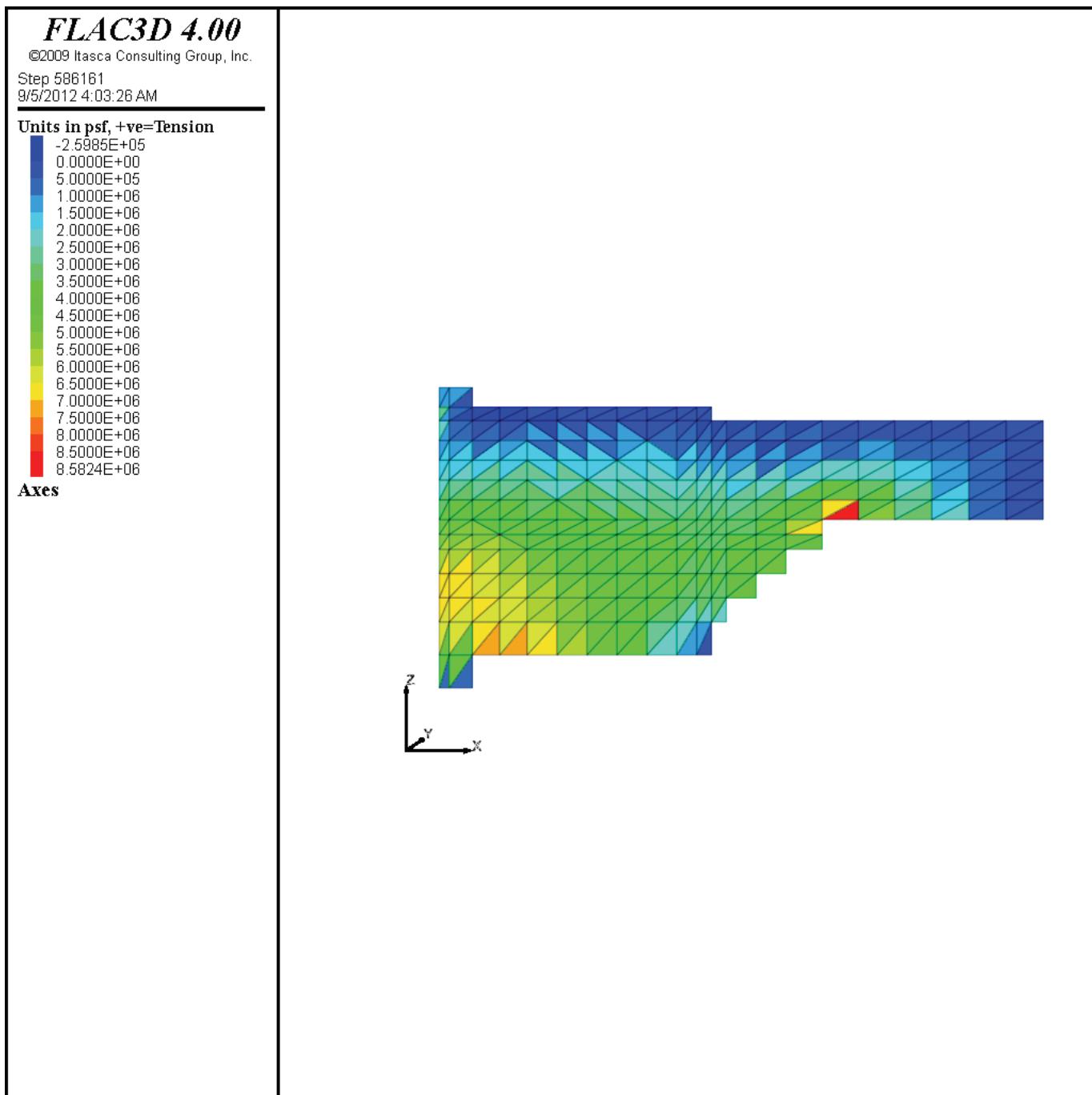


Figure F-2.1.6.b Tailwall Membrane Stress – As-Built Snapshot 20 Sec – Nisqually P0 EQ Record

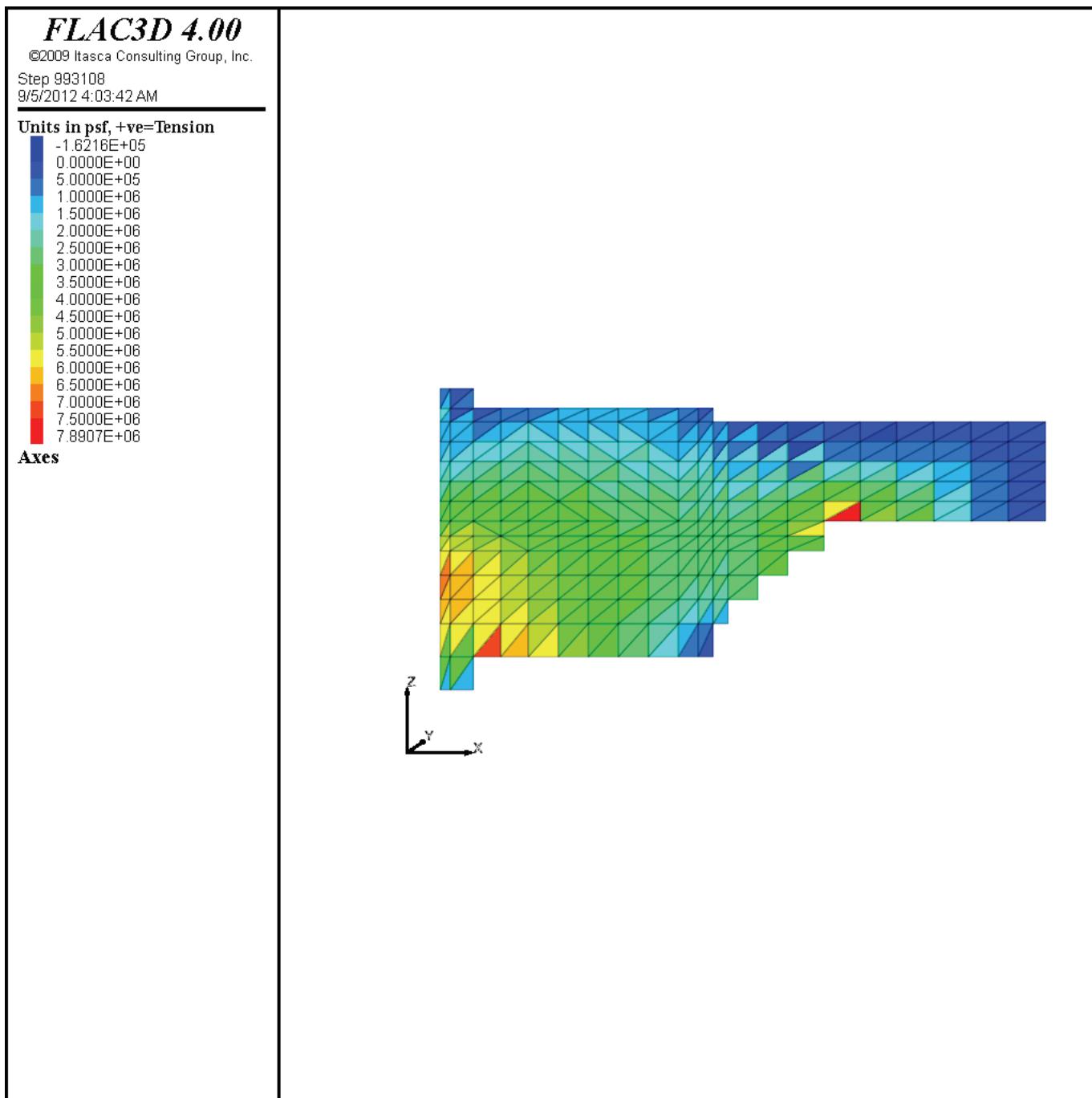


Figure F-2.1.7.b Tailwall Membrane Stress – As-Built Snapshot 40 Sec – Nisqually P0 EQ Record

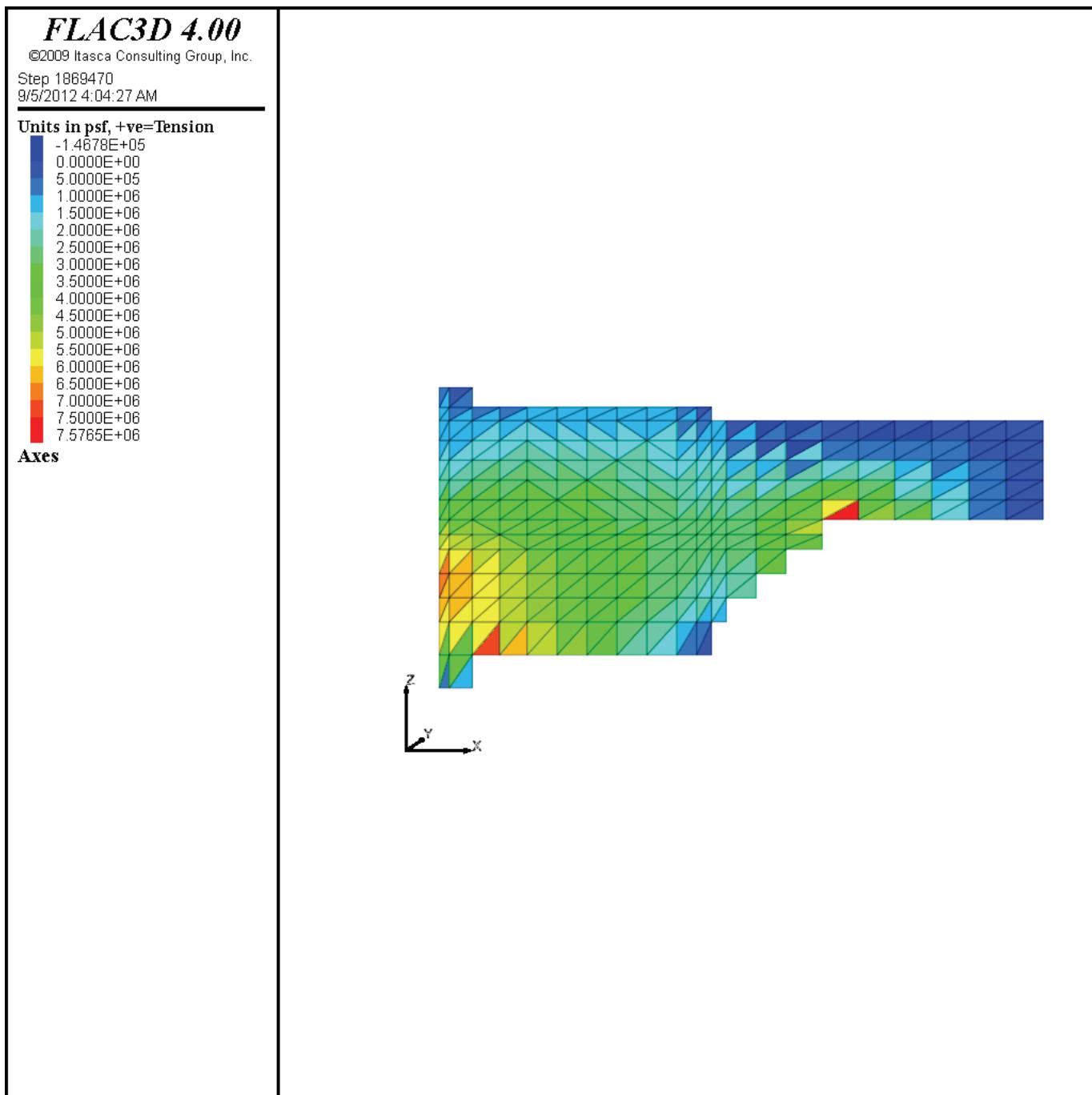


Figure F-2.1.8.b Tailwall Membrane Stress – As-Built Snapshot 83 Sec – Nisqually P0 EQ Record

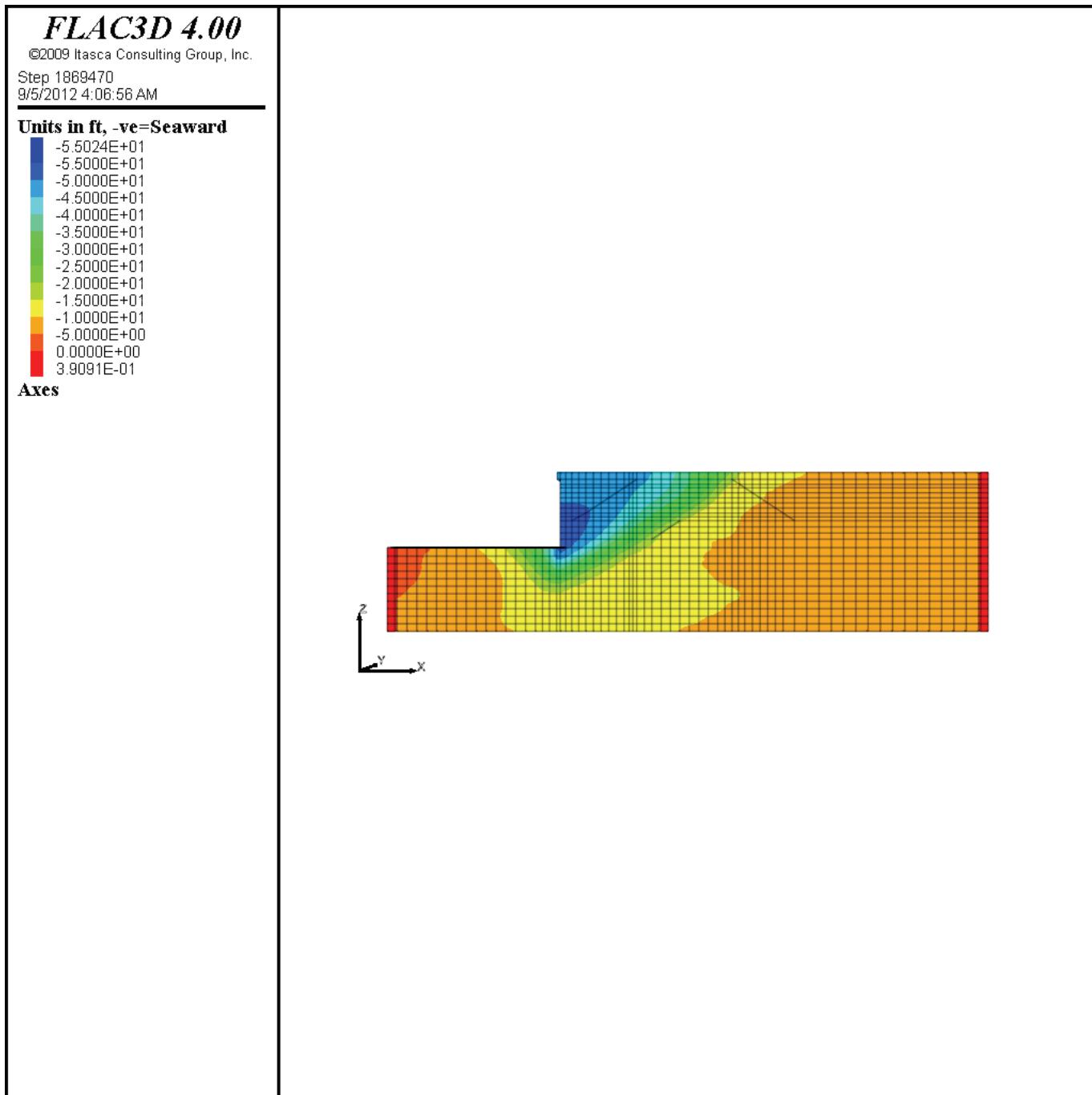


Figure F-2.1.9.b Permanent Soil X-Displacement Contours – As-Built – Nisqually P0 EQ Record

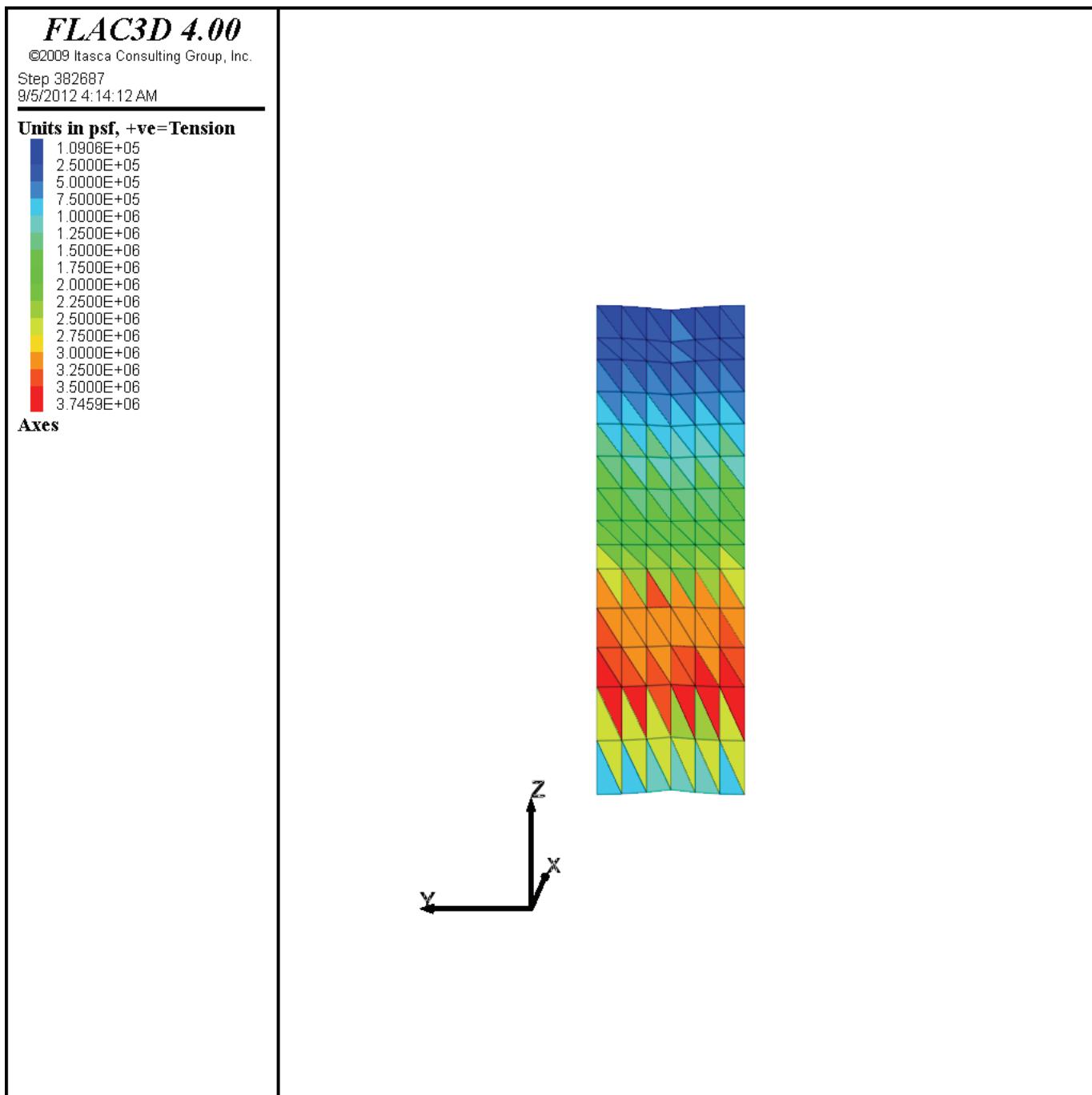


Figure F-2.1.1.c Facewall Membrane Stress – As-Built Snapshot At 10 Sec – Nisqually P90 EQ Record

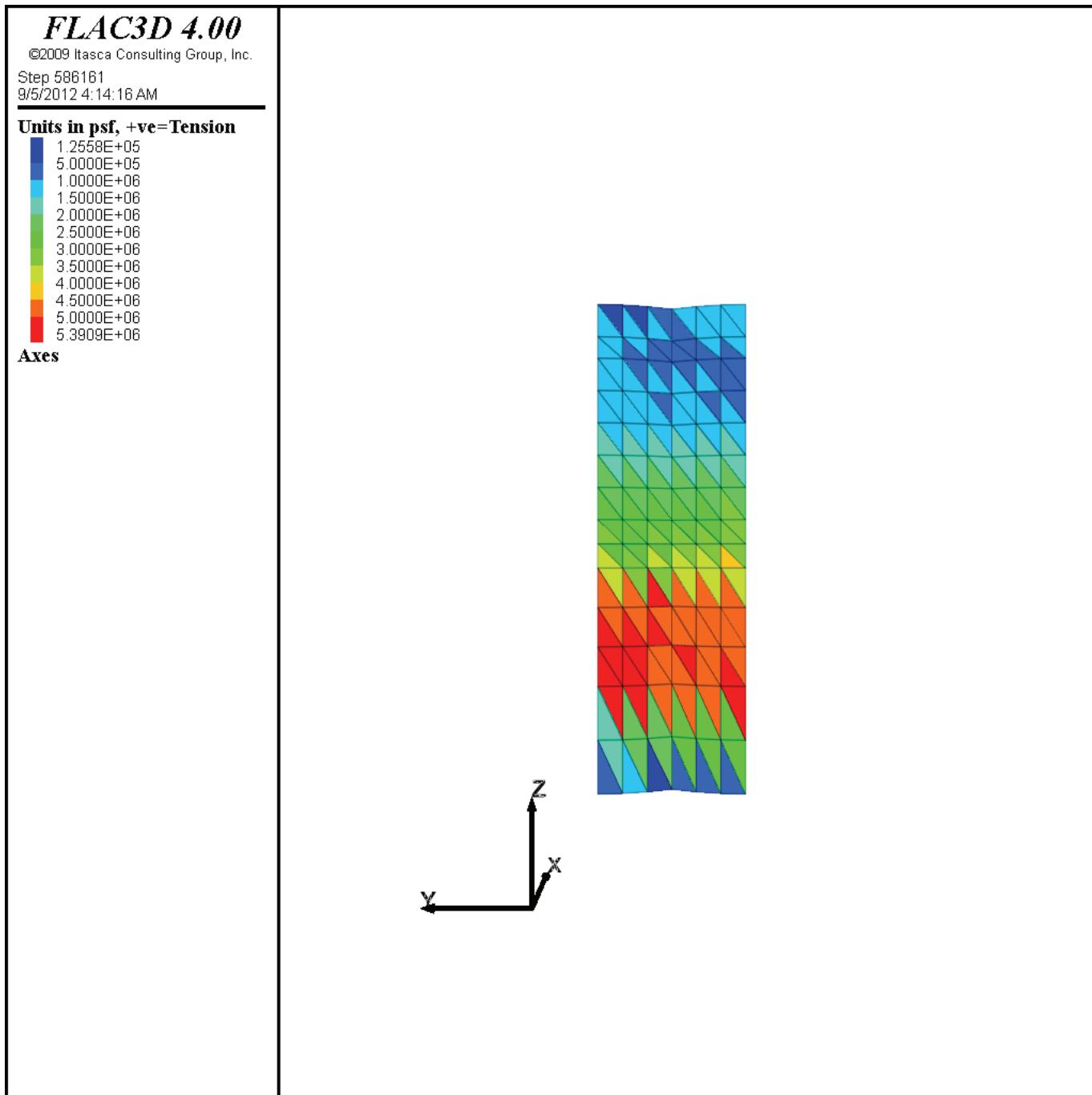


Figure F-2.1.2.c Facewall Membrane Stress – As-Built Snapshot 20 Sec – Nisqually P90 EQ Record

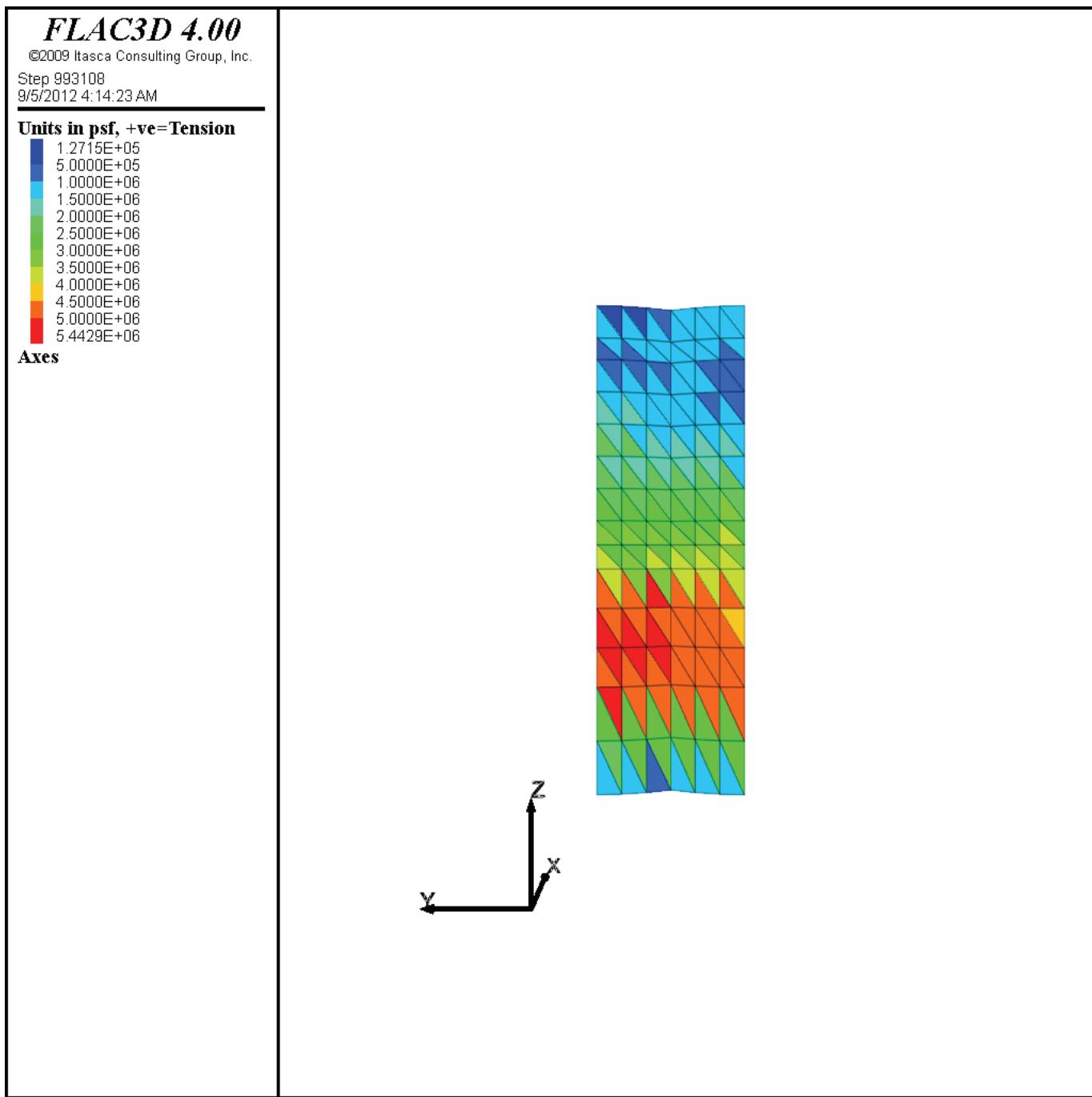


Figure F-2.1.3.c Facewall Membrane Stress – As-Built Snapshot 40 Sec – Nisqually P90 EQ Record

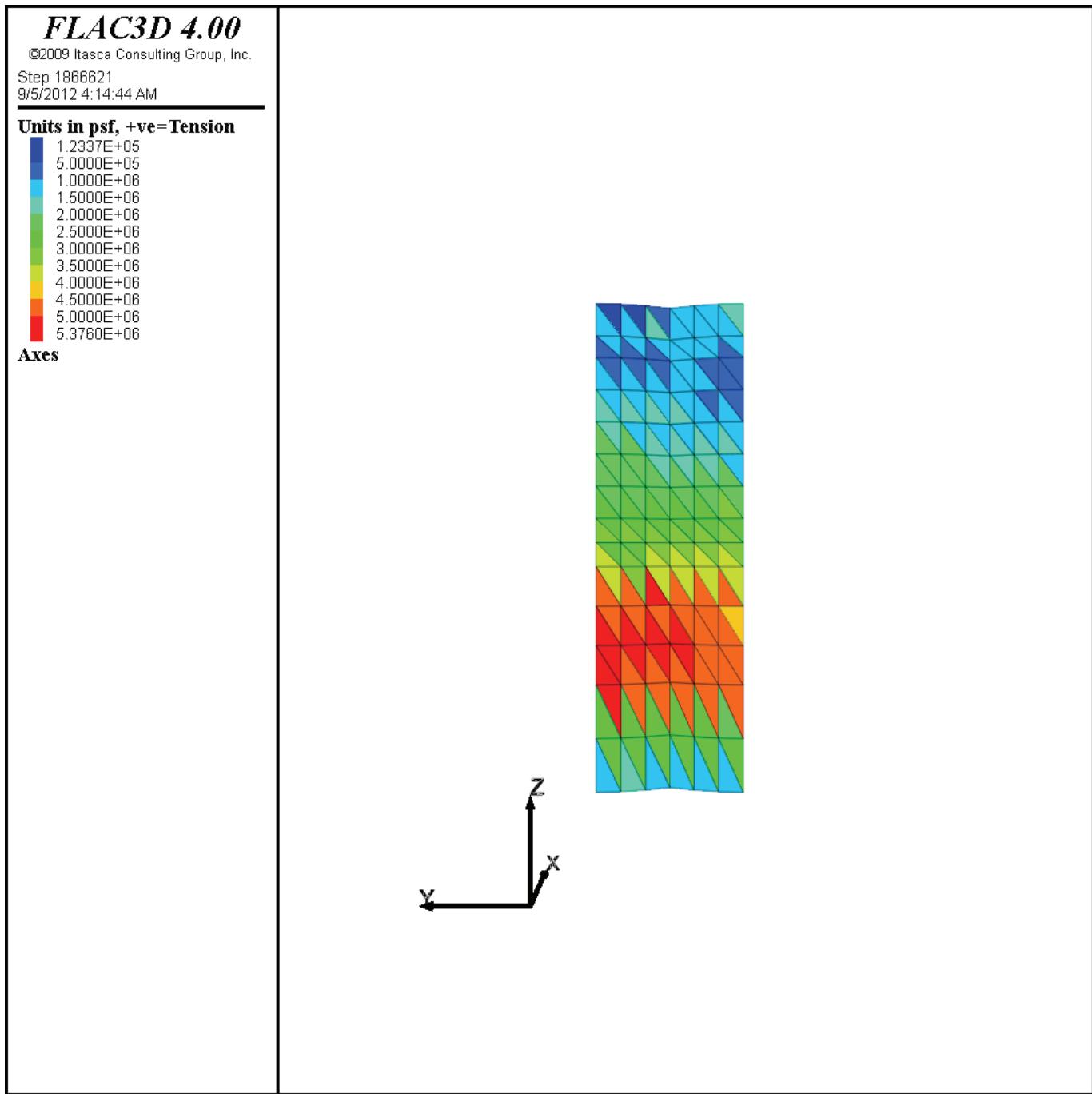


Figure F-2.1.4.c Facewall Membrane Stress – As-Built Snapshot 83 Sec – Nisqually P90 EQ Record

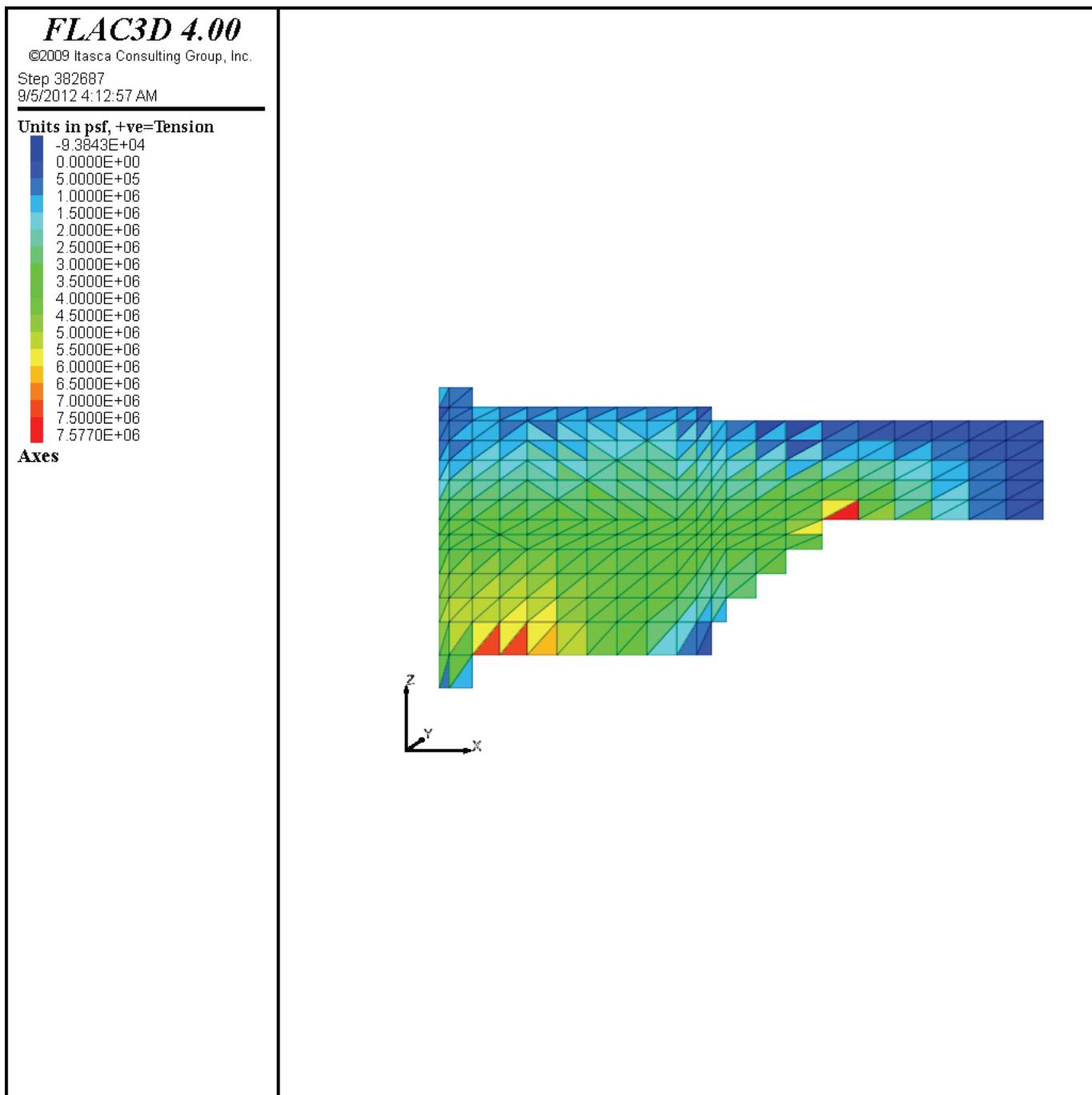


Figure F-2.1.5.c Tailwall Membrane Stress – As-Built Snapshot 10 Sec – Nisqually P90 EQ Record

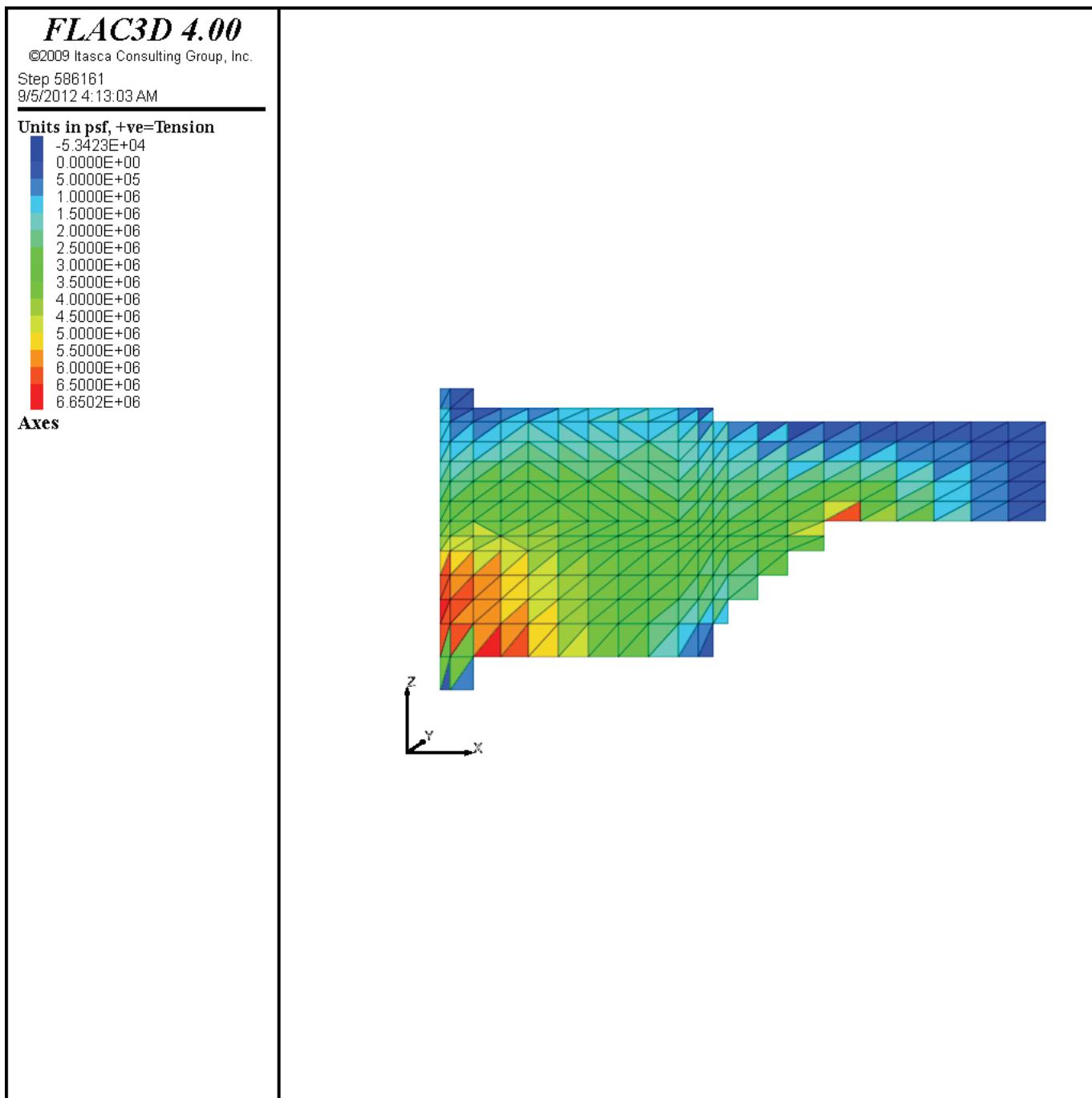


Figure F-2.1.6.c Tailwall Membrane Stress – As-Built Snapshot 20 Sec – Nisqually P90 EQ Record

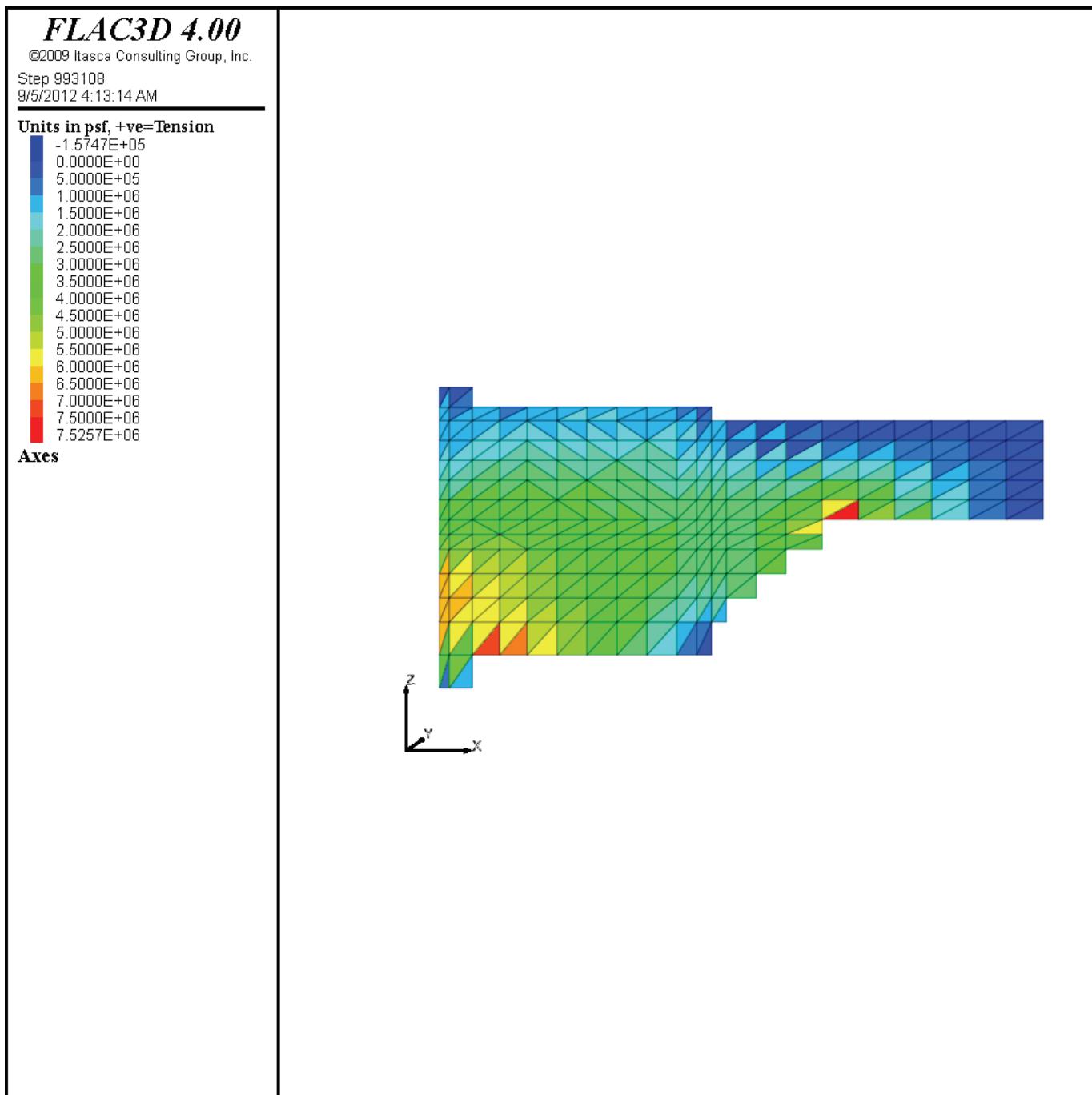


Figure F-2.1.7.c Tailwall Membrane Stress – As-Built Snapshot 40 Sec – Nisqually P90 EQ Record

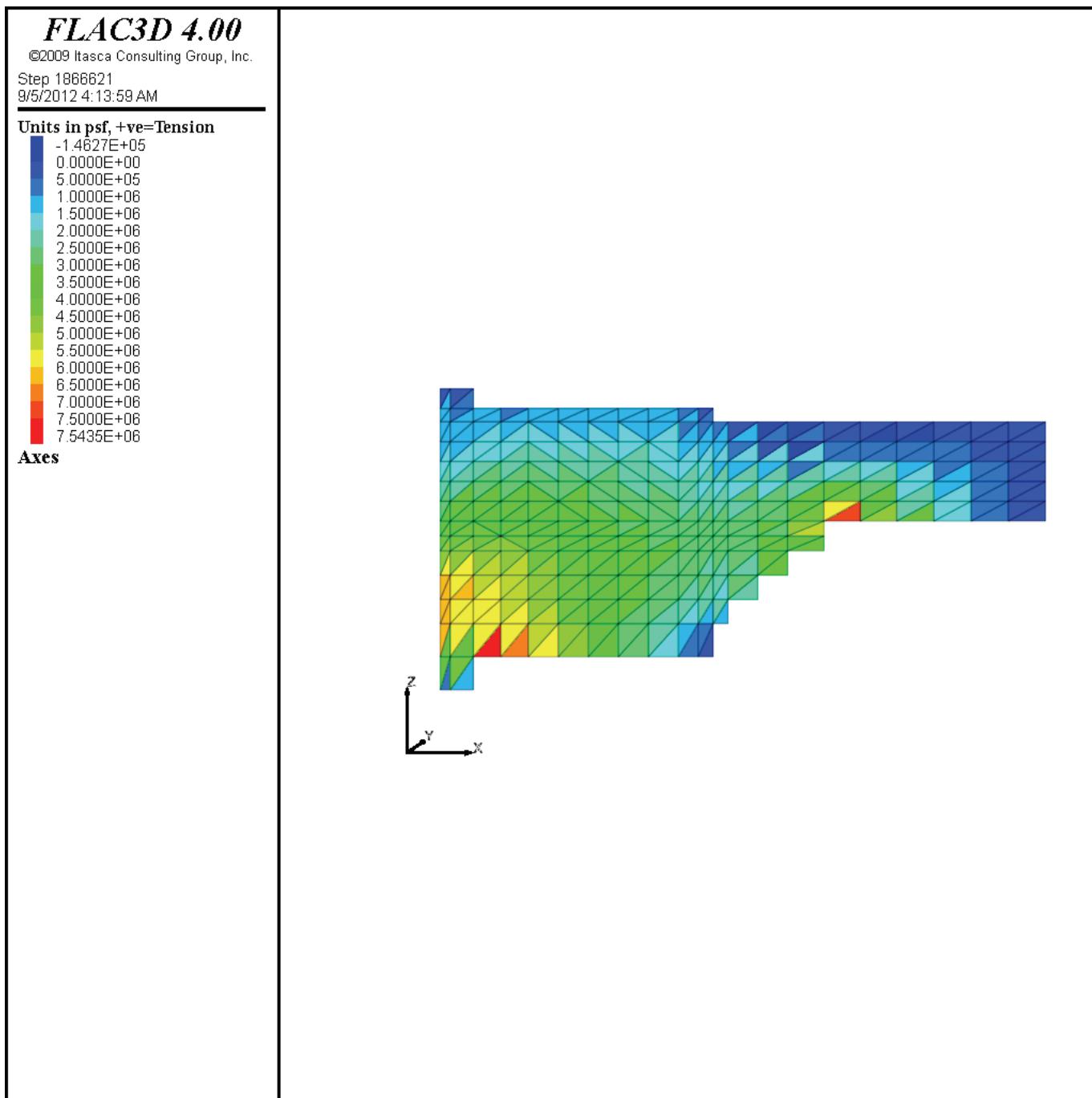


Figure F-2.1.8.c Tailwall Membrane Stress – As-Built Snapshot 83 Sec – Nisqually P90 EQ Record

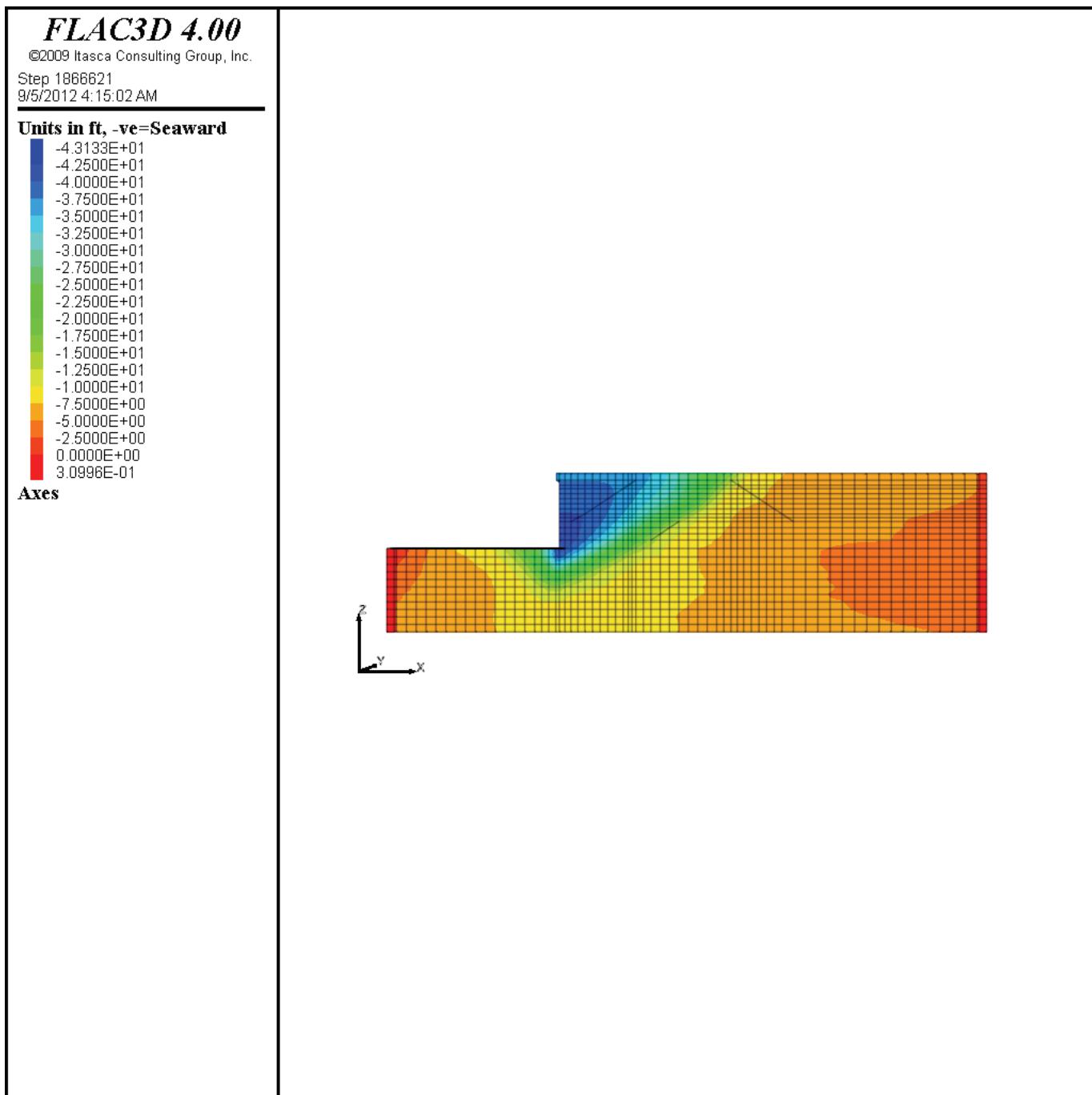


Figure F-2.1.9.c Permanent Soil X-Displacement Contours – As-Built – Nisqually P90 EQ Record

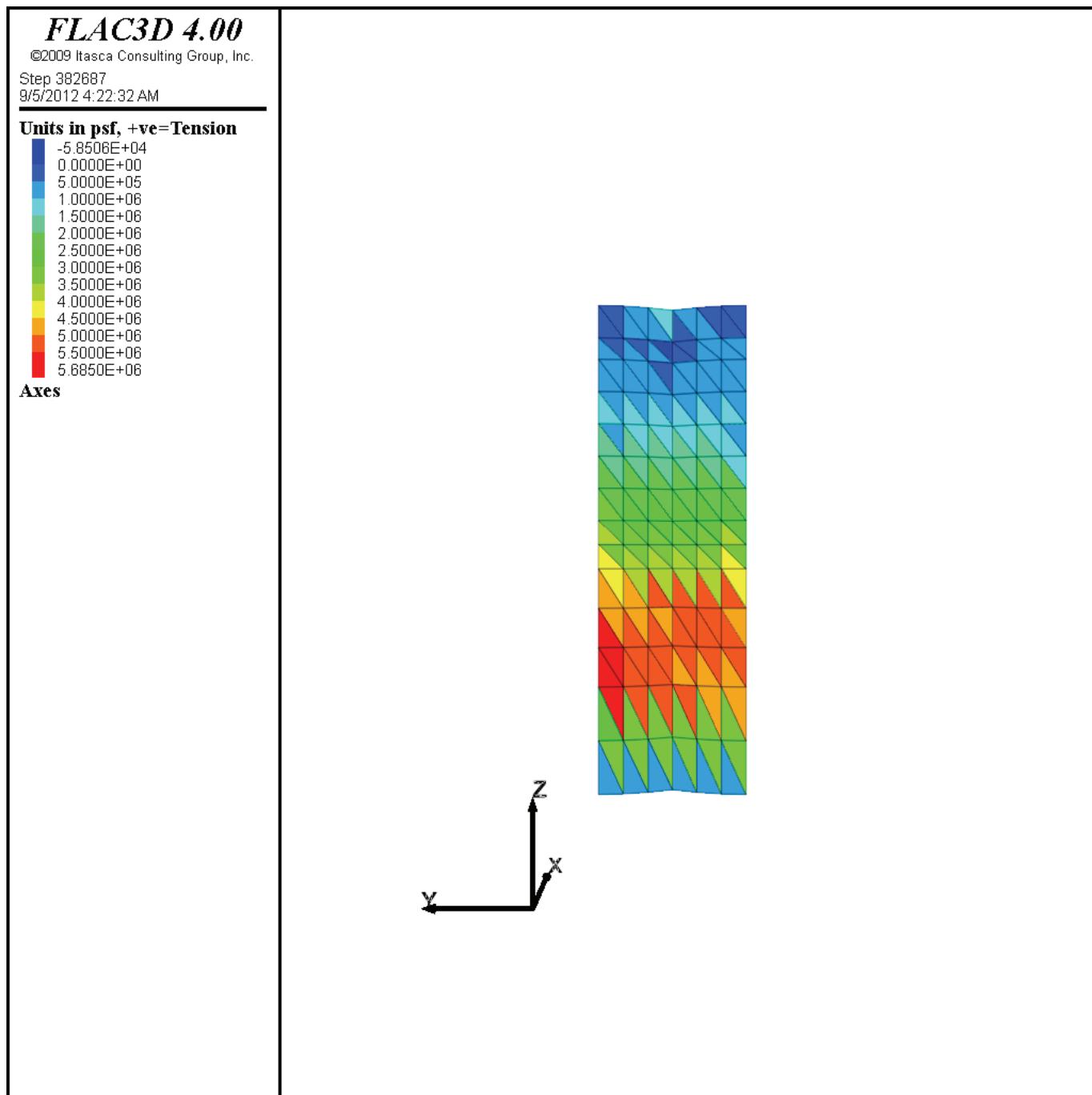


Figure F-2.1.1.d Facewall Membrane Stress – As-Built Snapshot At 10 Sec – Western Washington EQ Record

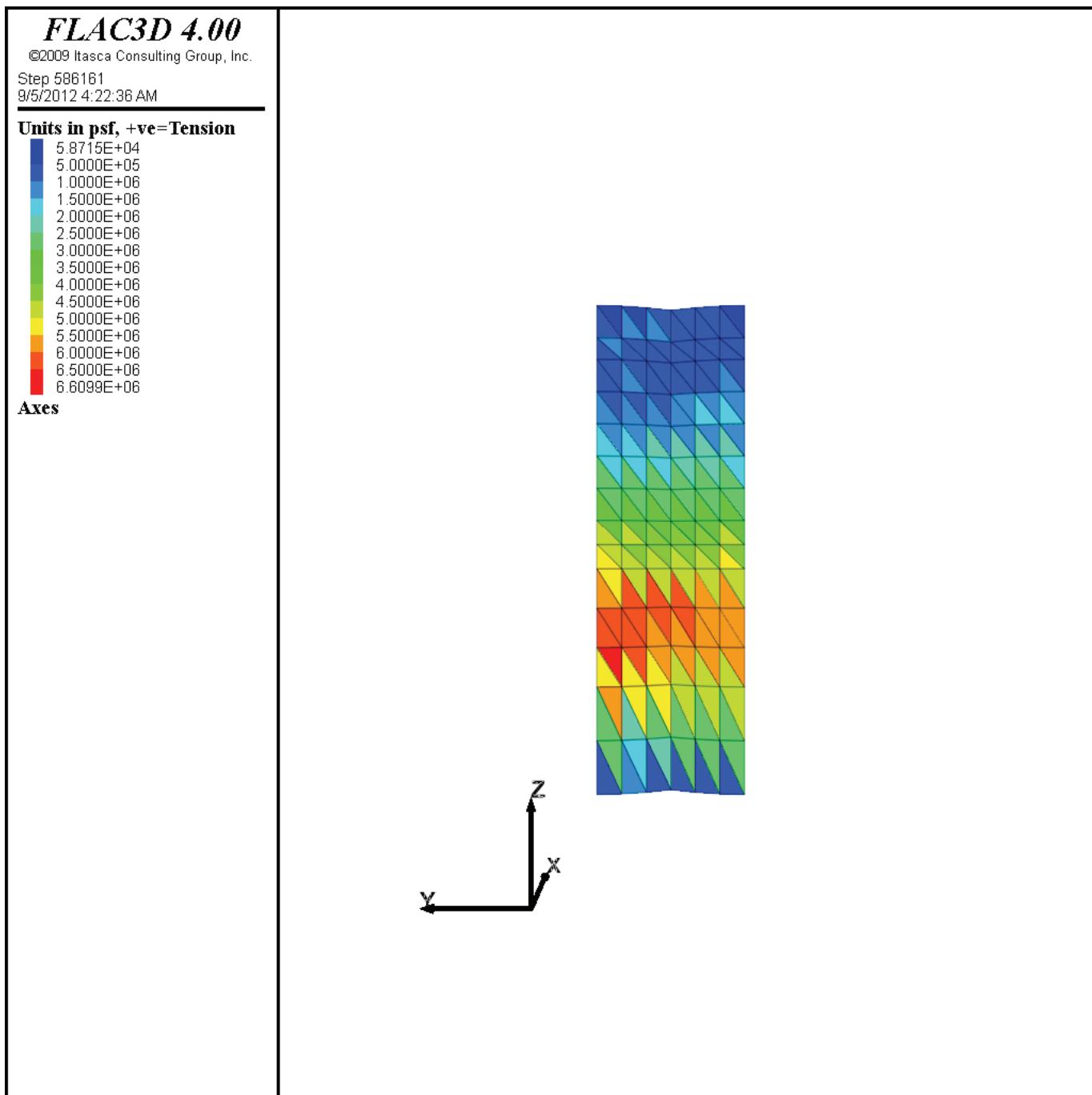


Figure F-2.1.2.d Facewall Membrane Stress – As-Built Snapshot 20 Sec – Western Washington EQ Record

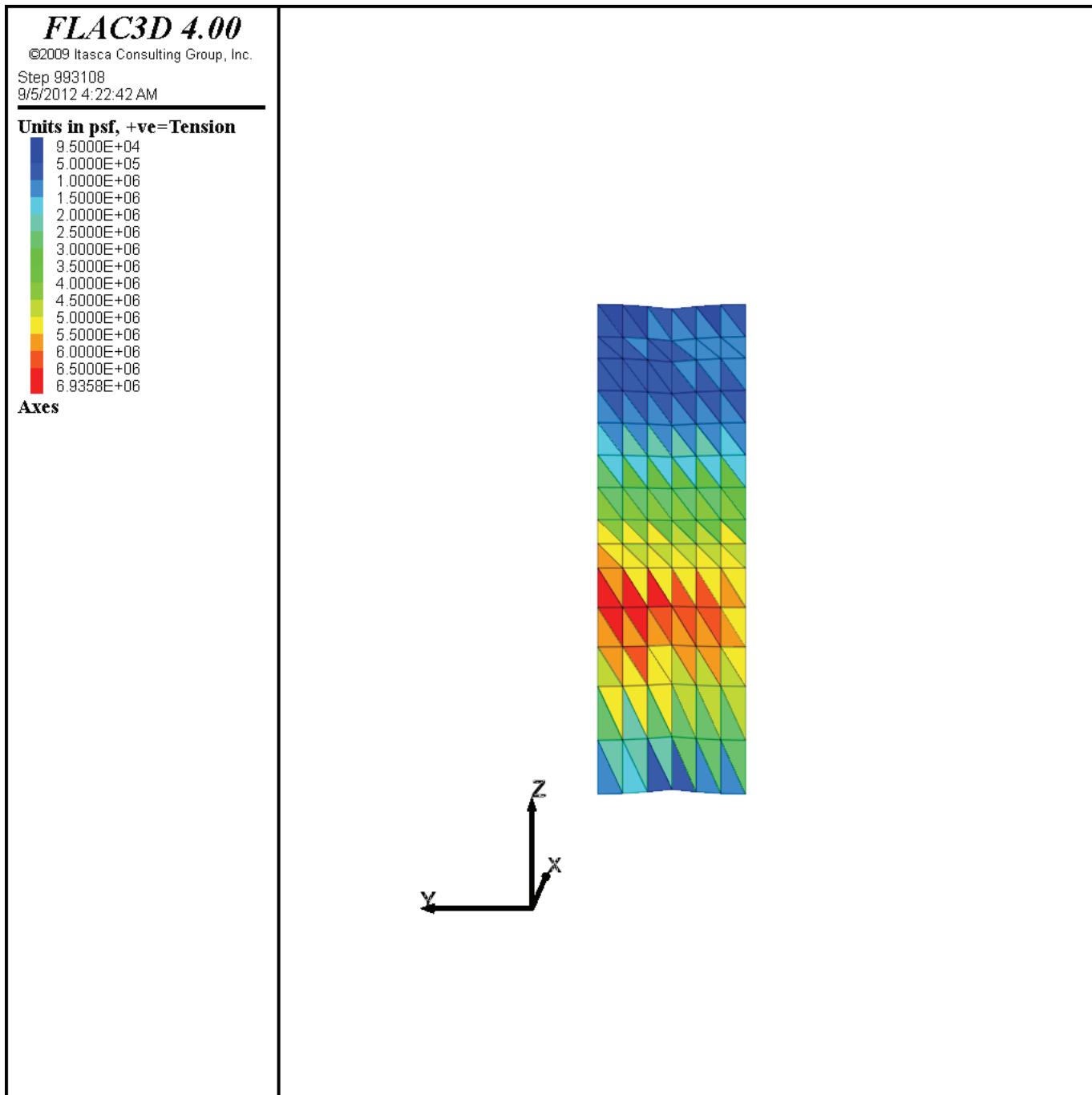


Figure F-2.1.3.d Facewall Membrane Stress – As-Built Snapshot 40 Sec – Western Washington EQ Record

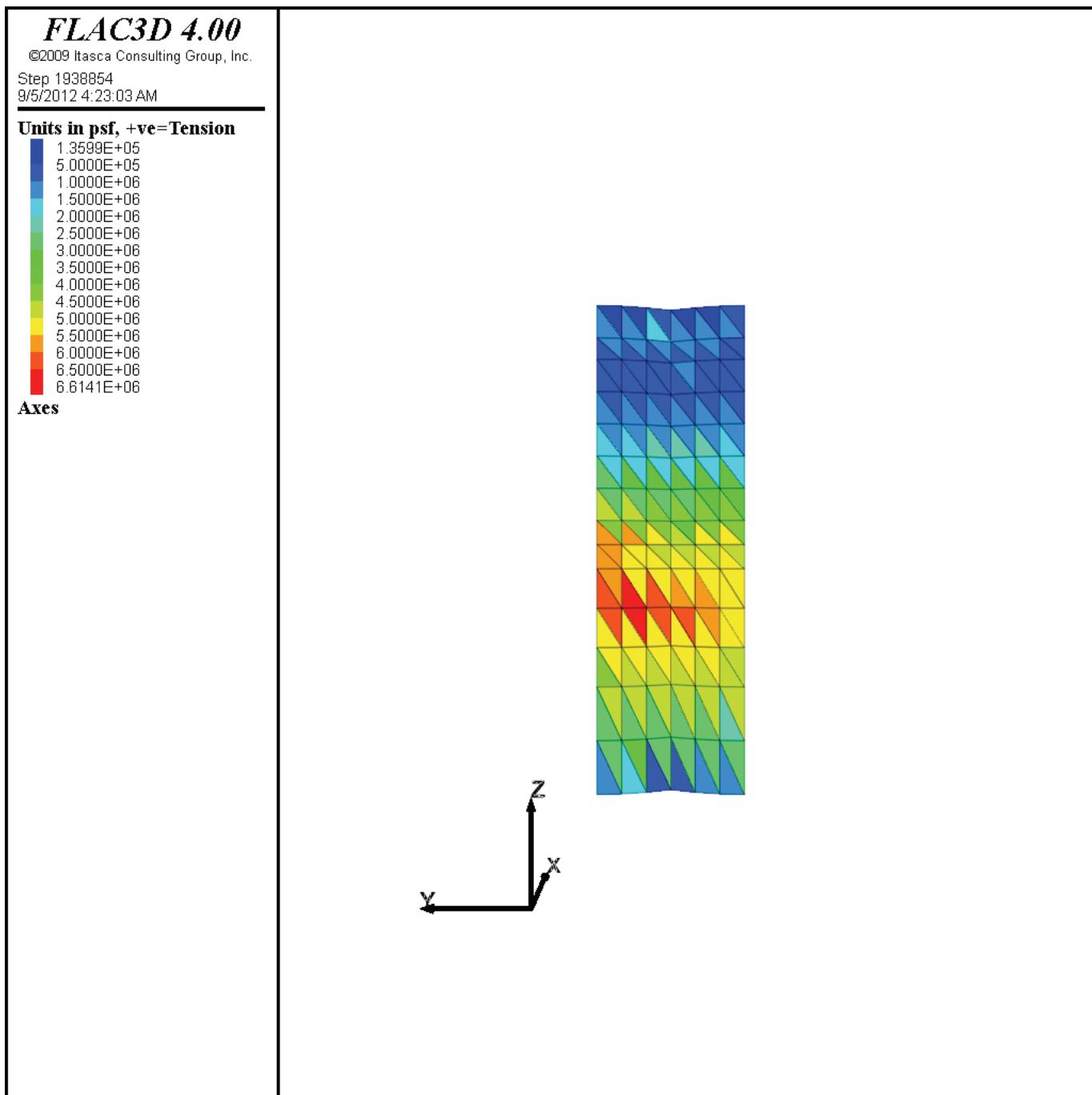


Figure F-2.1.4.d Facewall Membrane Stress – As-Built Snapshot 87 Sec – Western Washington EQ Record

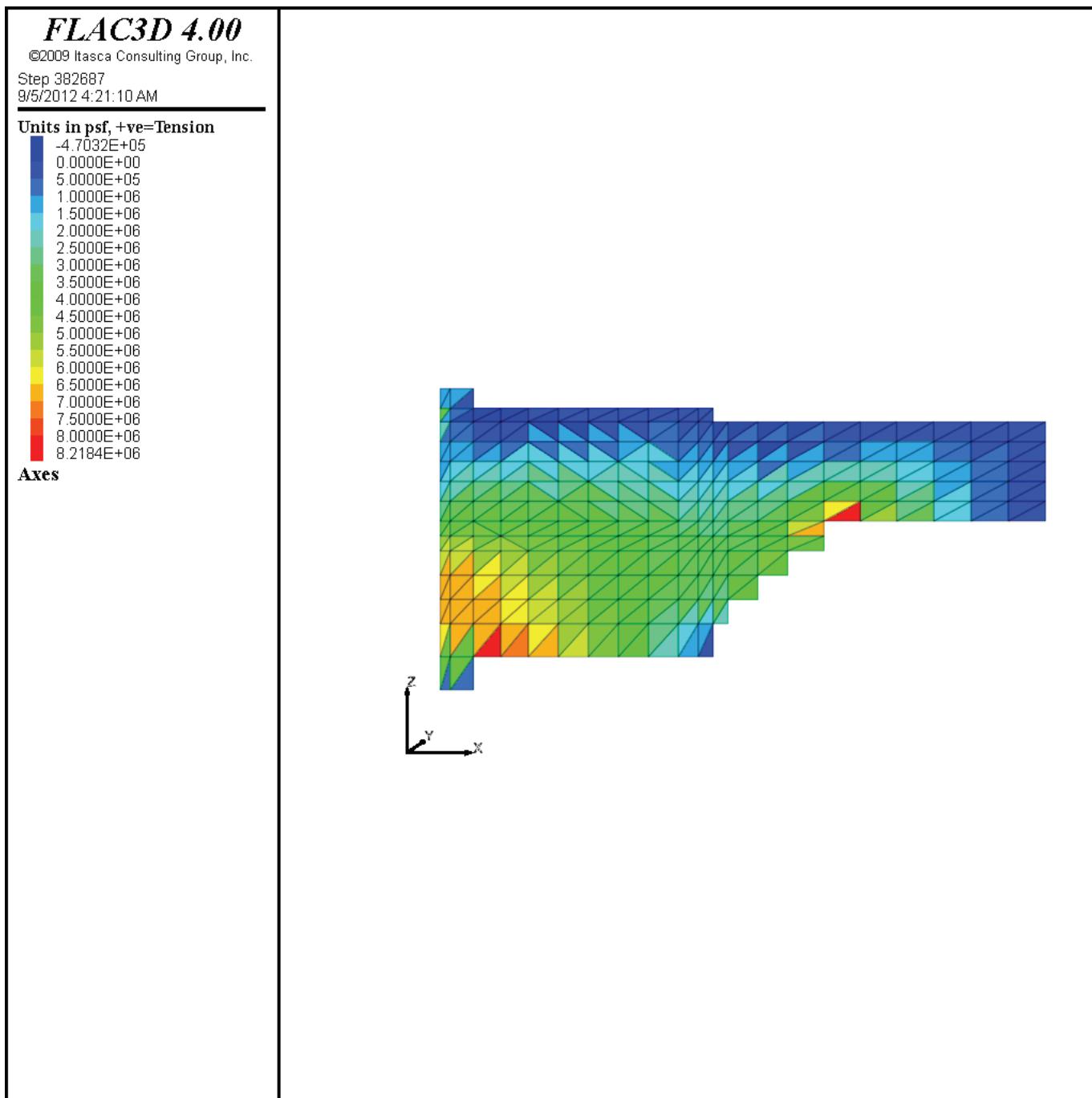


Figure F-2.1.5.d Tailwall Membrane Stress – As-Built Snapshot 10 Sec – Western Washington EQ Record

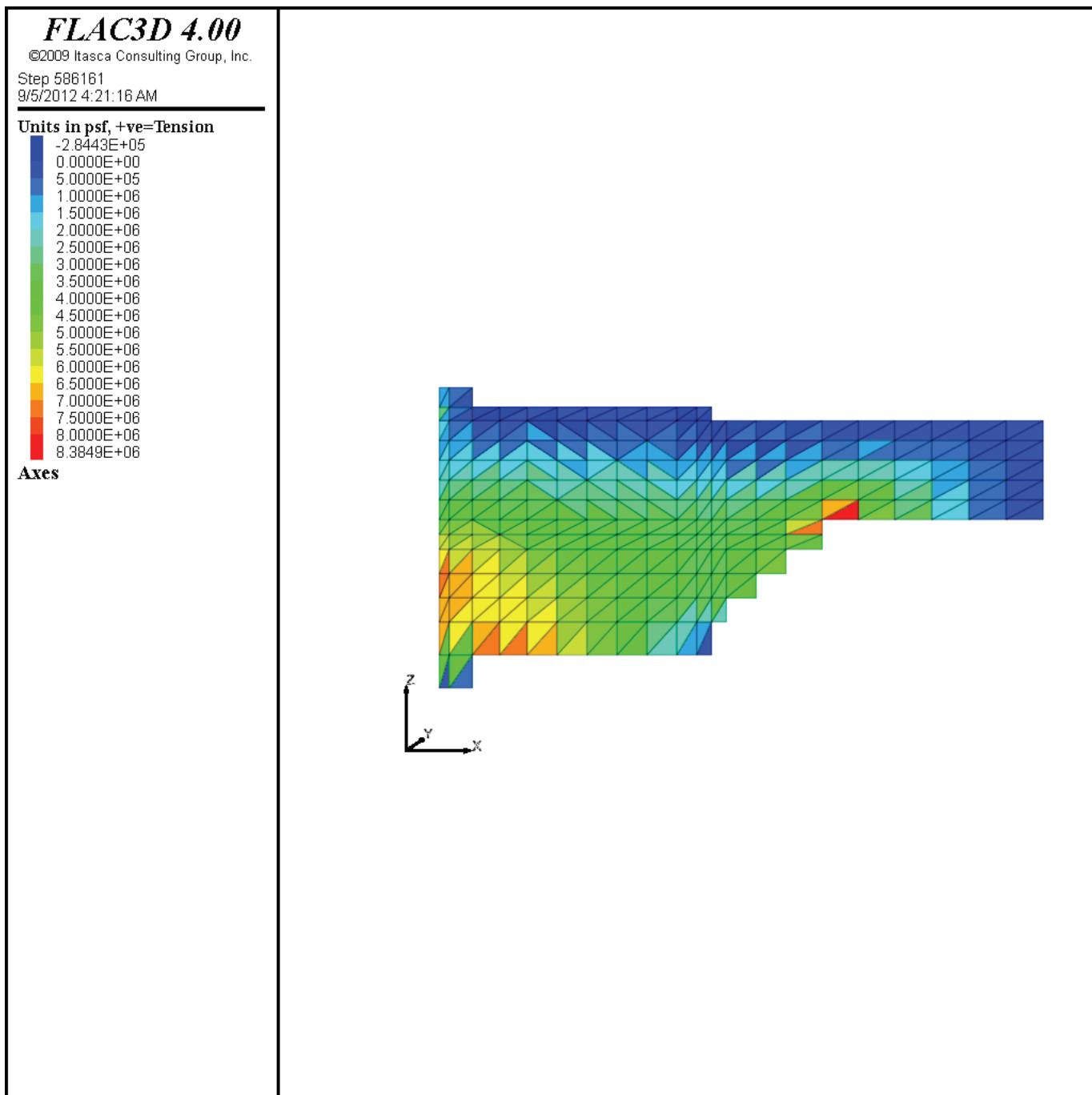


Figure F-2.1.6.d Tailwall Membrane Stress – As-Built Snapshot 20 Sec – Western Washington EQ Record

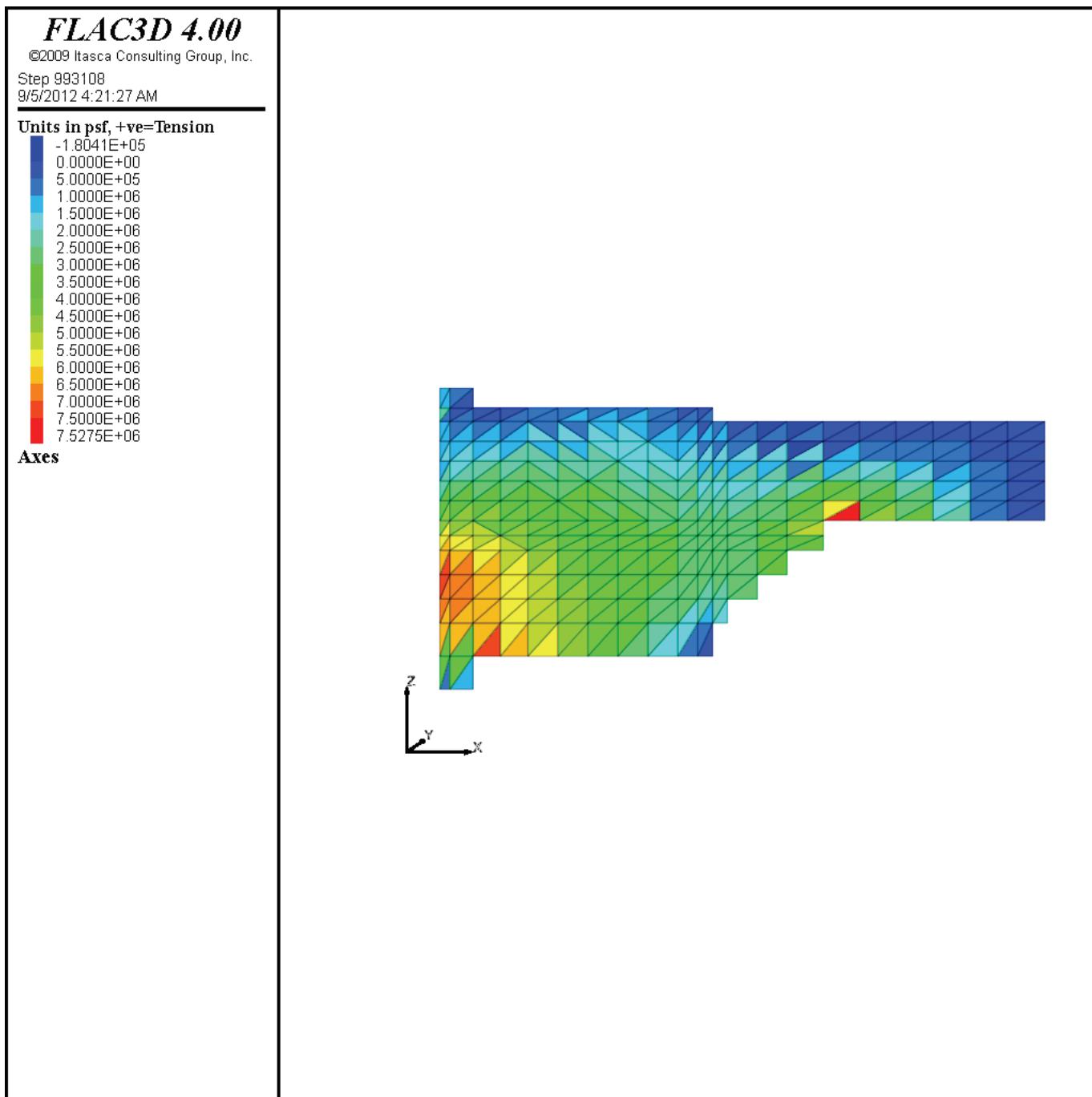


Figure F-2.1.7.d Tailwall Membrane Stress – As-Built Snapshot 40 Sec – Western Washington EQ Record

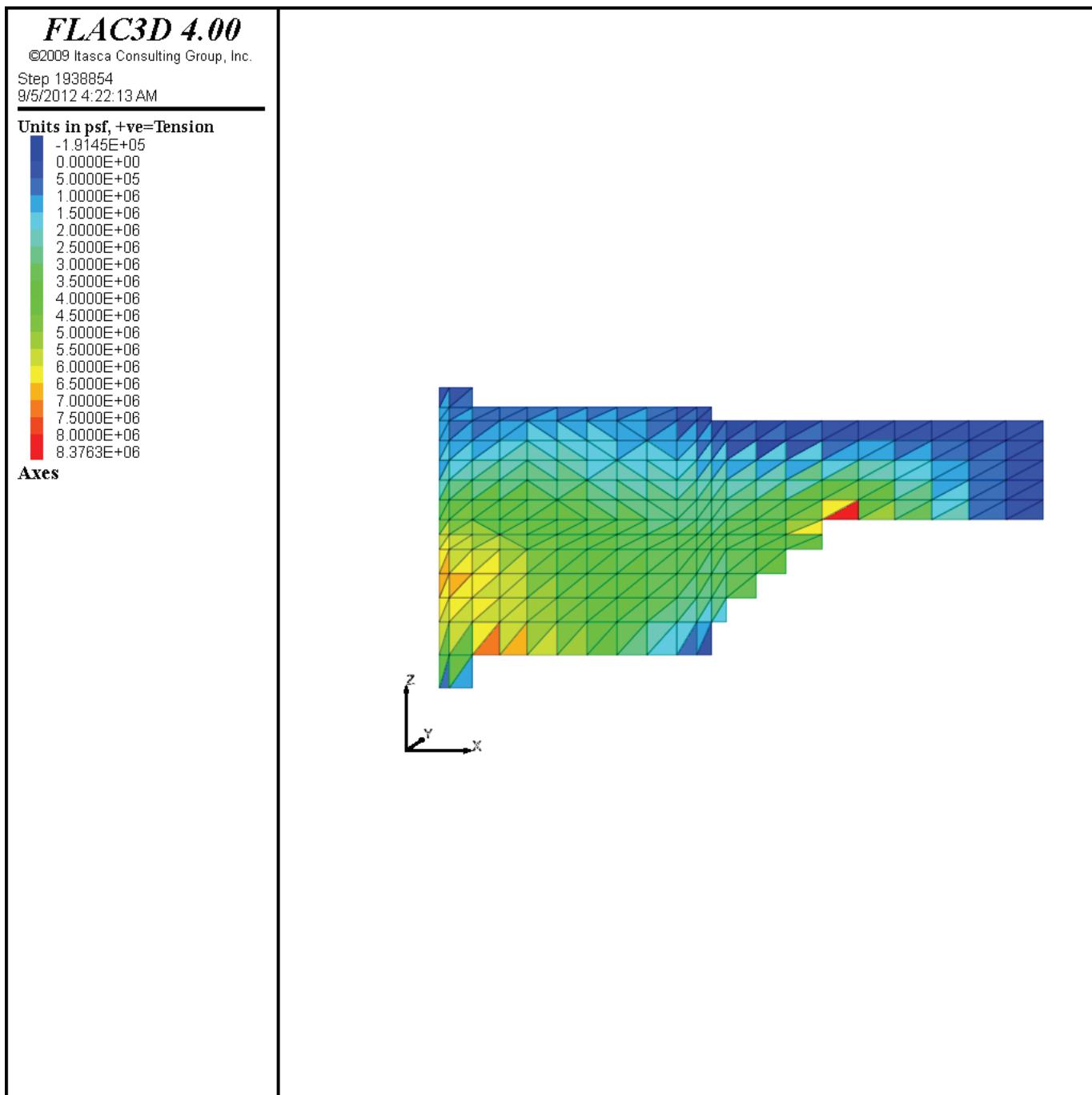


Figure F-2.1.8.d Tailwall Membrane Stress – As-Built Snapshot 87 Sec – Western Washington EQ Record

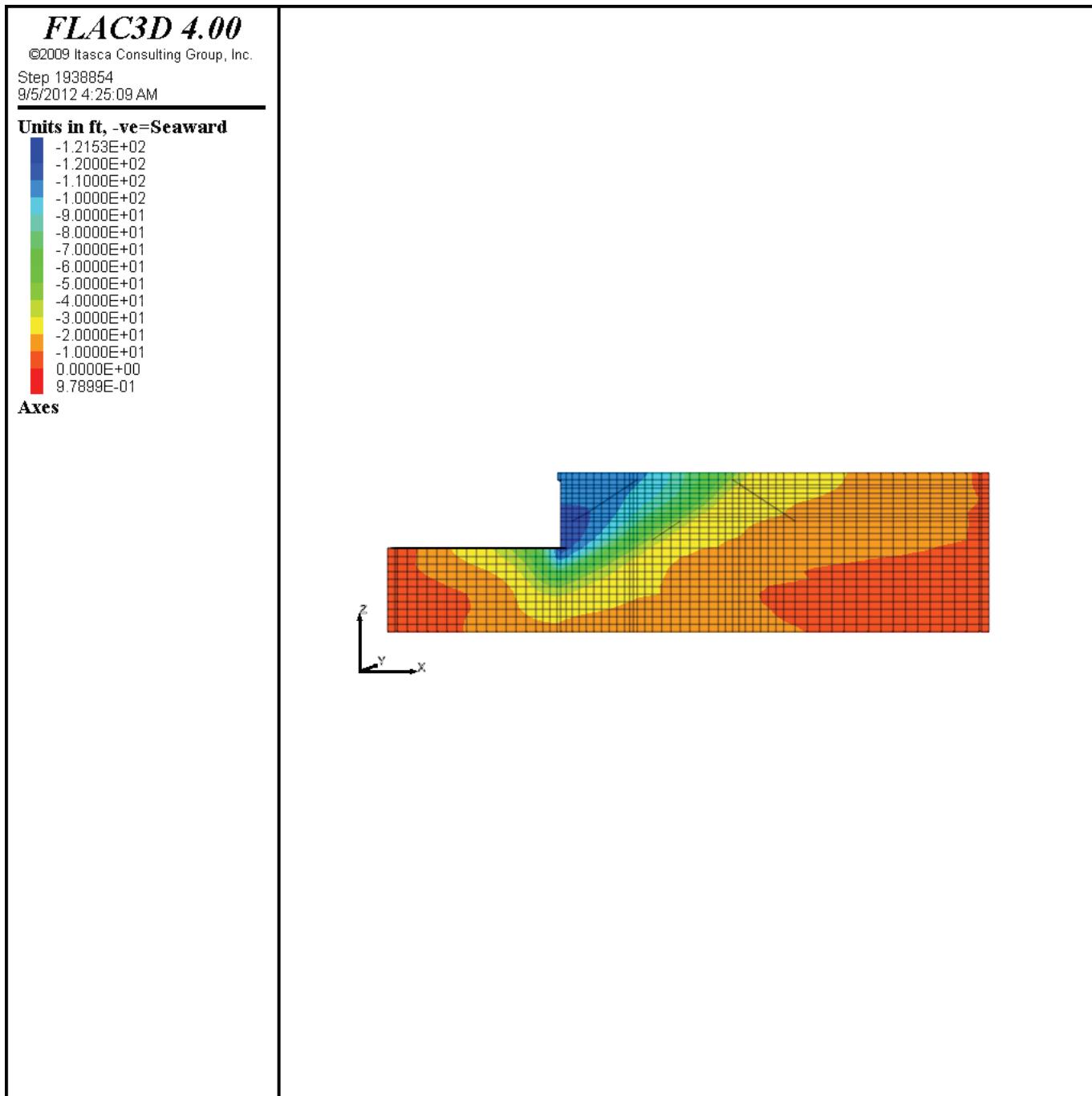


Figure F-2.1.9.d Permanent Soil X-Displacement Contours – As-Built – Western Washington EQ Record

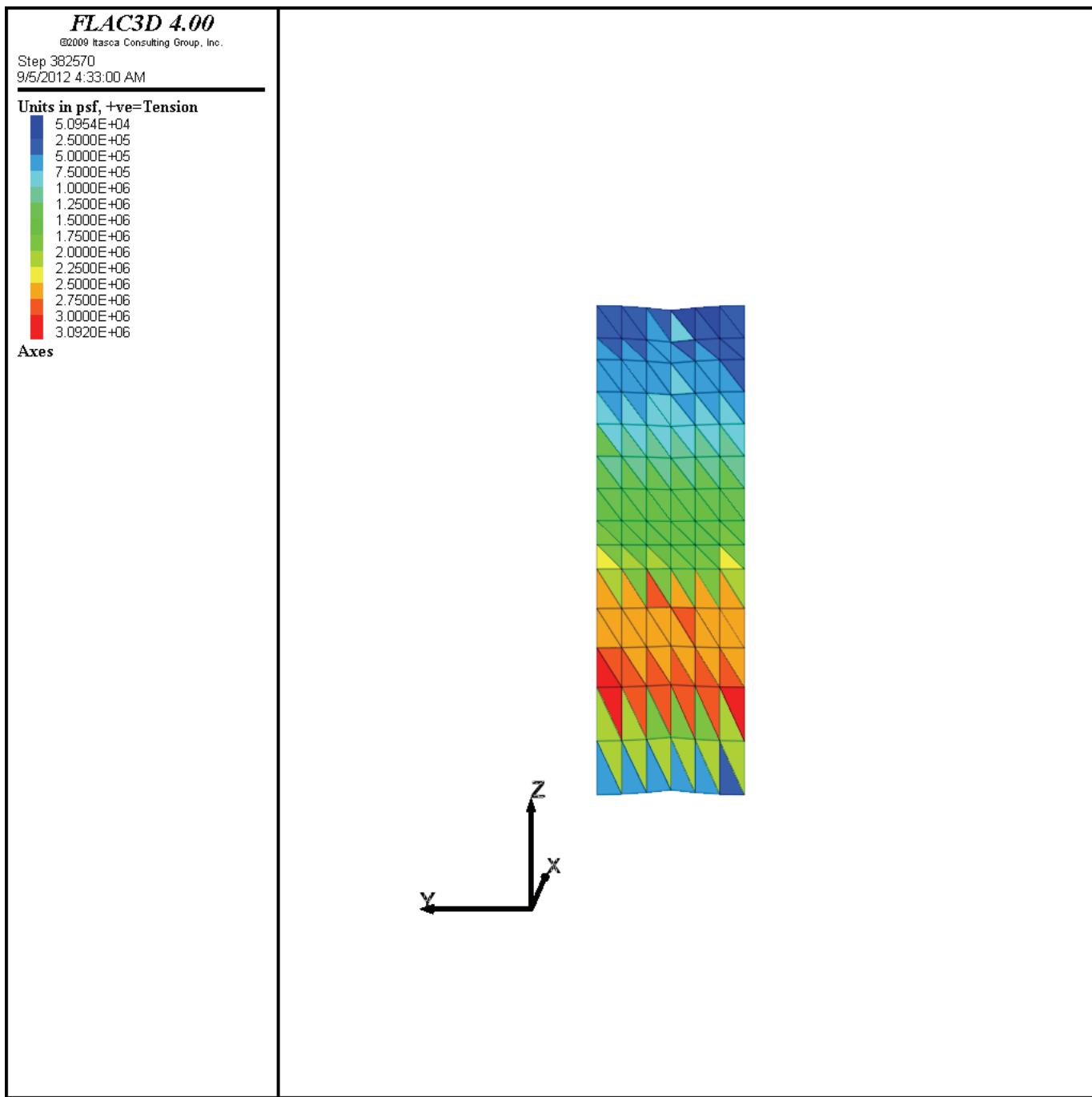


Figure F-2.2.1.a Facewall Membrane Stress – As-Built Snapshot At 10 Sec – Michoacan EQ Record

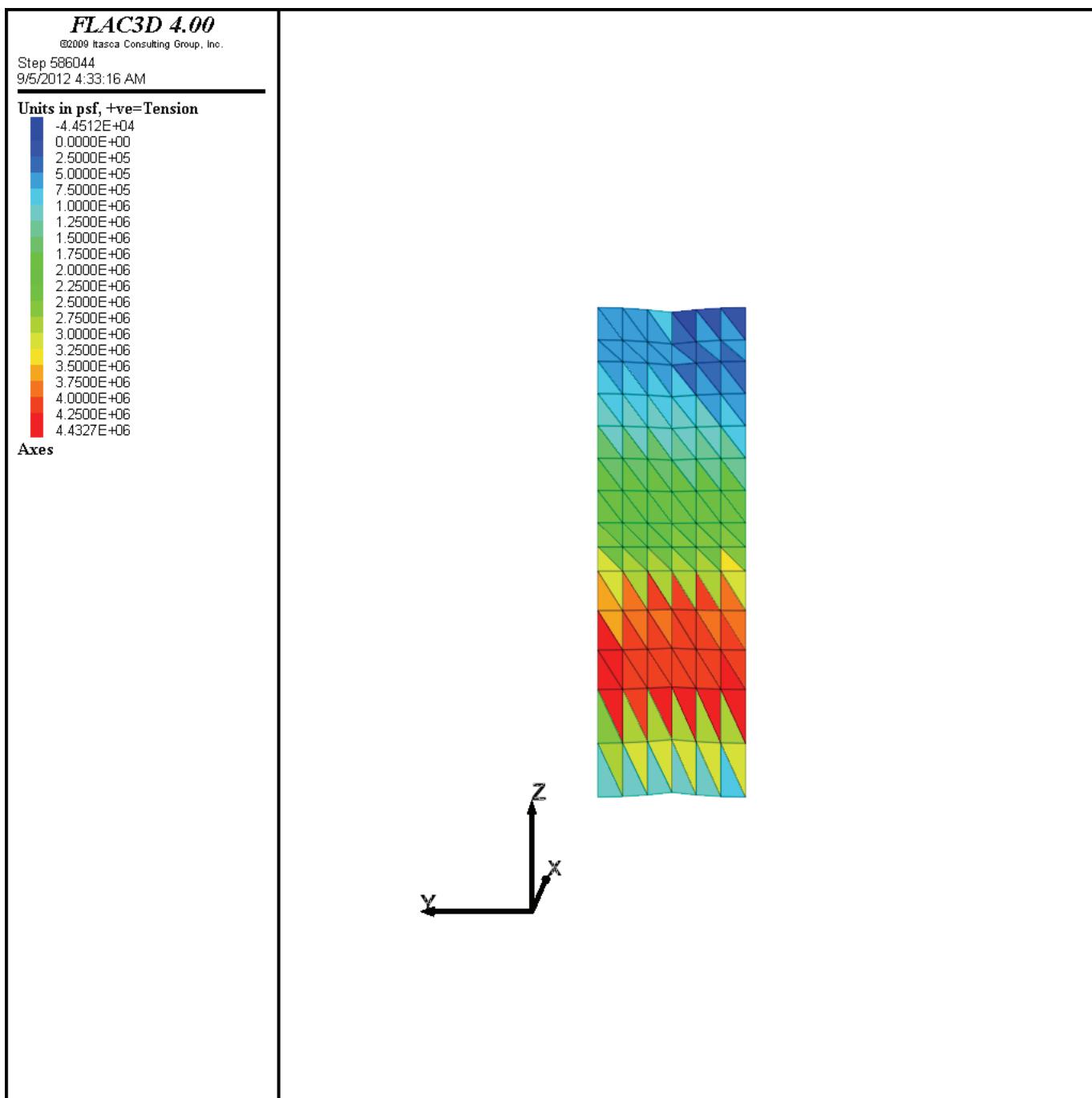


Figure F-2.2.2.a Facewall Membrane Stress – As-Built Snapshot 20 Sec – Michoacan EQ Record

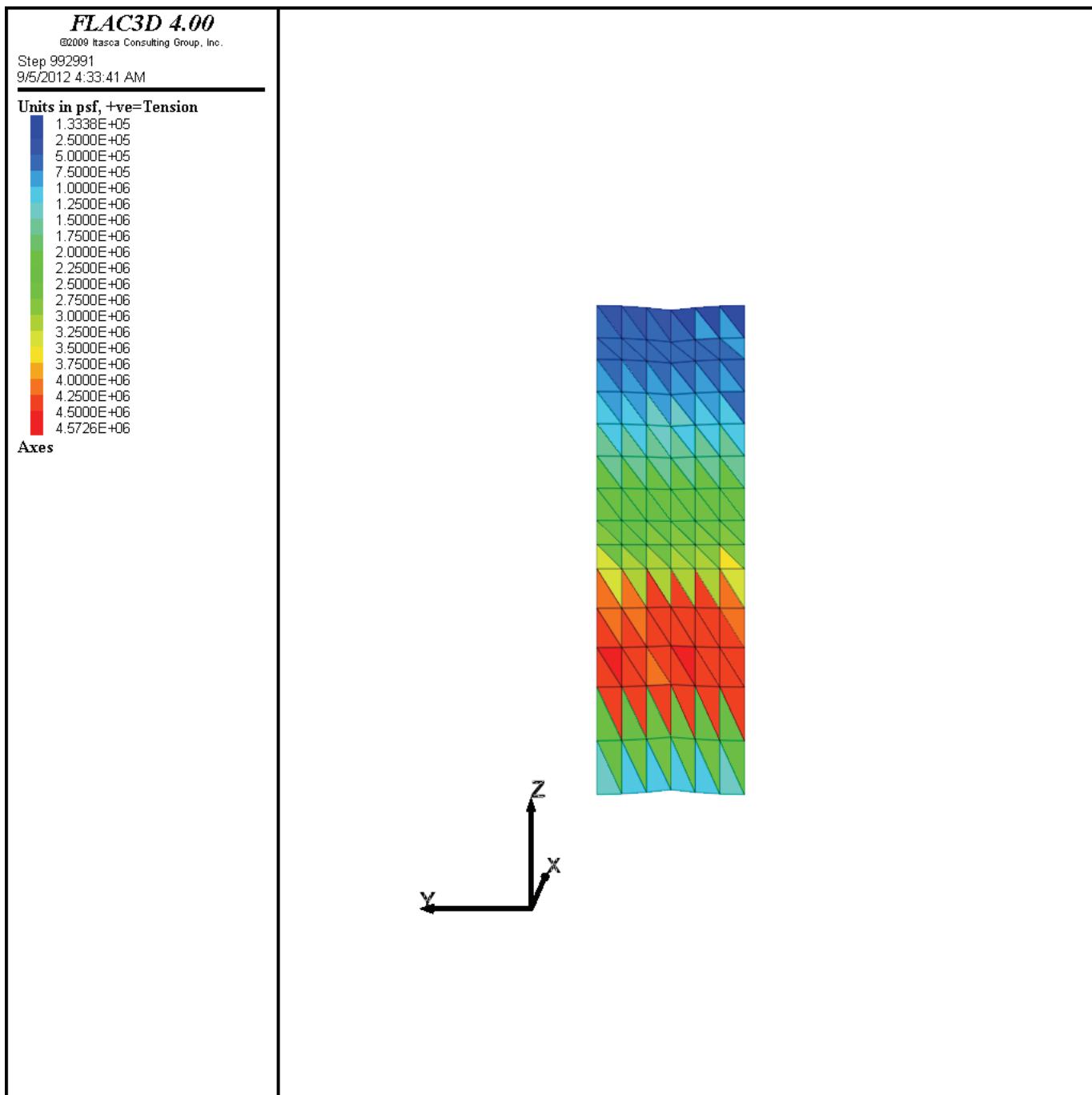


Figure F-2.2.3.a Facewall Membrane Stress – As-Built Snapshot 40 Sec – Michoacan EQ Record

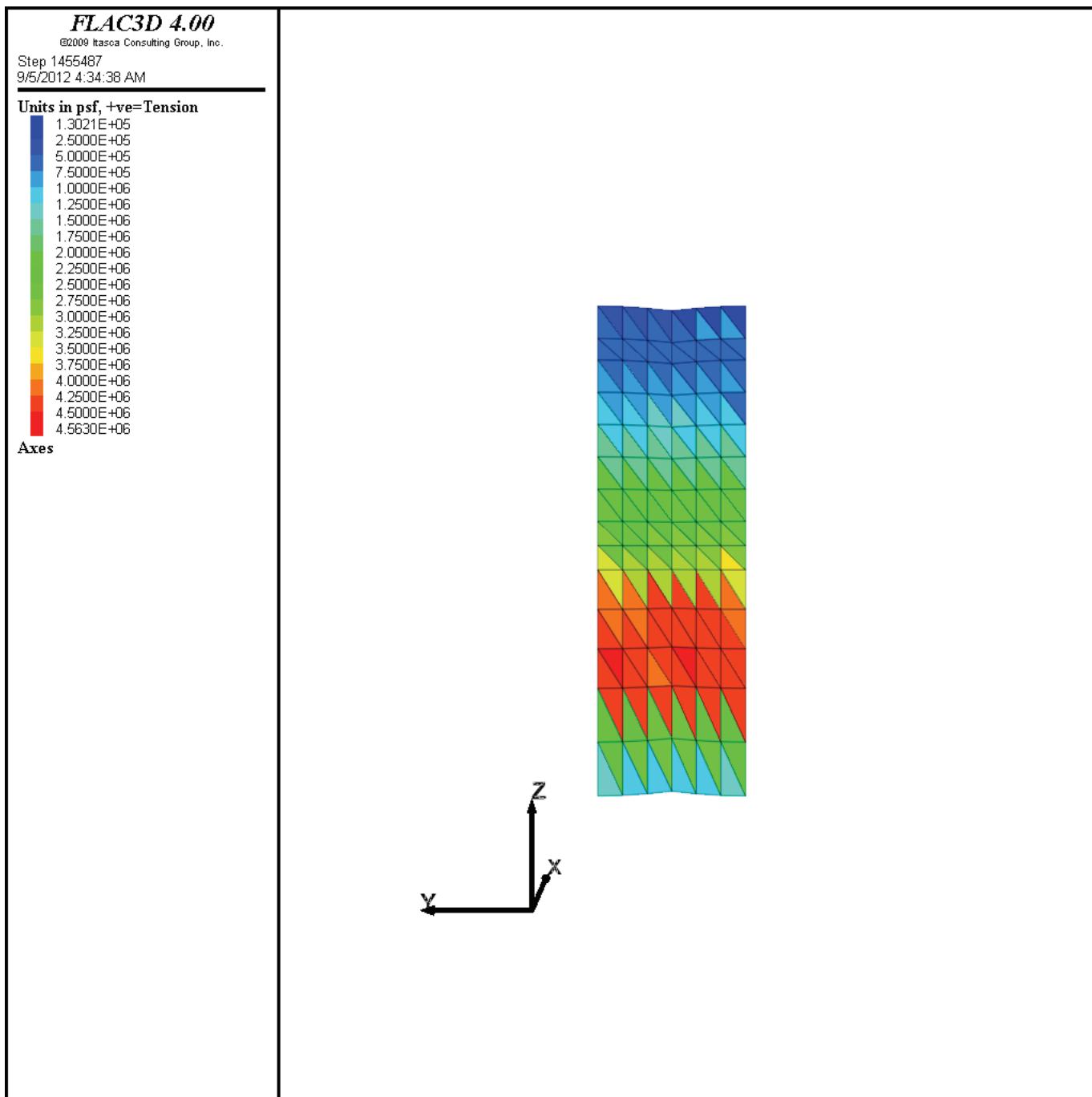


Figure F-2.2.4.a Facewall Membrane Stress – As-Built Snapshot 63 Sec – Michoacan EQ Record

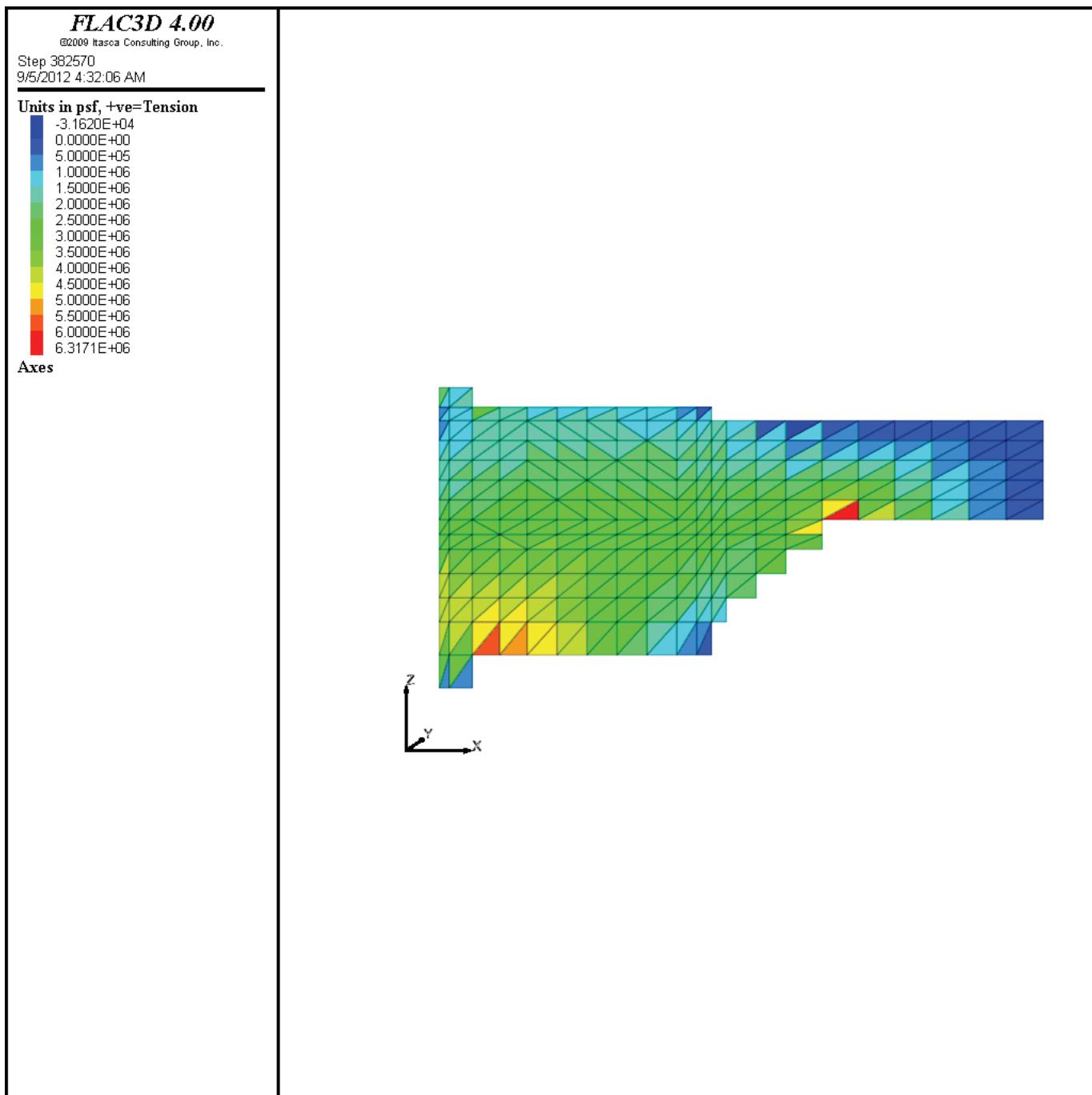


Figure F-2.2.5.a Tailwall Membrane Stress – As-Built Snapshot 10 Sec – Michoacan EQ Record

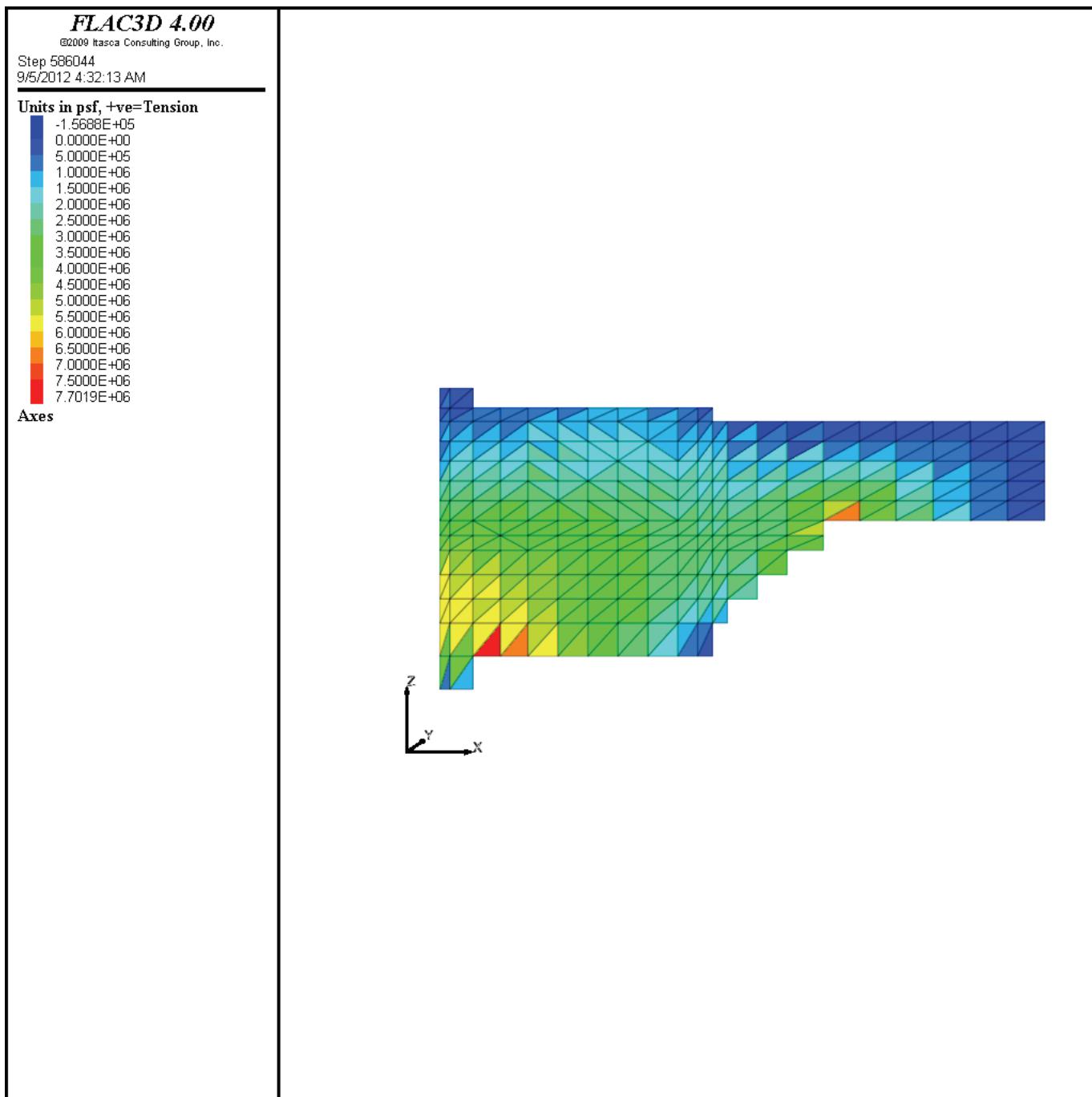


Figure F-2.2.6.a Tailwall Membrane Stress – As-Built Snapshot 20 Sec – Michoacan EQ Record

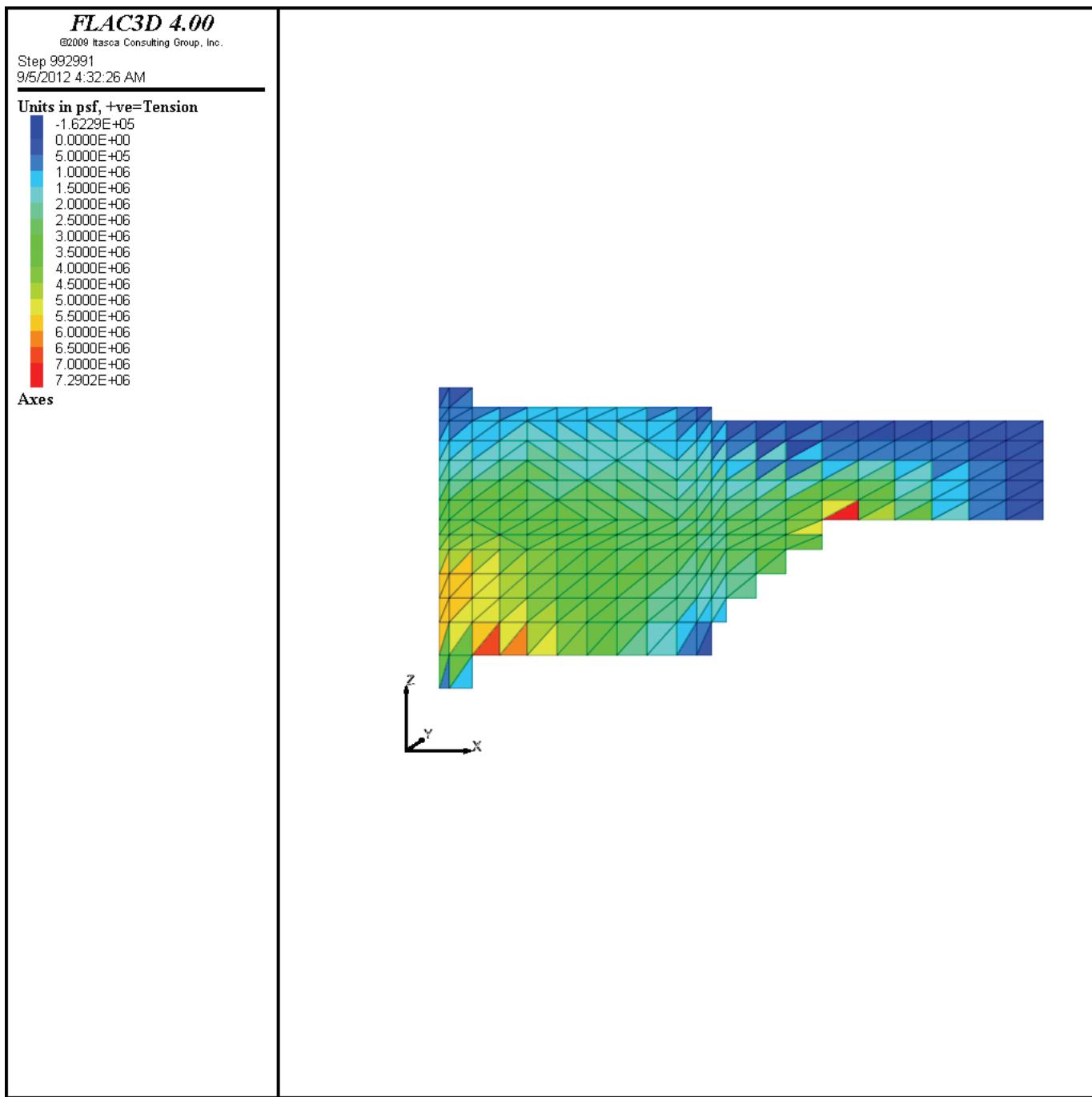


Figure F-2.2.7.a Tailwall Membrane Stress – As-Built Snapshot 40 Sec – Michoacan EQ Record

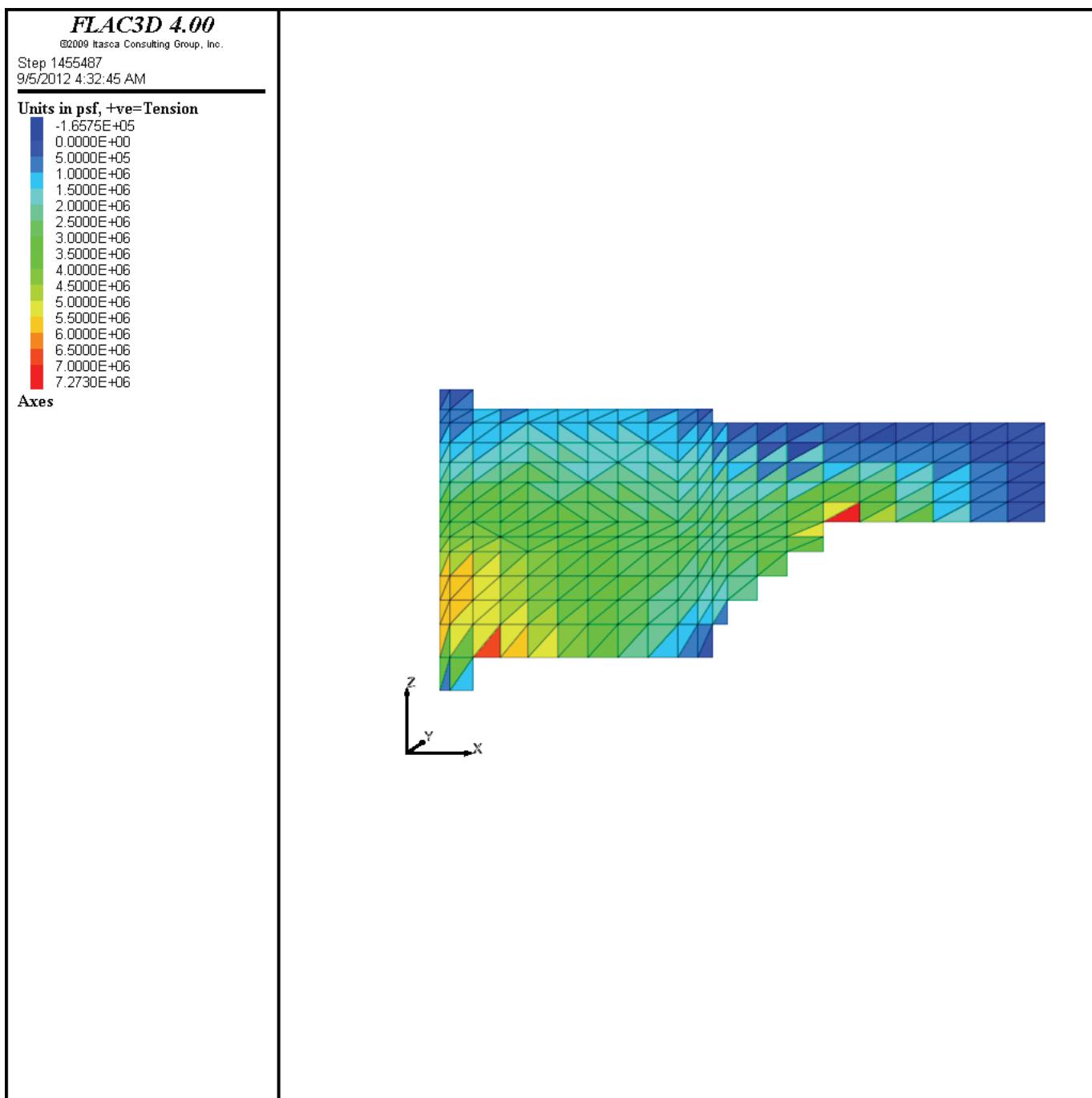


Figure F-2.2.8.a Tailwall Membrane Stress – As-Built Snapshot 63 Sec – Michoacan EQ Record

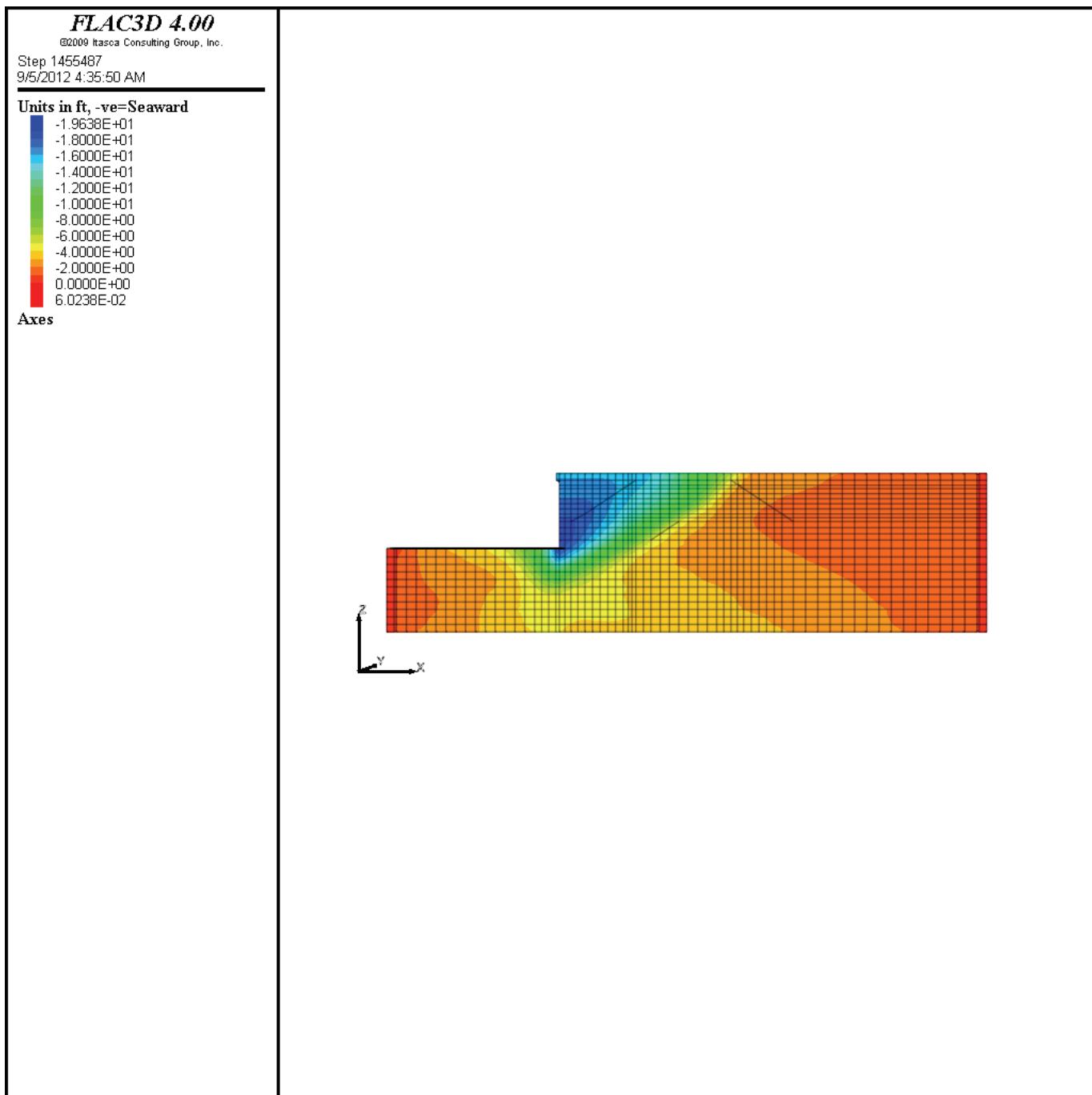


Figure F-2.2.9.a Permanent Soil X-Displacement Contours – As-Built – Michoacan EQ Record

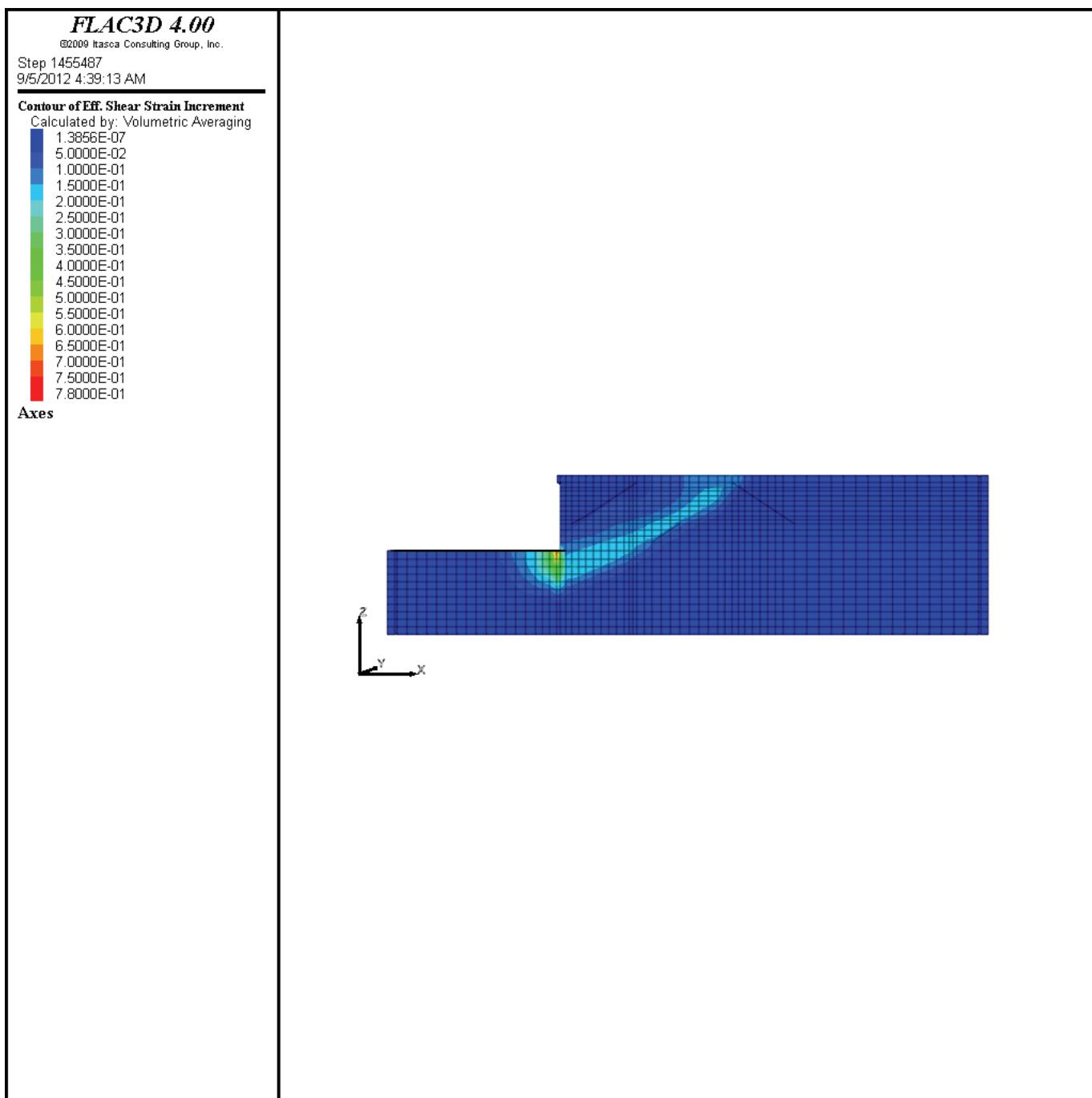


Figure F-2.2.10.a Effective Shear Strain Contours – As-Built – Michoacan EQ Record

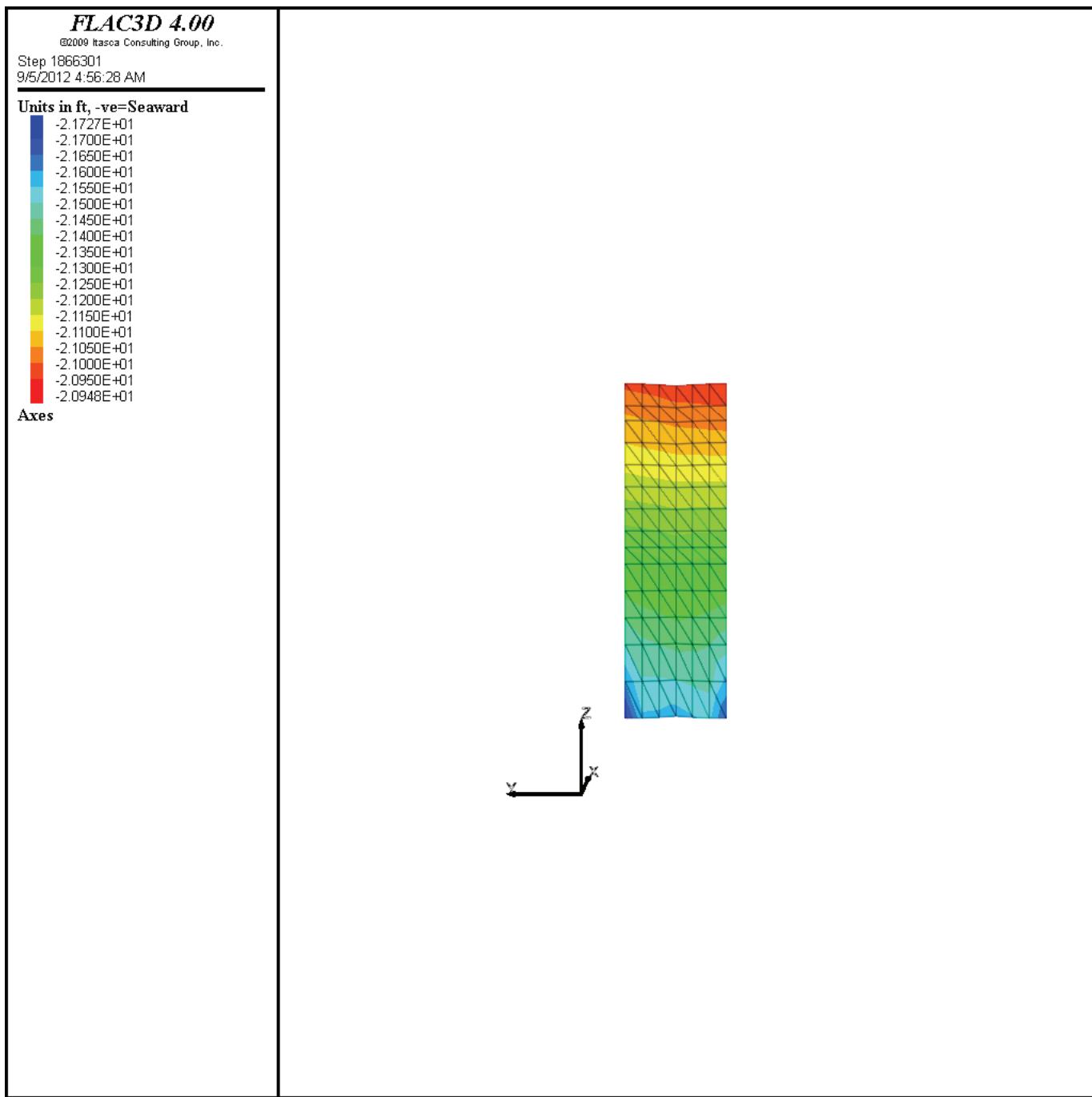


Figure F-2.2.1.b Facewall Membrane Stress – As-Built Snapshot At 10 Sec – Nisqually P0 EQ Record

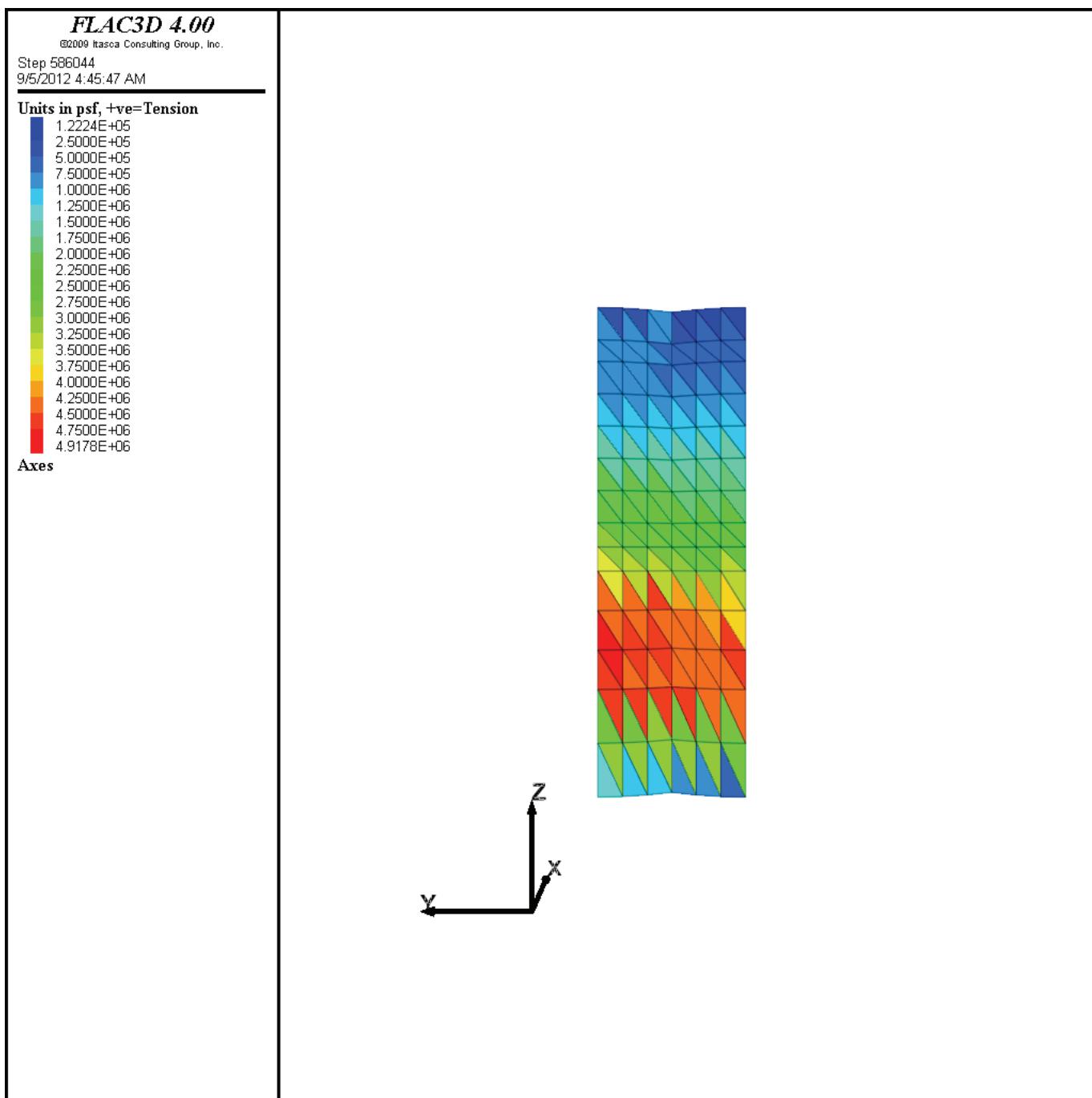


Figure F-2.2.2.b Facewall Membrane Stress – As-Built Snapshot 20 Sec – Nisqually P0 EQ Record

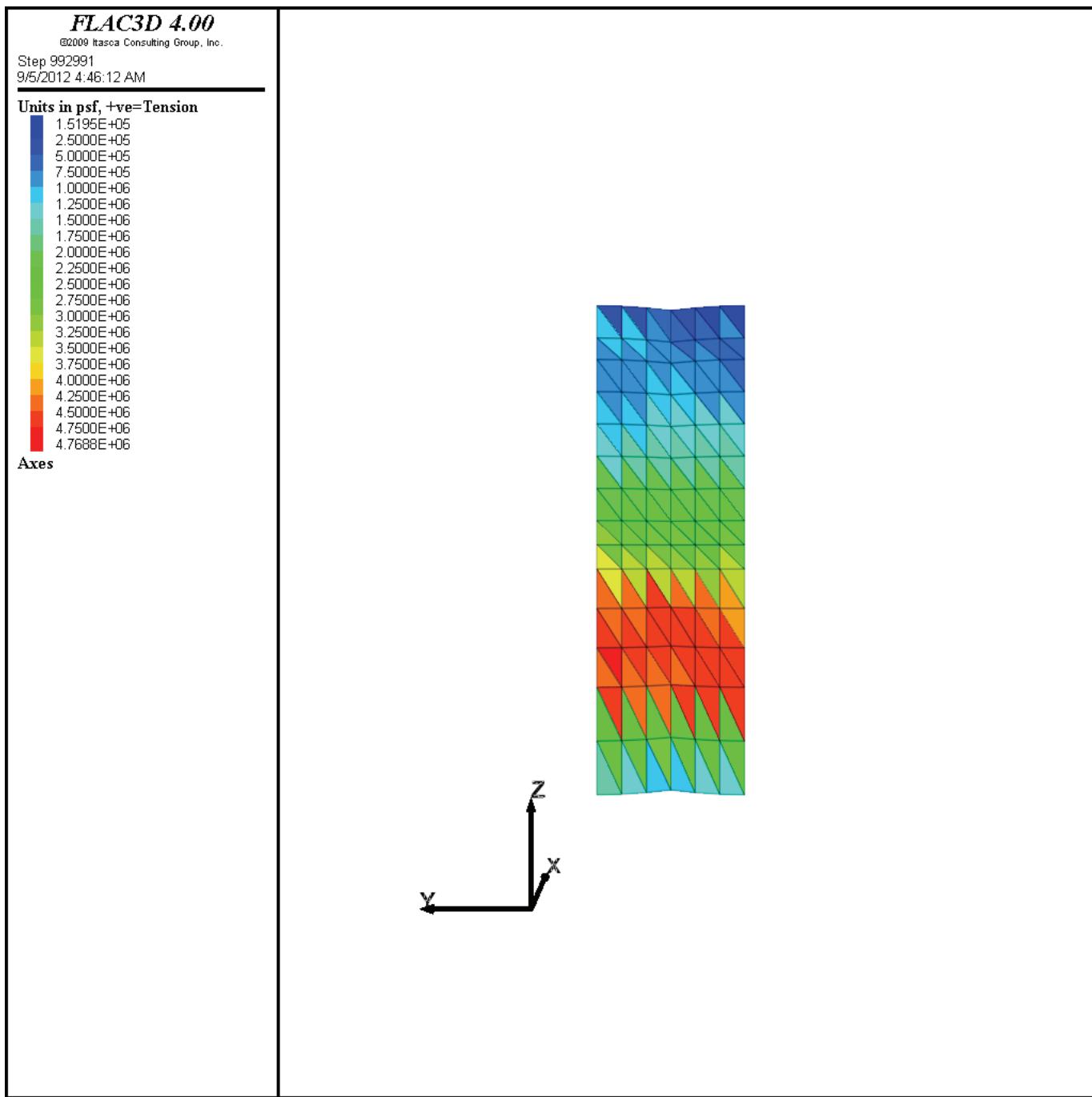


Figure F-2.2.3.b Facewall Membrane Stress – As-Built Snapshot 40 Sec – Nisqually P0 EQ Record

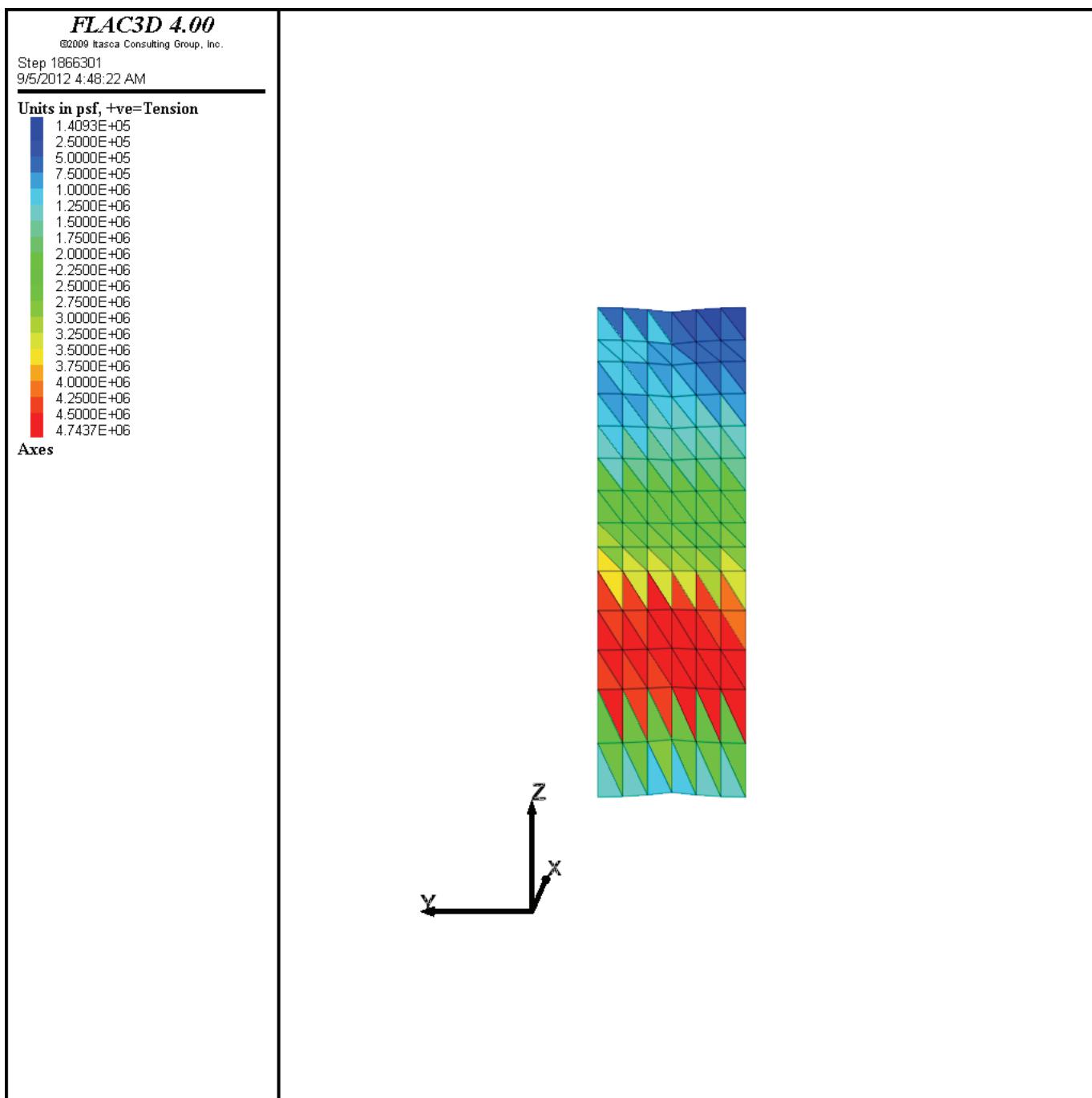


Figure F-2.2.4.b Facewall Membrane Stress – As-Built Snapshot 83 Sec – Nisqually P0 EQ Record

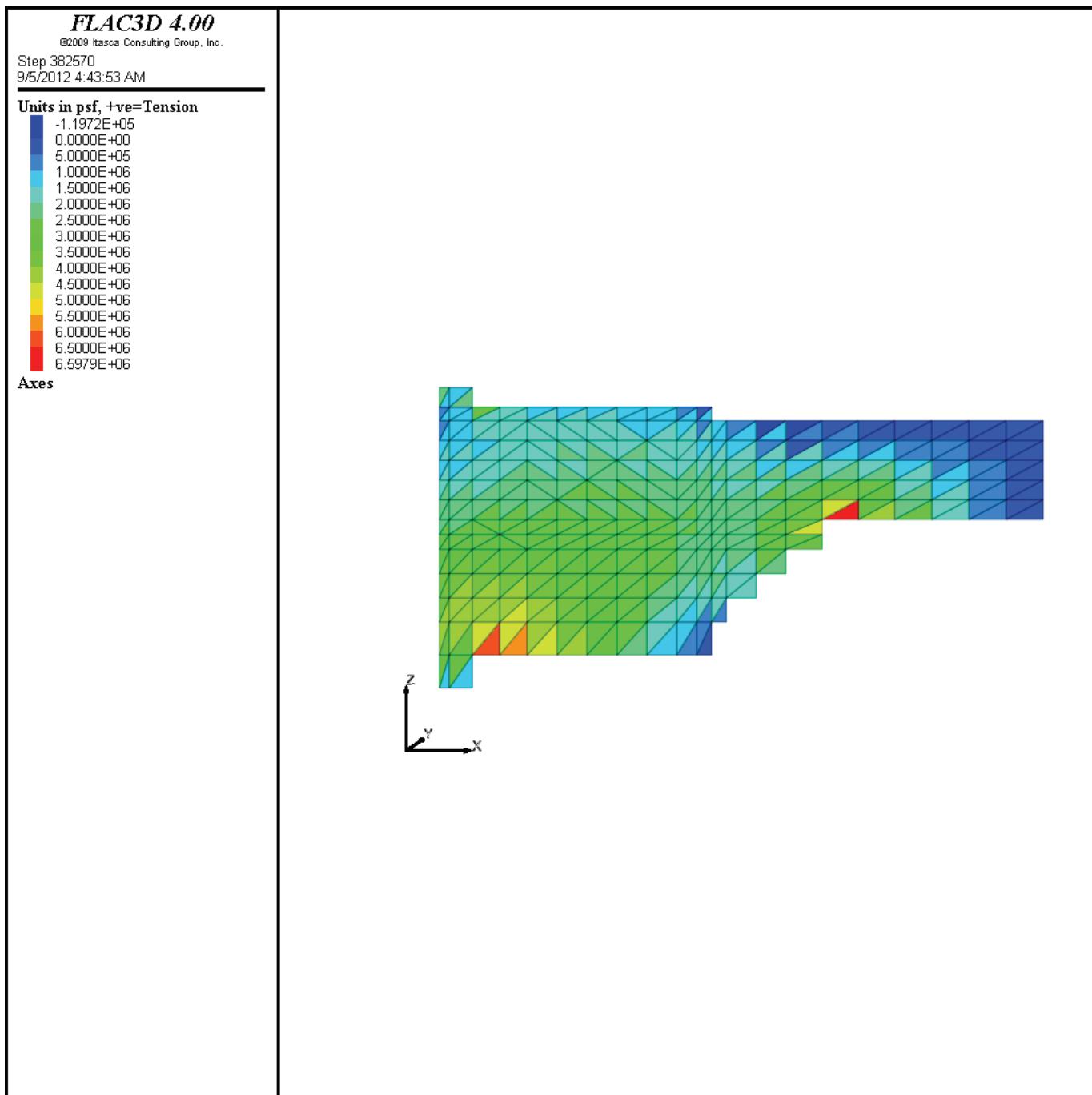


Figure F-2.2.5.b Tailwall Membrane Stress – As-Built Snapshot 10 Sec – Nisqually P0 EQ Record

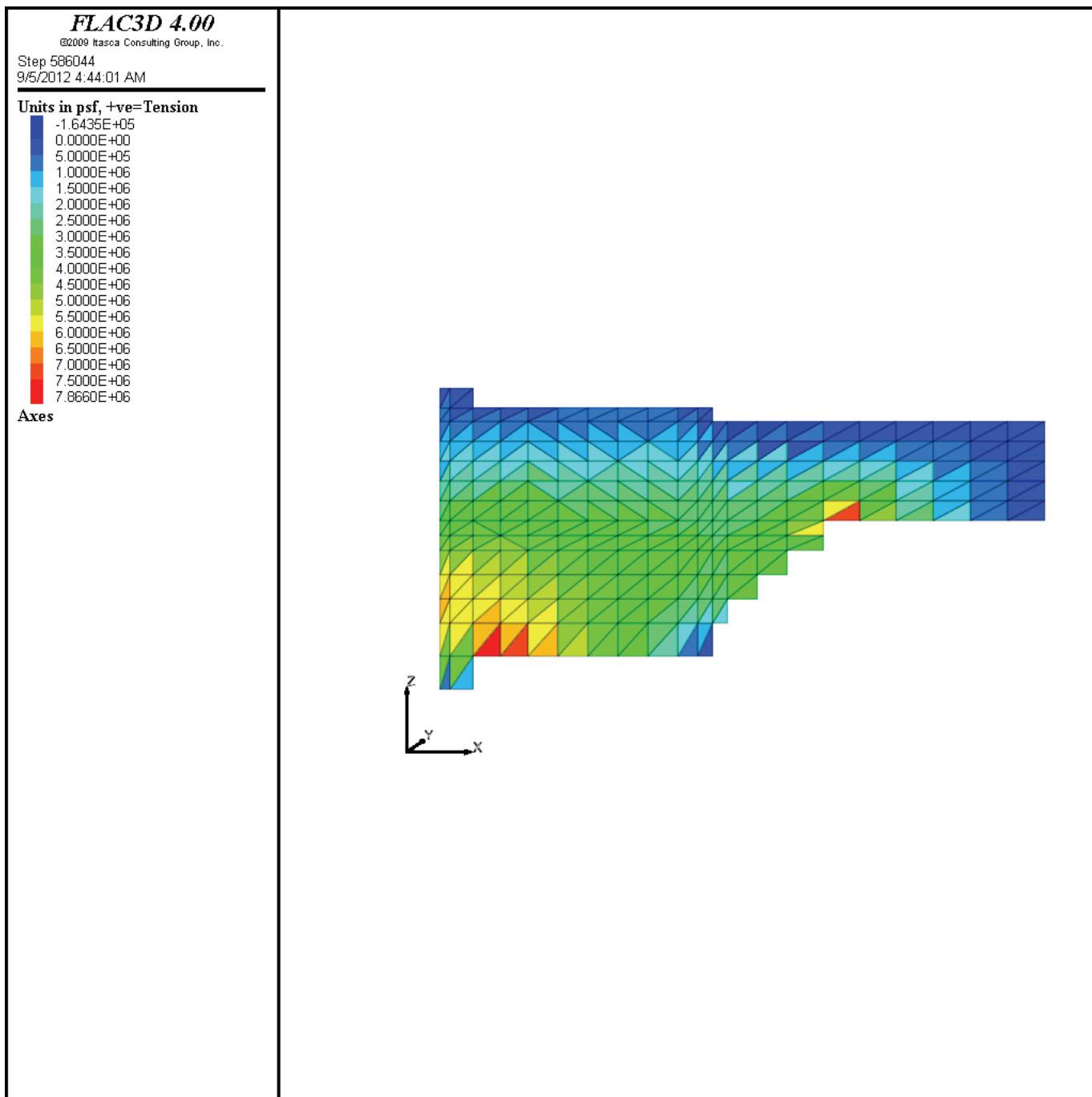


Figure F-2.2.6.b Tailwall Membrane Stress – As-Built Snapshot 20 Sec – Nisqually P0 EQ Record

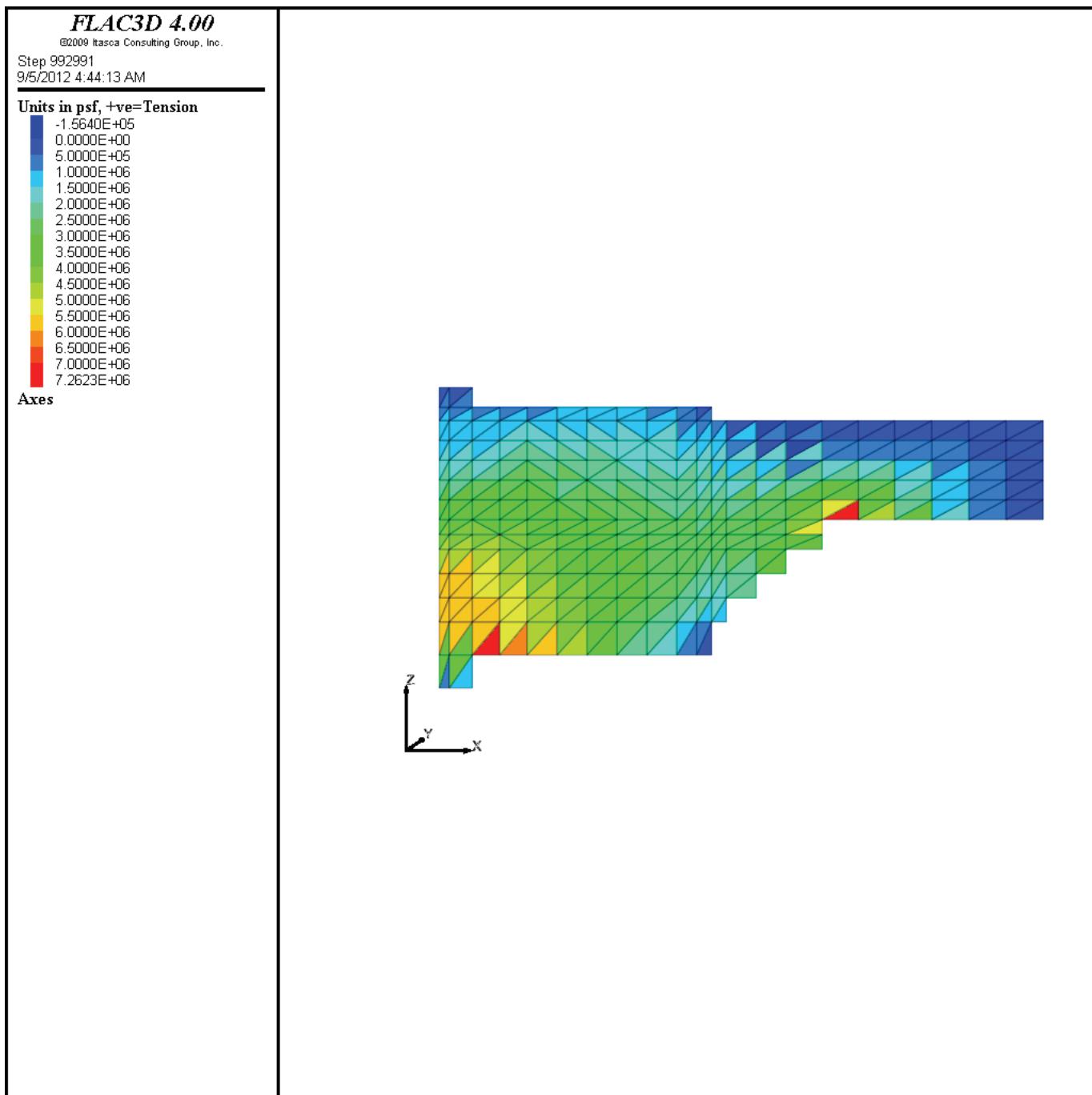


Figure F-2.2.7.b Tailwall Membrane Stress – As-Built Snapshot 40 Sec – Nisqually P0 EQ Record

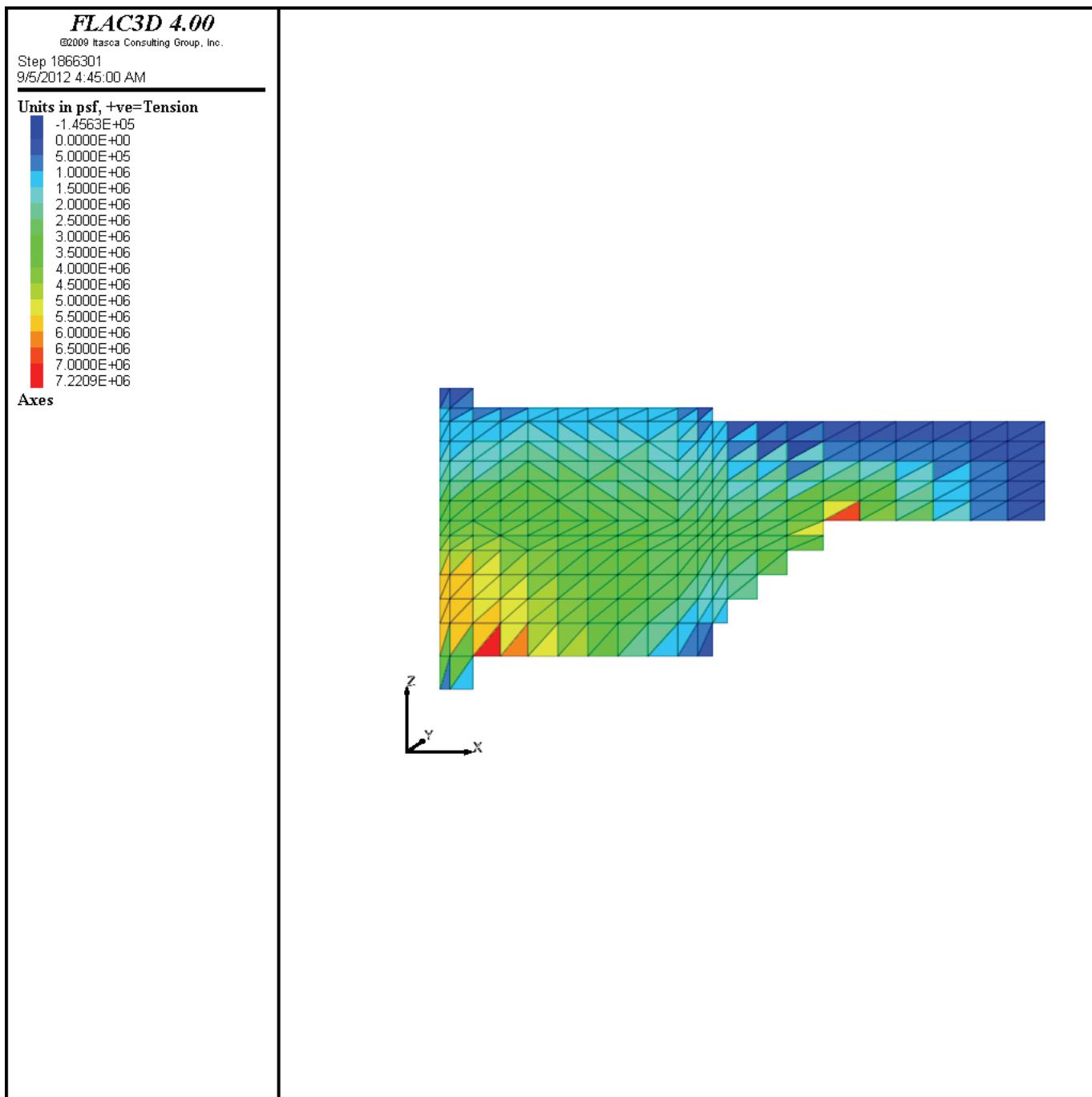


Figure F-2.2.8.b Tailwall Membrane Stress – As-Built Snapshot 83 Sec – Nisqually P0 EQ Record

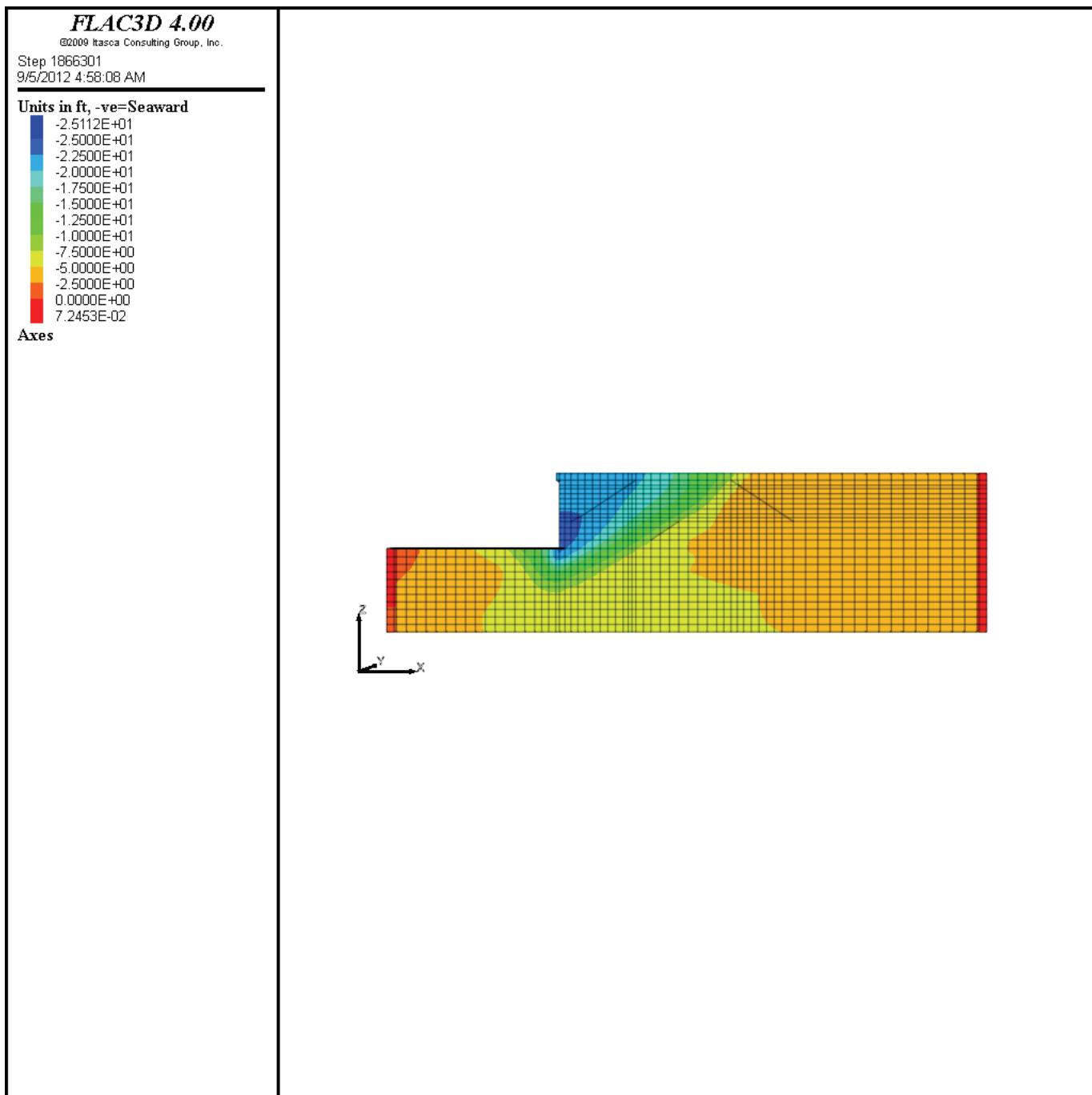


Figure F-2.2.9.b Permanent Soil X-Displacement Contours – As-Built – Nisqually P0 EQ Record

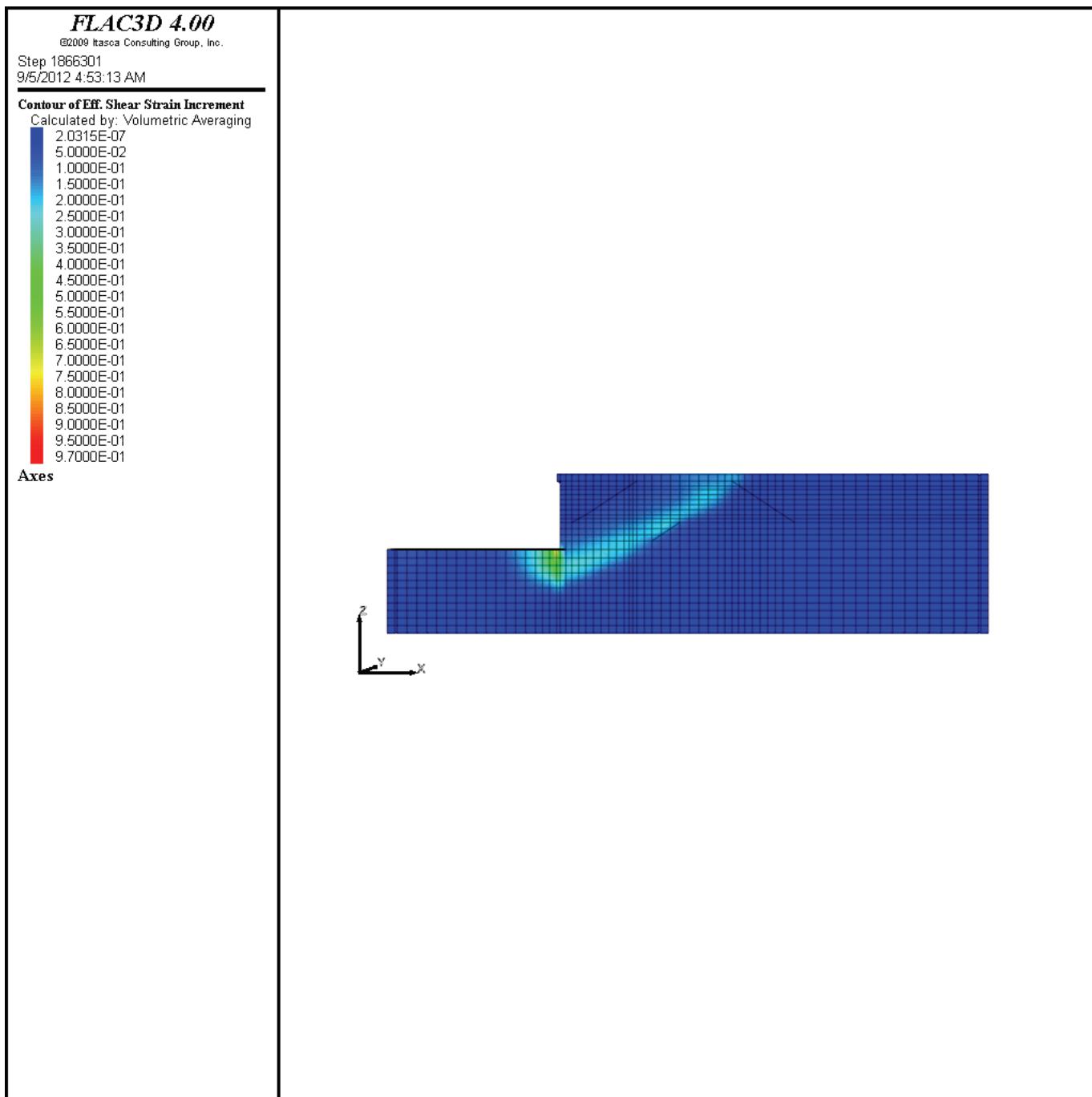


Figure F-2.2.10.b Effective Shear Strain Contours – As-Built – Nisqually P0 EQ Record

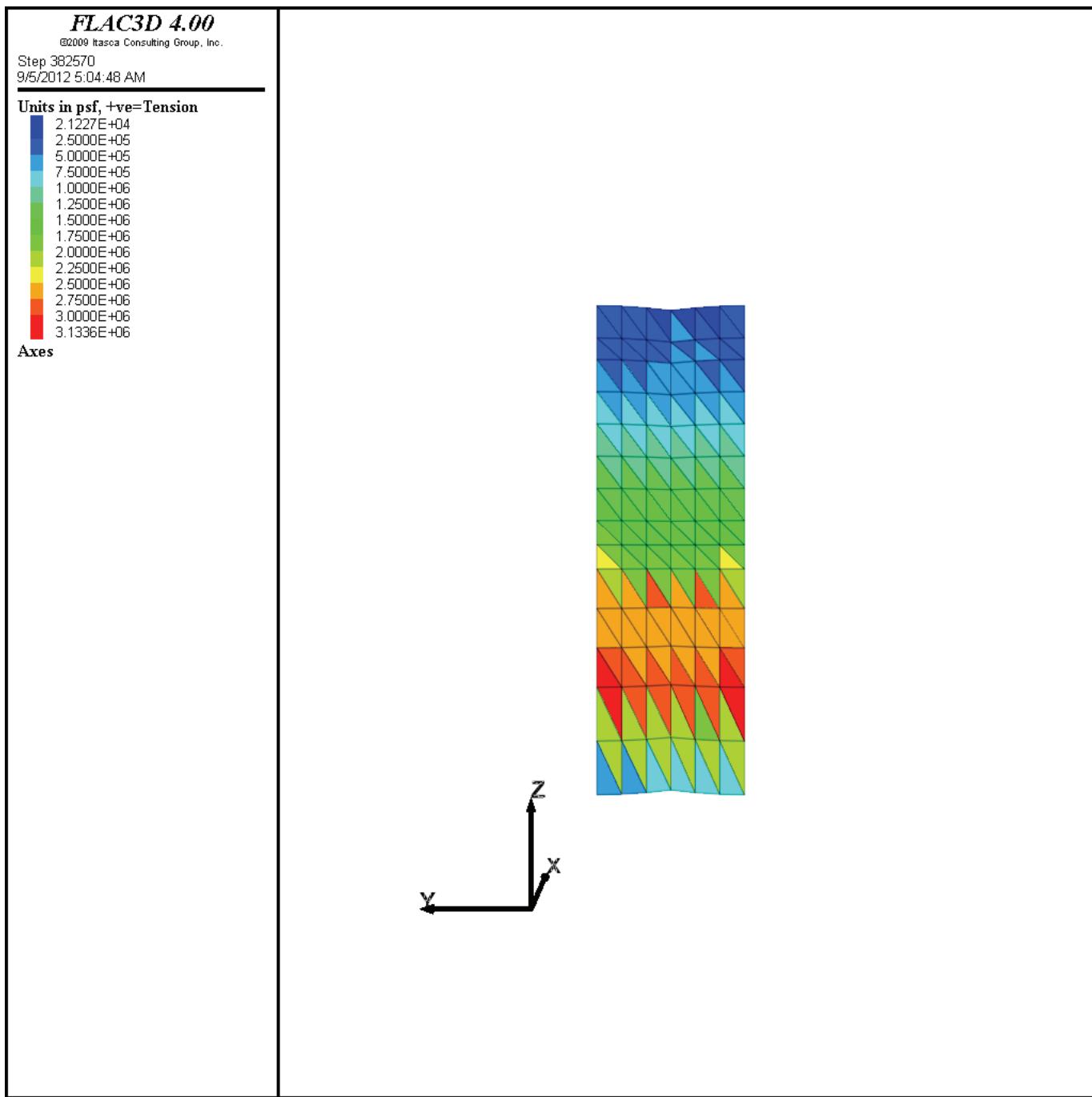


Figure F-2.2.1.c Facewall Membrane Stress – As-Built Snapshot At 10 Sec – Nisqually P90 EQ Record

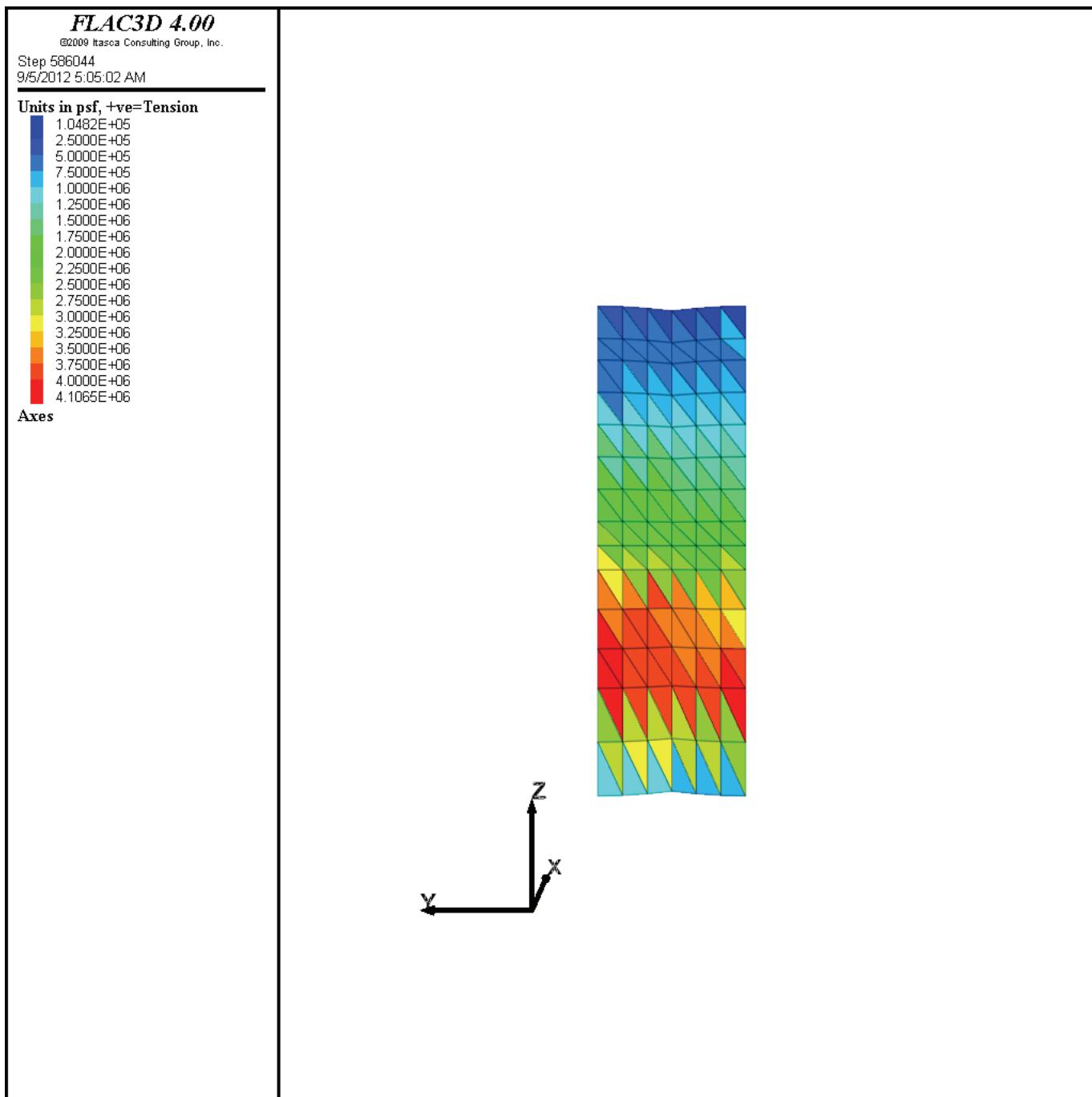


Figure F-2.2.2.c Facewall Membrane Stress – As-Built Snapshot 20 Sec – Nisqually P90 EQ Record

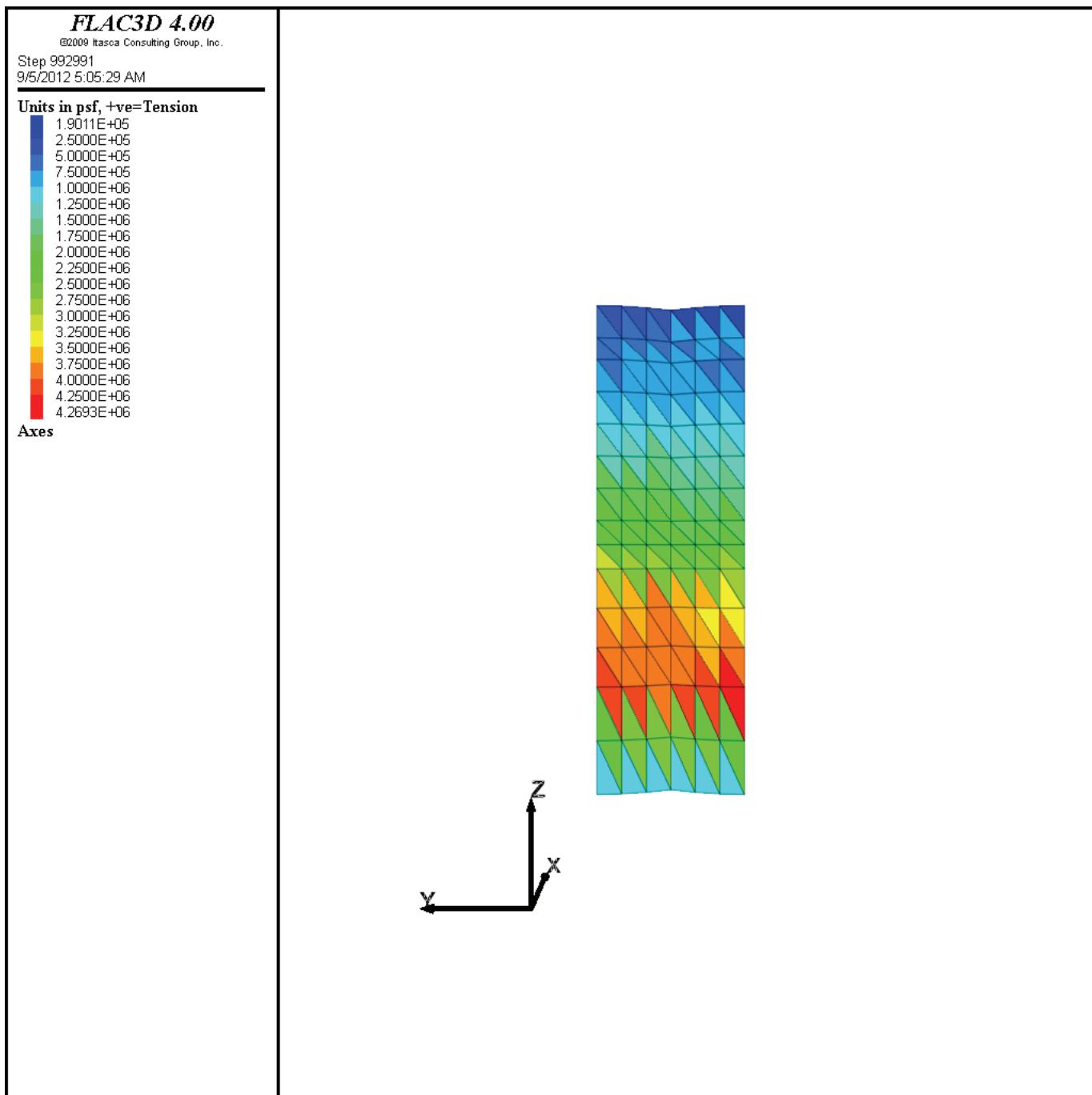


Figure F-2.2.3.c Facewall Membrane Stress – As-Built Snapshot 40 Sec – Nisqually P90 EQ Record

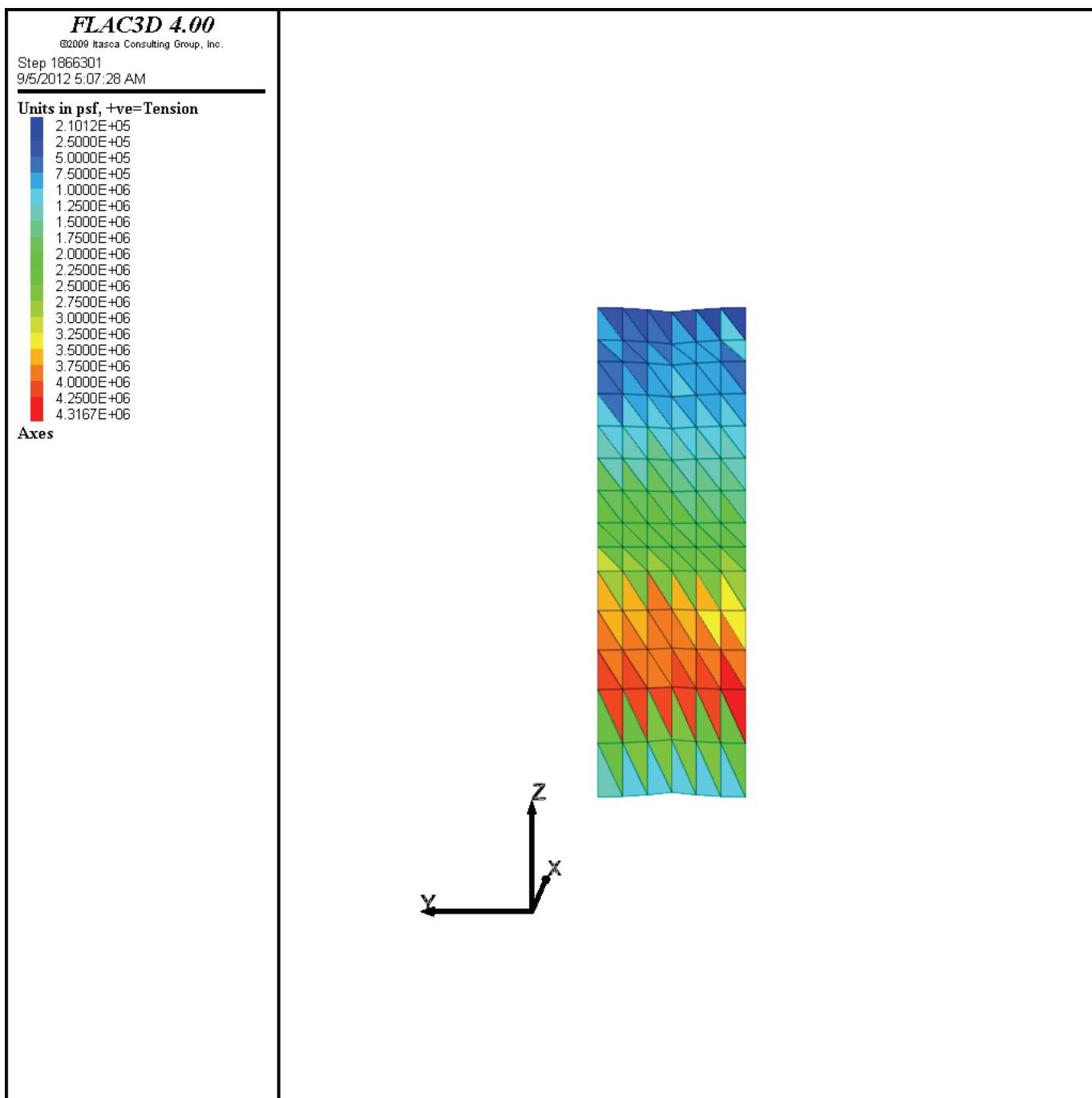


Figure F-2.2.4.c Facewall Membrane Stress – As-Built Snapshot 83 Sec – Nisqually P90 EQ Record

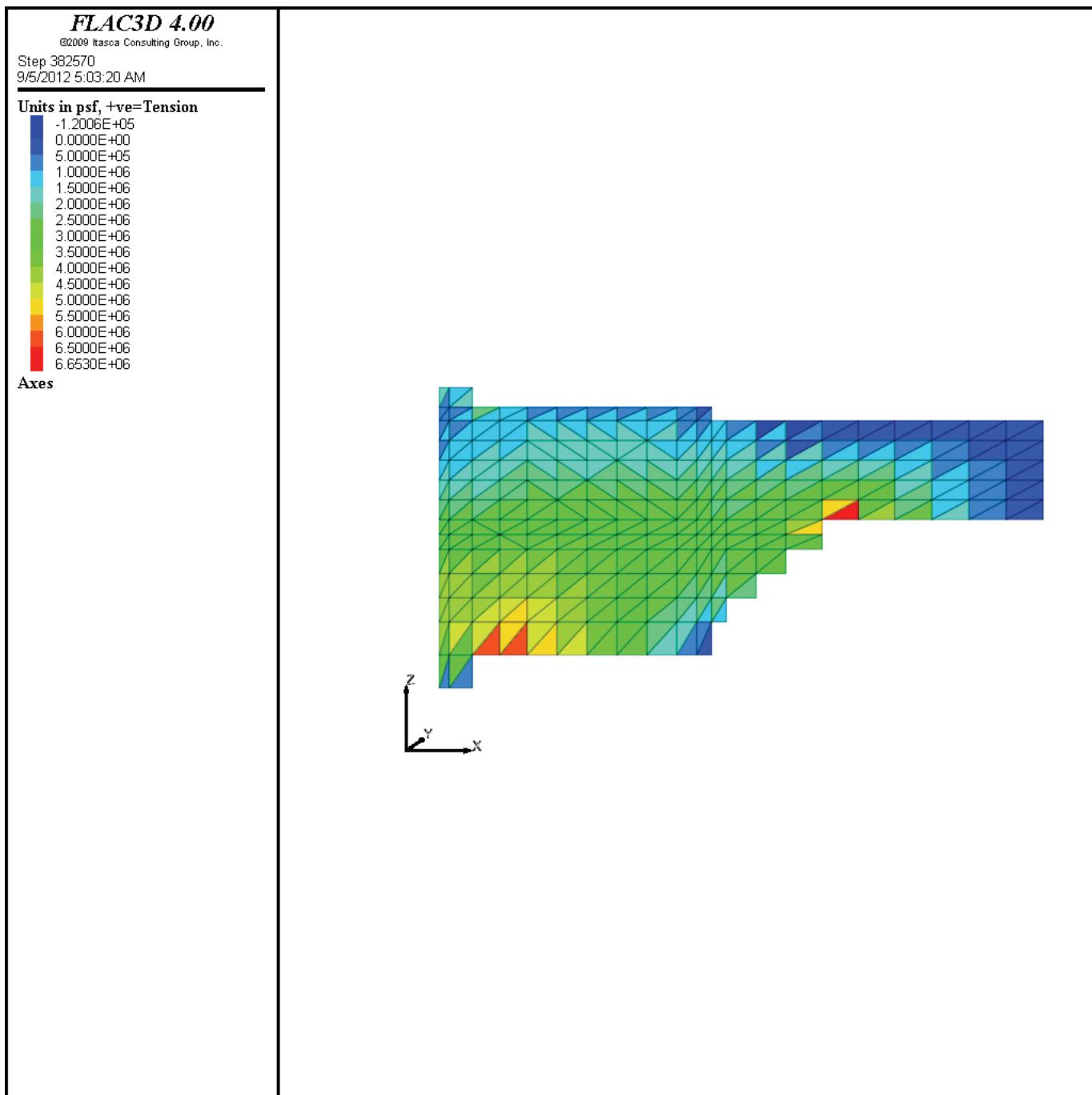


Figure F-2.2.5.c Tailwall Membrane Stress – As-Built Snapshot 10 Sec – Nisqually P90 EQ Record

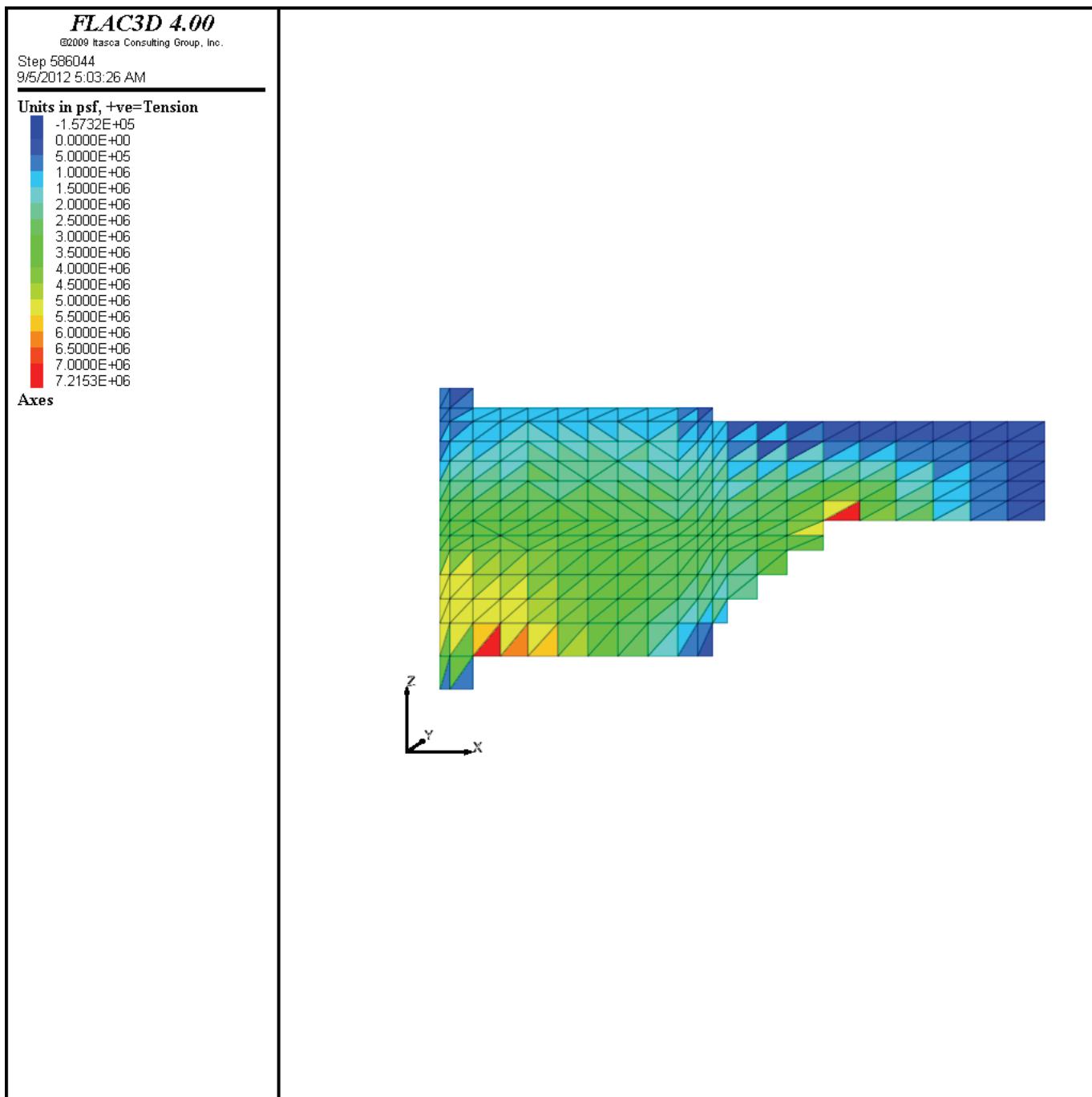


Figure F-2.2.6.c Tailwall Membrane Stress – As-Built Snapshot 20 Sec – Nisqually P90 EQ Record

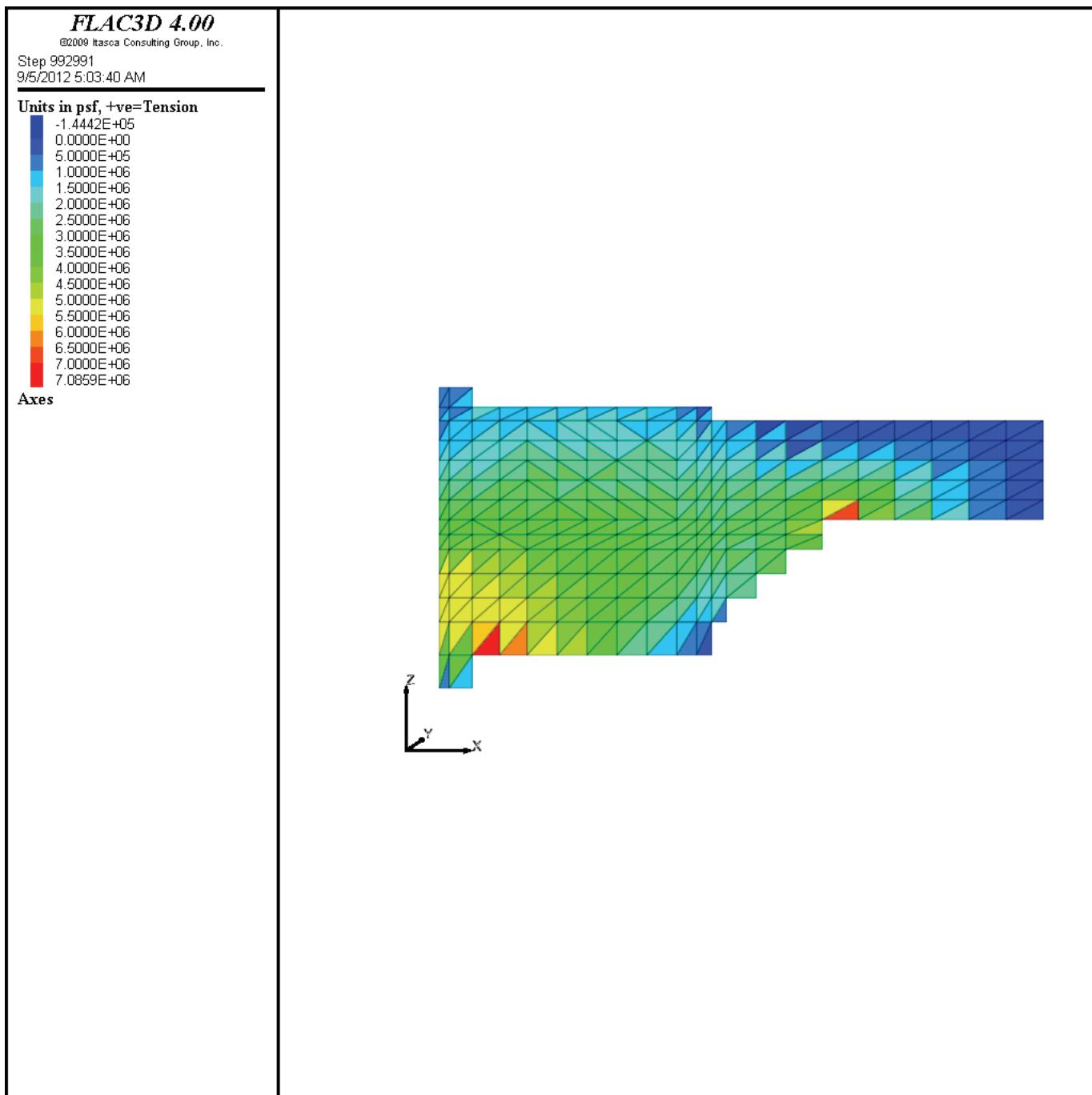


Figure F-2.2.7.c Tailwall Membrane Stress – As-Built Snapshot 40 Sec – Nisqually P90 EQ Record

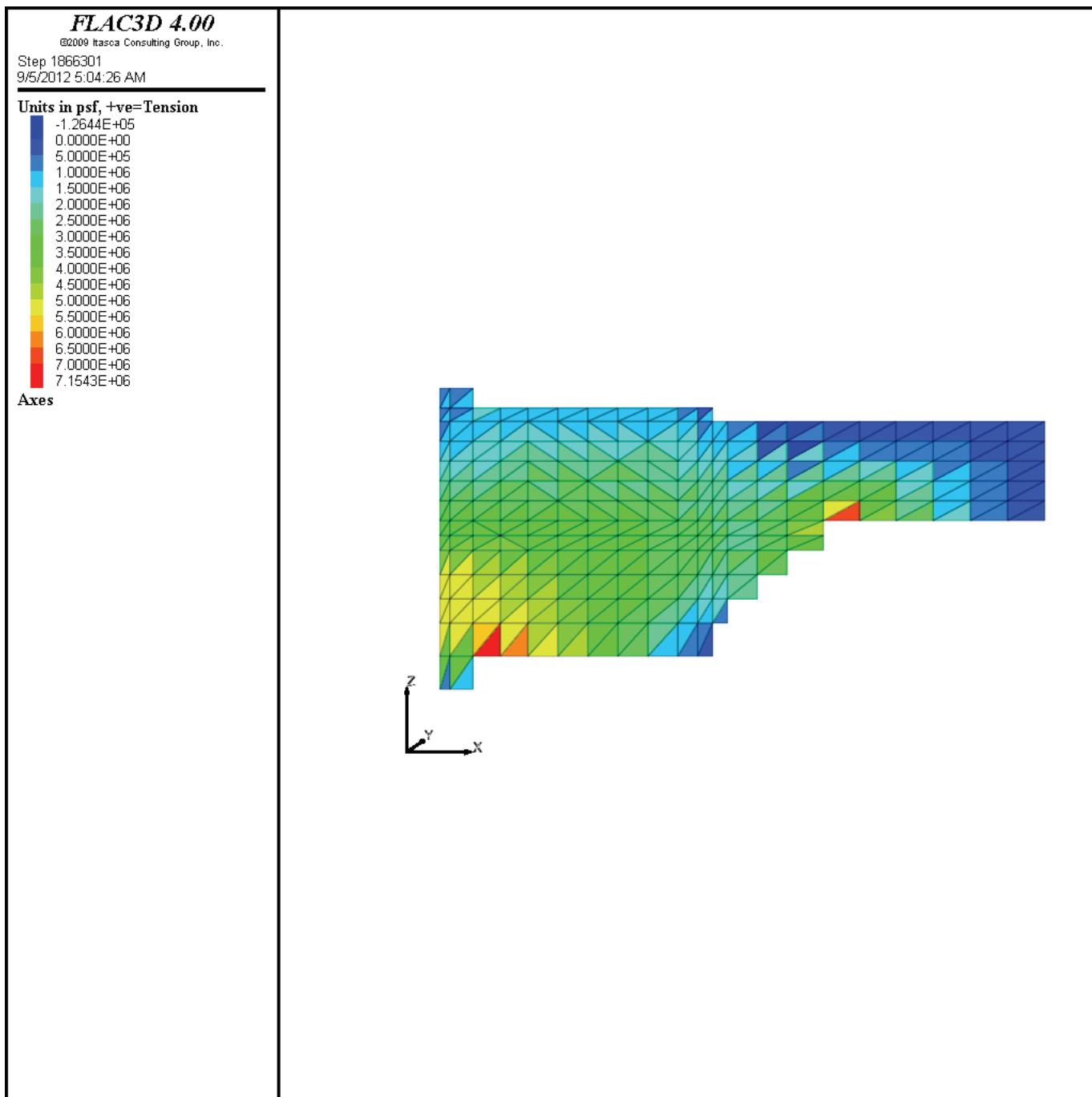


Figure F-2.2.8.c Tailwall Membrane Stress – As-Built Snapshot 83 Sec – Nisqually P90 EQ Record

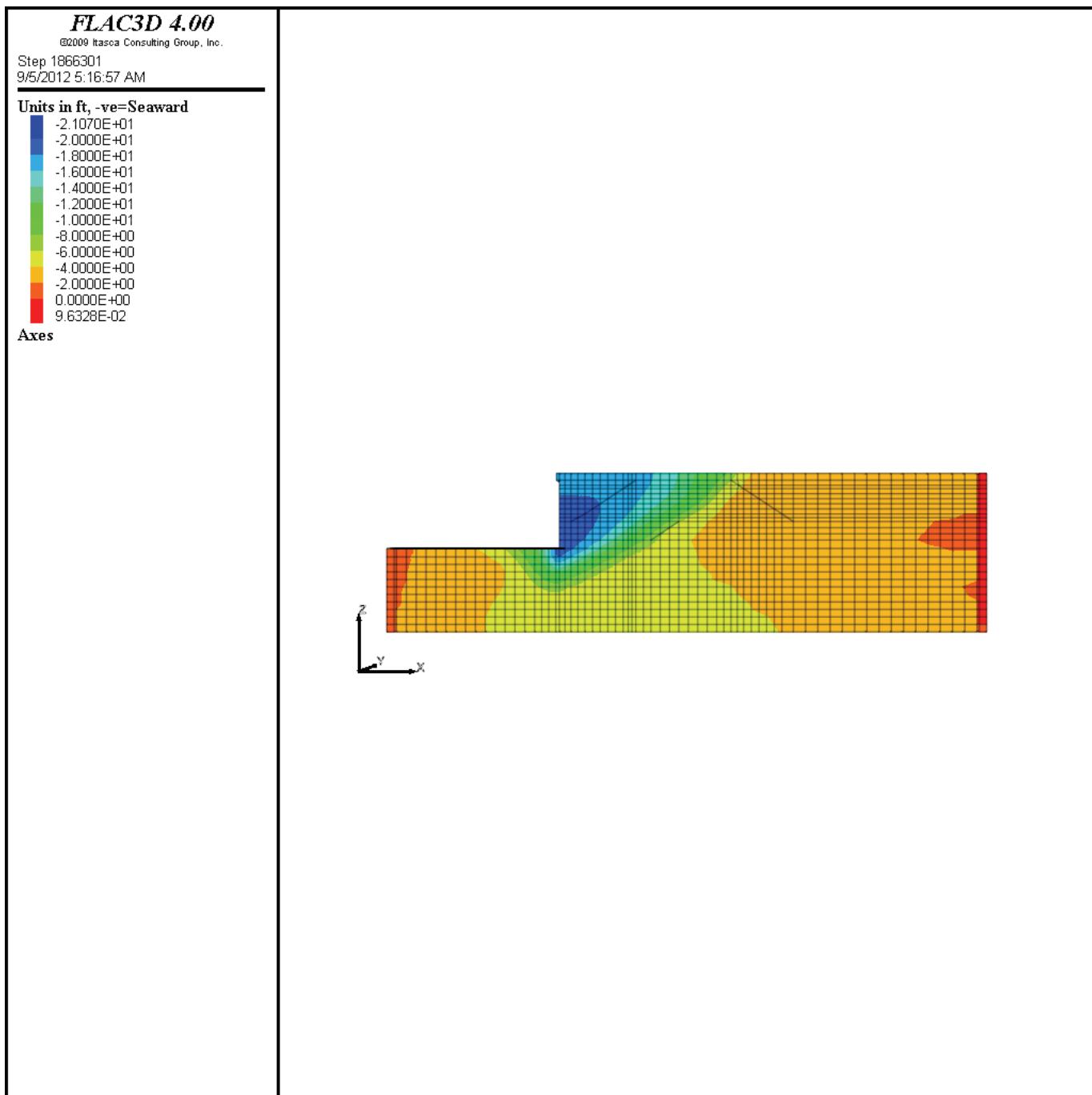


Figure F-2.2.9.c Permanent Soil X-Displacement Contours – As-Built – Nisqually P90 EQ Record

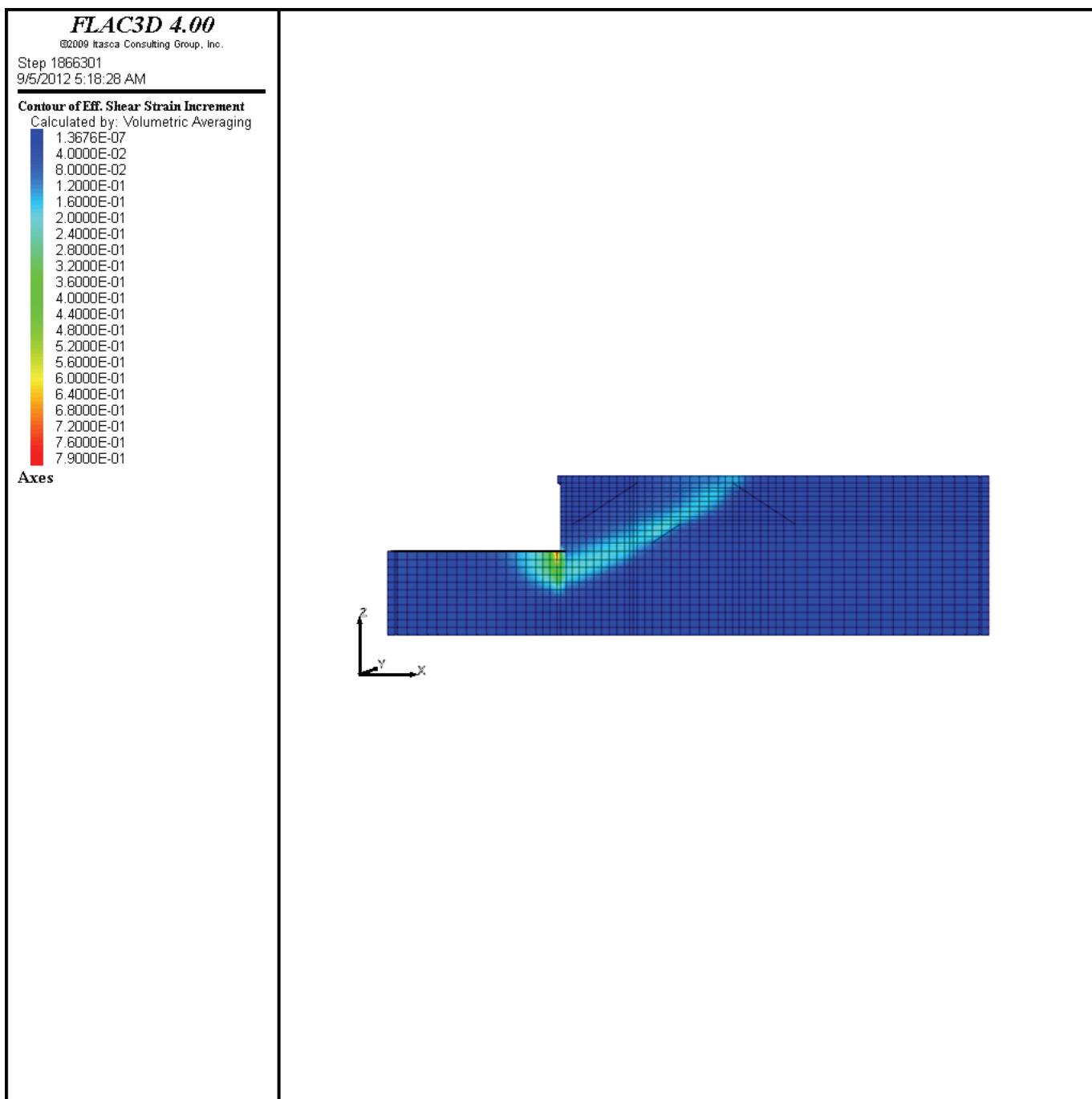


Figure F-2.2.10.c Effective Shear Strain Contours – As-Built – Nisqually P90 EQ Record

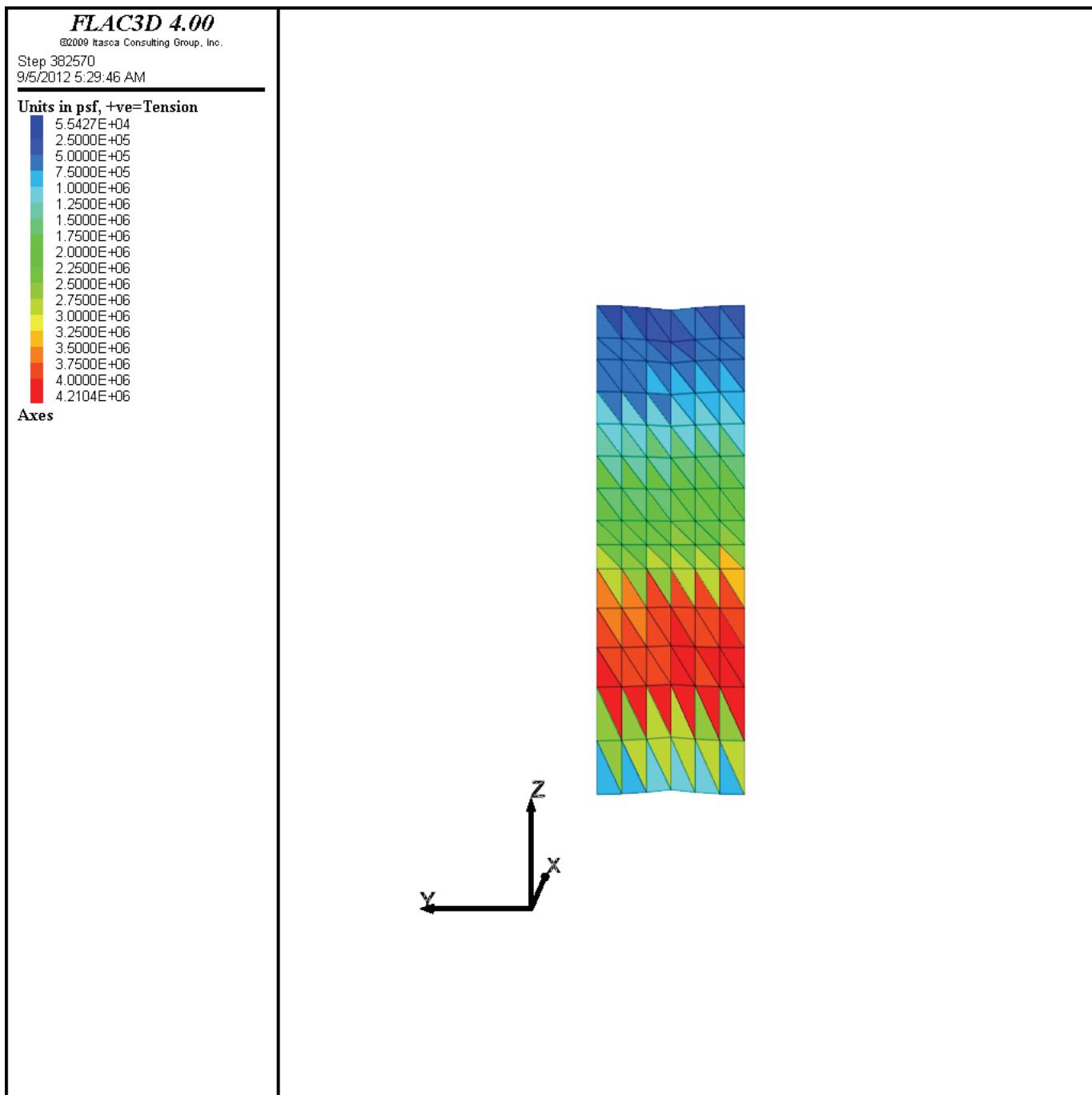


Figure F-2.2.1.d Facewall Membrane Stress – As-Built Snapshot At 10 Sec – Western Washington EQ Record

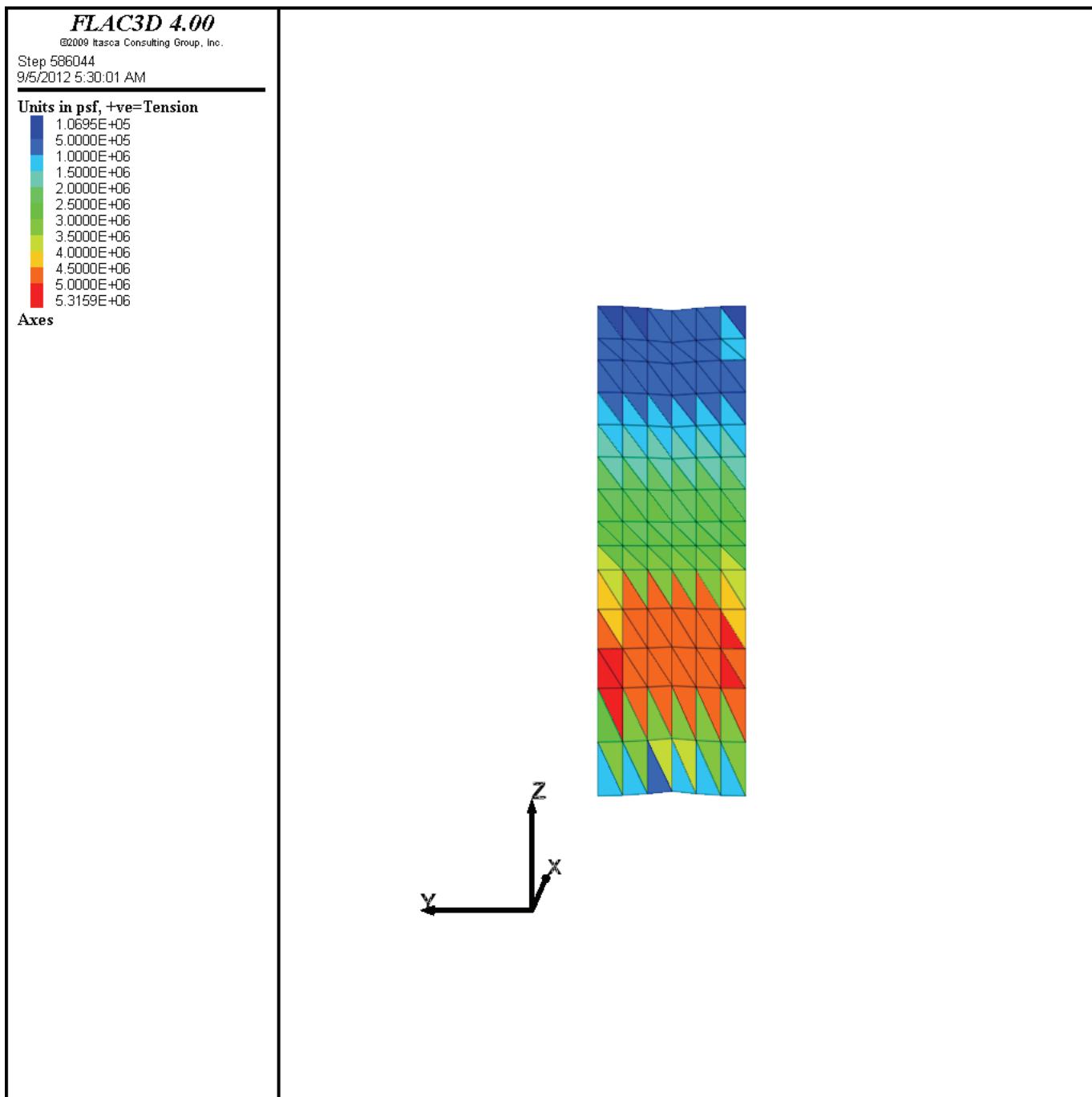


Figure F-2.2.2.d Facewall Membrane Stress – As-Built Snapshot 20 Sec – Western Washington EQ Record

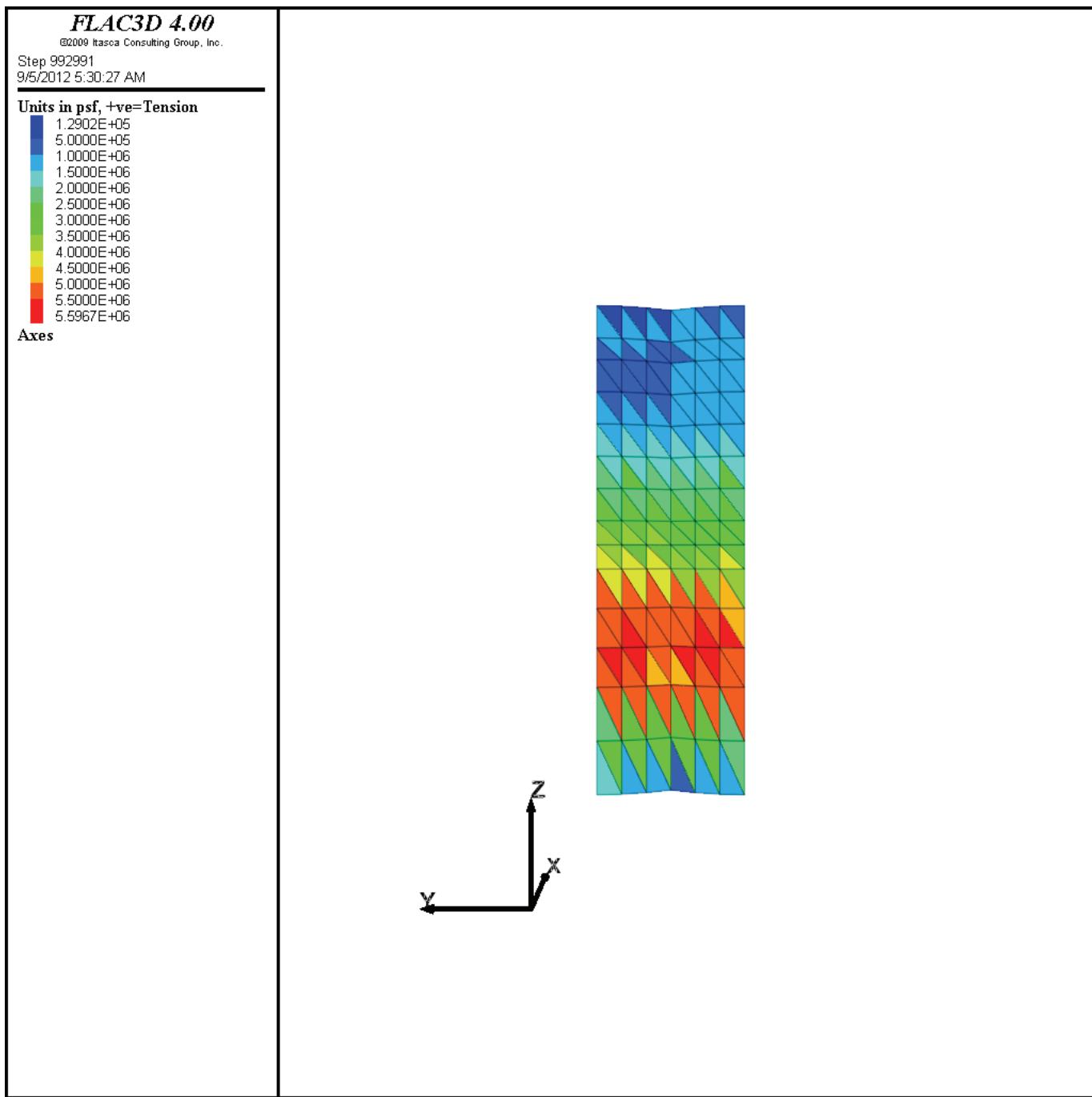


Figure F-2.2.3.d Facewall Membrane Stress – As-Built Snapshot 40 Sec – Western Washington EQ Record

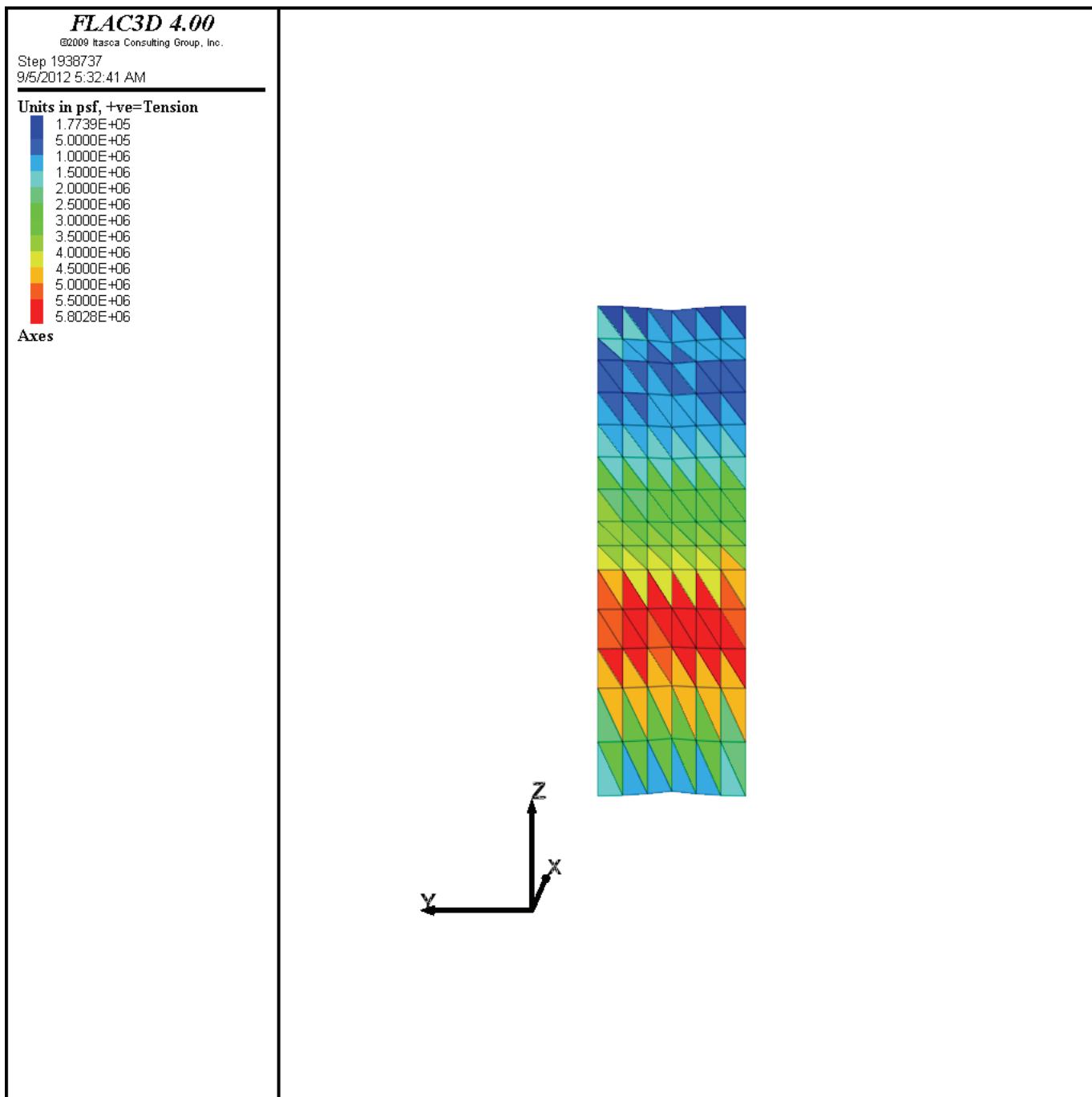


Figure F-2.2.4.d Facewall Membrane Stress – As-Built Snapshot 87 Sec – Western Washington EQ Record

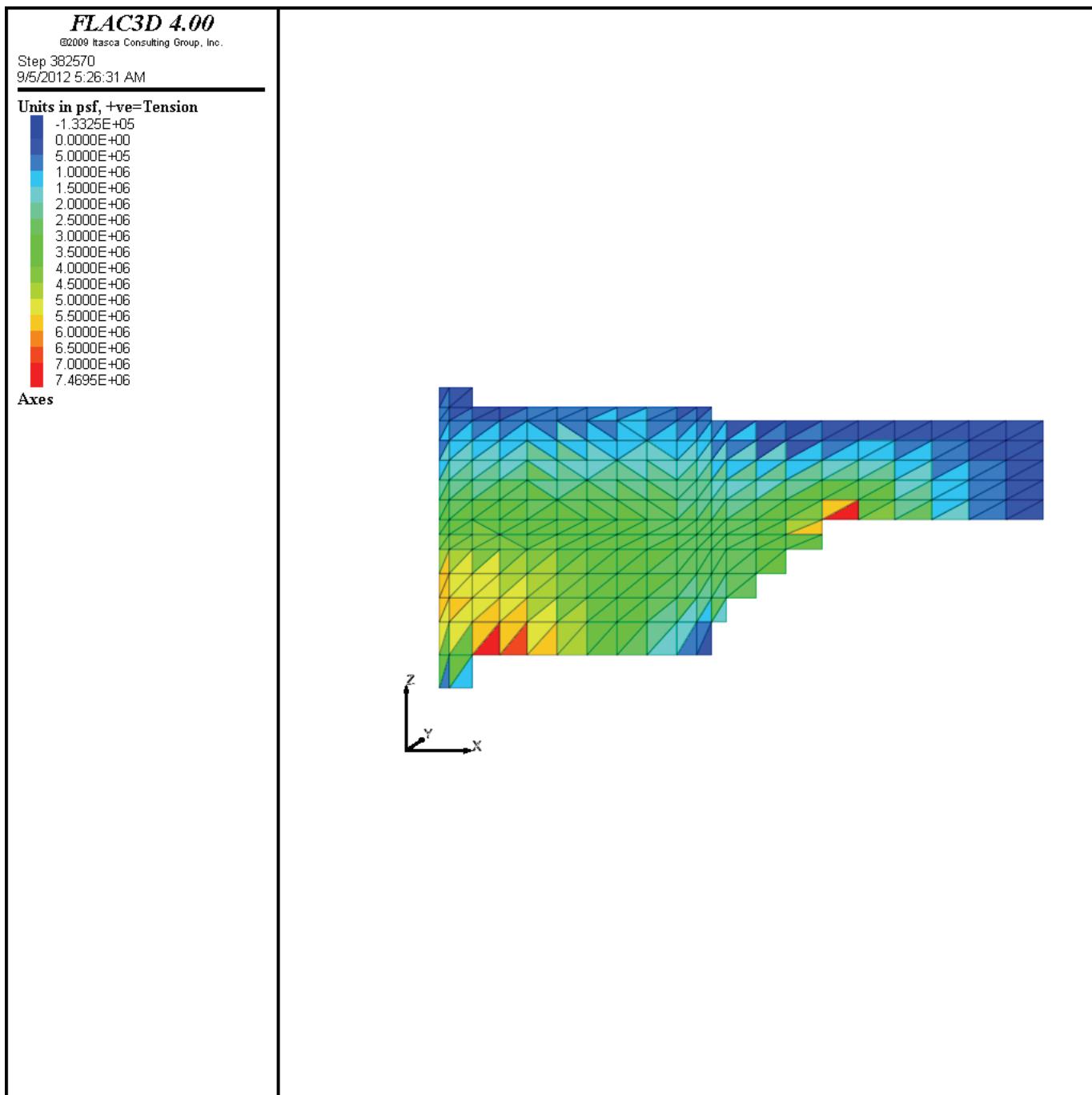


Figure F-2.2.5.d Tailwall Membrane Stress – As-Built Snapshot 10 Sec – Western Washington EQ Record

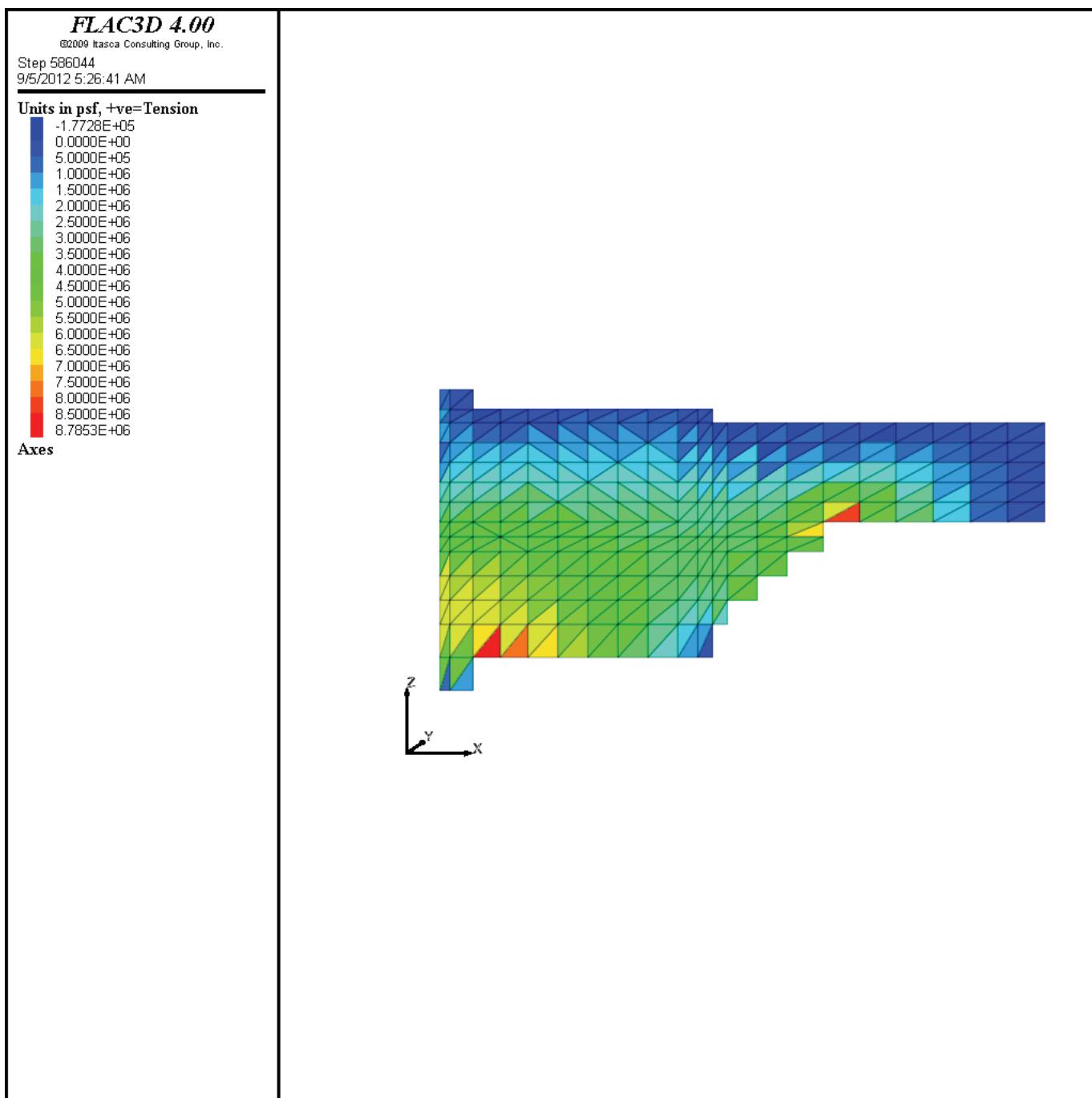


Figure F-2.2.6.d Tailwall Membrane Stress – As-Built Snapshot 20 Sec – Western Washington EQ Record

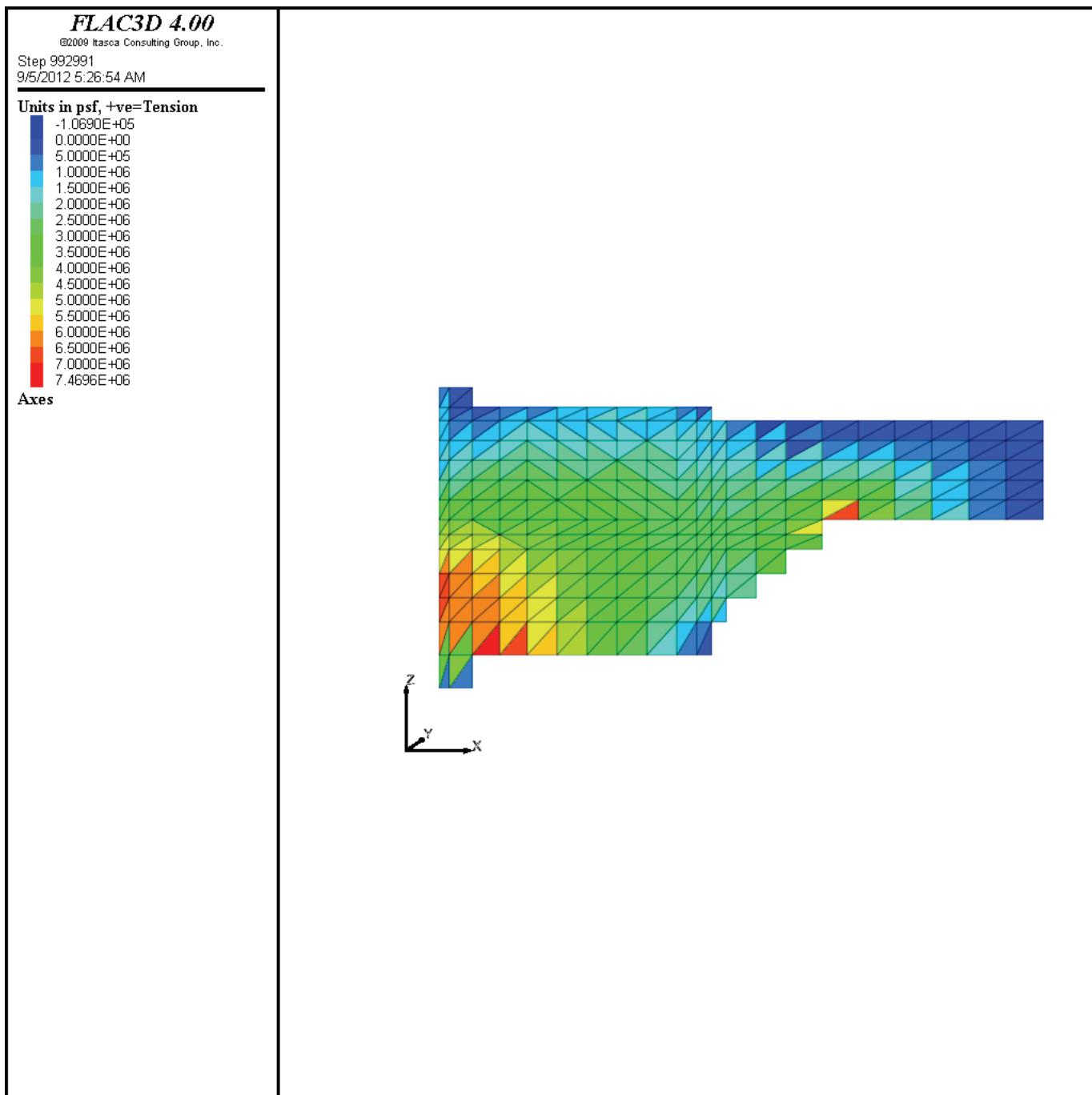


Figure F-2.2.7.d Tailwall Membrane Stress – As-Built Snapshot 40 Sec – Western Washington EQ Record

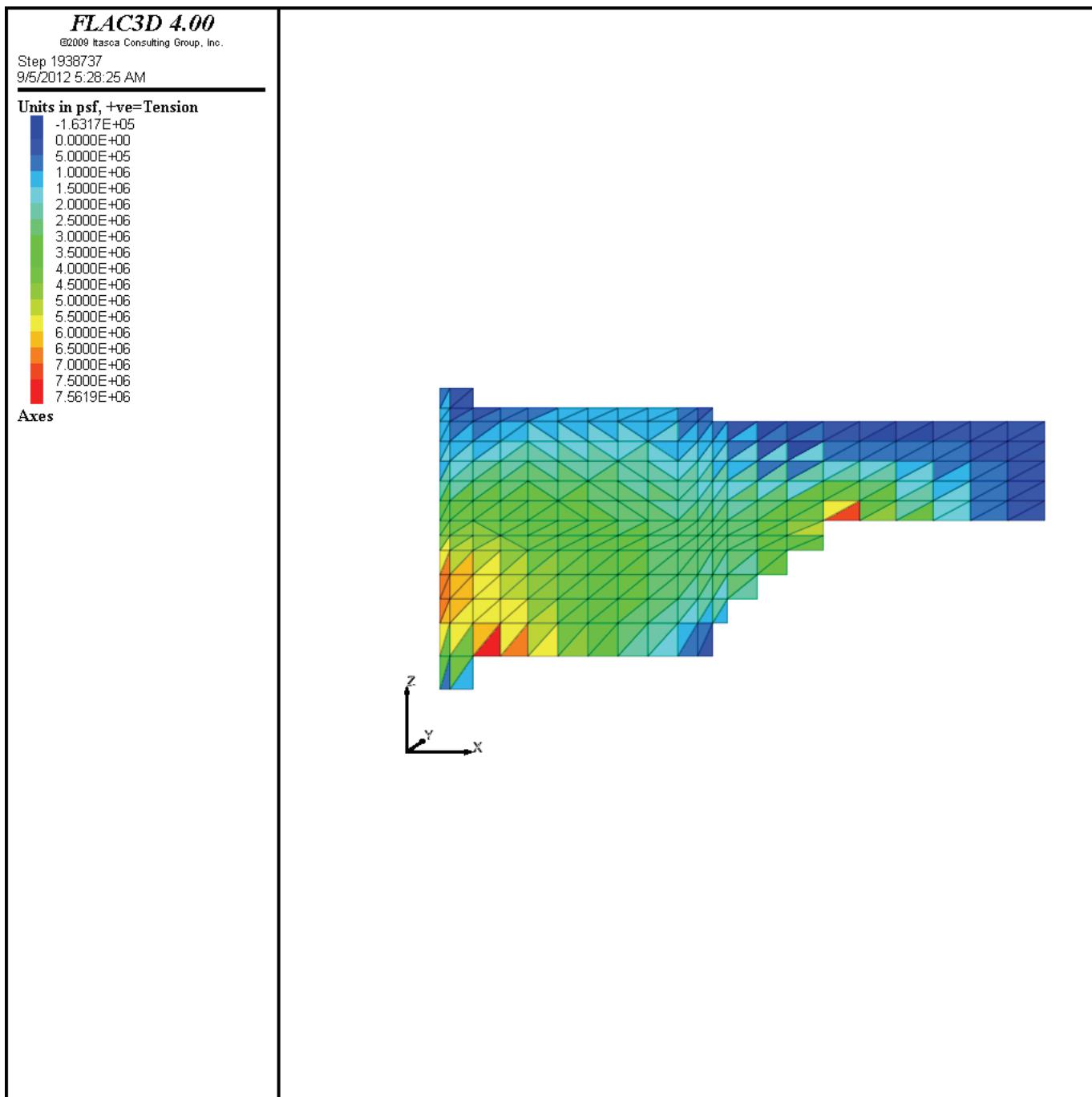


Figure F-2.2.8.d Tailwall Membrane Stress – As-Built Snapshot 87 Sec – Western Washington EQ Record

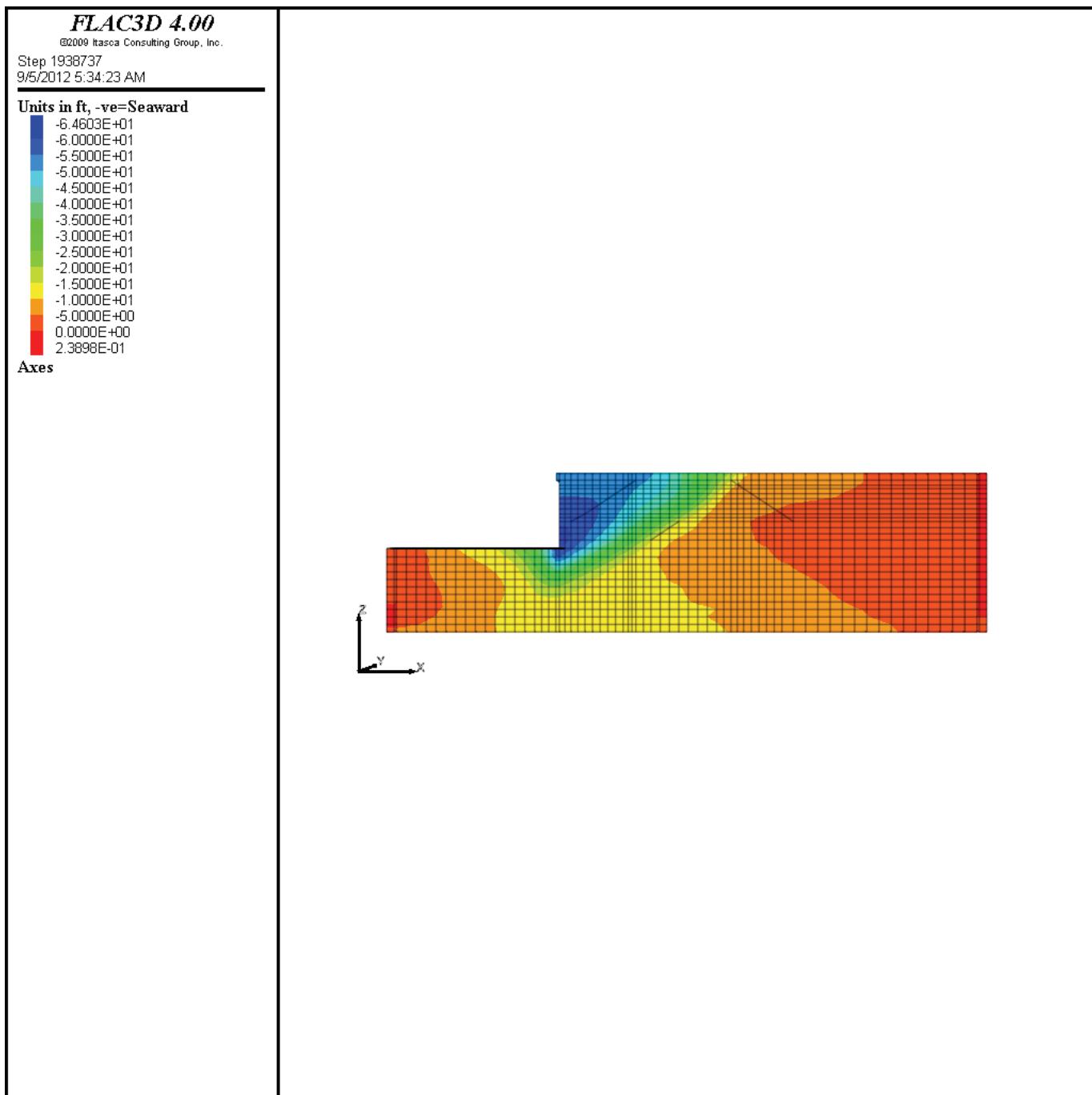


Figure F-2.2.9.d Permanent Soil X-Displacement Contours – As-Built – Western Washington EQ Record

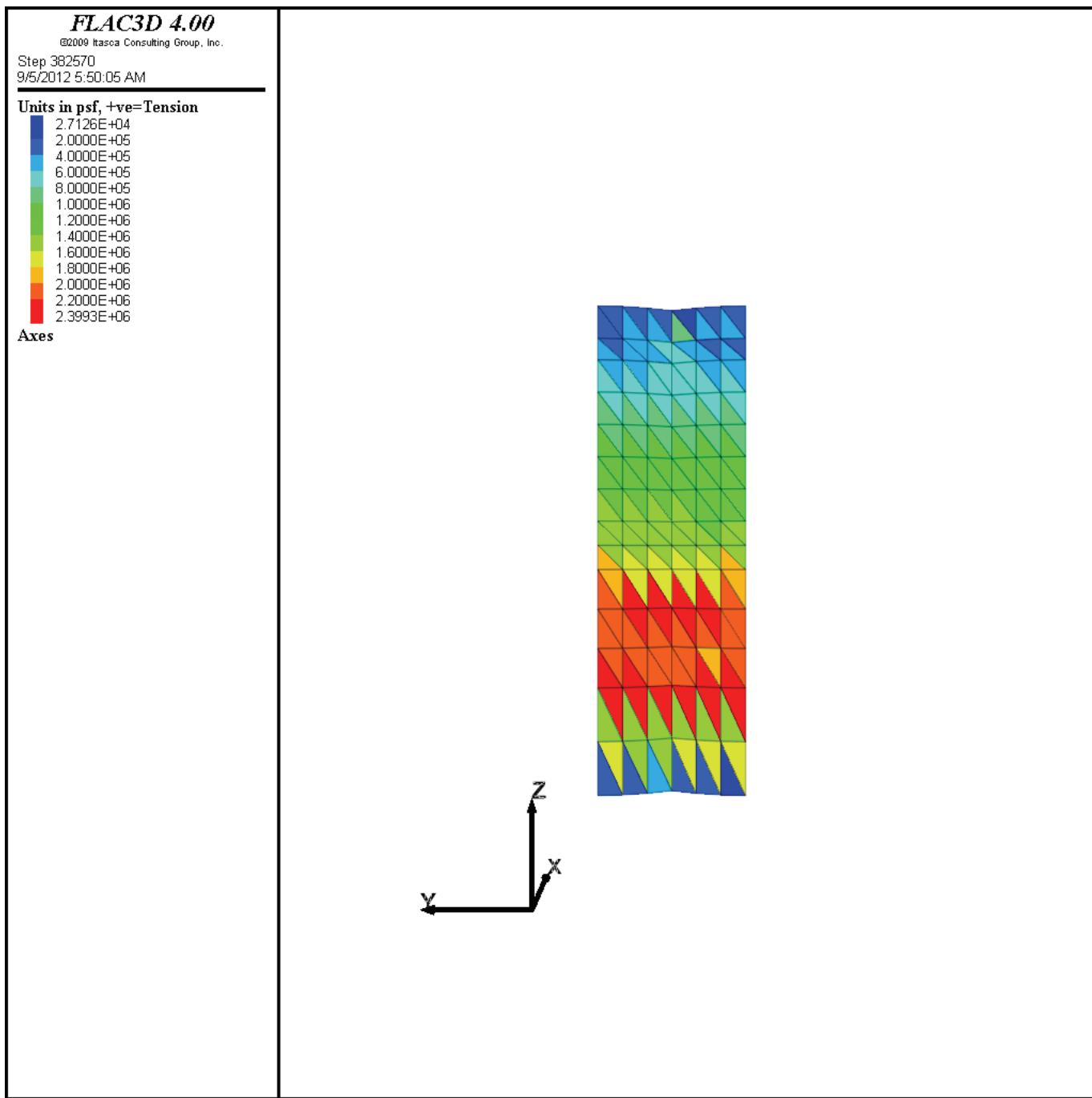


Figure F-2.3.1.a Facewall Membrane Stress – As-Built Snapshot At 10 Sec – Michoacan EQ Record

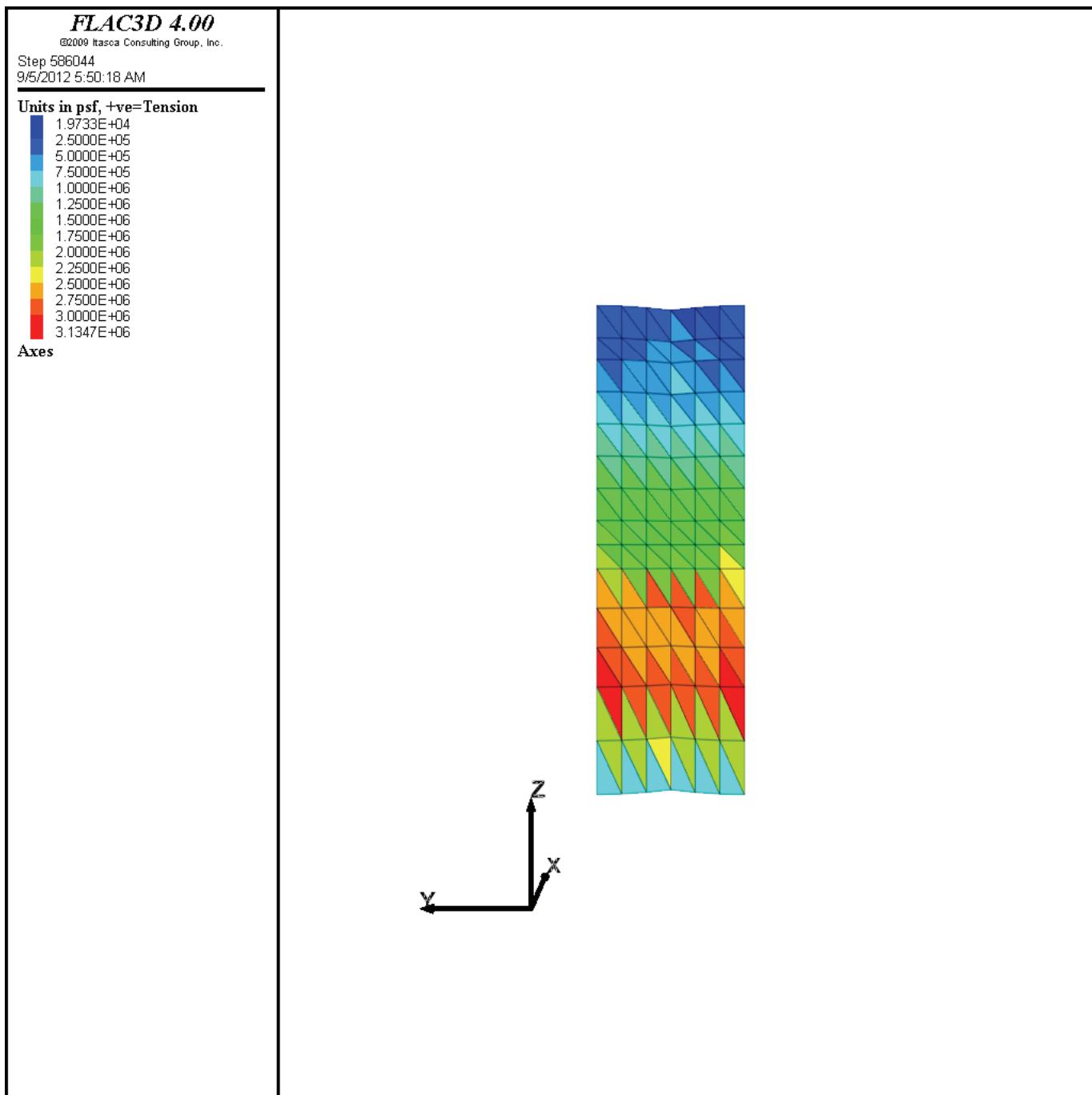


Figure F-2.3.2.a Facewall Membrane Stress – As-Built Snapshot 20 Sec – Michoacan EQ Record

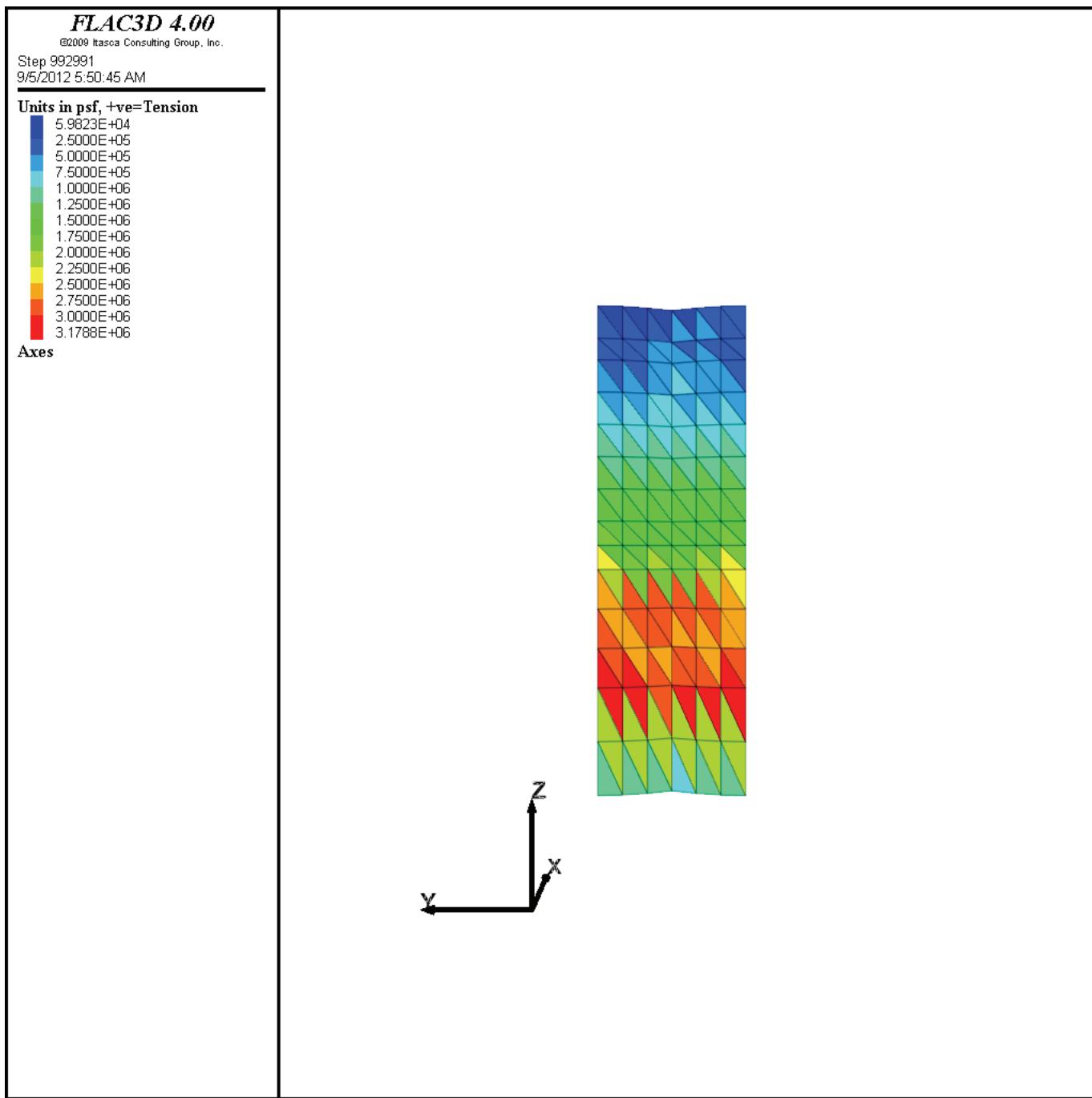


Figure F-2.3.3.a Facewall Membrane Stress – As-Built Snapshot 40 Sec – Michoacan EQ Record

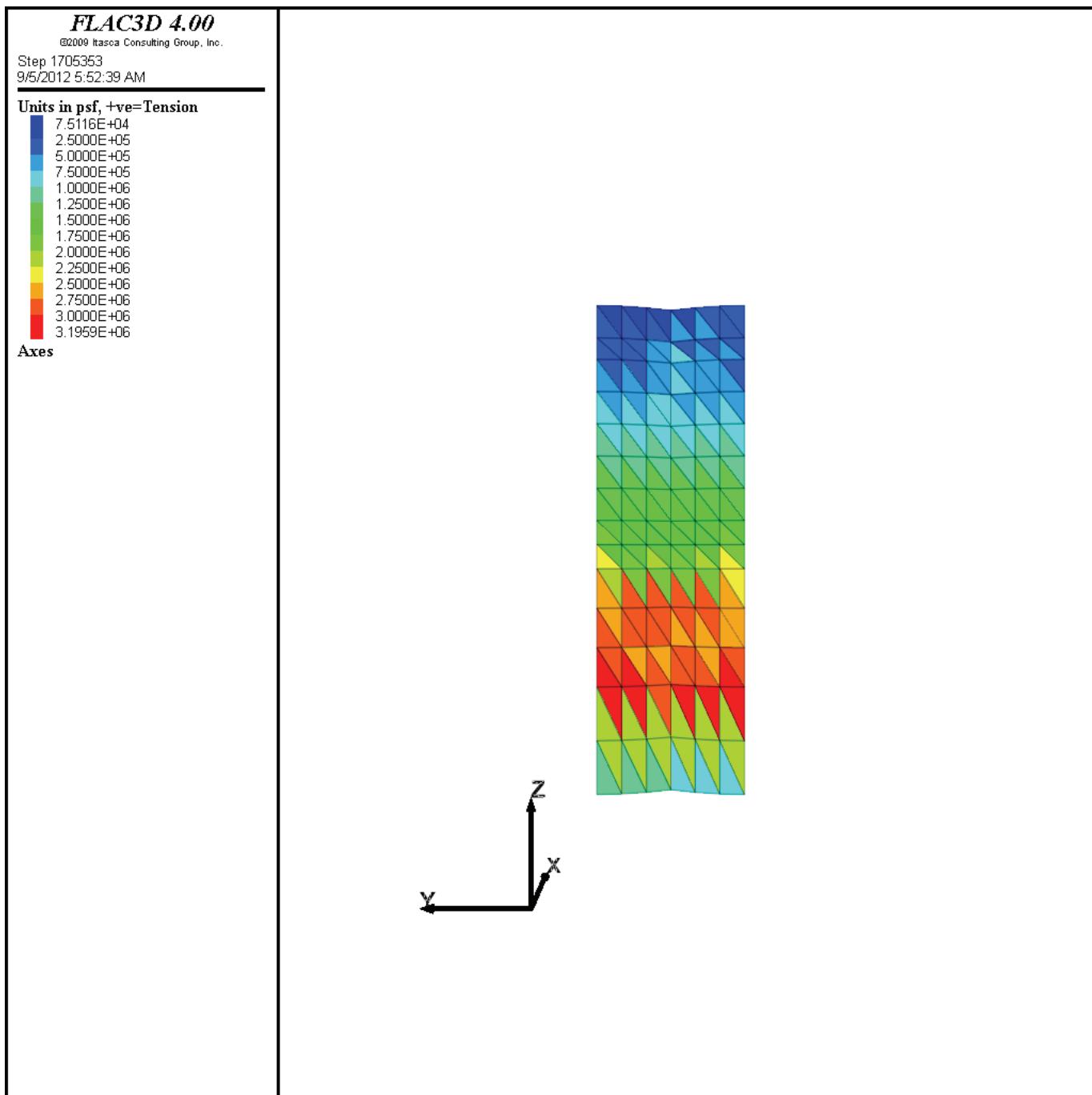


Figure F-2.3.4.a Facewall Membrane Stress – As-Built Snapshot 75 Sec – Michoacan EQ Record

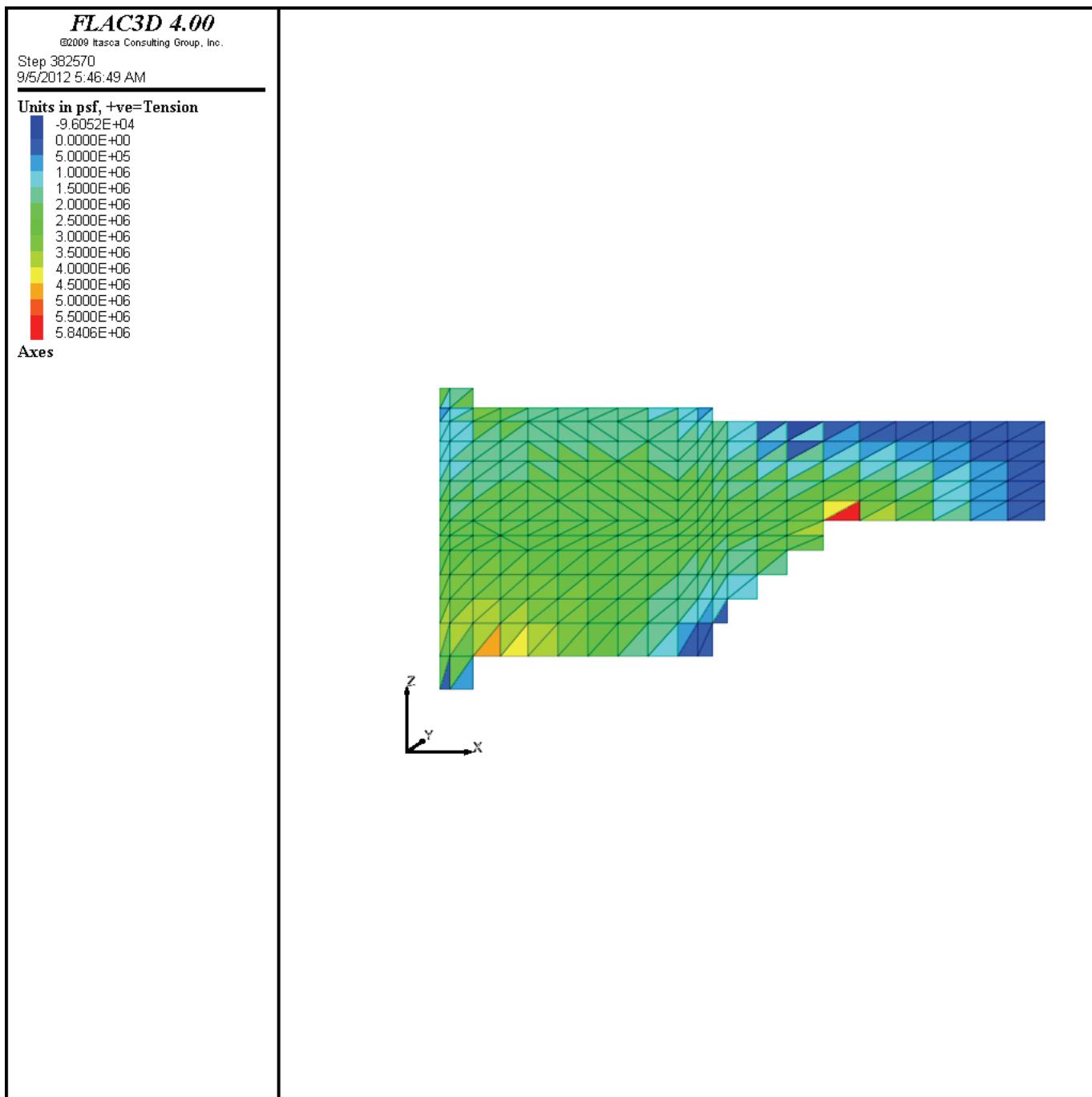


Figure F-2.3.5.a Tailwall Membrane Stress – As-Built Snapshot 10 Sec – Michoacan EQ Record

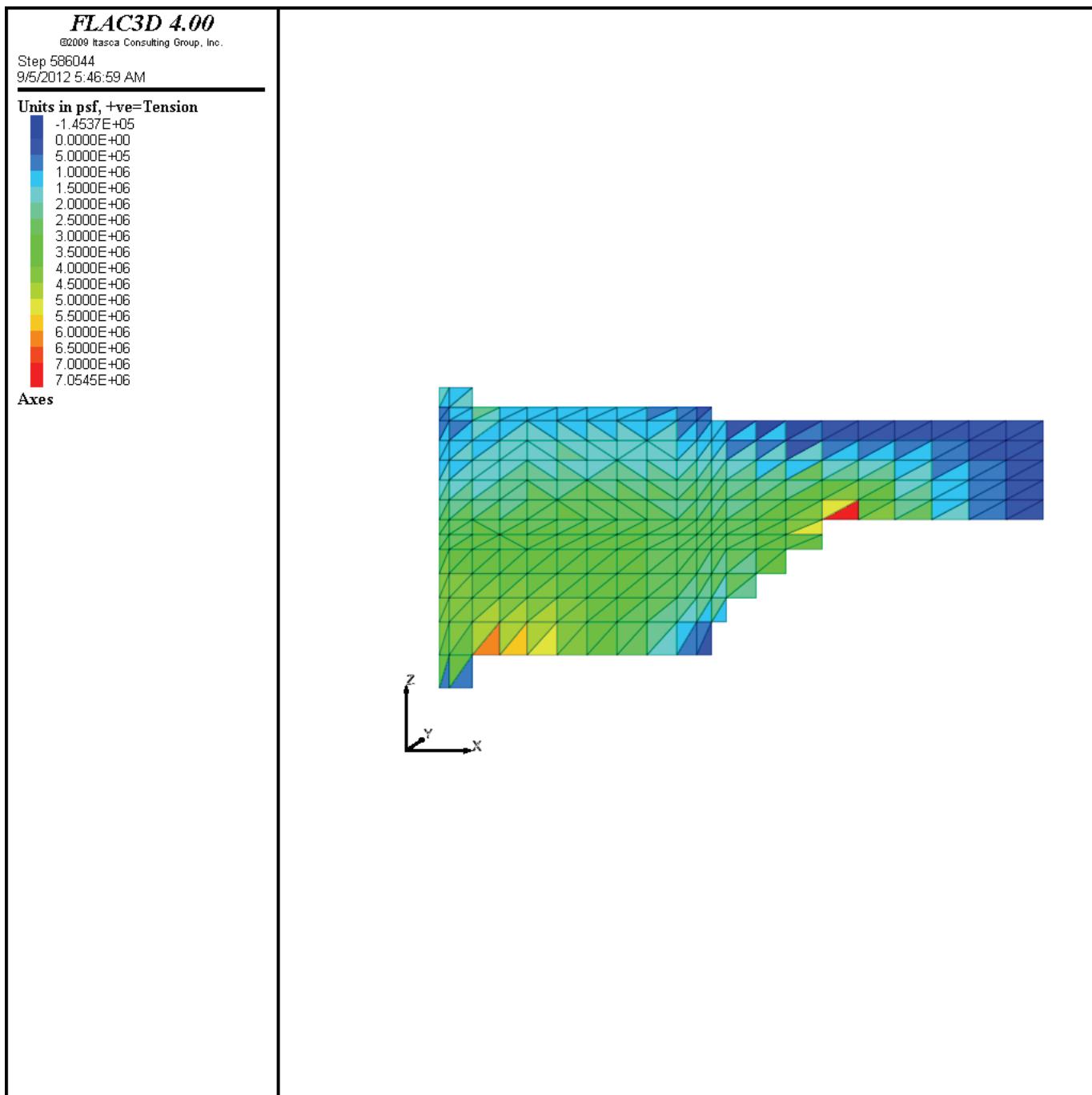


Figure F-2.3.6.a Tailwall Membrane Stress – As-Built Snapshot 20 Sec – Michoacan EQ Record

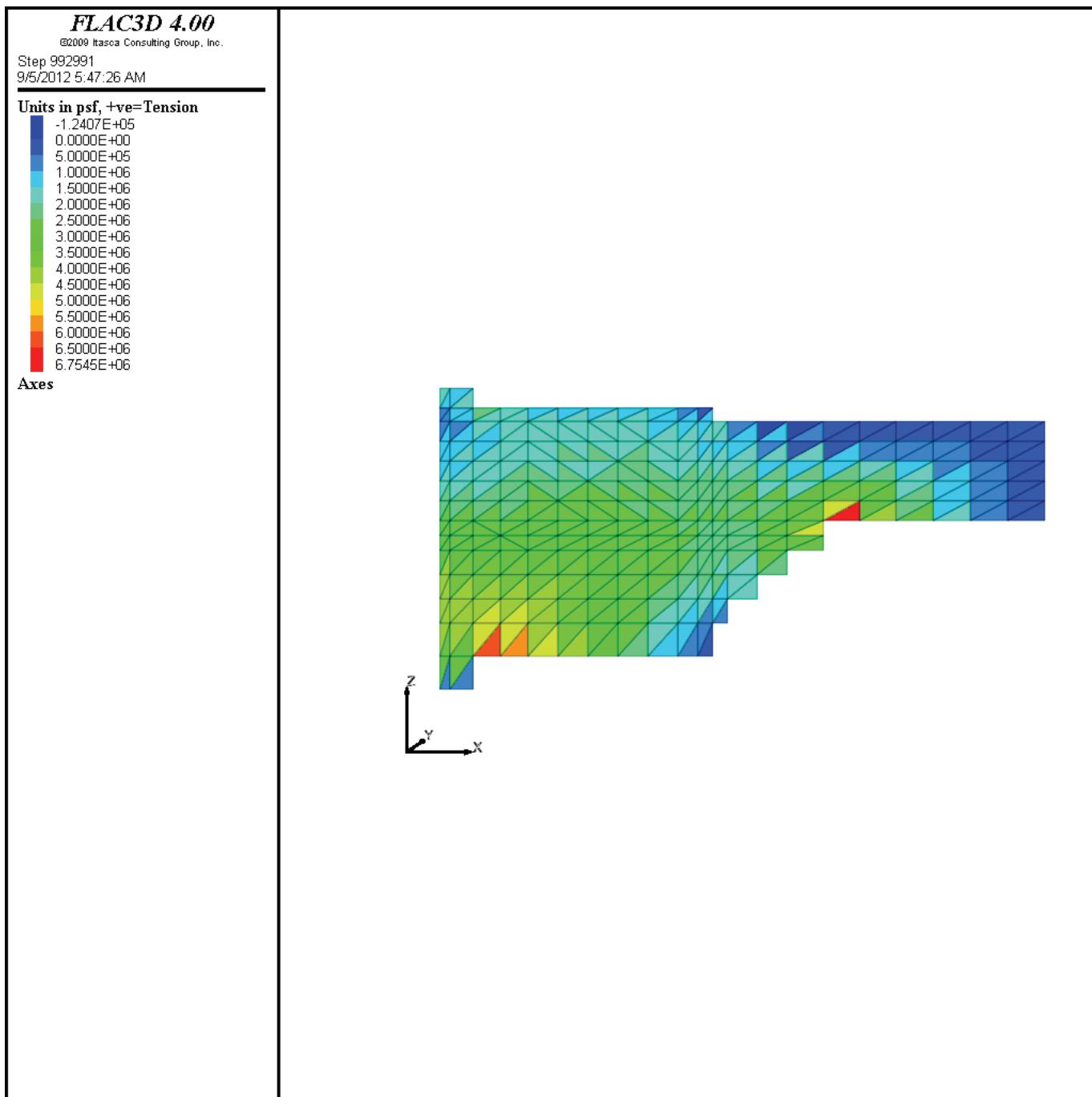


Figure F-2.3.7.a Tailwall Membrane Stress – As-Built Snapshot 40 Sec – Michoacan EQ Record

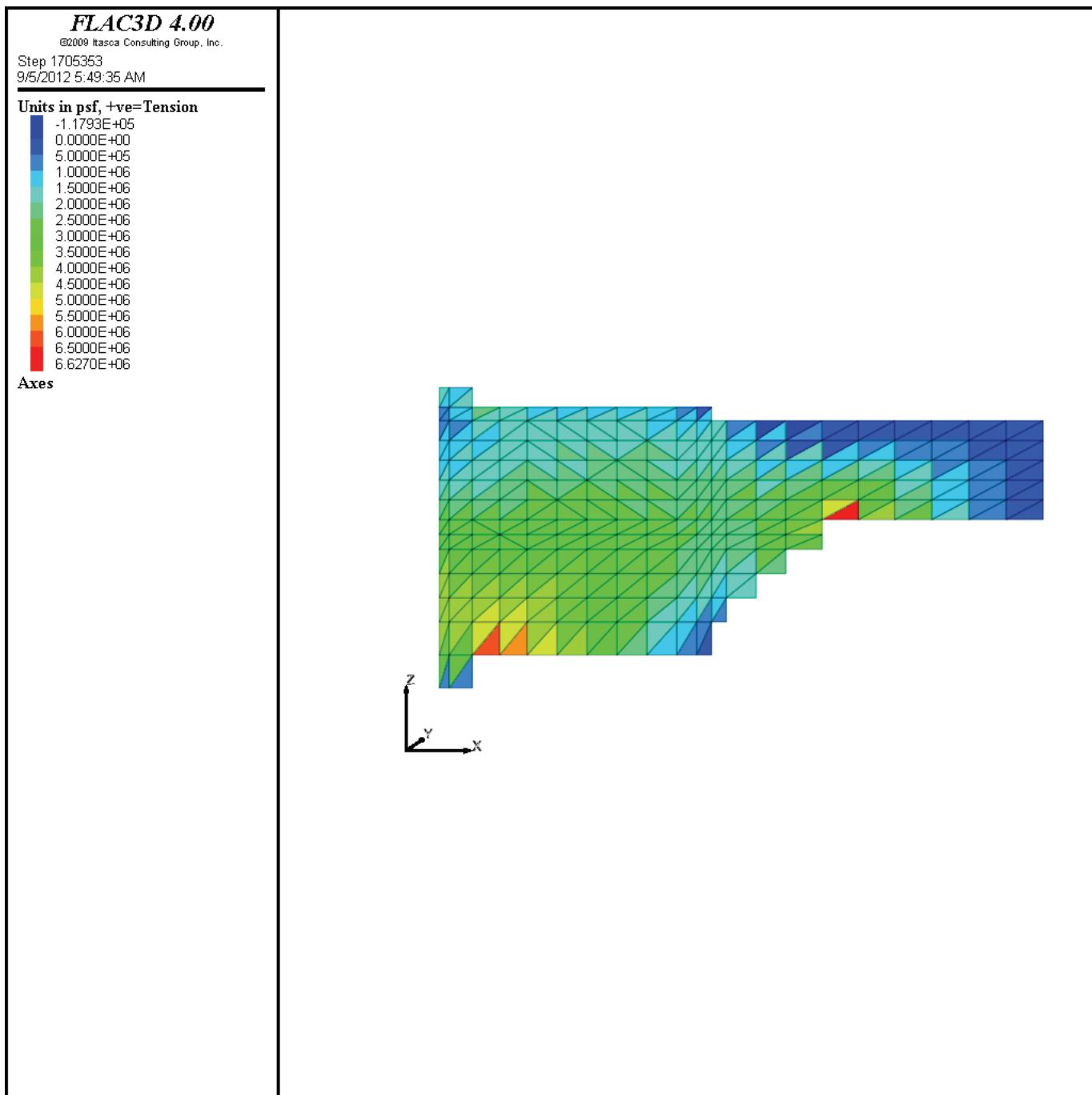


Figure F-2.3.8.a Tailwall Membrane Stress – As-Built Snapshot 75 Sec – Michoacan EQ Record

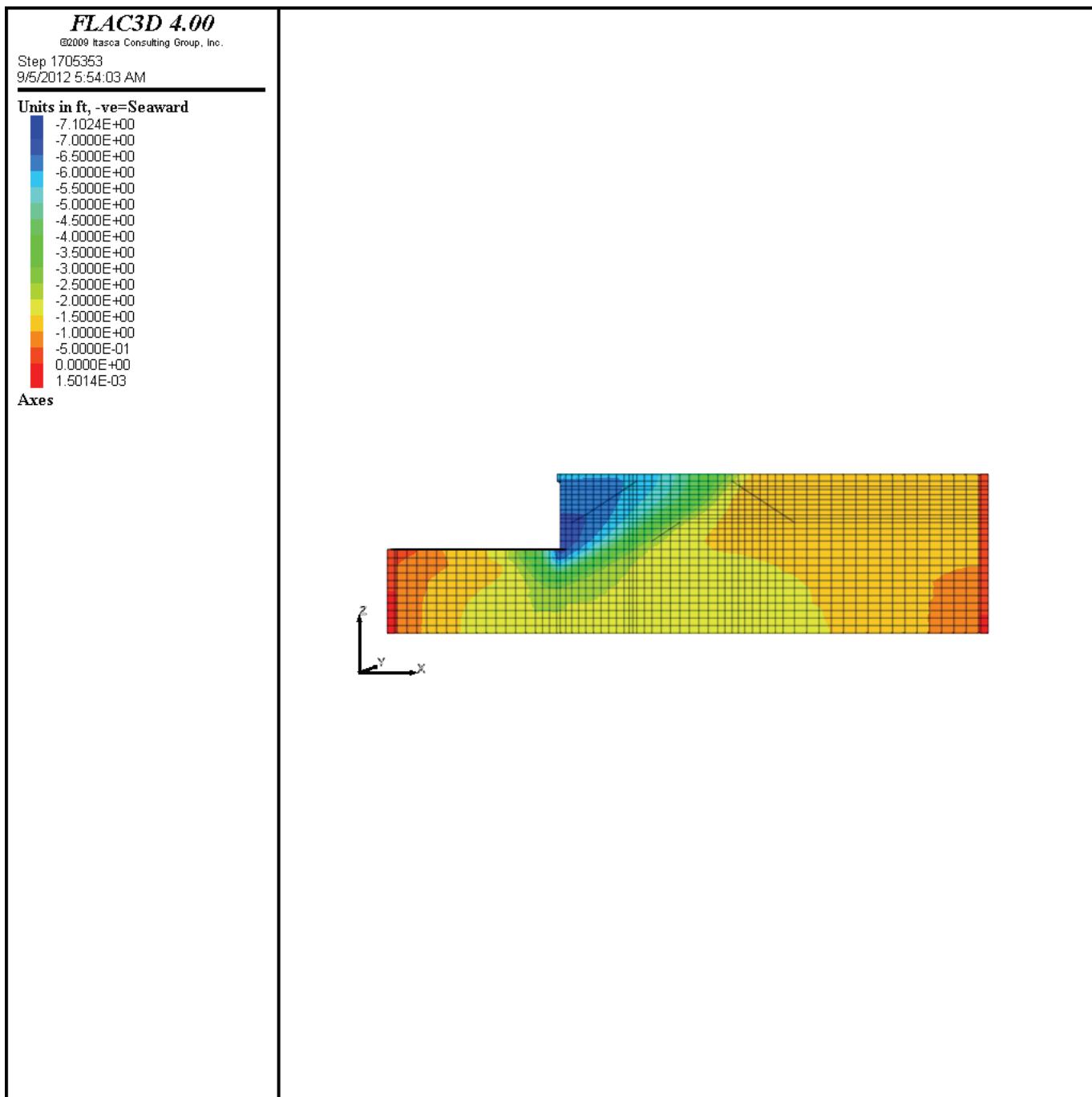


Figure F-2.3.9.a Permanent Soil X-Displacement Contours – As-Built – Michoacan EQ Record

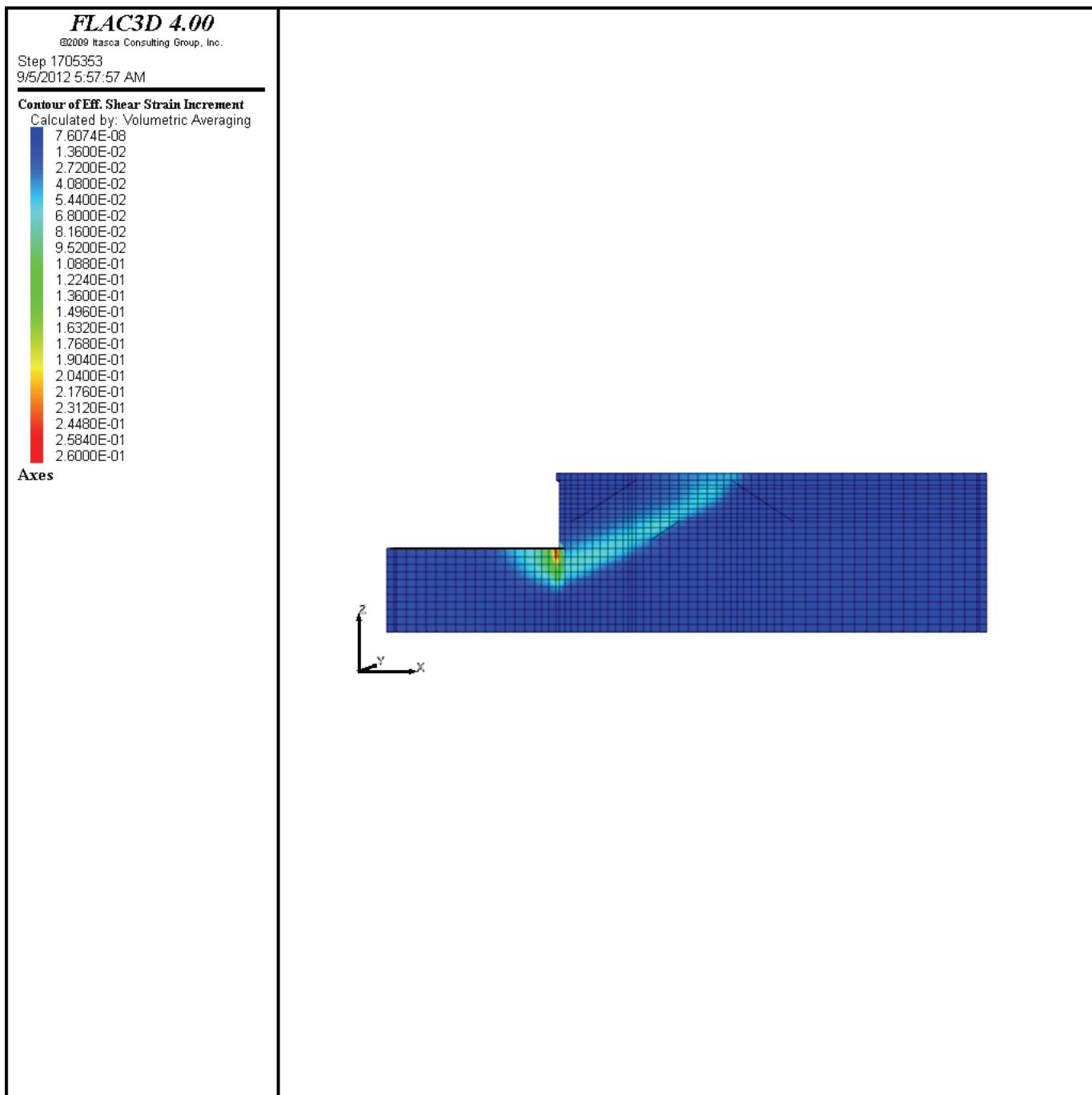


Figure F-2.3.10.a Effective Shear Strain Contours – As-Built – Michoacan EQ Record

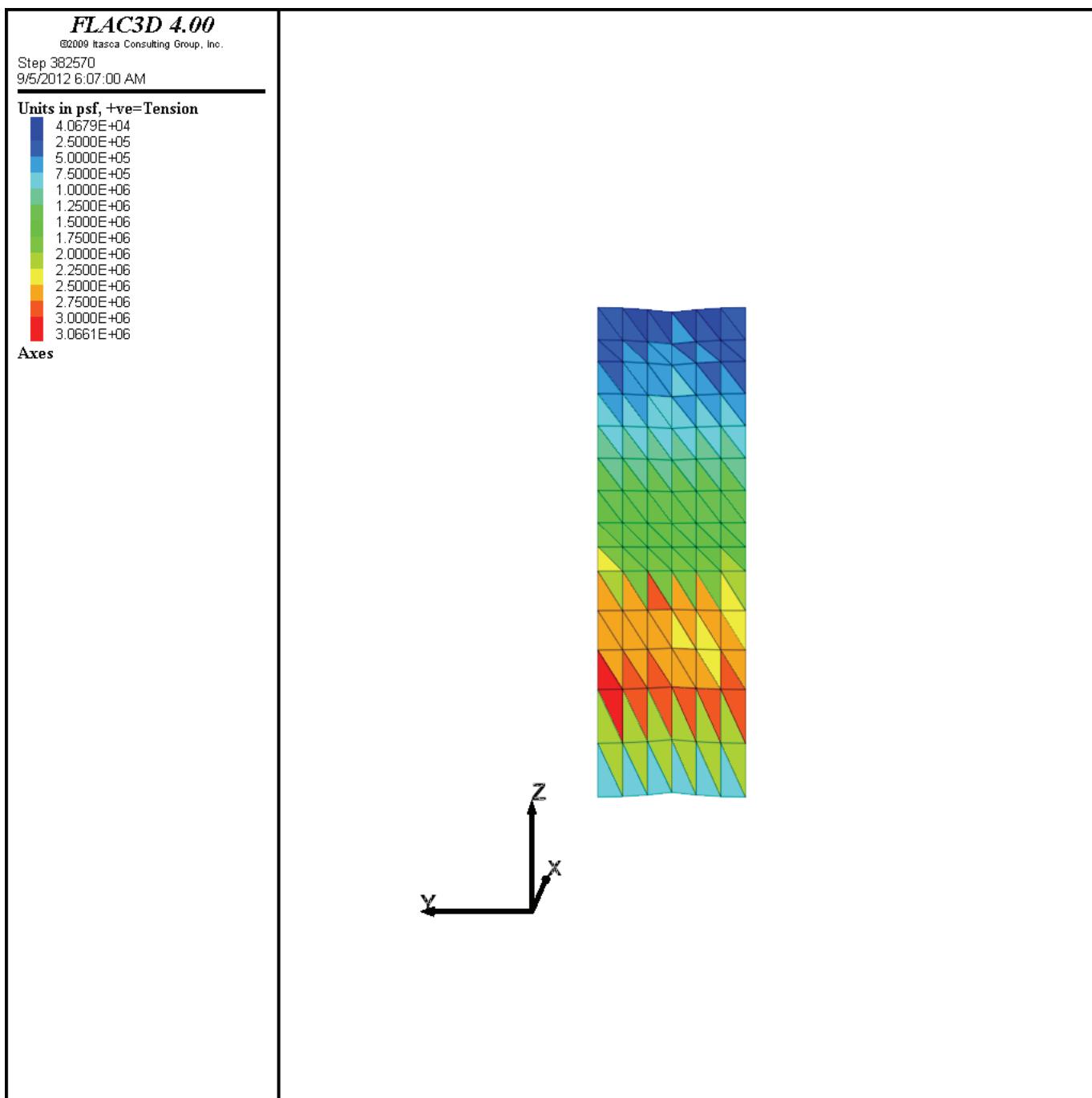


Figure F-2.3.1.b Facewall Membrane Stress – As-Built Snapshot At 10 Sec – Puget Sound EQ Record

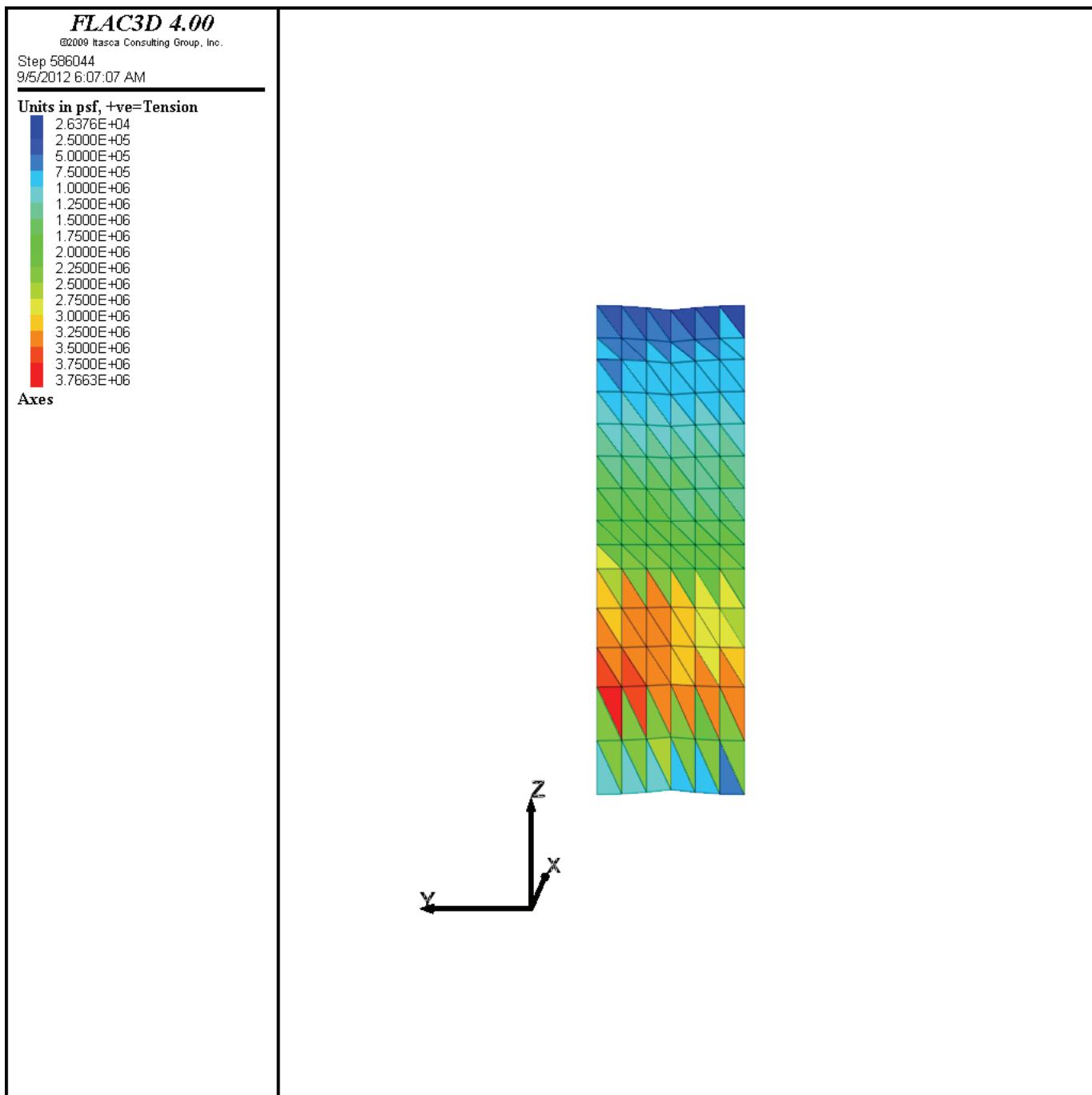


Figure F-2.3.2.b Facewall Membrane Stress – As-Built Snapshot 20 Sec – Puget Sound EQ Record

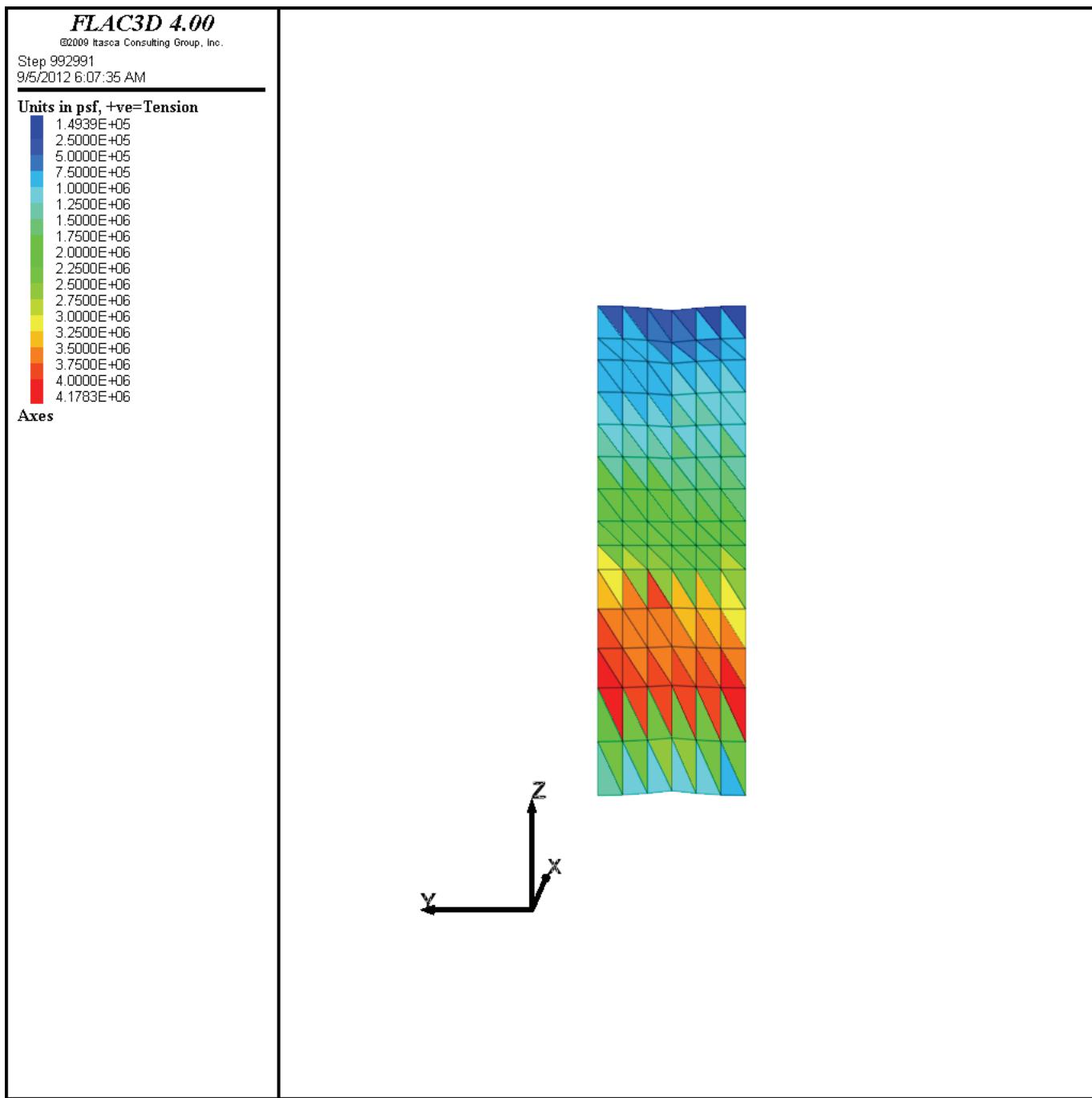


Figure F-2.3.3.b Facewall Membrane Stress – As-Built Snapshot 40 Sec – Puget Sound EQ Record

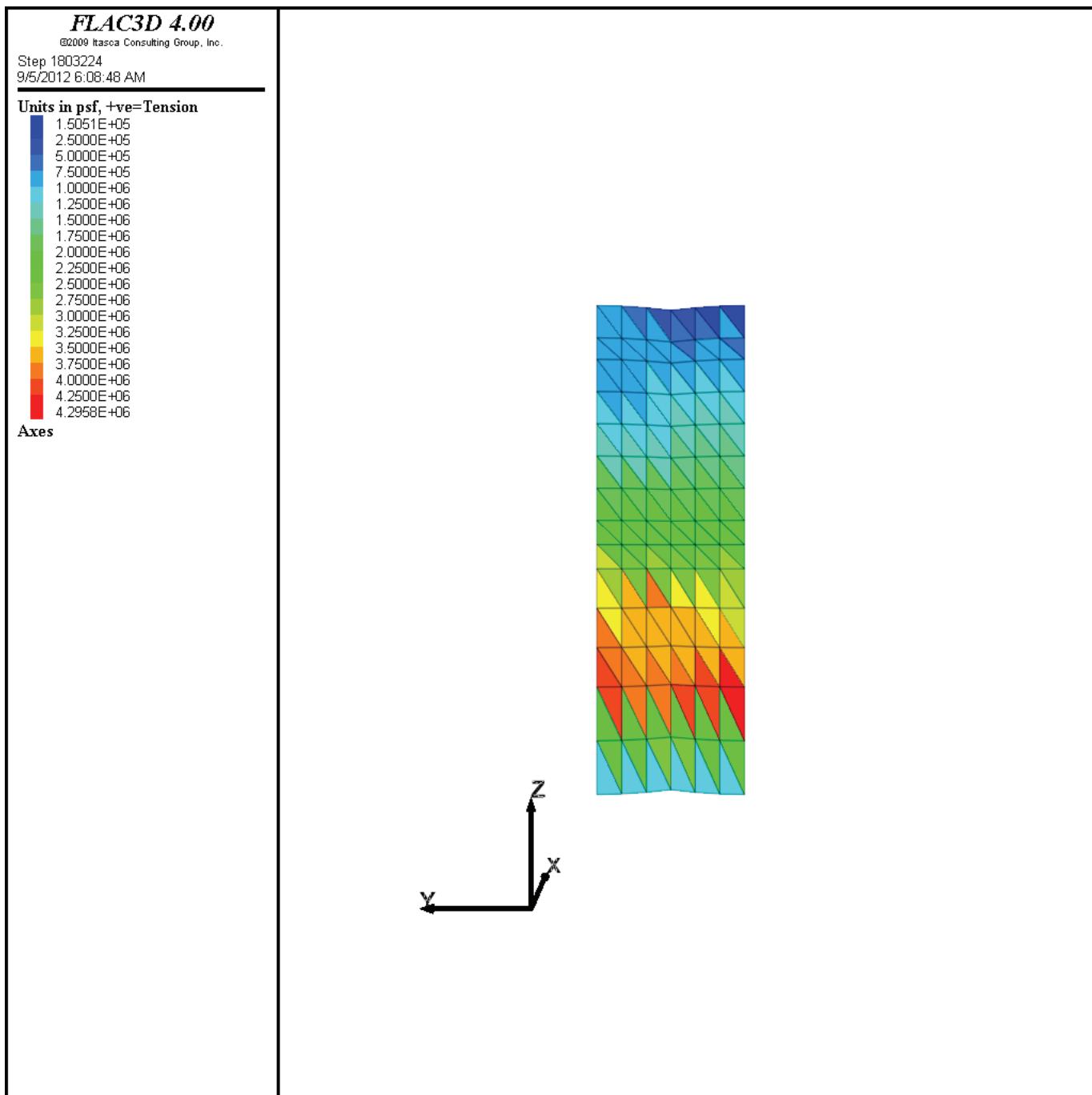


Figure F-2.3.4.b Facewall Membrane Stress – As-Built Snapshot 80 Sec – Puget Sound EQ Record

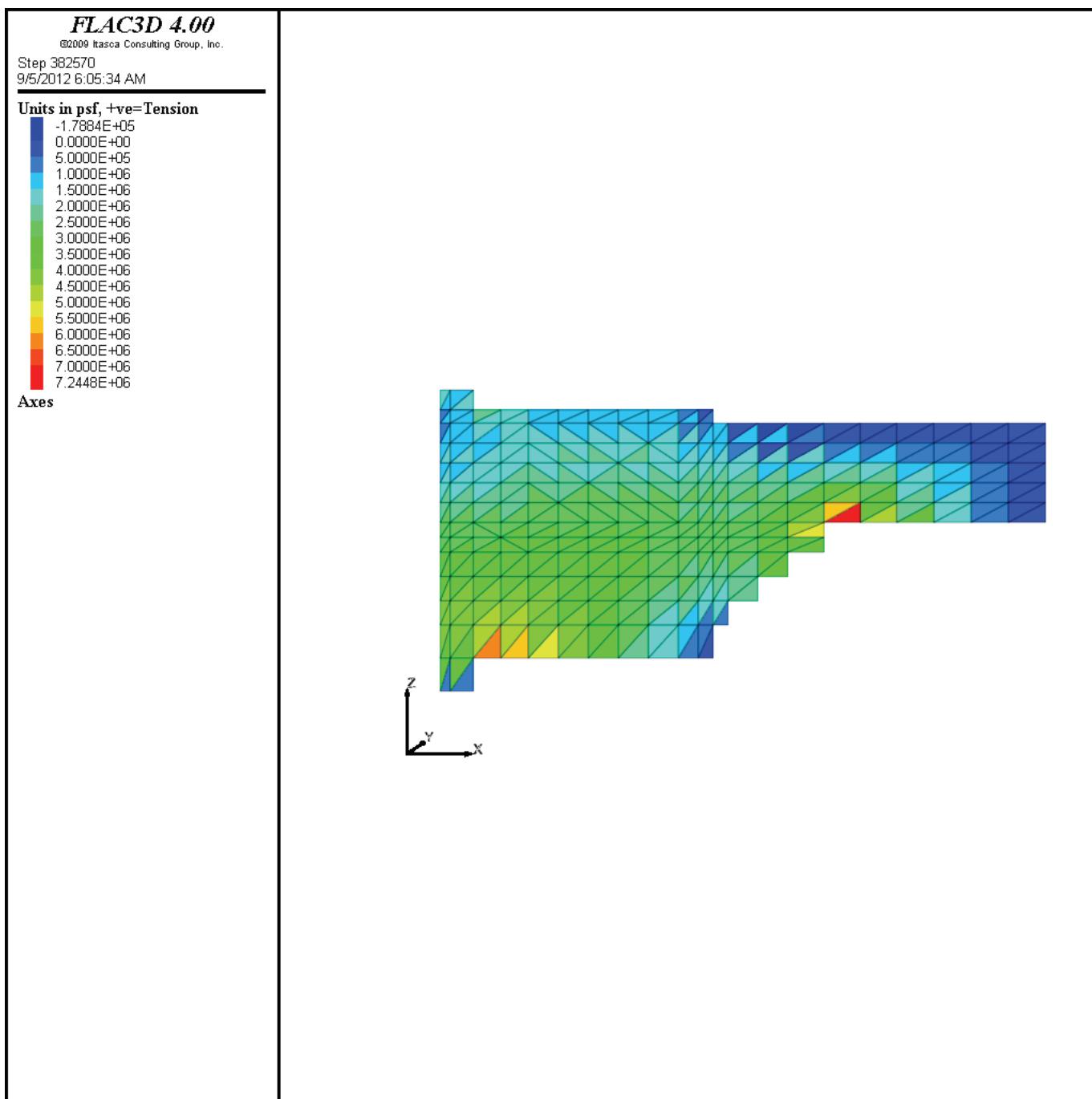


Figure F-2.3.5.b Tailwall Membrane Stress – As-Built Snapshot 10 Sec – Puget Sound EQ Record

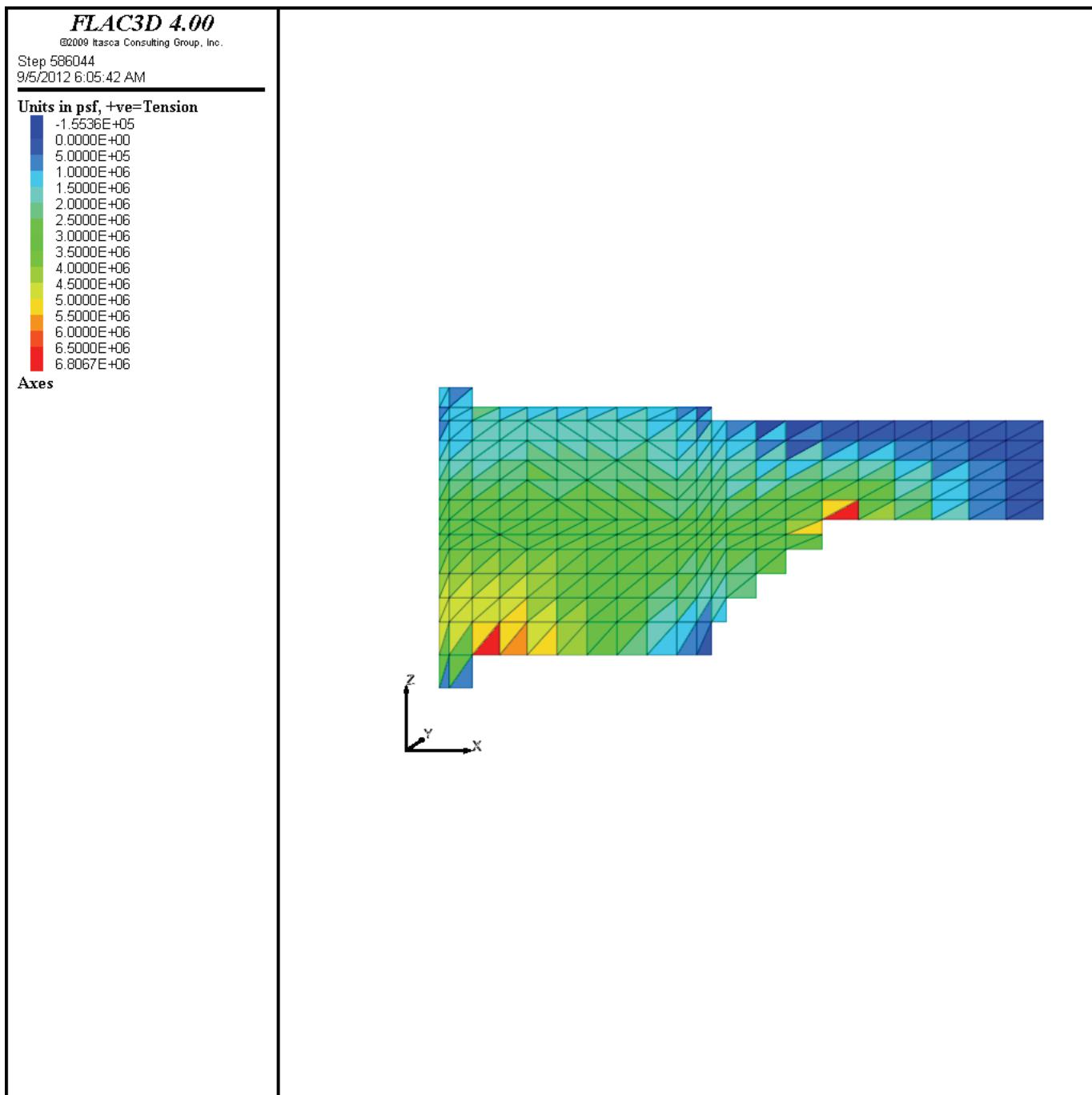


Figure F-2.3.6.b Tailwall Membrane Stress – As-Built Snapshot 20 Sec – Puget Sound EQ Record

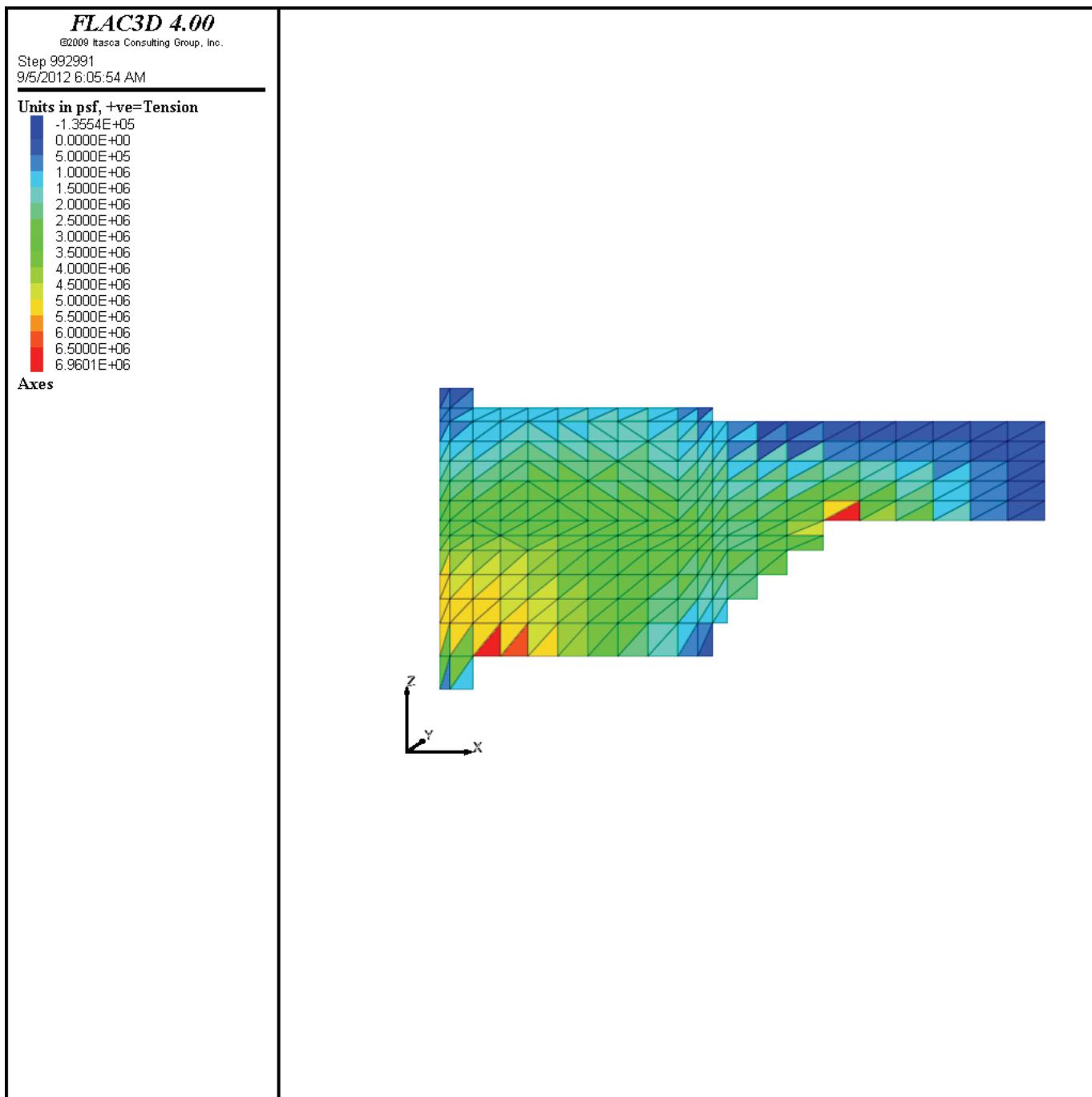


Figure F-2.3.7.b Tailwall Membrane Stress – As-Built Snapshot 40 Sec – Puget Sound EQ Record

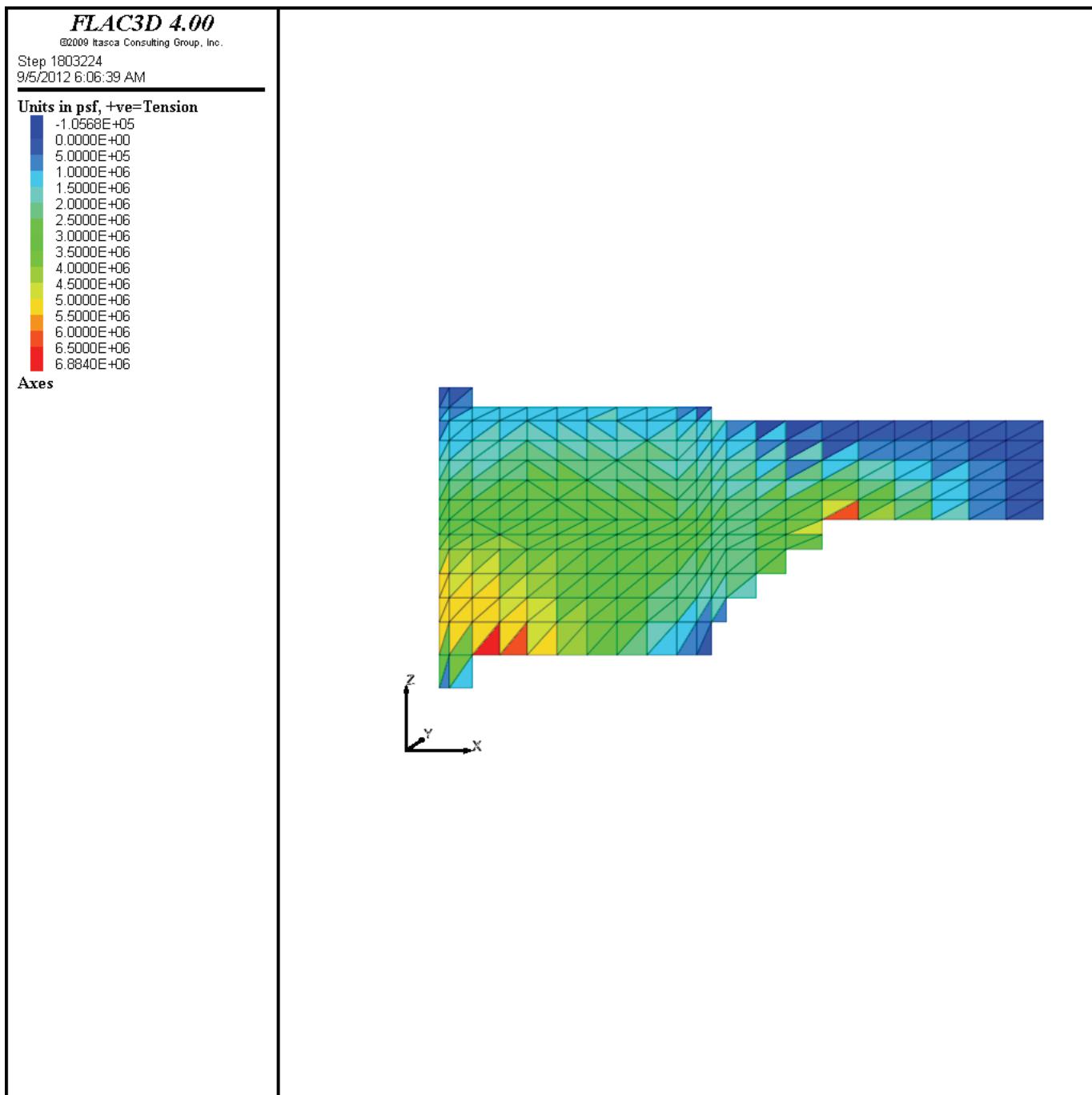


Figure F-2.3.8.b Tailwall Membrane Stress – As-Built Snapshot 80 Sec – Puget Sound EQ Record

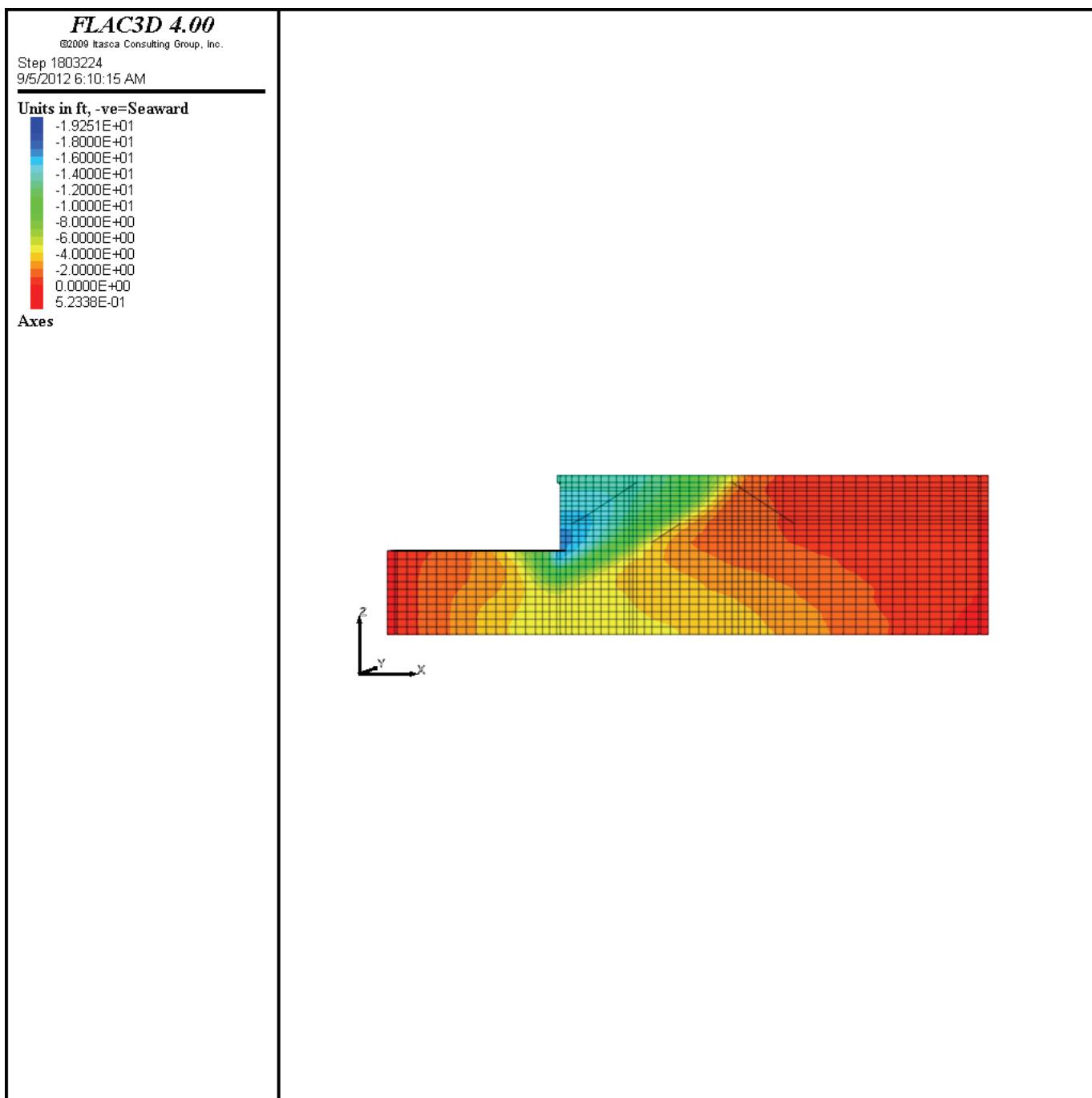


Figure F-2.3.9.b Permanent Soil X-Displacement Contours – As-Built – Puget Sound EQ Record

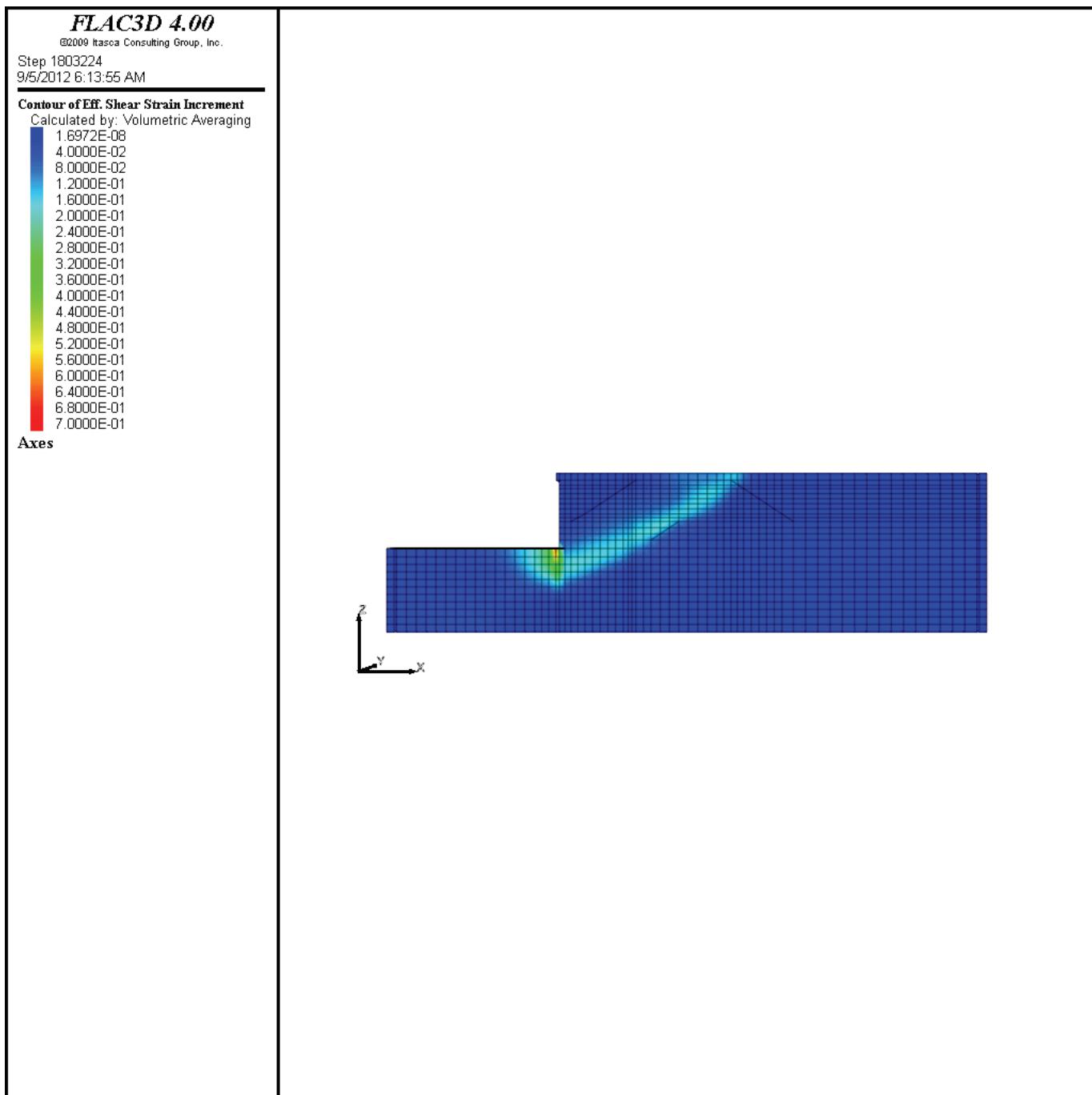


Figure F-2.3.10.b Effective Shear Strain Contours – As-Built – Puget Sound EQ Record

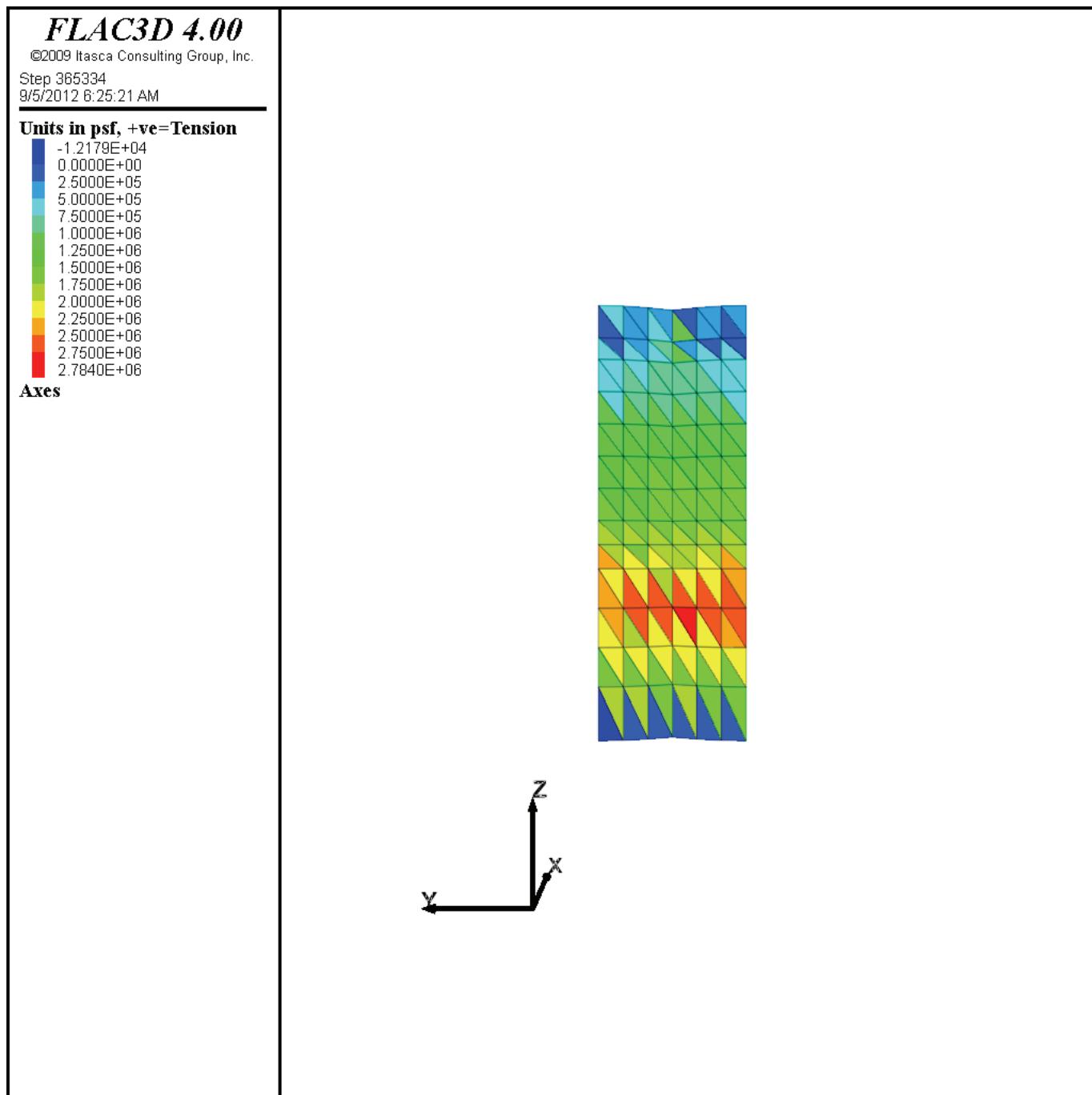


Figure F-3.1.1.a Facewall Membrane Stress – Independent Design Snapshot At 10 Sec – Michoacan EQ Record

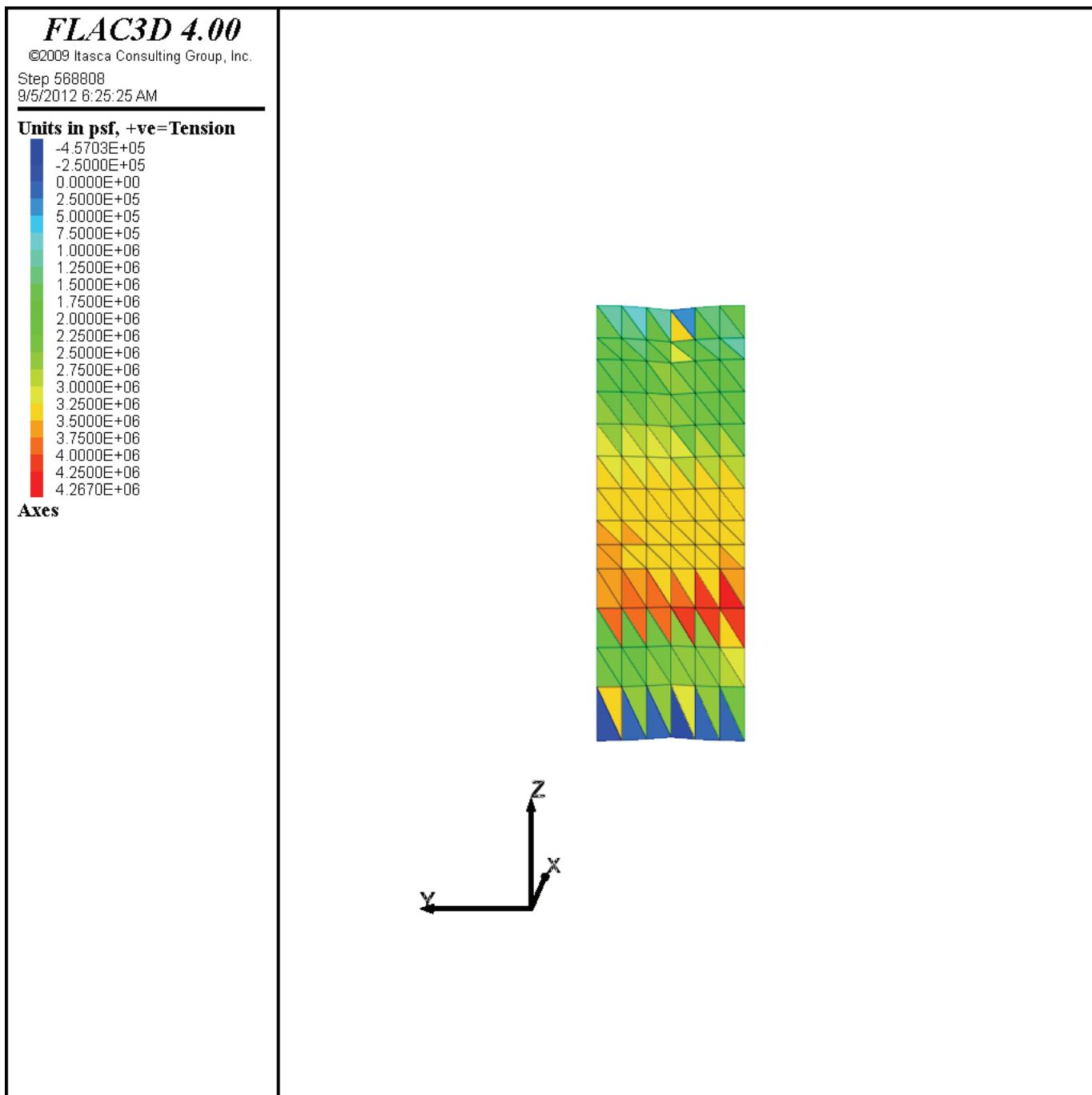


Figure F-3.1.2.a Facewall Membrane Stress – Independent Design Snapshot 20 Sec – Michoacan EQ Record

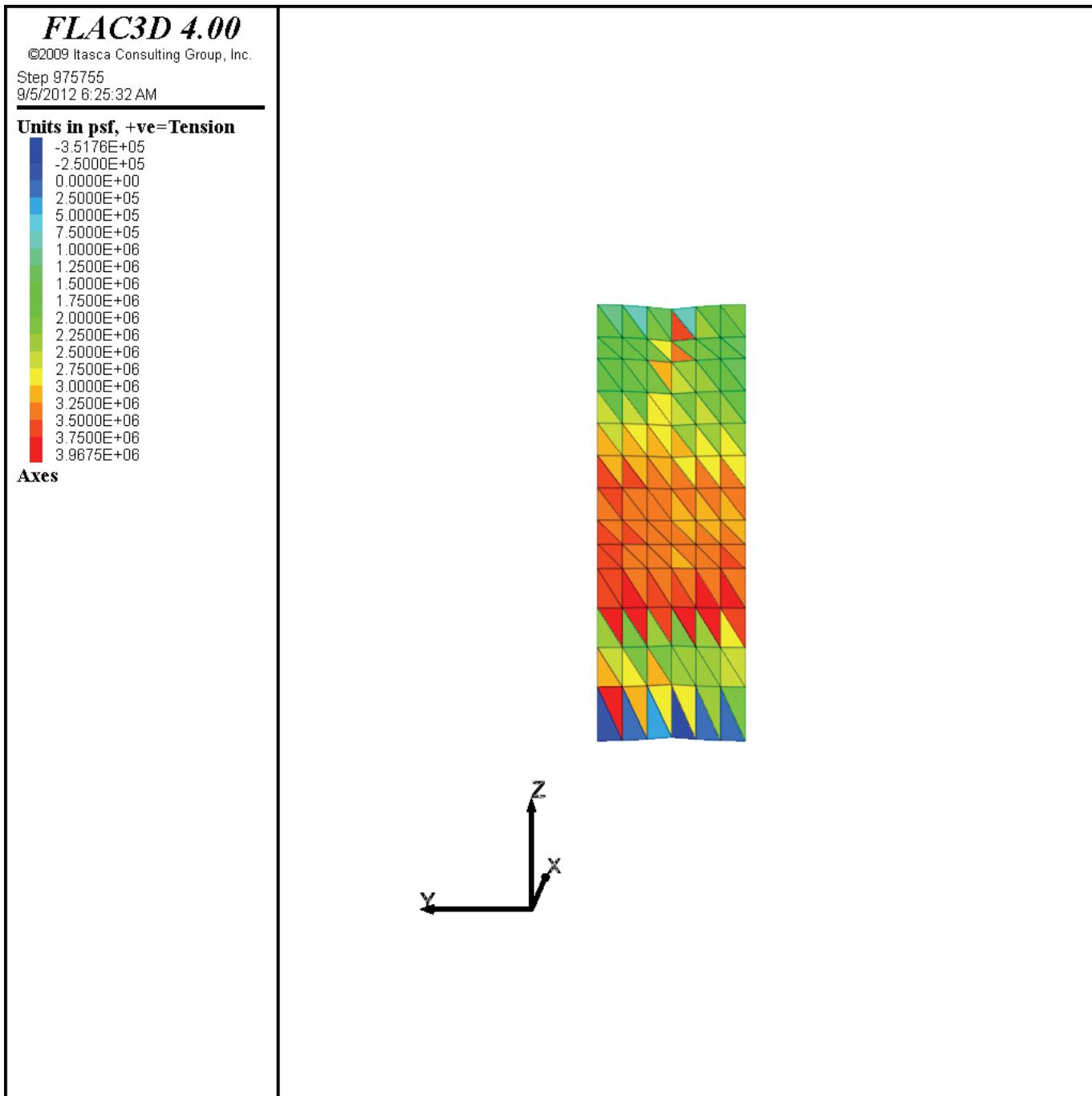


Figure F-3.1.3.a Facewall Membrane Stress – Independent Design Snapshot 40 Sec – Michoacan EQ Record

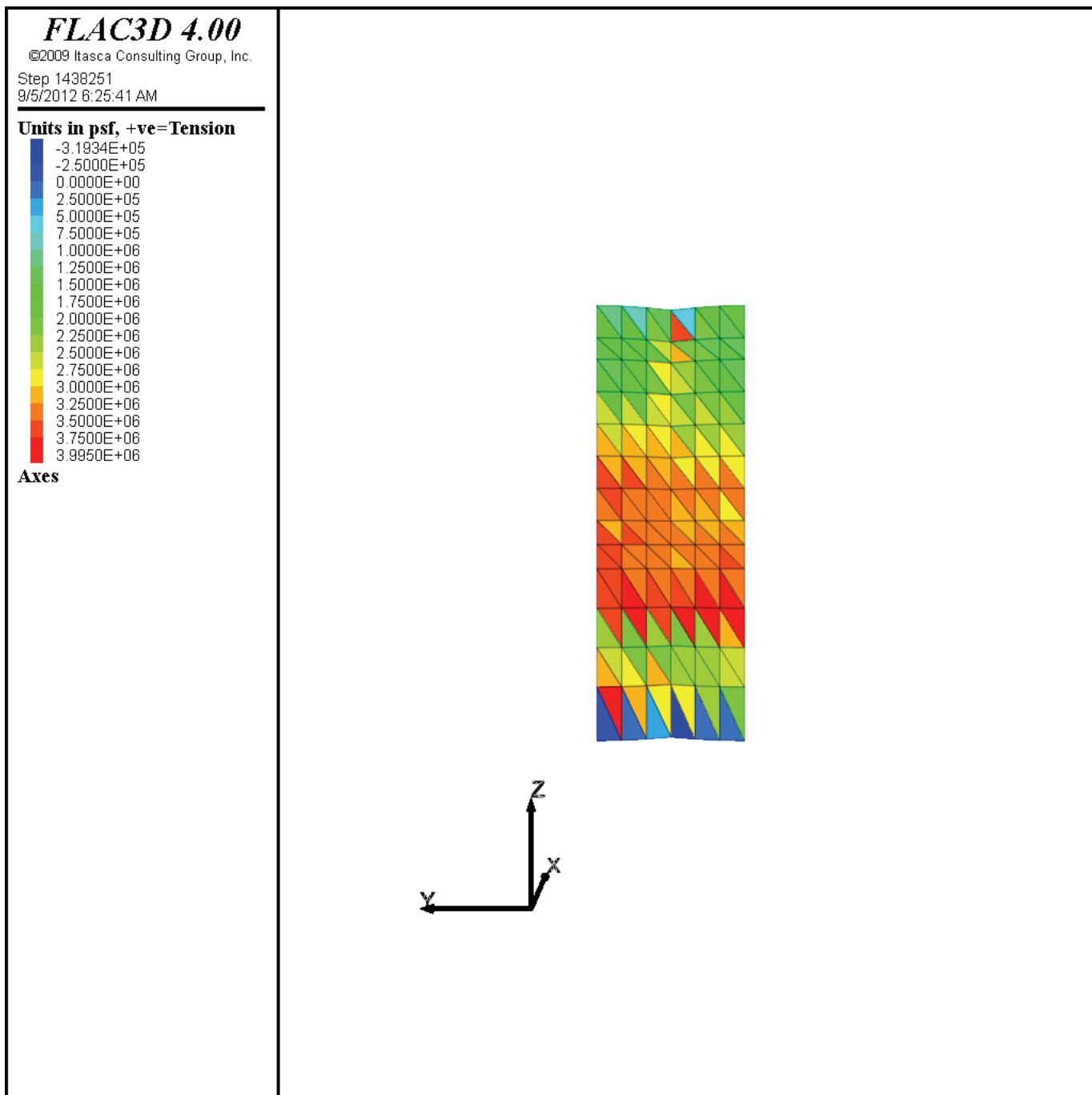


Figure F-3.1.4.a Facewall Membrane Stress – Independent Design Snapshot 63 Sec – Michoacan EQ Record

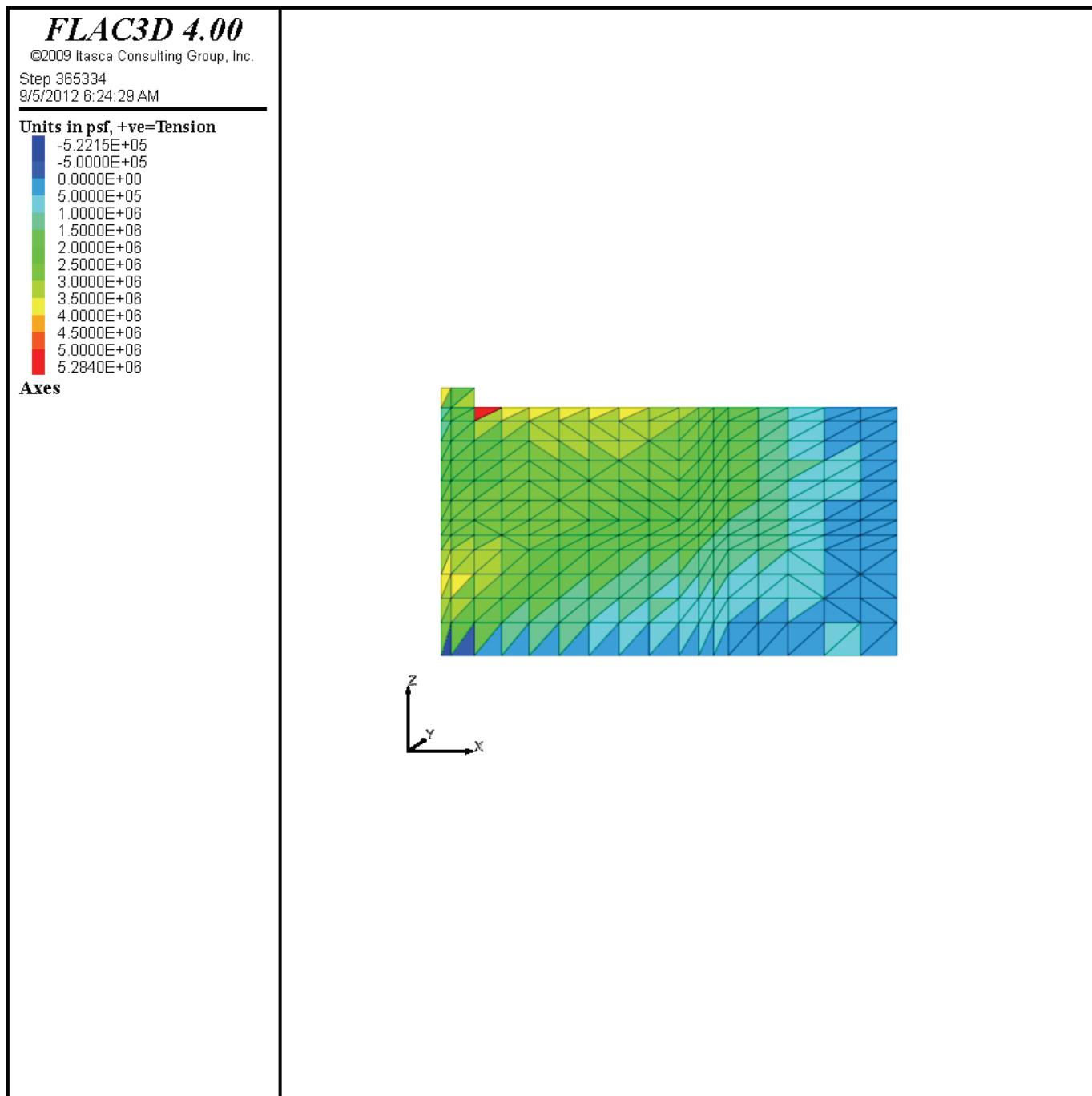


Figure F-3.1.5.a Tailwall Membrane Stress – Independent Design Snapshot 10 Sec – Michoacan EQ Record

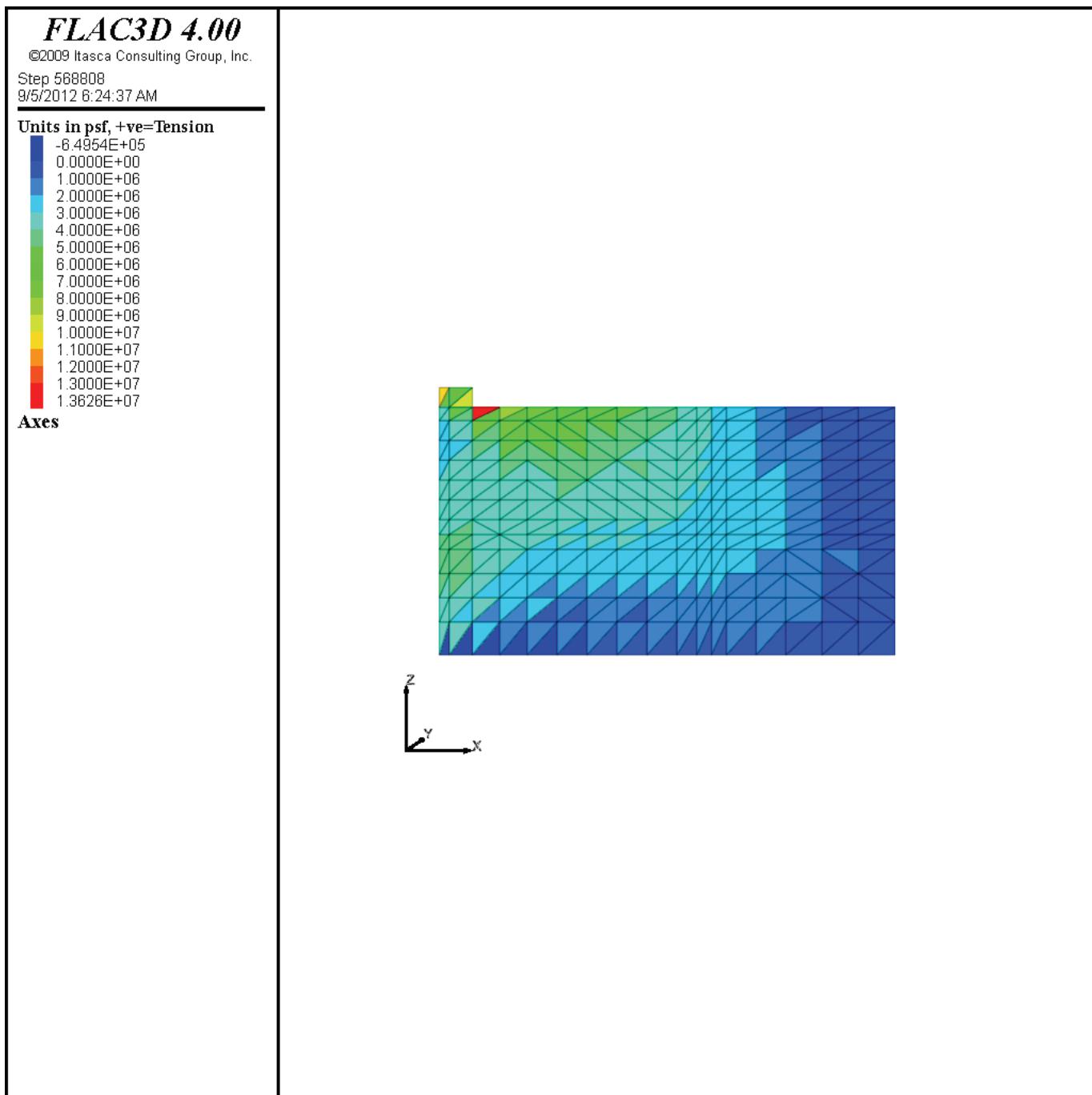


Figure F-3.1.6.a Tailwall Membrane Stress – Independent Design Snapshot 20 Sec – Michoacan EQ Record

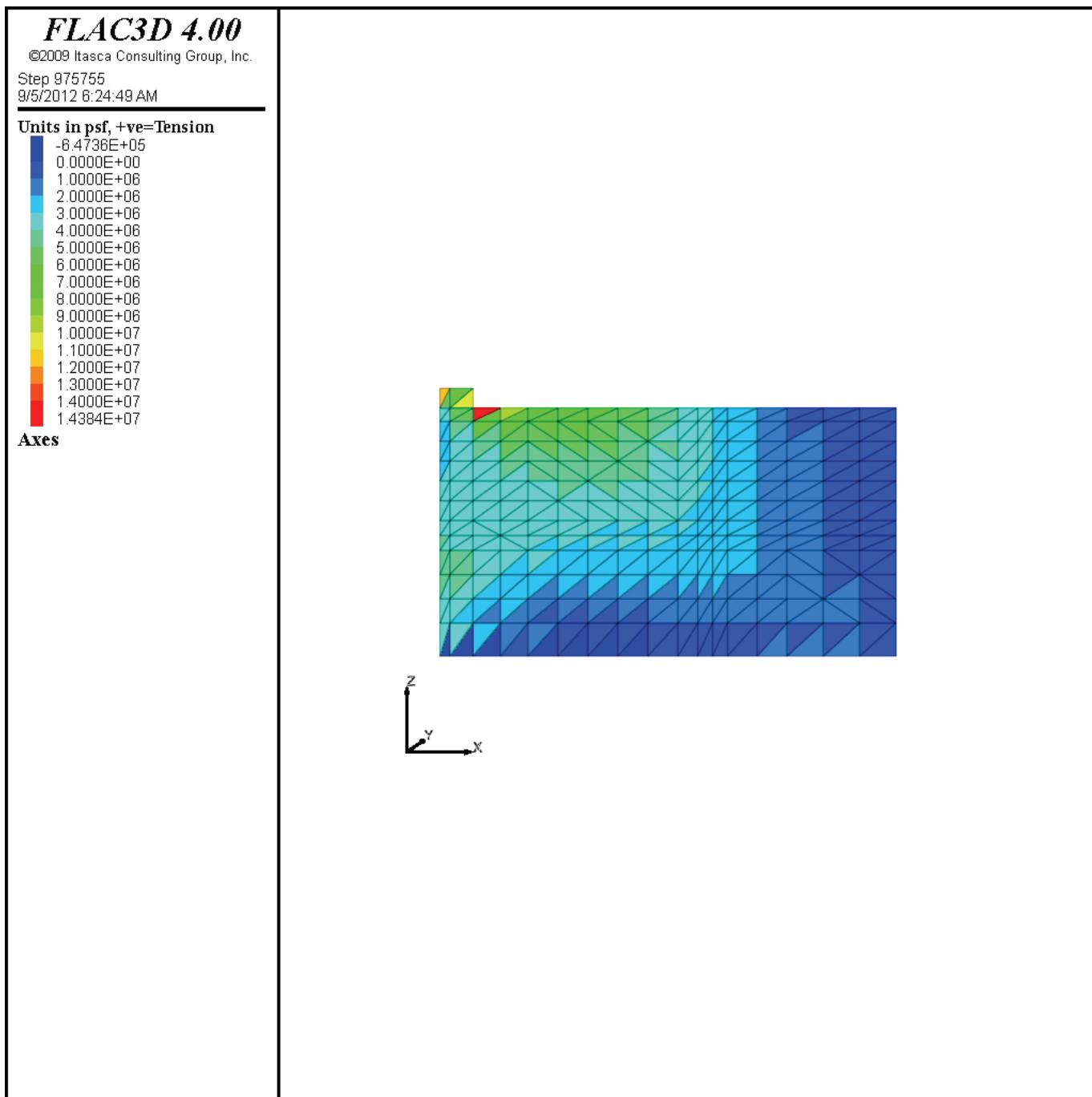


Figure F-3.1.7.a Tailwall Membrane Stress – Independent Design Snapshot 40 Sec – Michoacan EQ Record

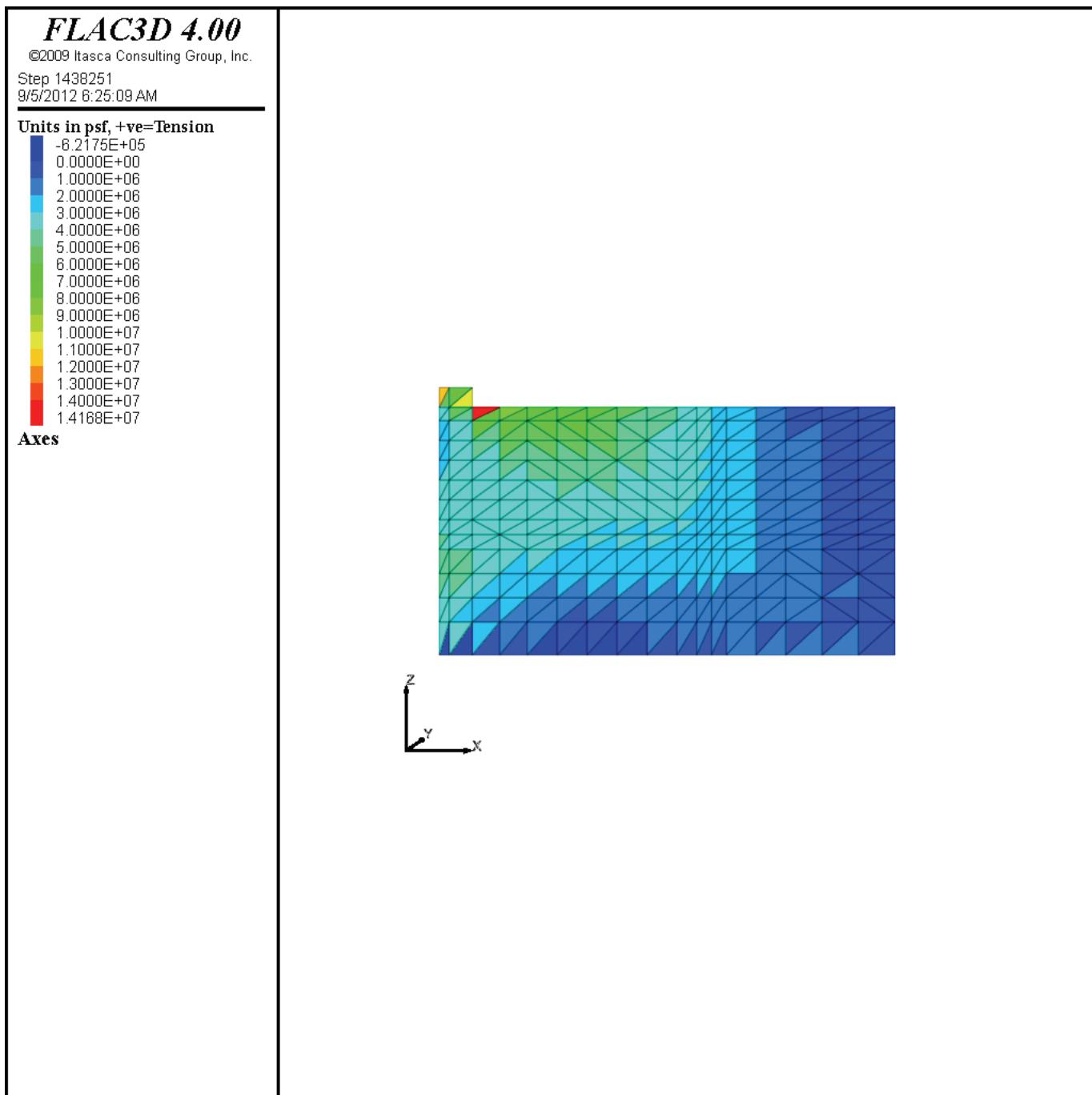


Figure F-3.1.8.a Tailwall Membrane Stress – Independent Design Snapshot 63 Sec – Michoacan EQ Record

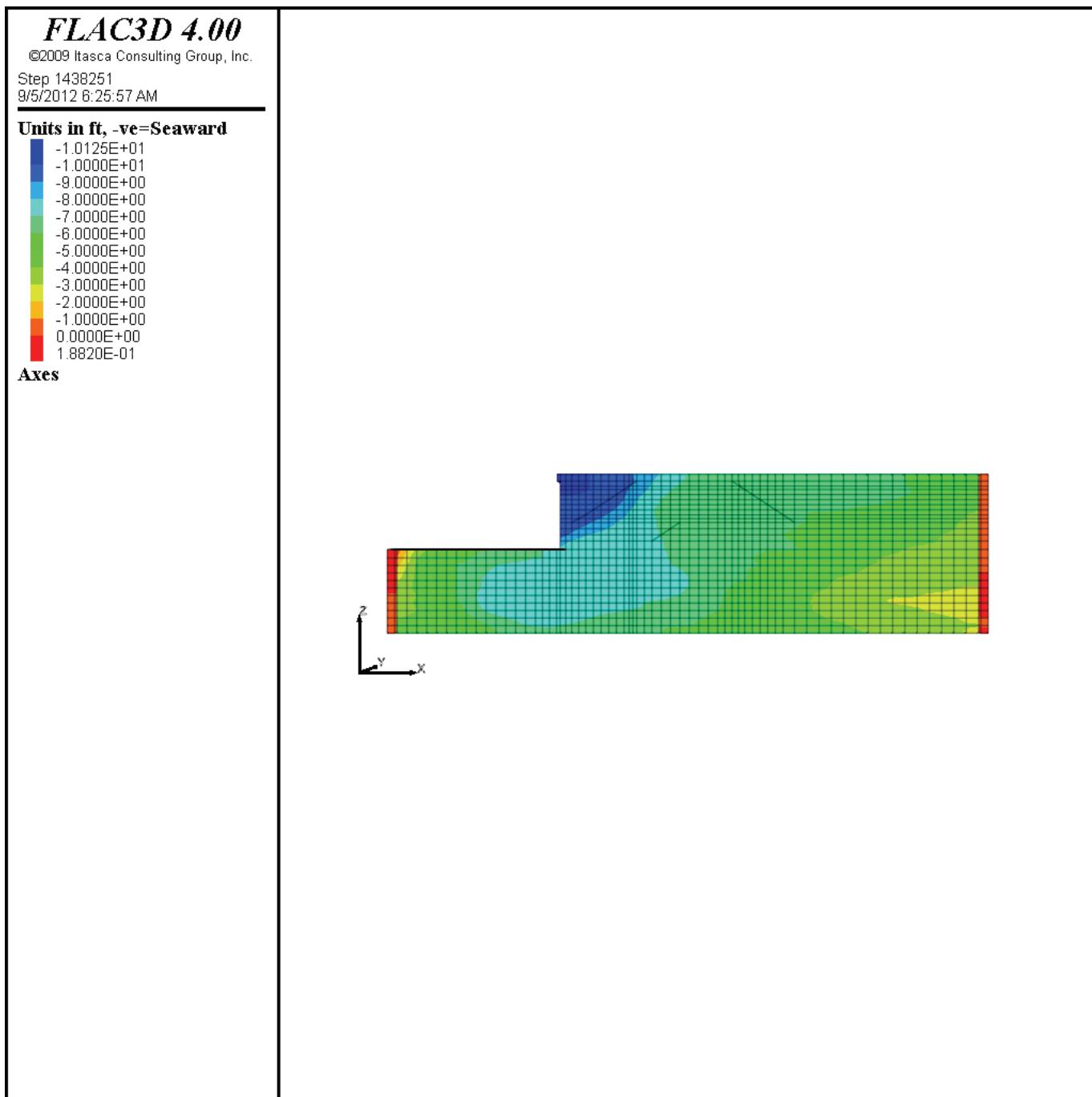


Figure F-3.1.9.a Permanent Soil X-Displacement Contours – Independent Design – Michoacan EQ Record

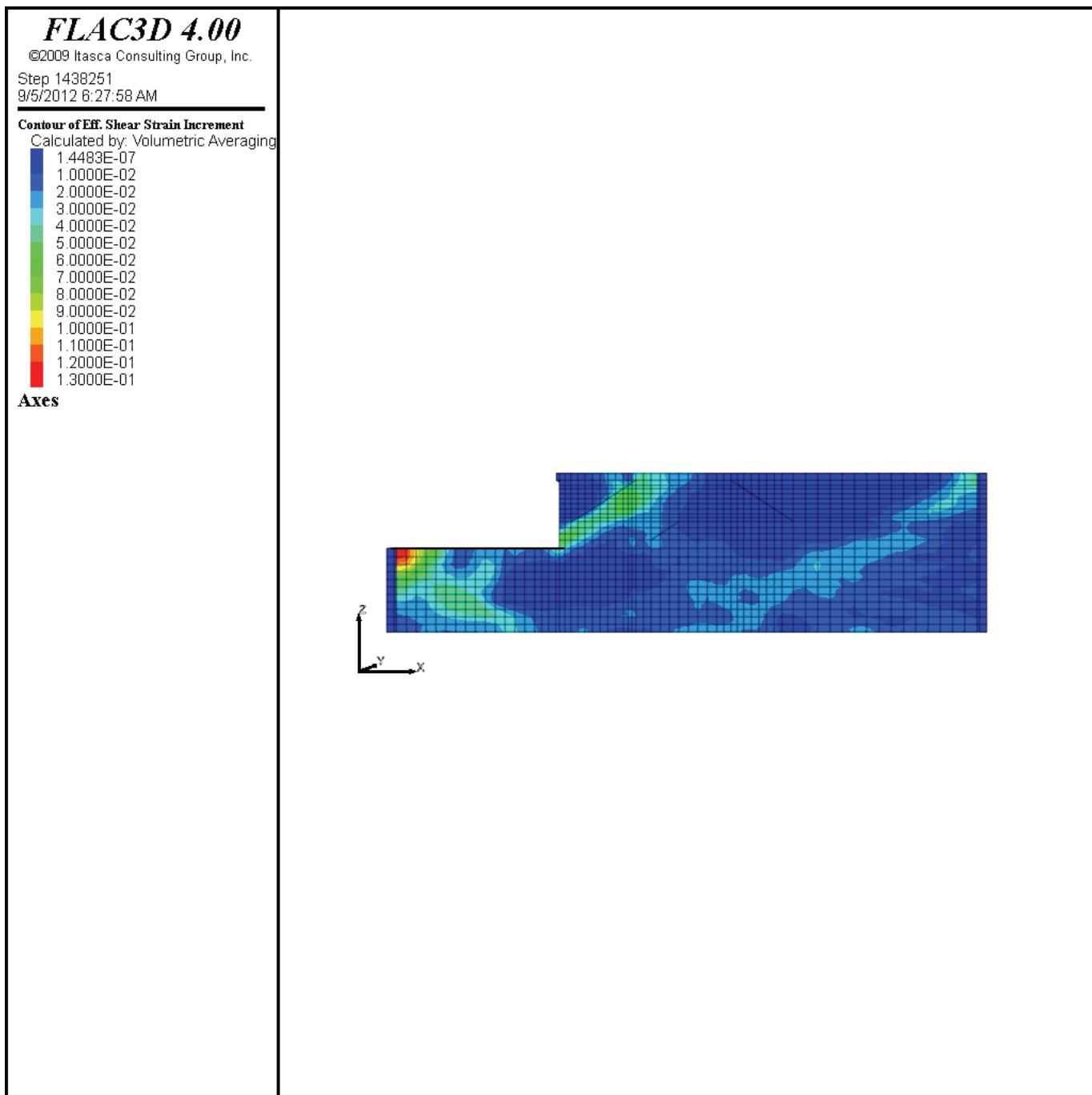


Figure F-3.1.10.a Effective Shear Strain Contours – Independent Design – Michoacan EQ Record

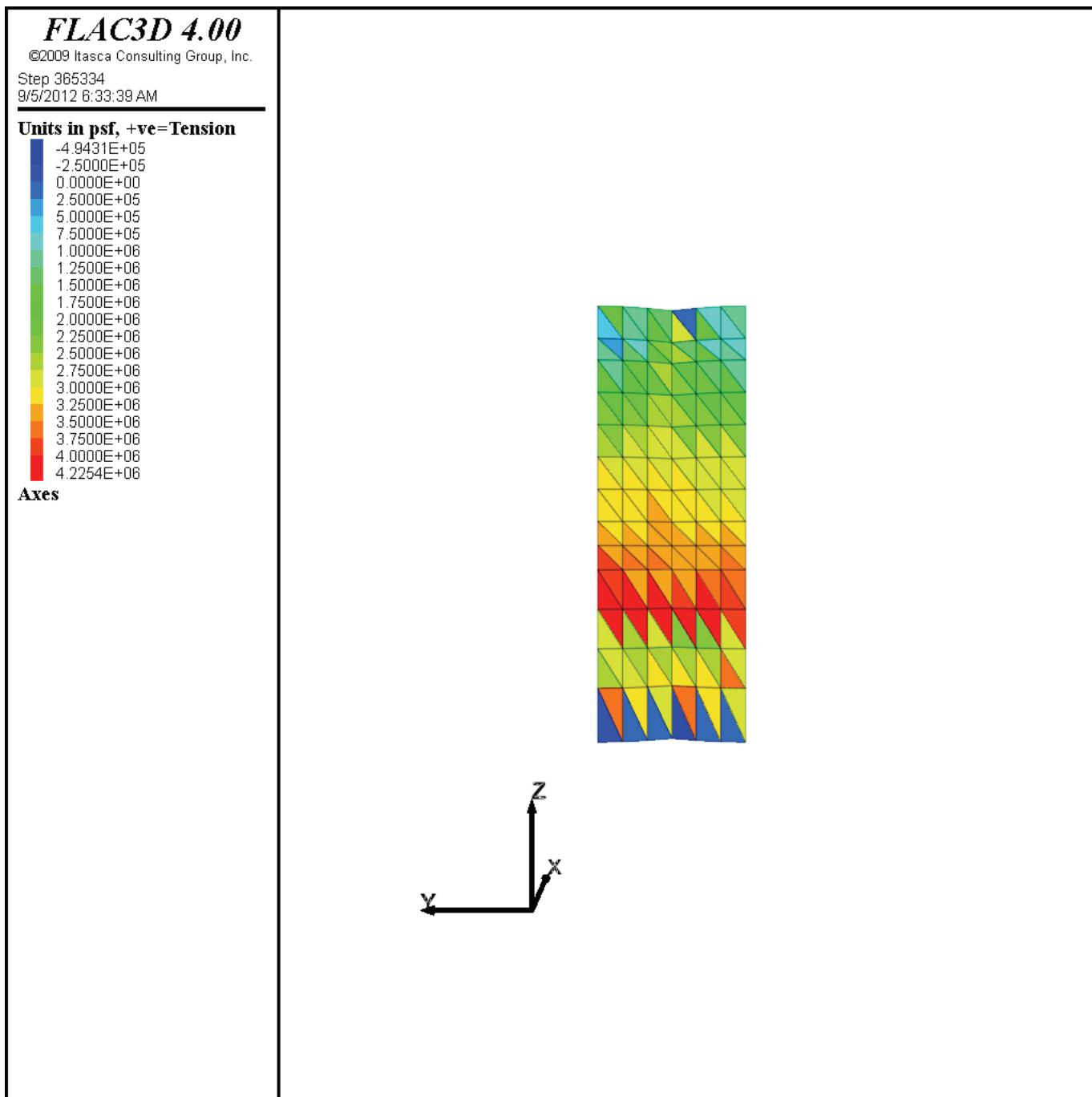


Figure F-3.1.1.b Facewall Membrane Stress – Independent Design Snapshot At 10 Sec – Western Washington EQ Record

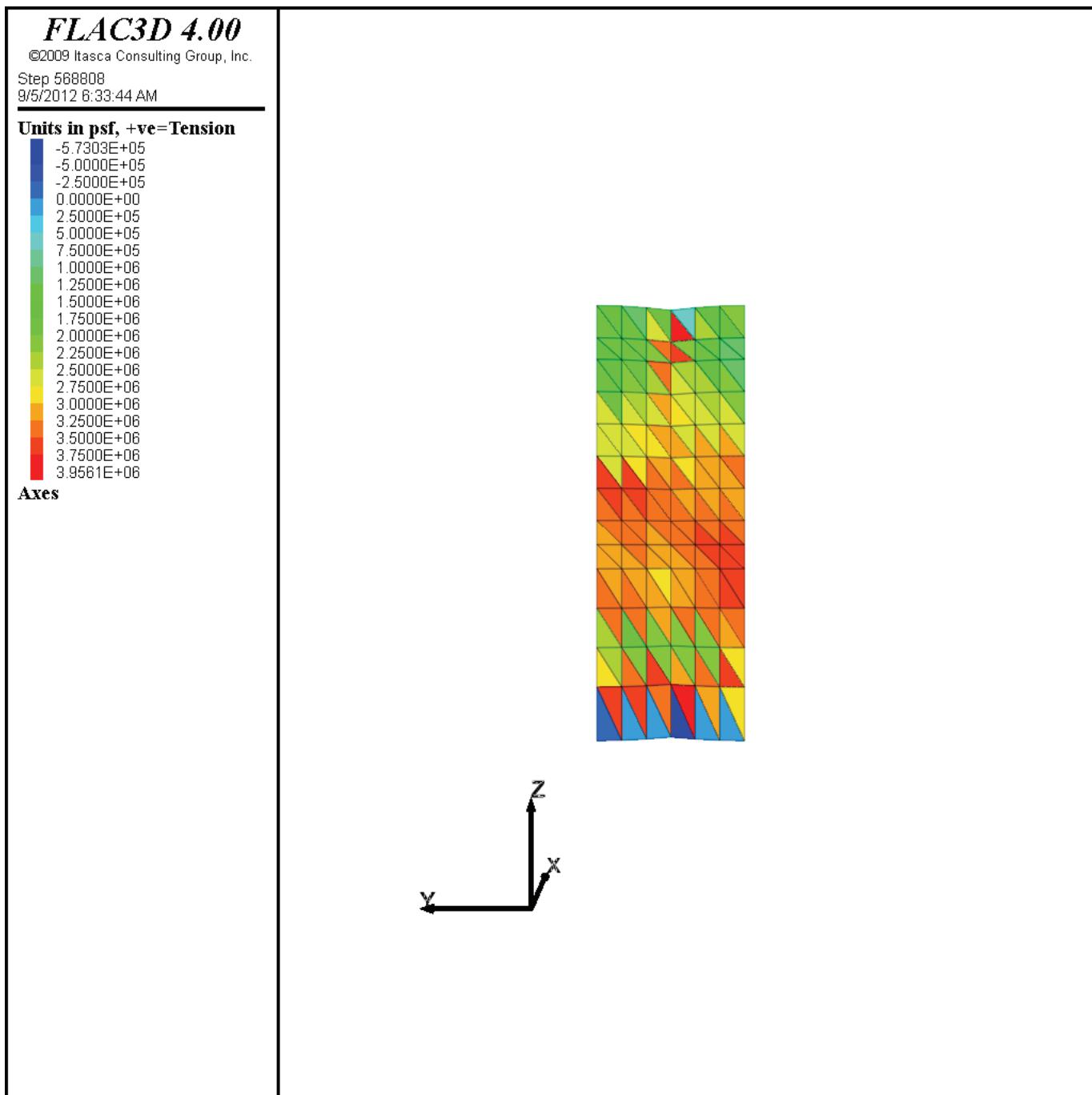


Figure F-3.1.2.b Facewall Membrane Stress – Independent Design Snapshot 20 Sec – Western Washington EQ Record

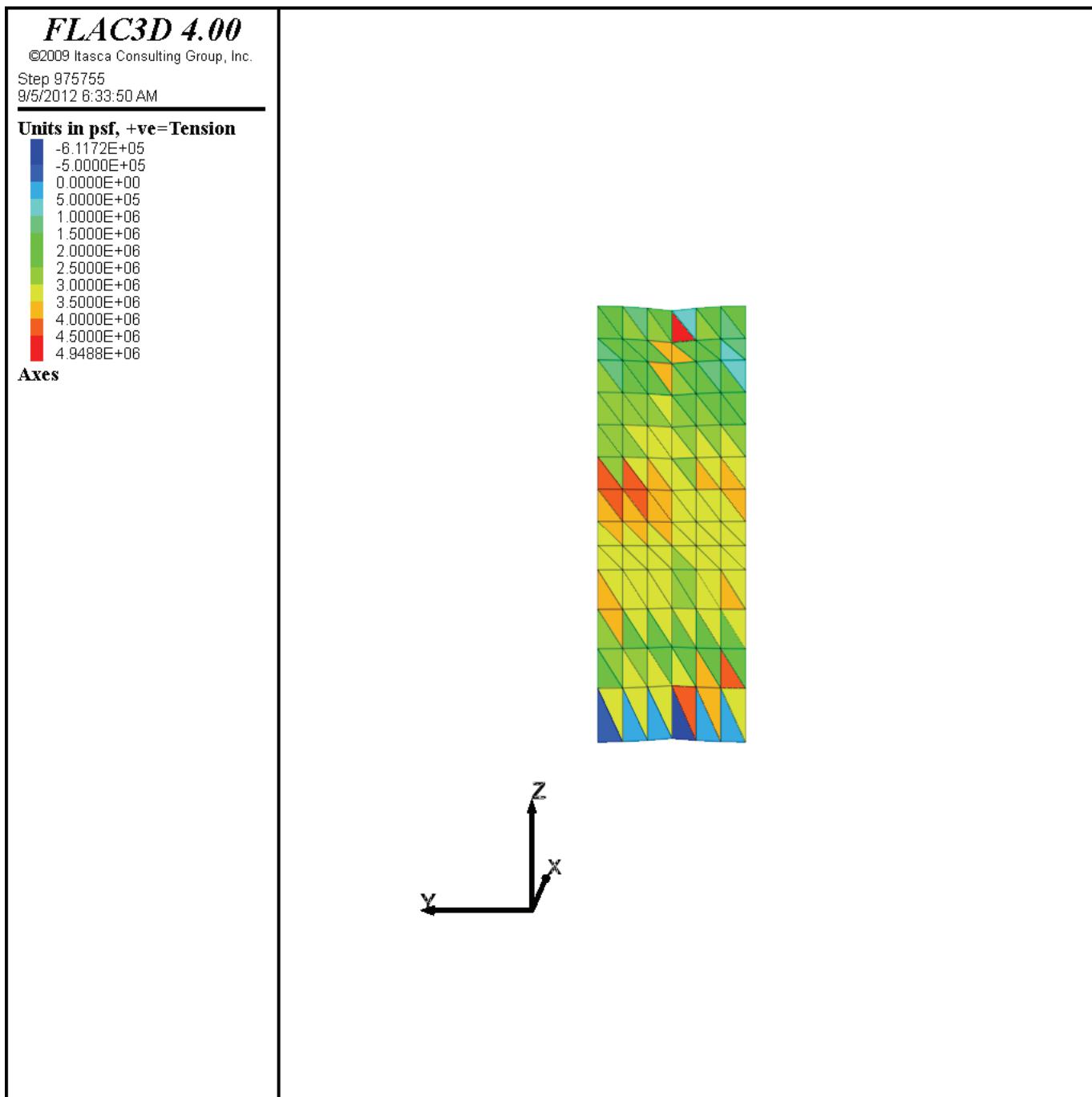


Figure F-3.1.3.b Facewall Membrane Stress – Independent Design Snapshot 40 Sec – Western Washington EQ Record

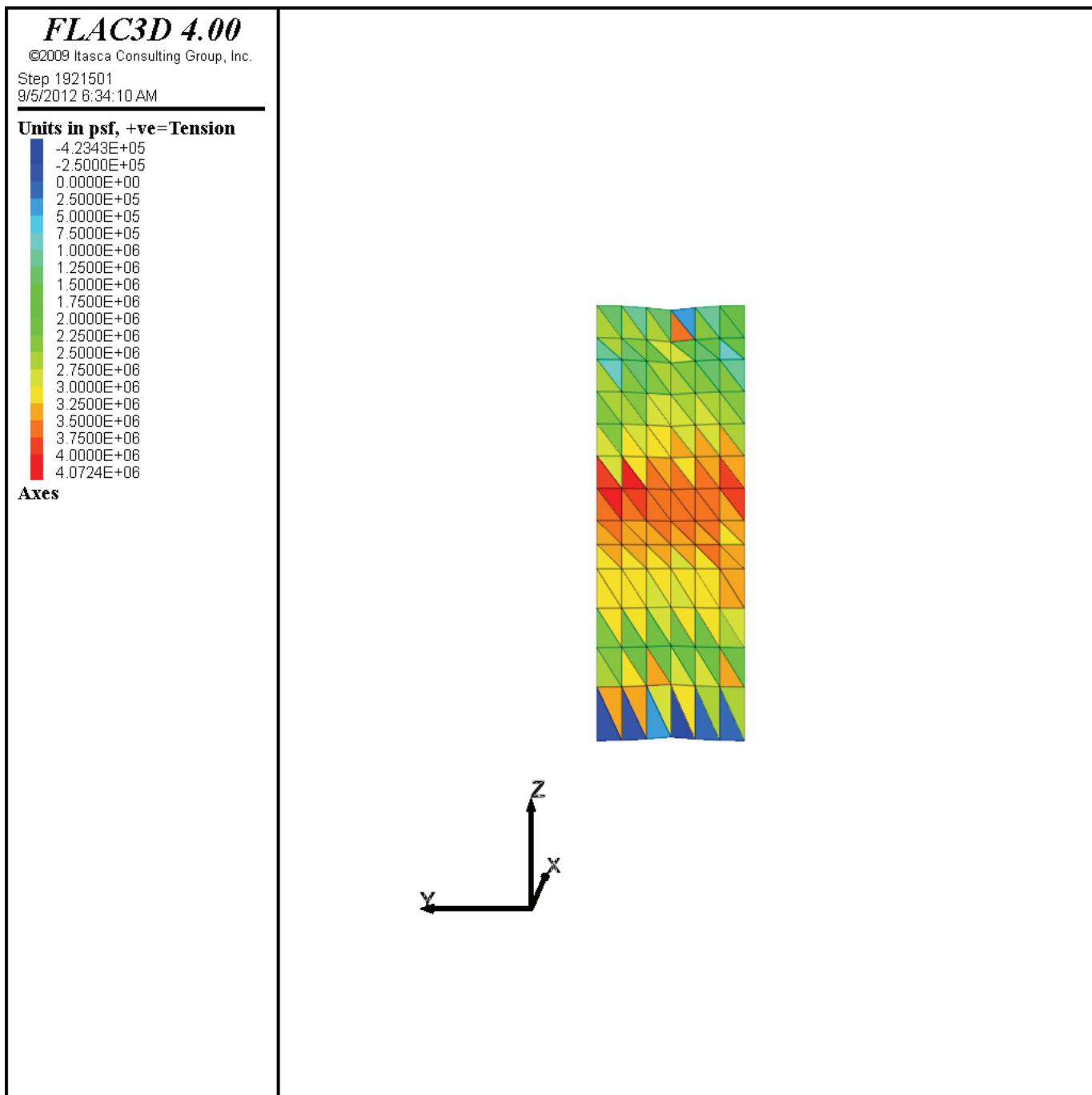


Figure F-3.1.4.b Facewall Membrane Stress – Independent Design Snapshot 87 Sec – Western Washington EQ Record

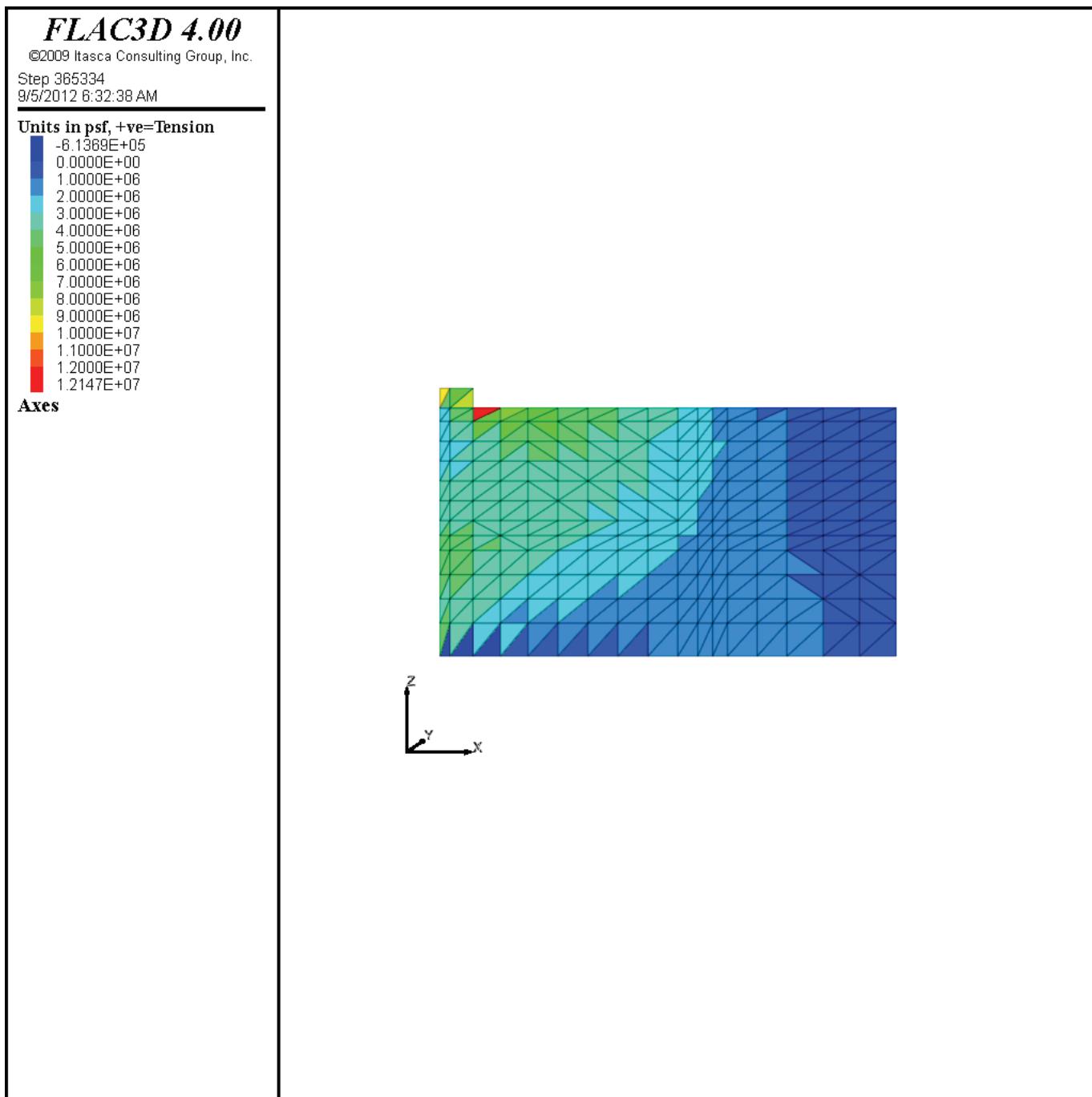


Figure F-3.1.5.b Tailwall Membrane Stress – Independent Design Snapshot 10 Sec – Western Washington EQ Record

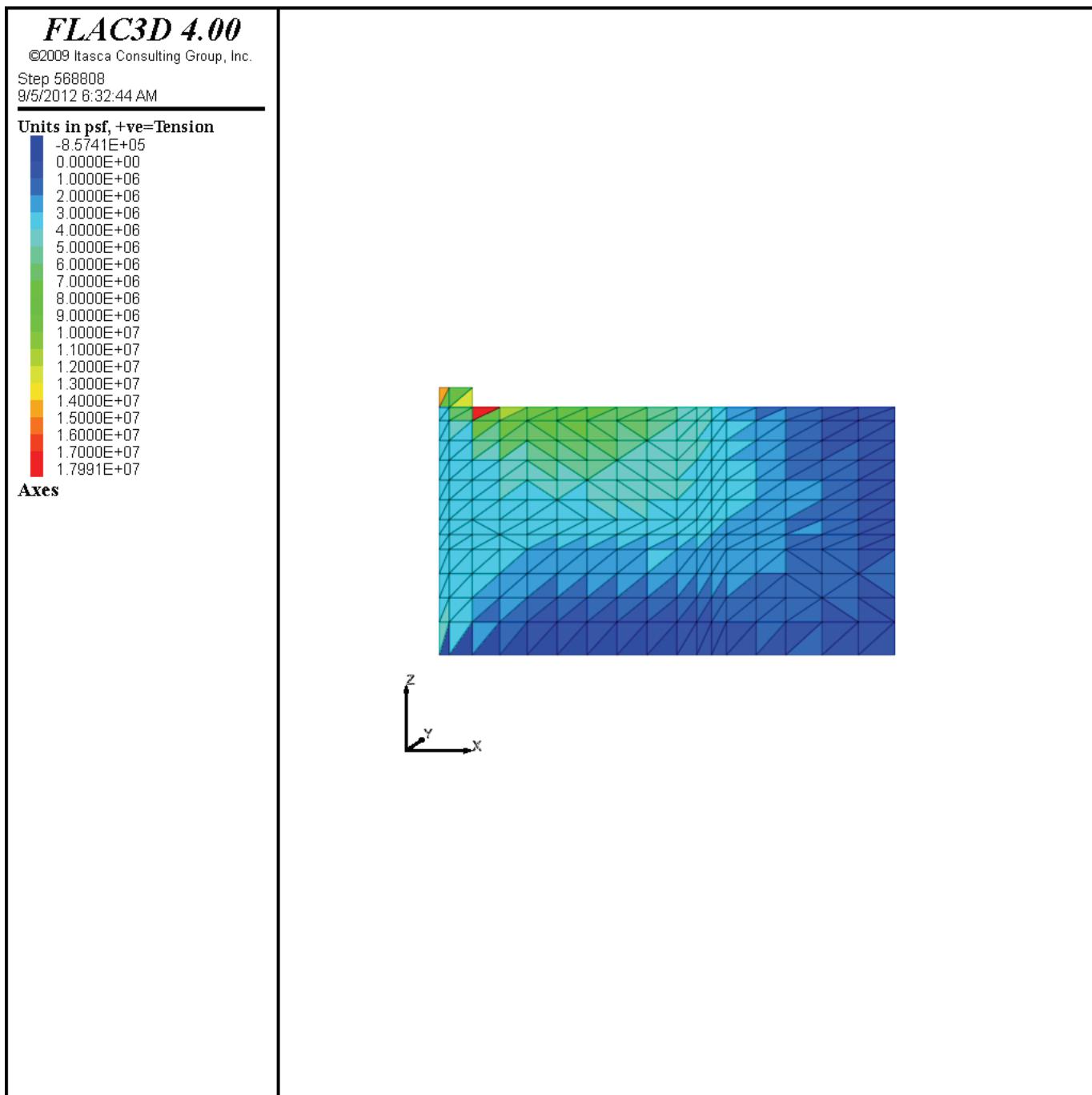


Figure F-3.1.6.b Tailwall Membrane Stress – Independent Design Snapshot 20 Sec – Western Washington EQ Record

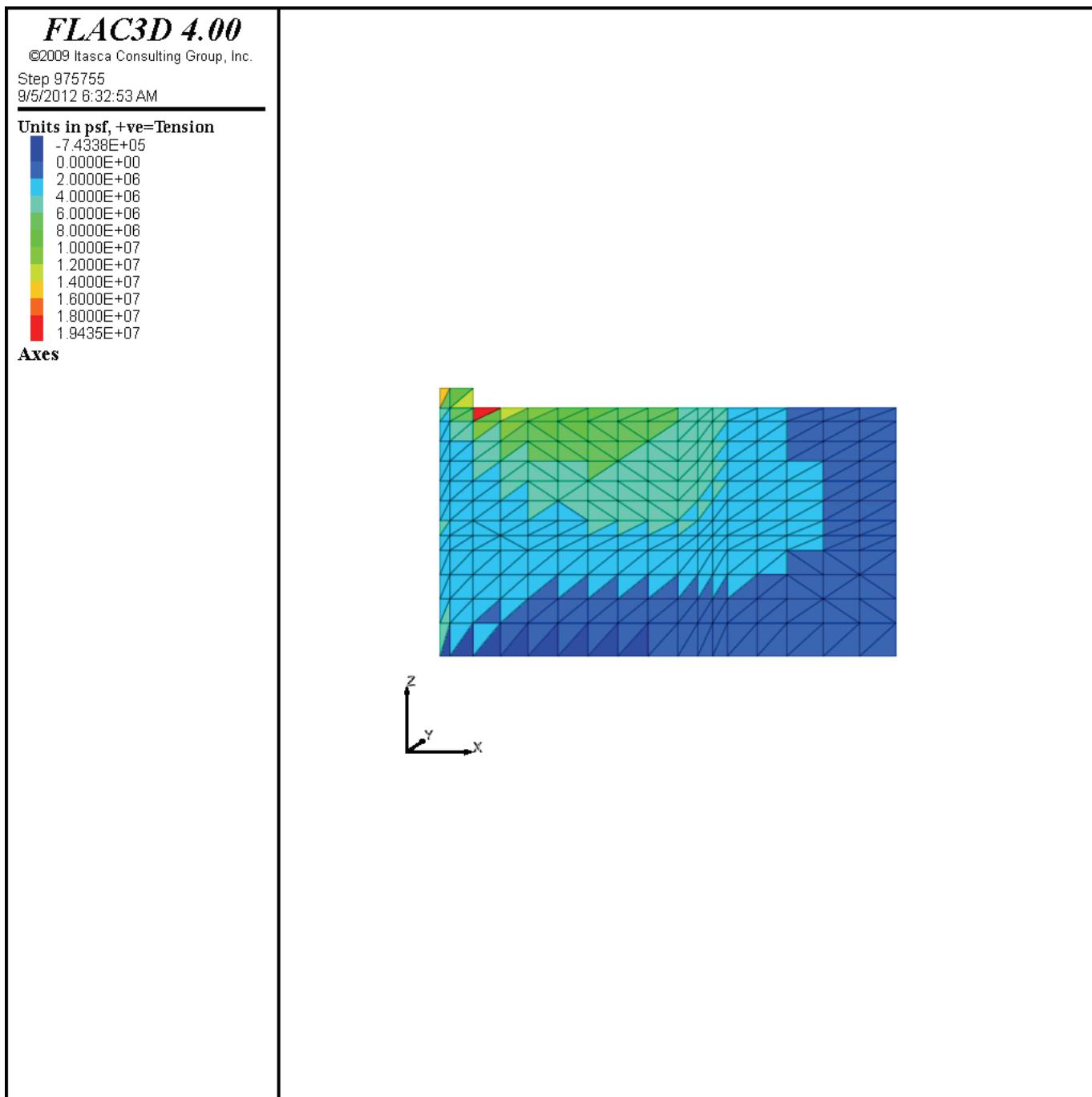


Figure F-3.1.7.b Tailwall Membrane Stress – Independent Design Snapshot 40 Sec – Western Washington EQ Record

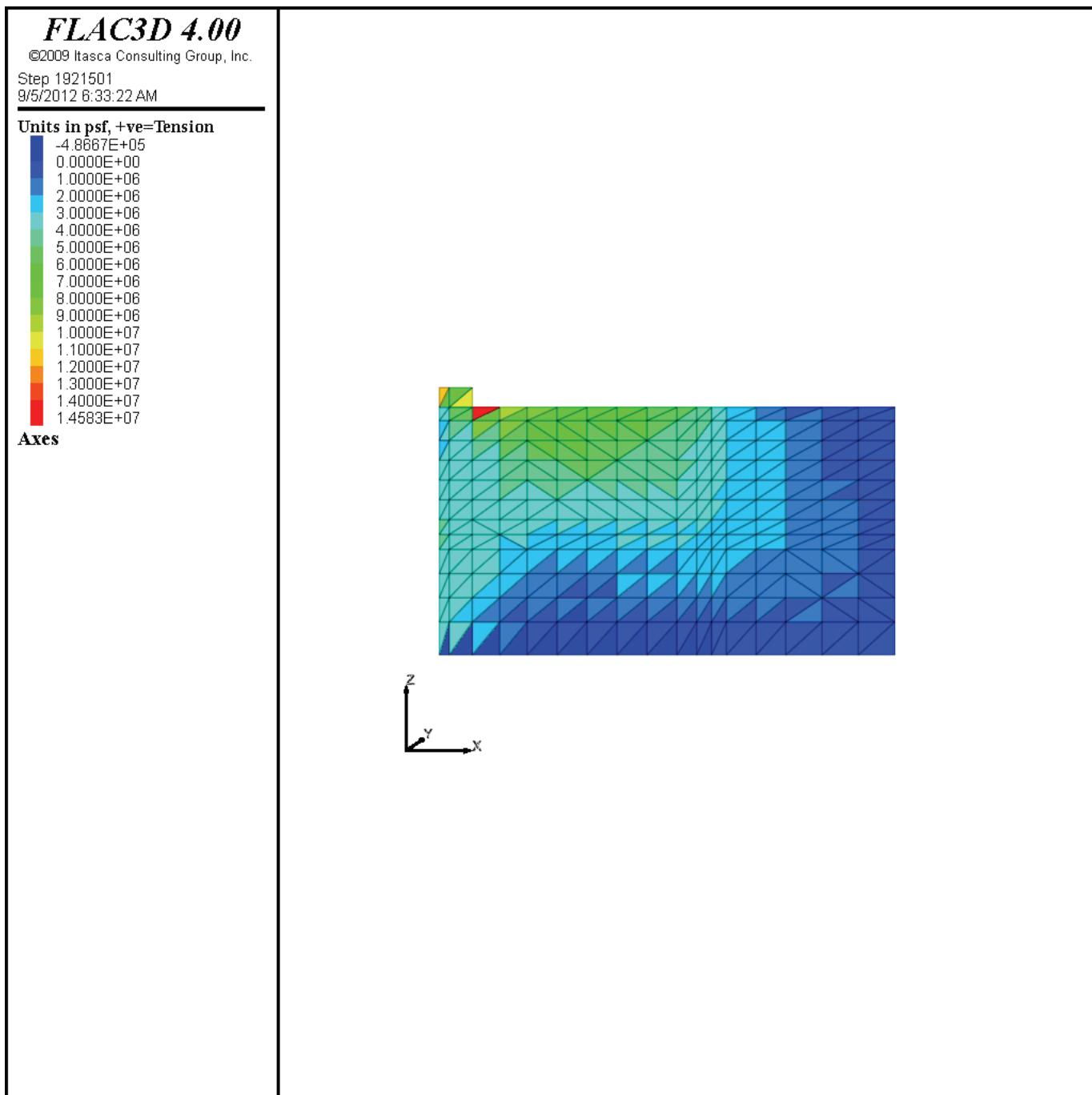


Figure F-3.1.8.b Tailwall Membrane Stress – Independent Design Snapshot 87 Sec – Western Washington EQ Record

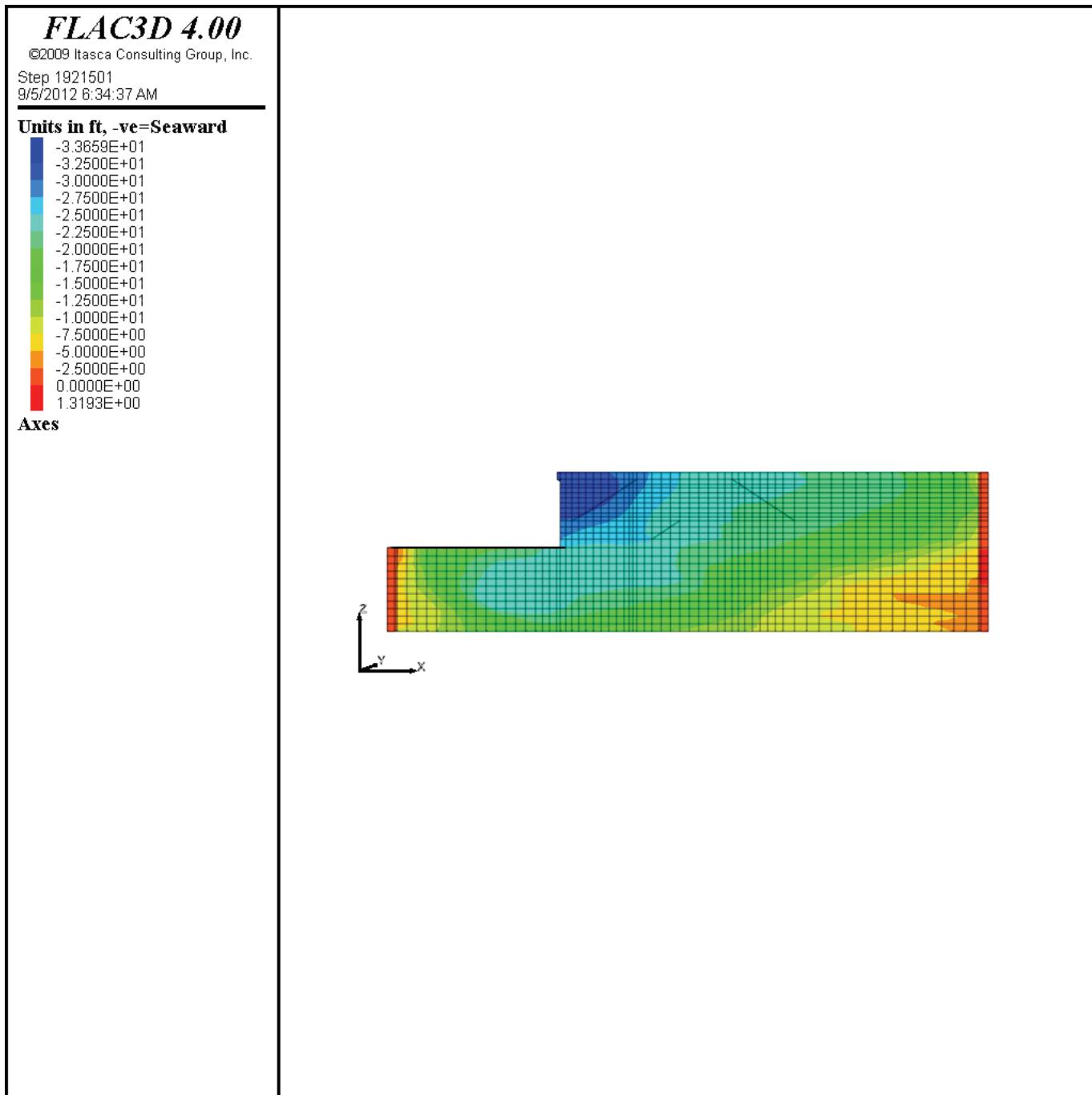


Figure F-3.1.9.b Permanent Soil X-Displacement Contours – Independent Design – Western Washington EQ Record

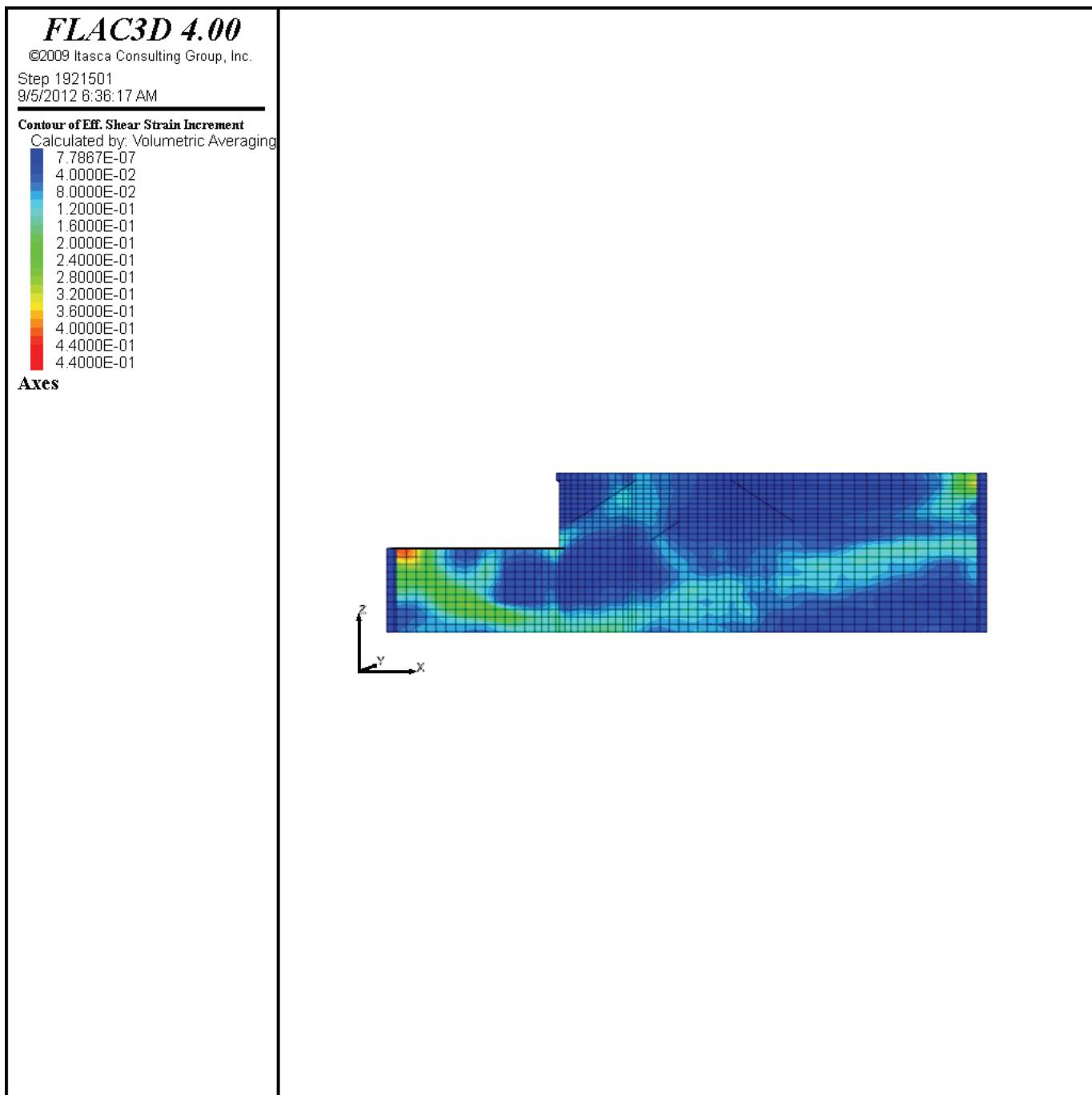


Figure F-3.1.10.b Effective Shear Strain Contours – Independent Design – Western Washington EQ Record

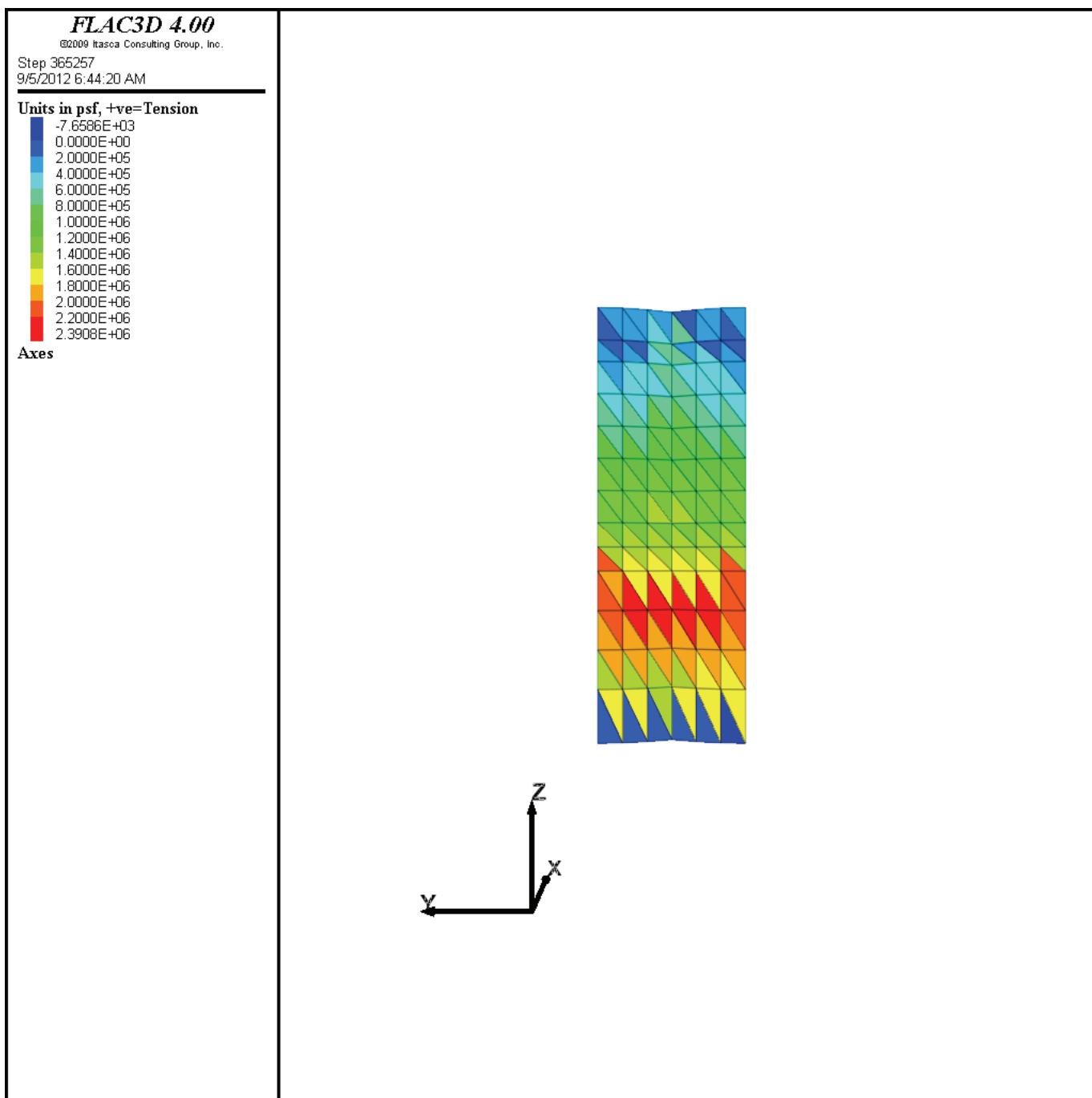


Figure F-3.2.1.a Facewall Membrane Stress – Independent Design Snapshot At 10 Sec – Michoacan EQ Record

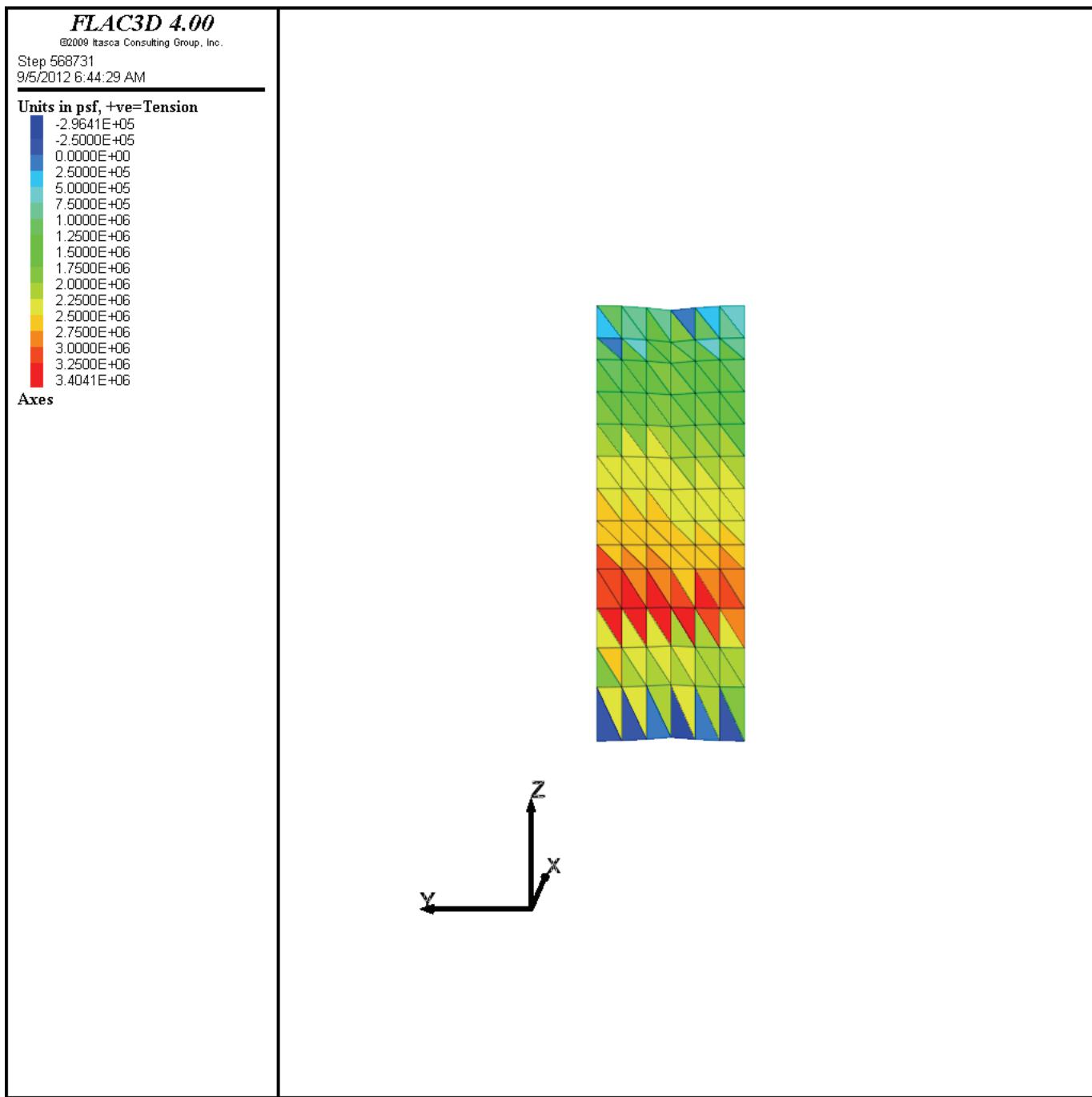


Figure F-3.2.2.a Facewall Membrane Stress – Independent Design Snapshot 20 Sec – Michoacan EQ Record

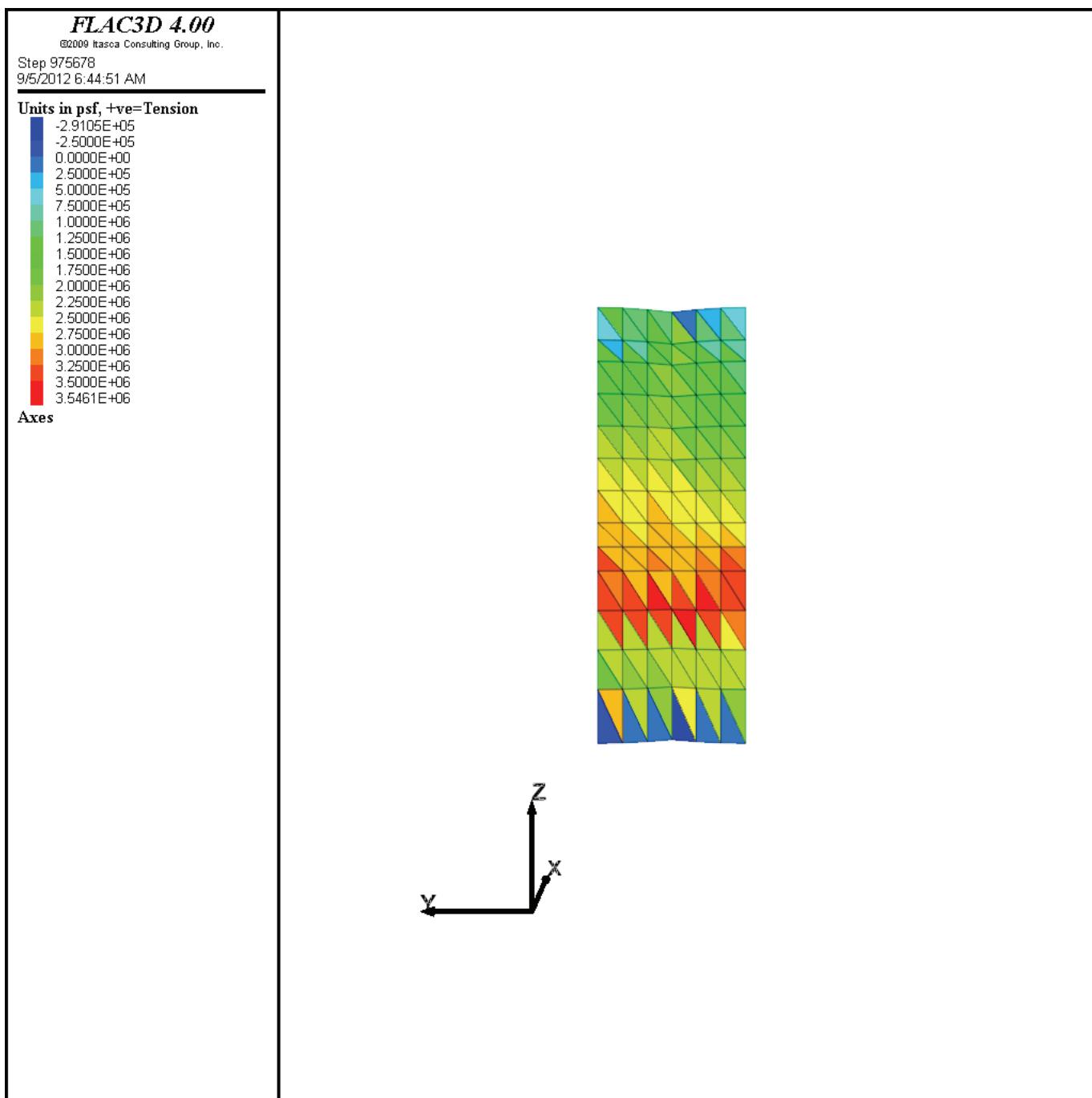


Figure F-3.2.3.a Facewall Membrane Stress – Independent Design Snapshot 40 Sec – Michoacan EQ Record

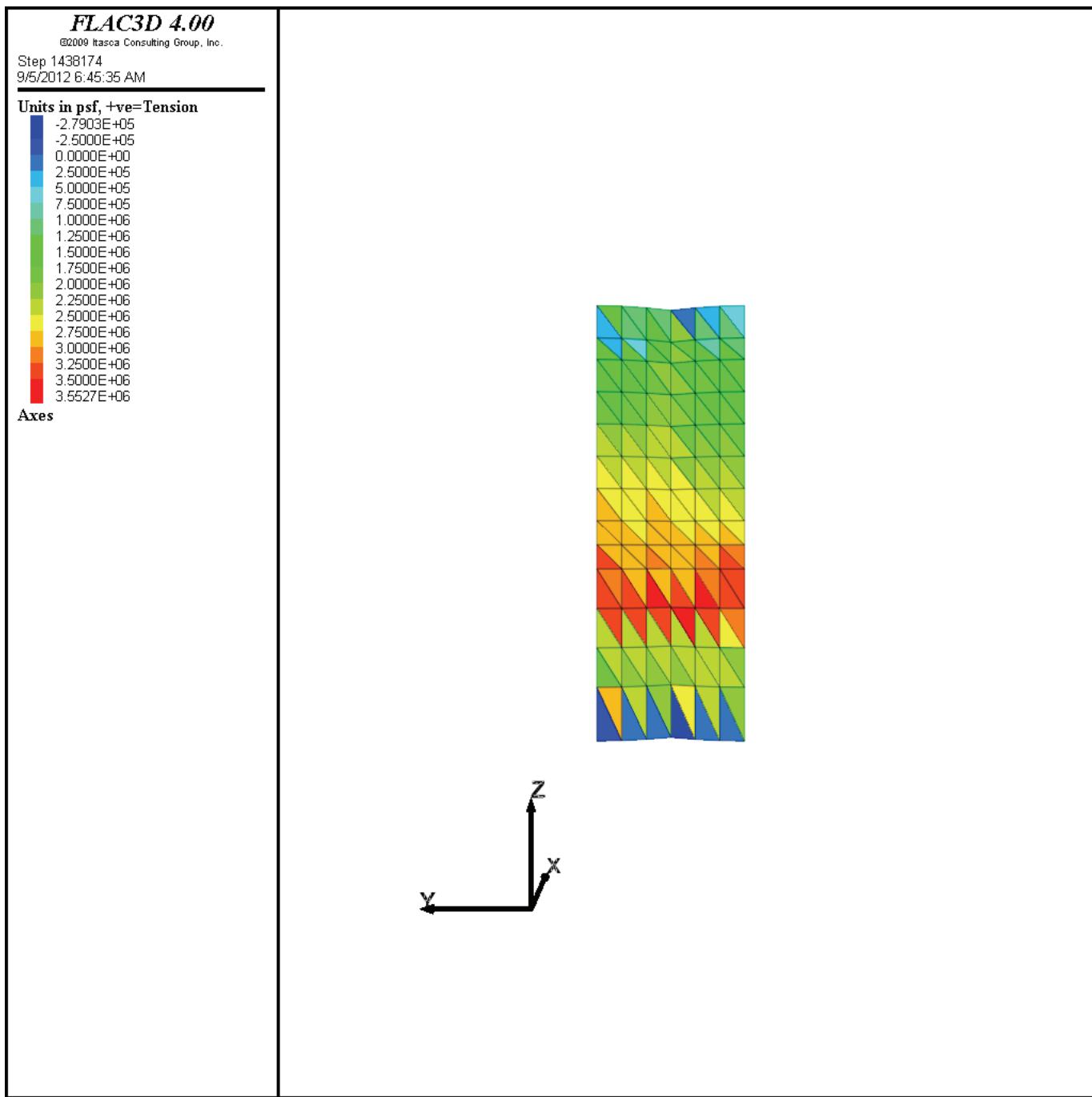


Figure F-3.2.4.a Facewall Membrane Stress – Independent Design Snapshot 63 Sec – Michoacan EQ Record

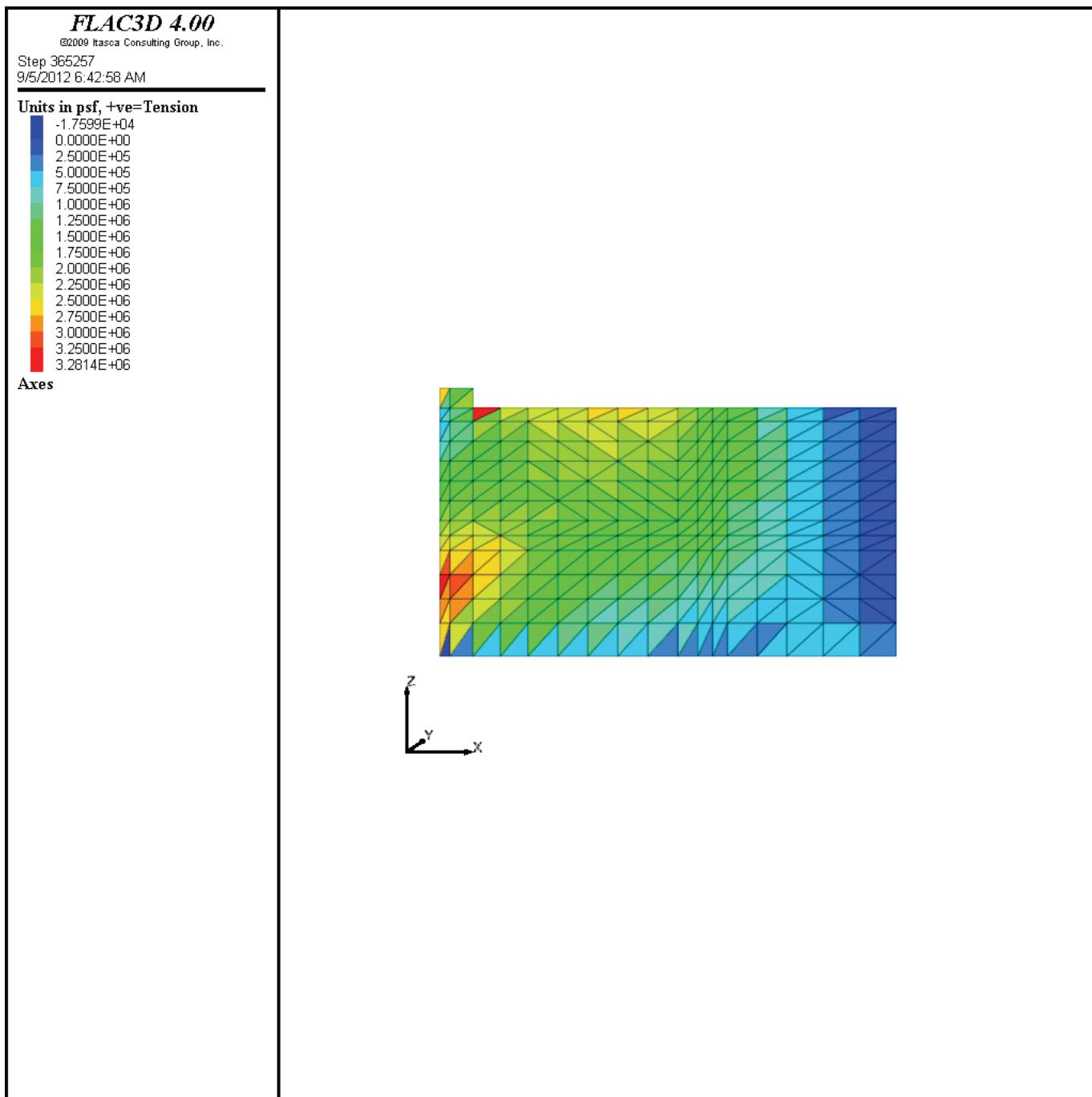


Figure F-3.2.5.a Tailwall Membrane Stress – Independent Design Snapshot 10 Sec – Michoacan EQ Record

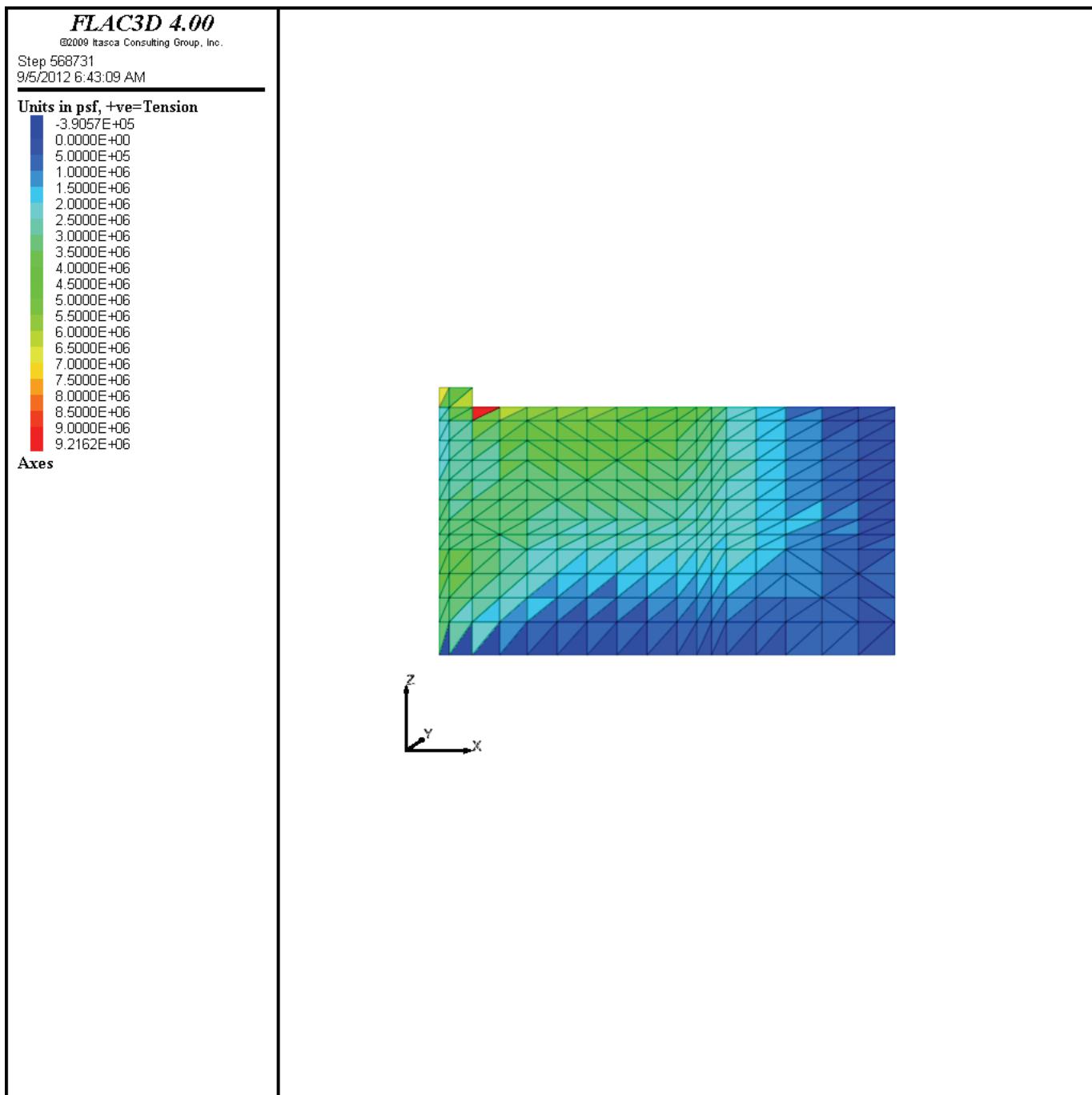


Figure F-3.2.6.a Tailwall Membrane Stress – Independent Design Snapshot 20 Sec – Michoacan EQ Record

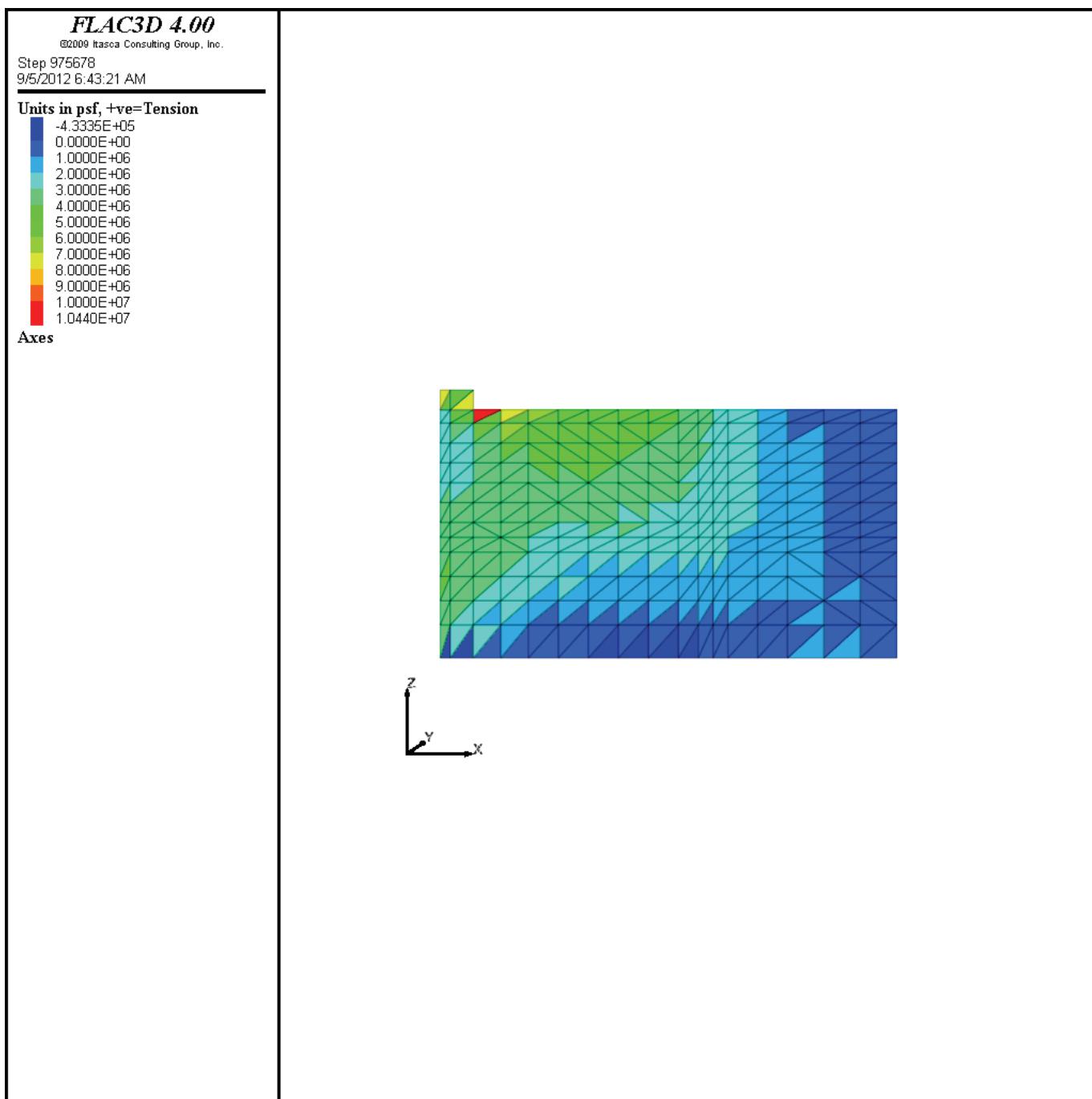


Figure F-3.2.7.a Tailwall Membrane Stress – Independent Design Snapshot 40 Sec – Michoacan EQ Record

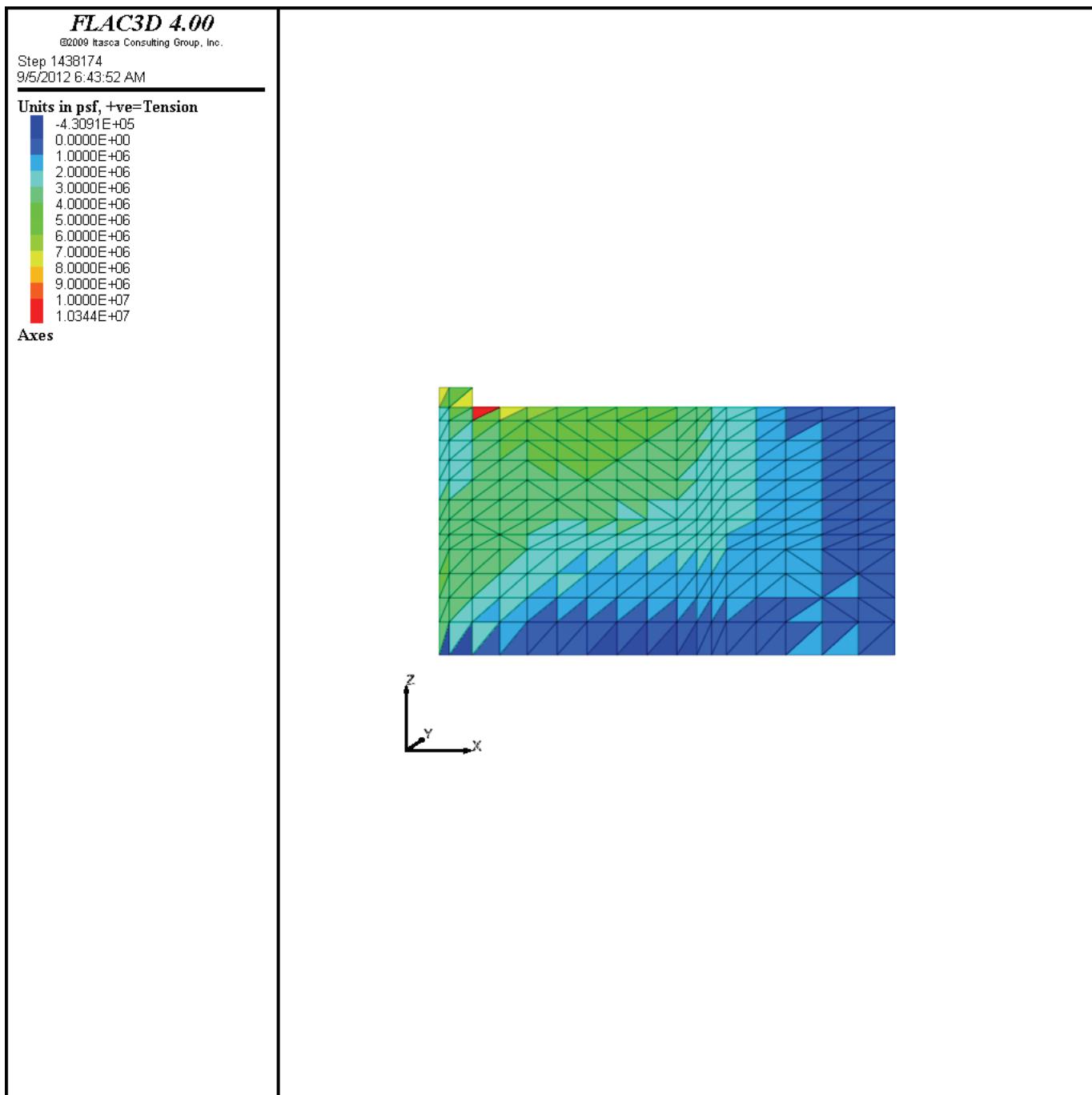


Figure F-3.2.8.a Tailwall Membrane Stress – Independent Design Snapshot 63 Sec – Michoacan EQ Record

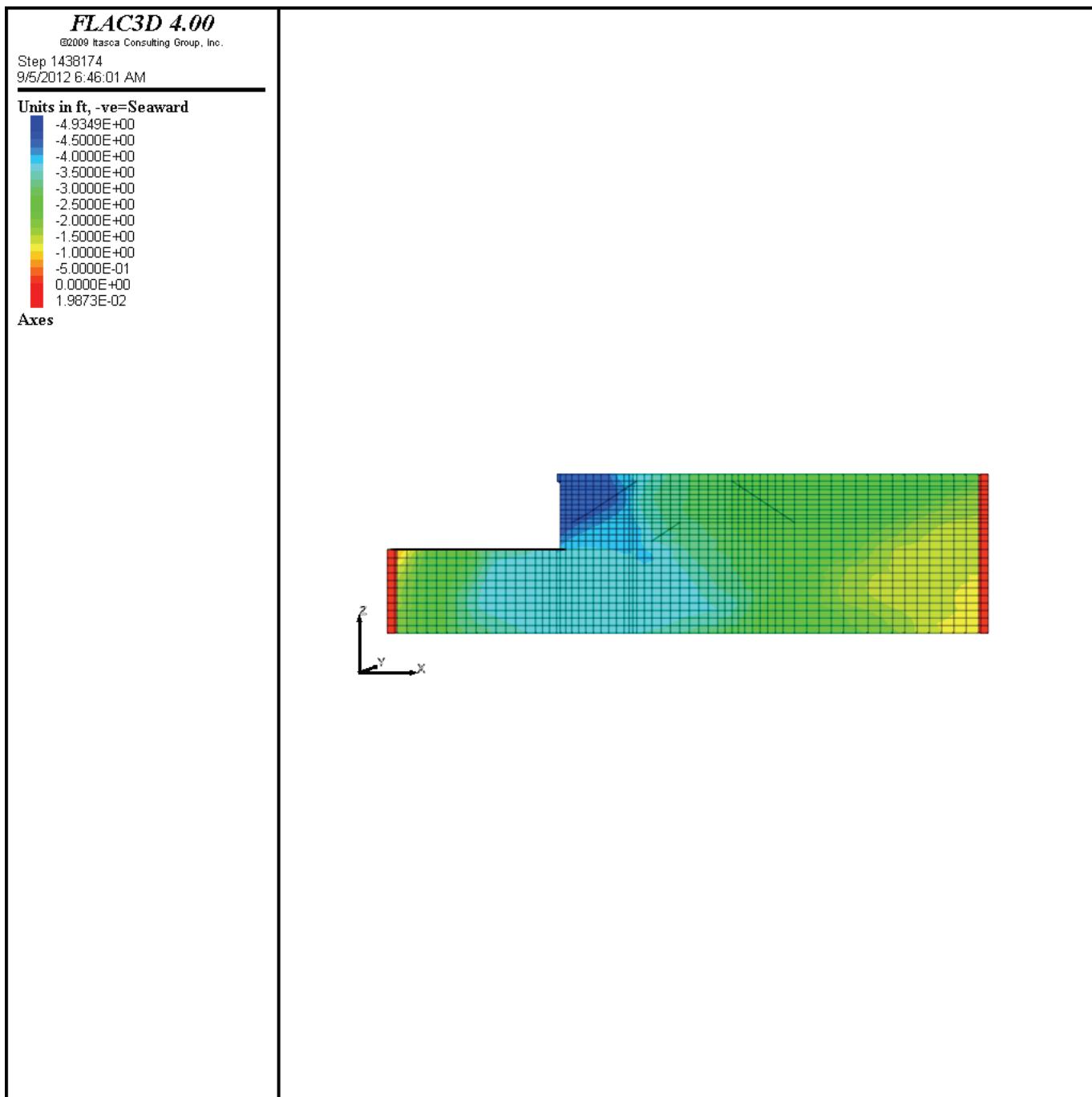


Figure F-3.2.9.a Permanent Soil X-Displacement Contours – Independent Design – Michoacan EQ Record

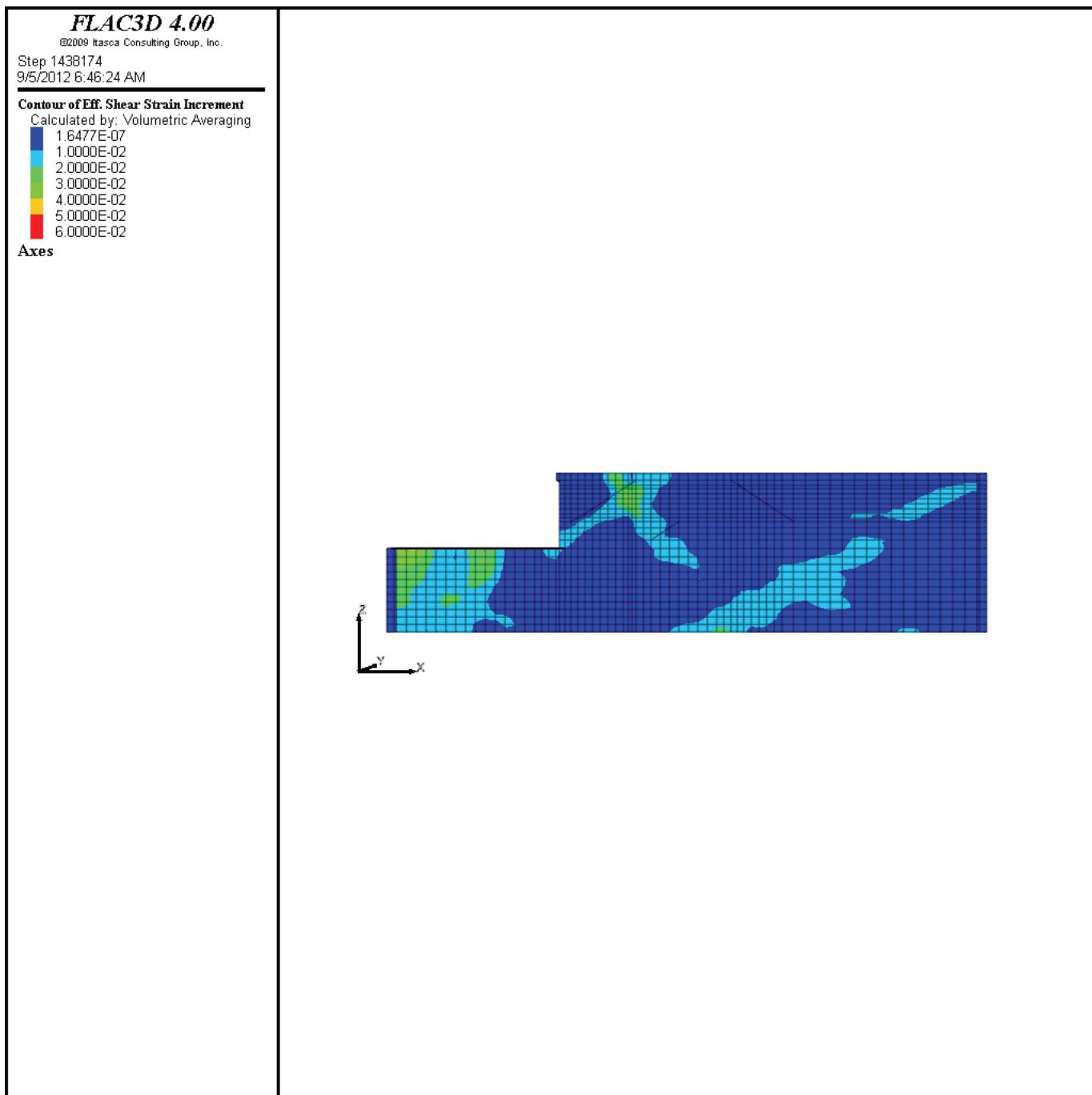


Figure F-3.2.10.a Effective Shear Strain Contours – Independent Design – Michoacan EQ Record

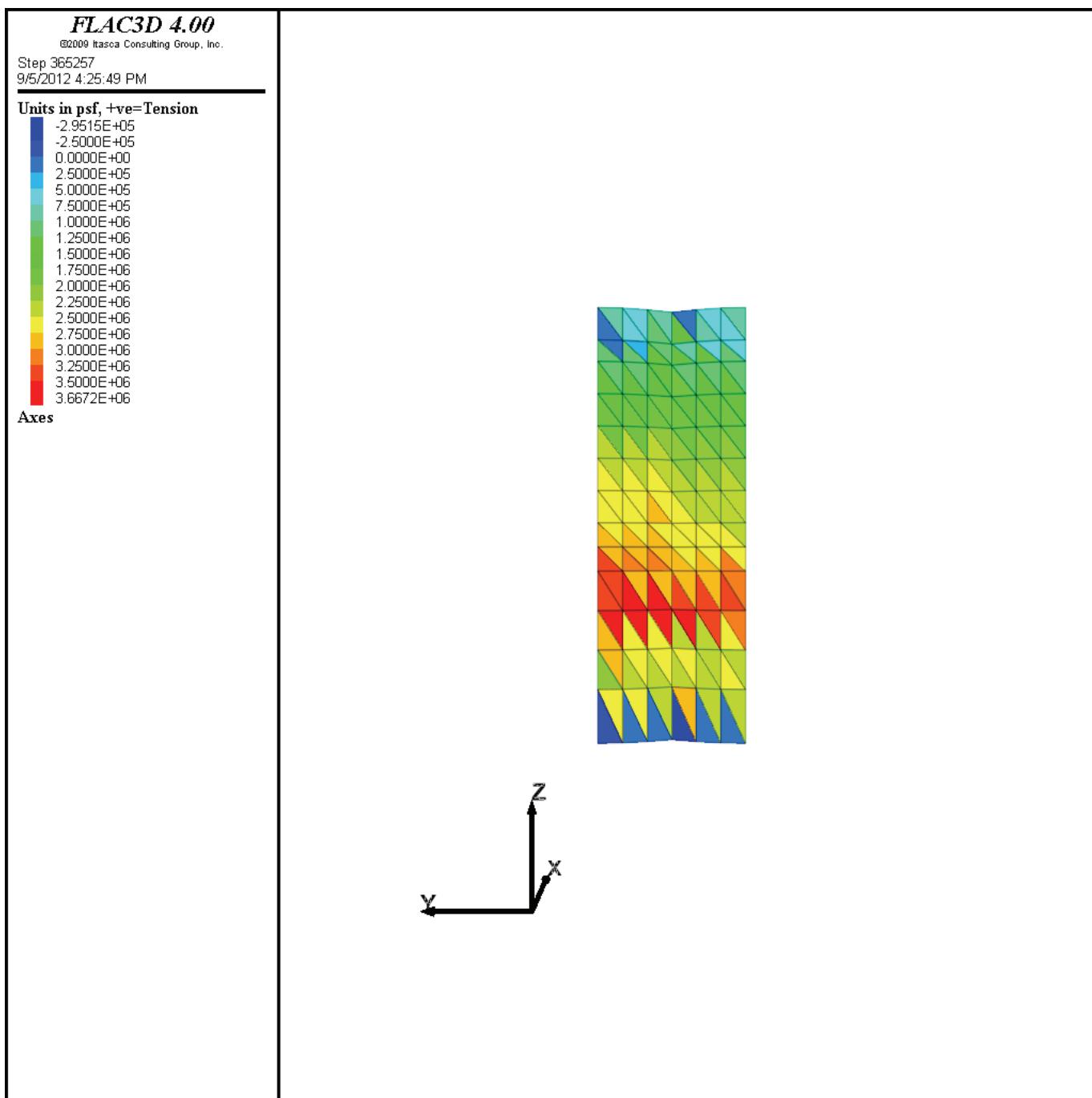


Figure F-3.2.1.b Facewall Membrane Stress – Independent Design Snapshot At 10 Sec – Western Washington EQ Record

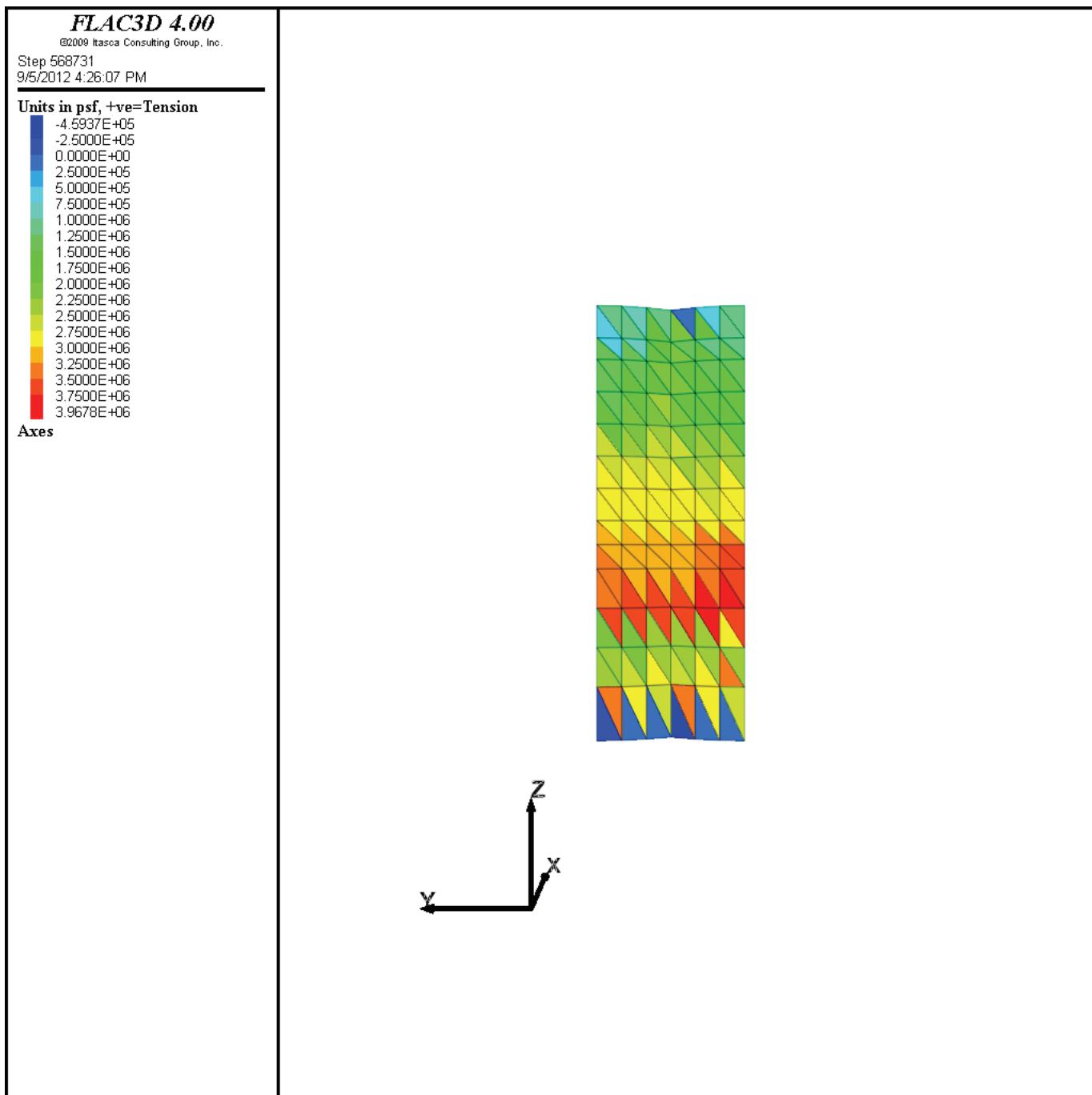


Figure F-3.2.2.b Facewall Membrane Stress – Independent Design Snapshot 20 Sec – Western Washington EQ Record

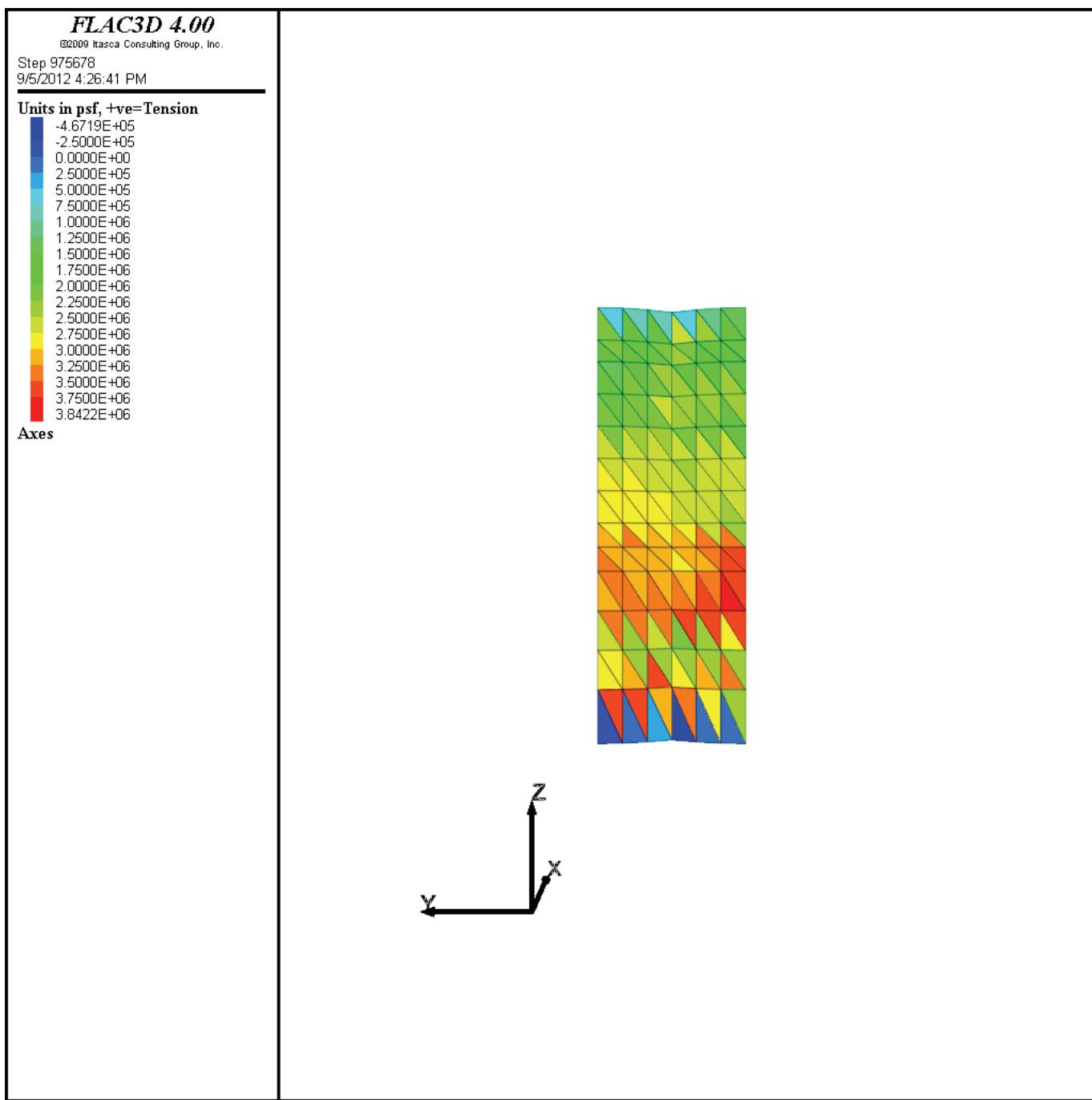


Figure F-3.2.3.b Facewall Membrane Stress – Independent Design Snapshot 40 Sec – Western Washington EQ Record

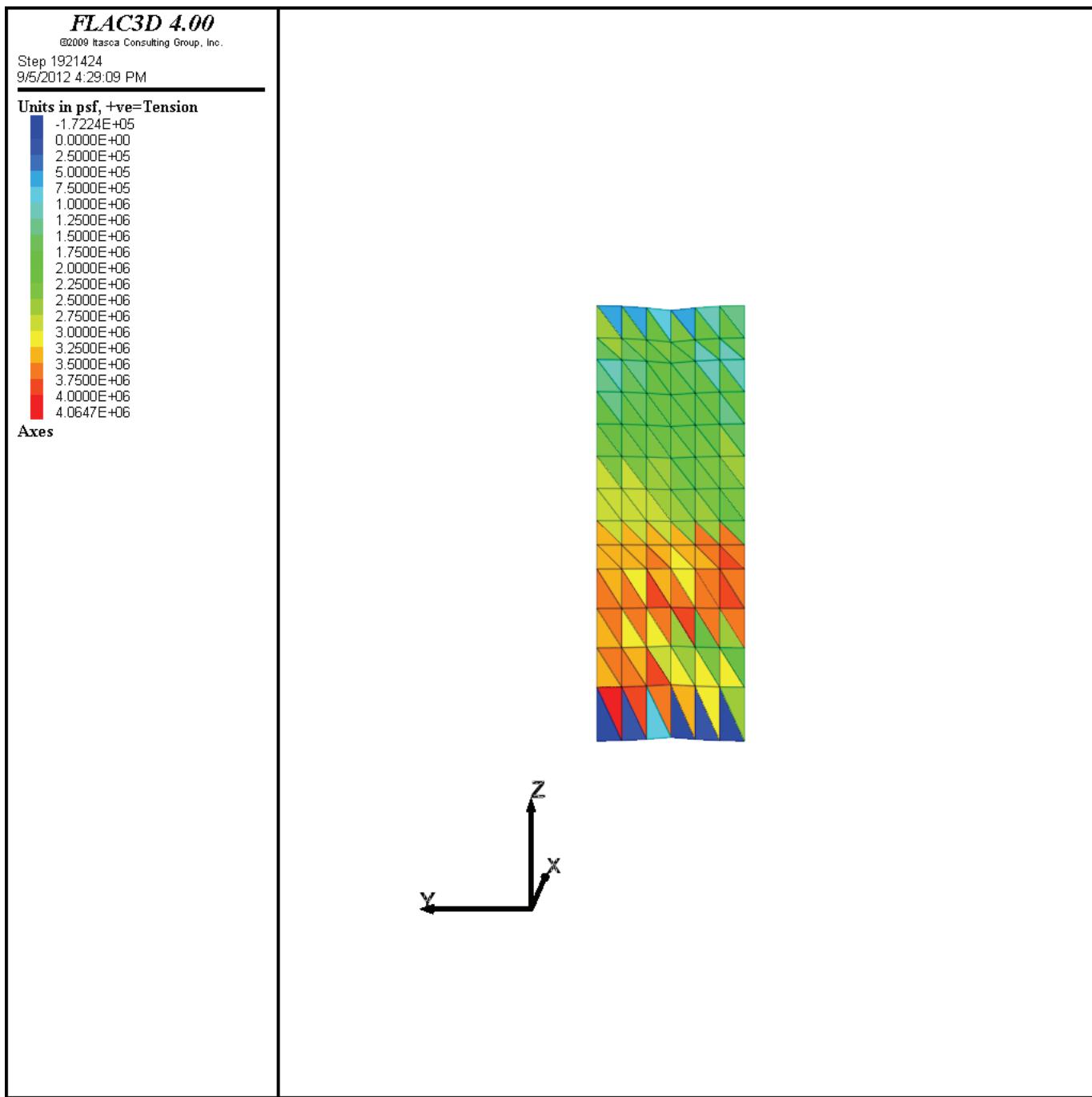


Figure F-3.2.4.b Facewall Membrane Stress – Independent Design Snapshot 87 Sec – Western Washington EQ Record

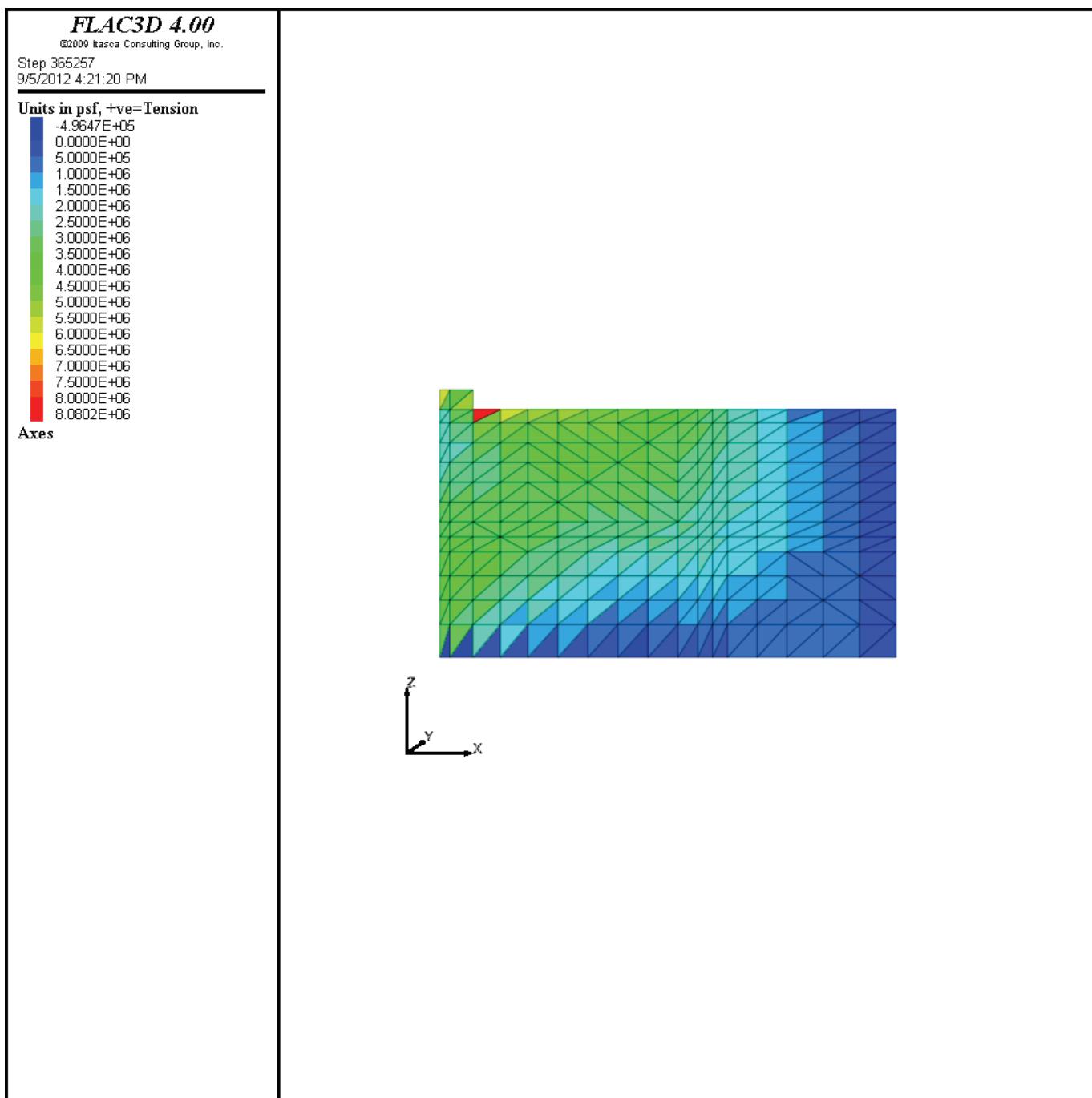


Figure F-3.2.5.b Tailwall Membrane Stress – Independent Design Snapshot 10 Sec – Western Washington EQ Record

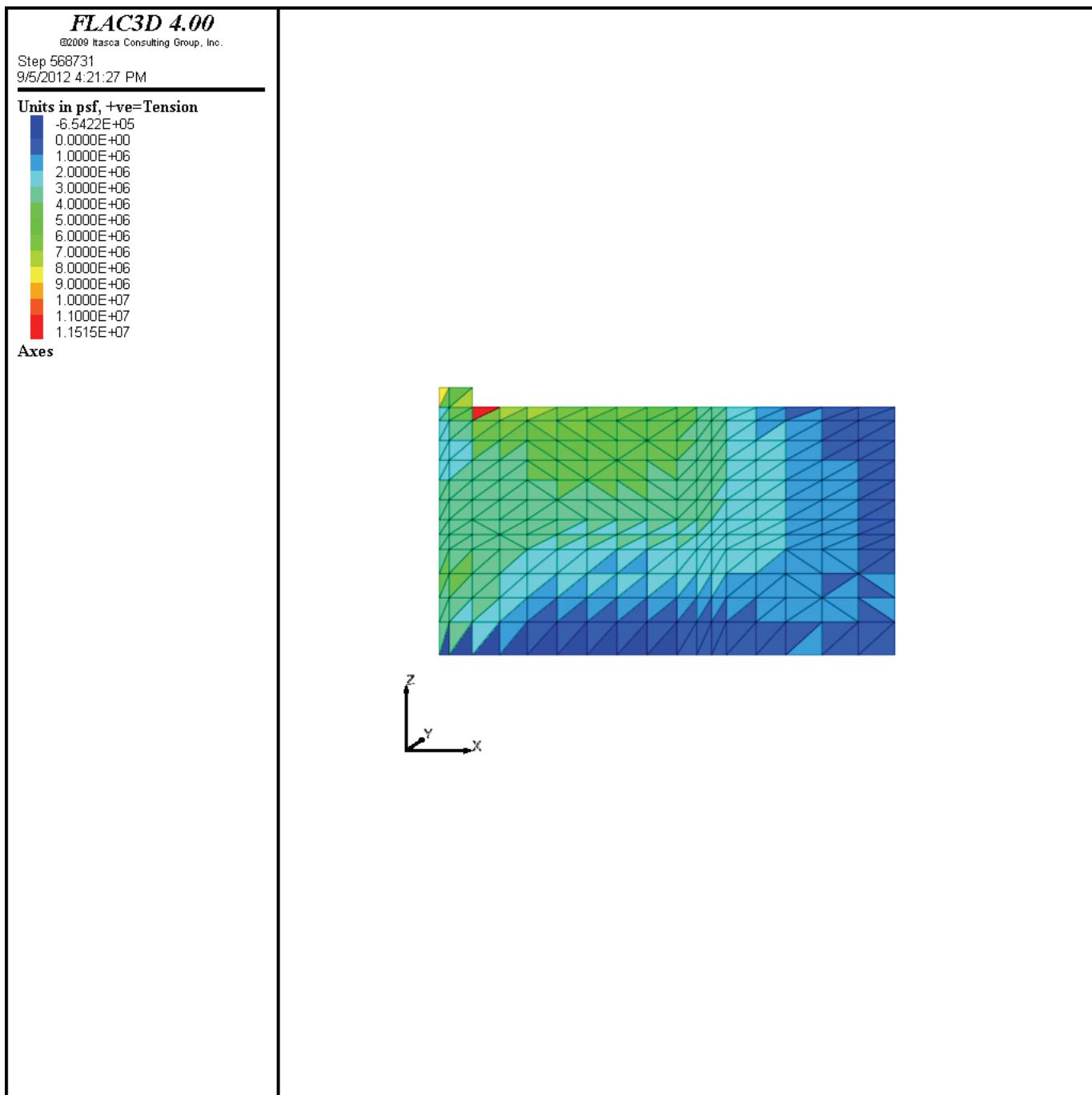


Figure F-3.2.6.b Tailwall Membrane Stress – Independent Design Snapshot 20 Sec – Western Washington EQ Record

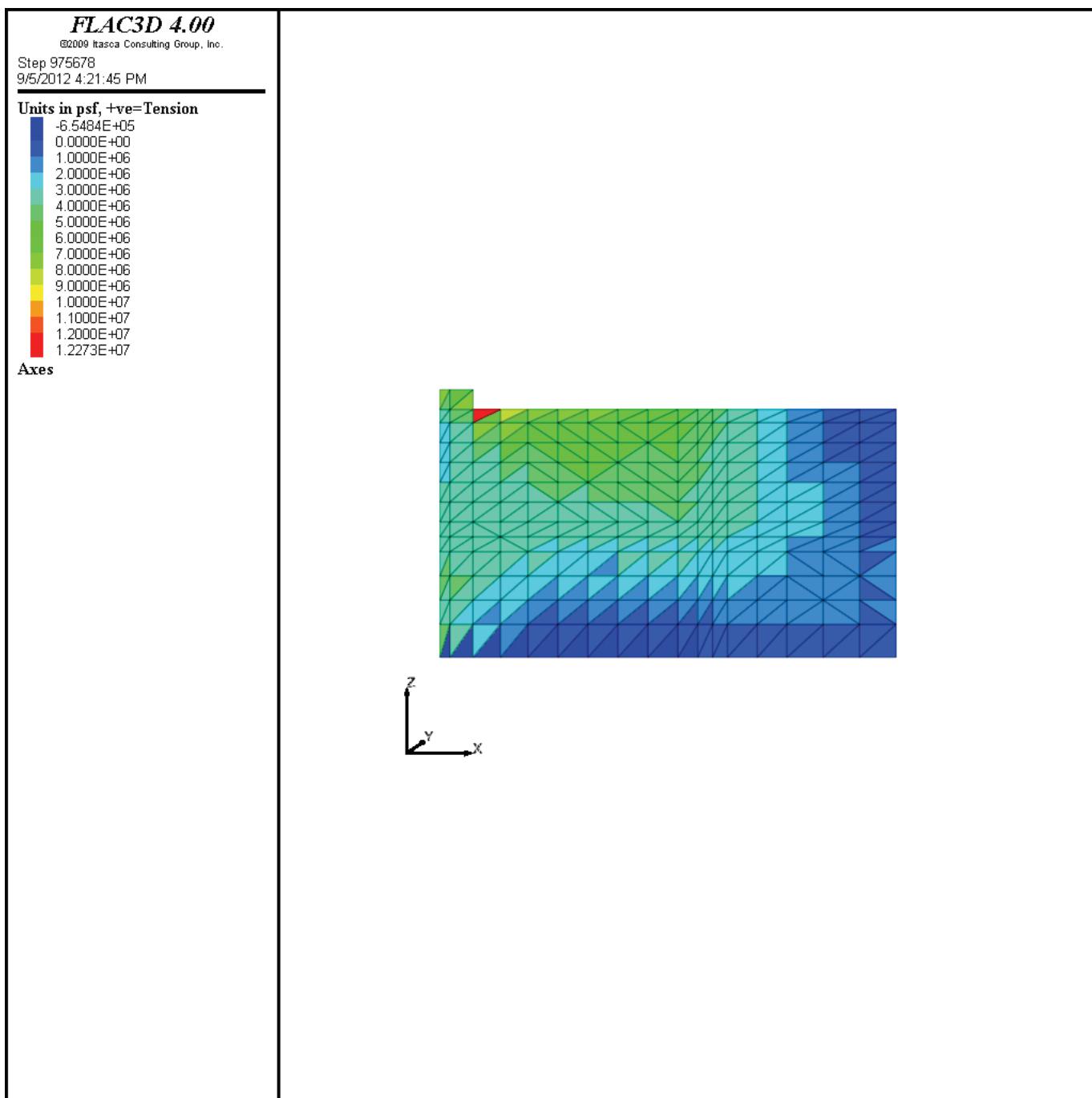


Figure F-3.2.7.b Tailwall Membrane Stress – Independent Design Snapshot 40 Sec – Western Washington EQ Record

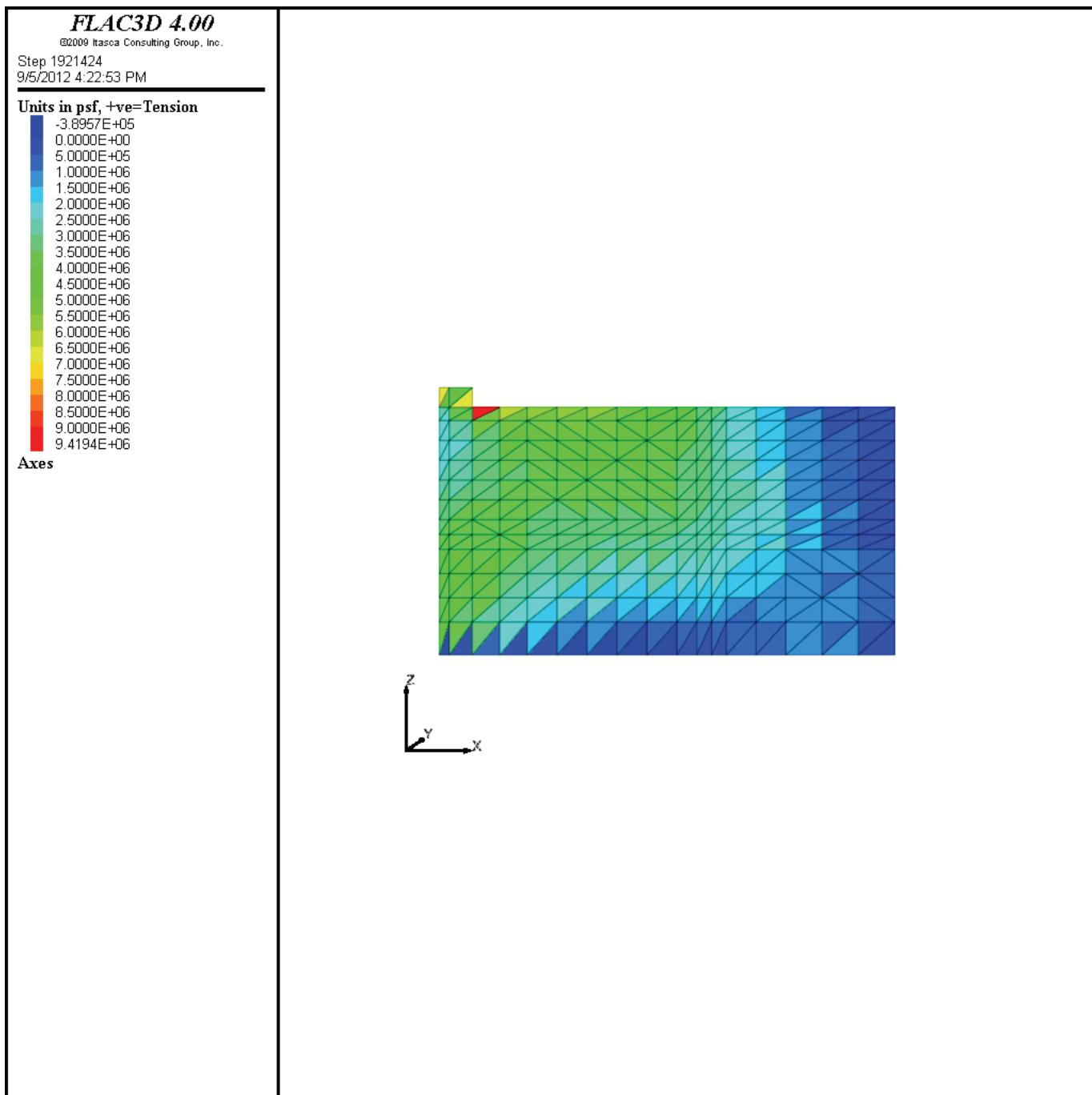


Figure F-3.2.8.b Tailwall Membrane Stress – Independent Design Snapshot 87 Sec – Western Washington EQ Record

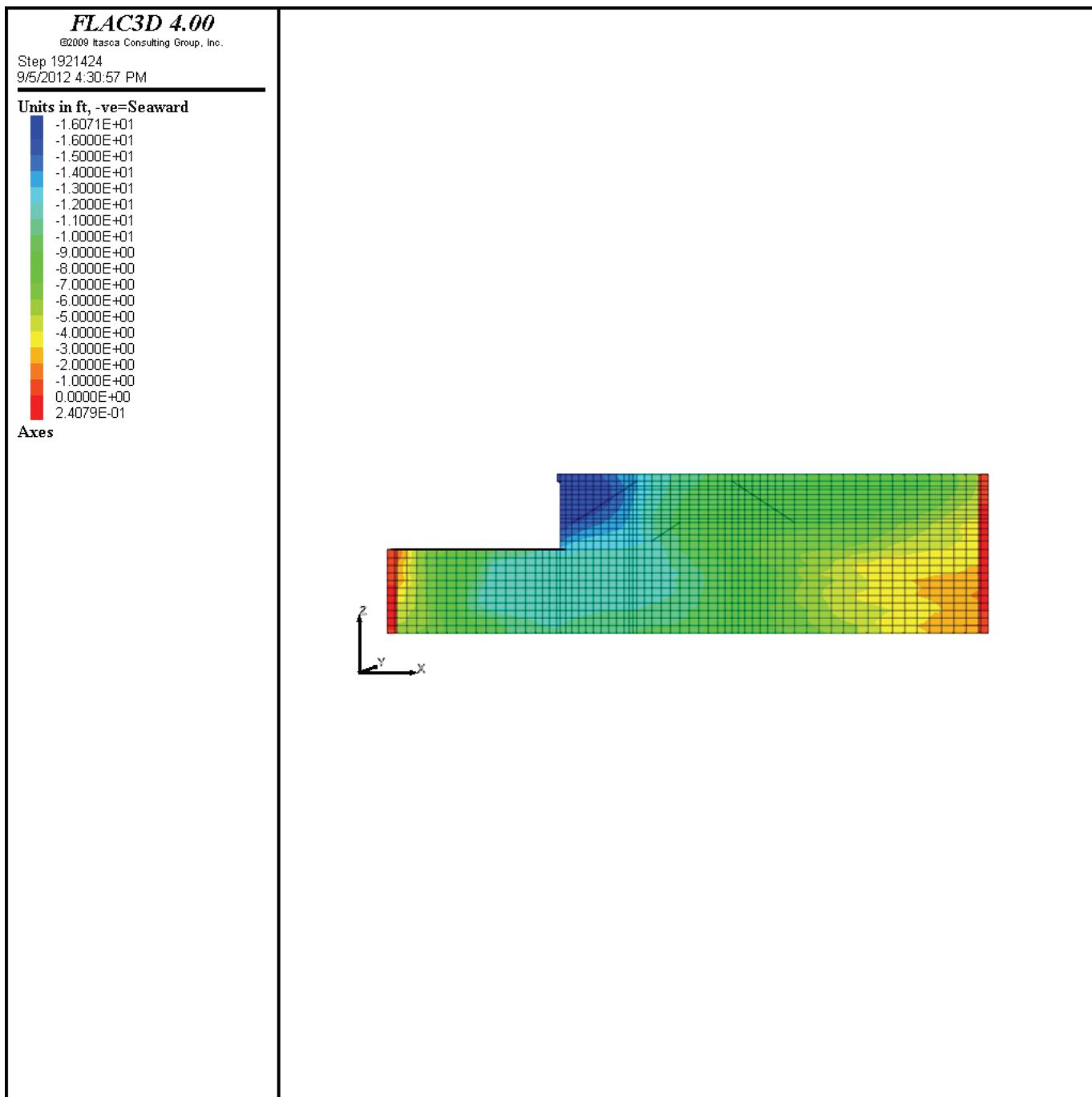
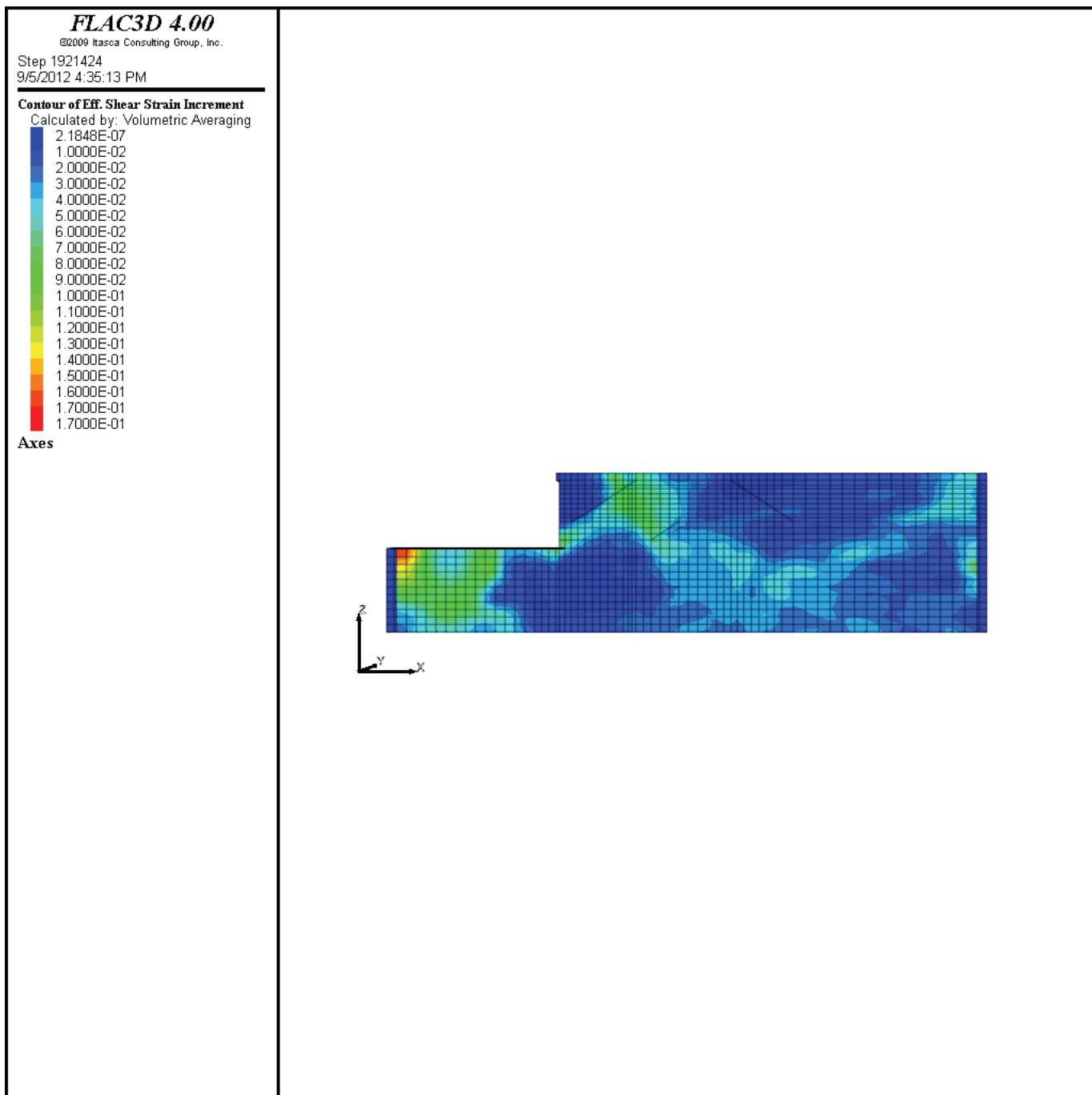


Figure F-3.2.9.b Permanent Soil X-Displacement Contours – Independent Design – Western Washington EQ Record



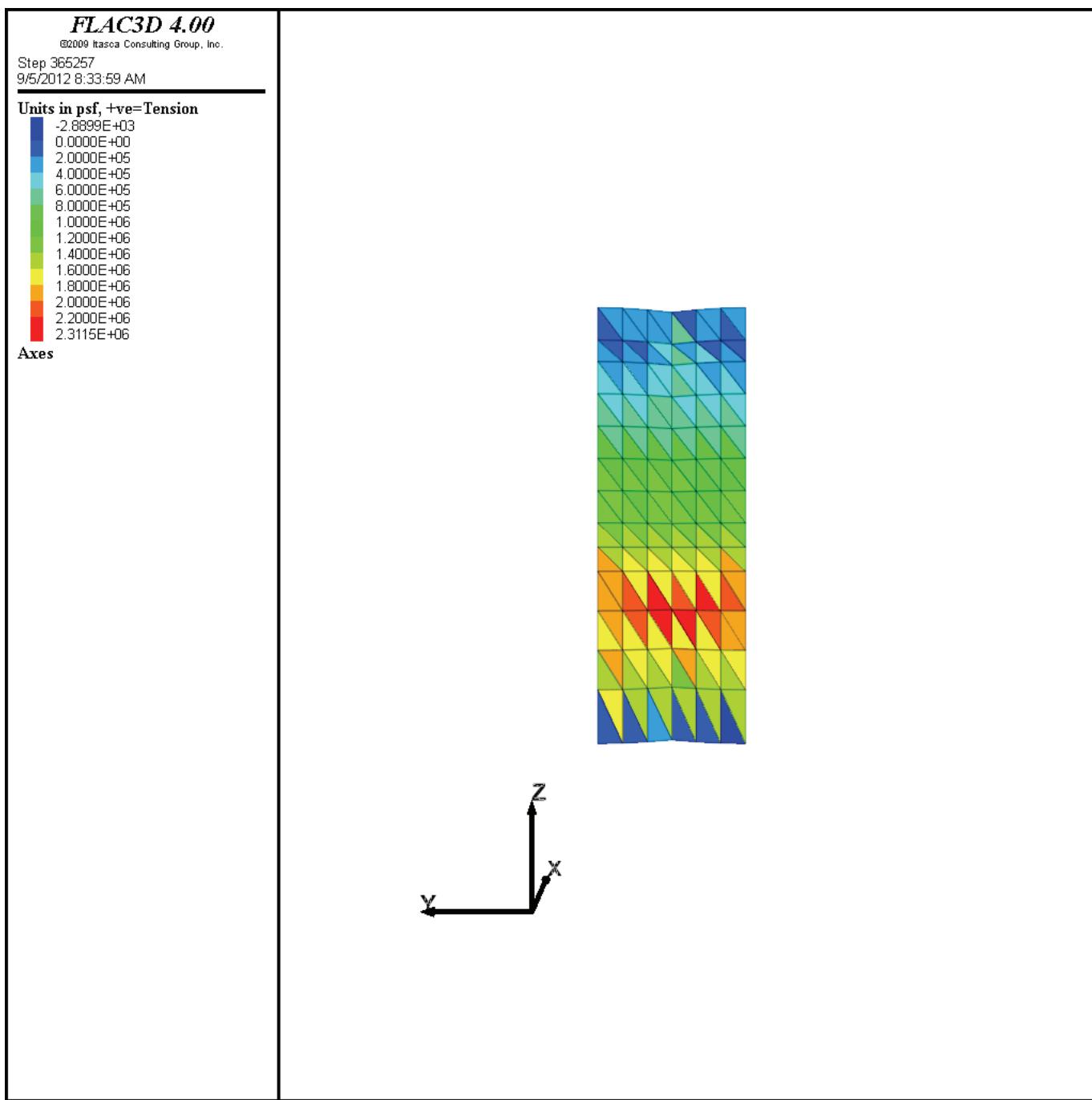


Figure F-3.3.1.a Facewall Membrane Stress – Independent Design Snapshot At 10 Sec – Michoacan EQ Record

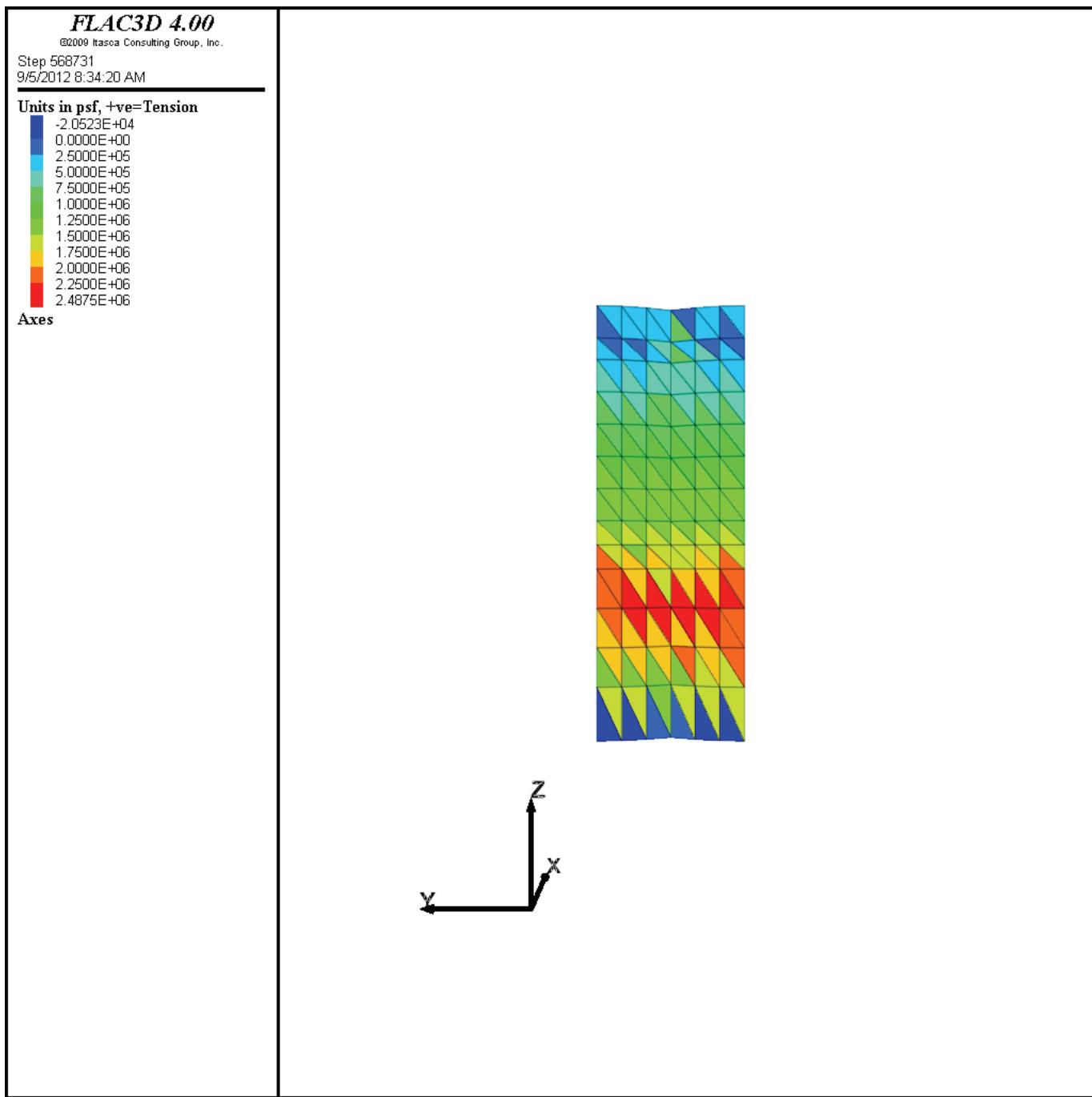


Figure F-3.3.2.a Facewall Membrane Stress – Independent Design Snapshot 20 Sec – Michoacan EQ Record

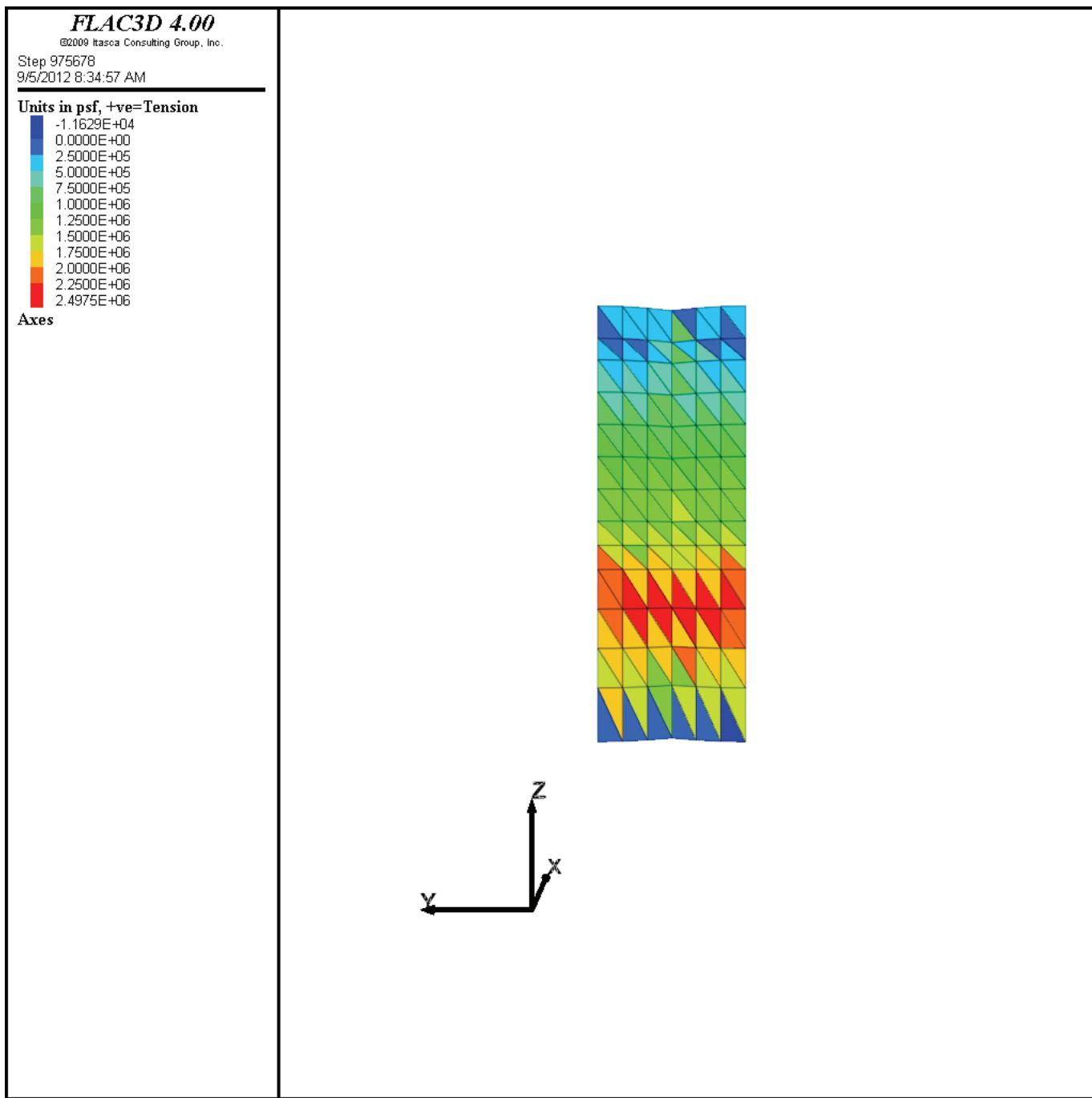


Figure F-3.3.3.a Facewall Membrane Stress – Independent Design Snapshot 40 Sec – Michoacan EQ Record

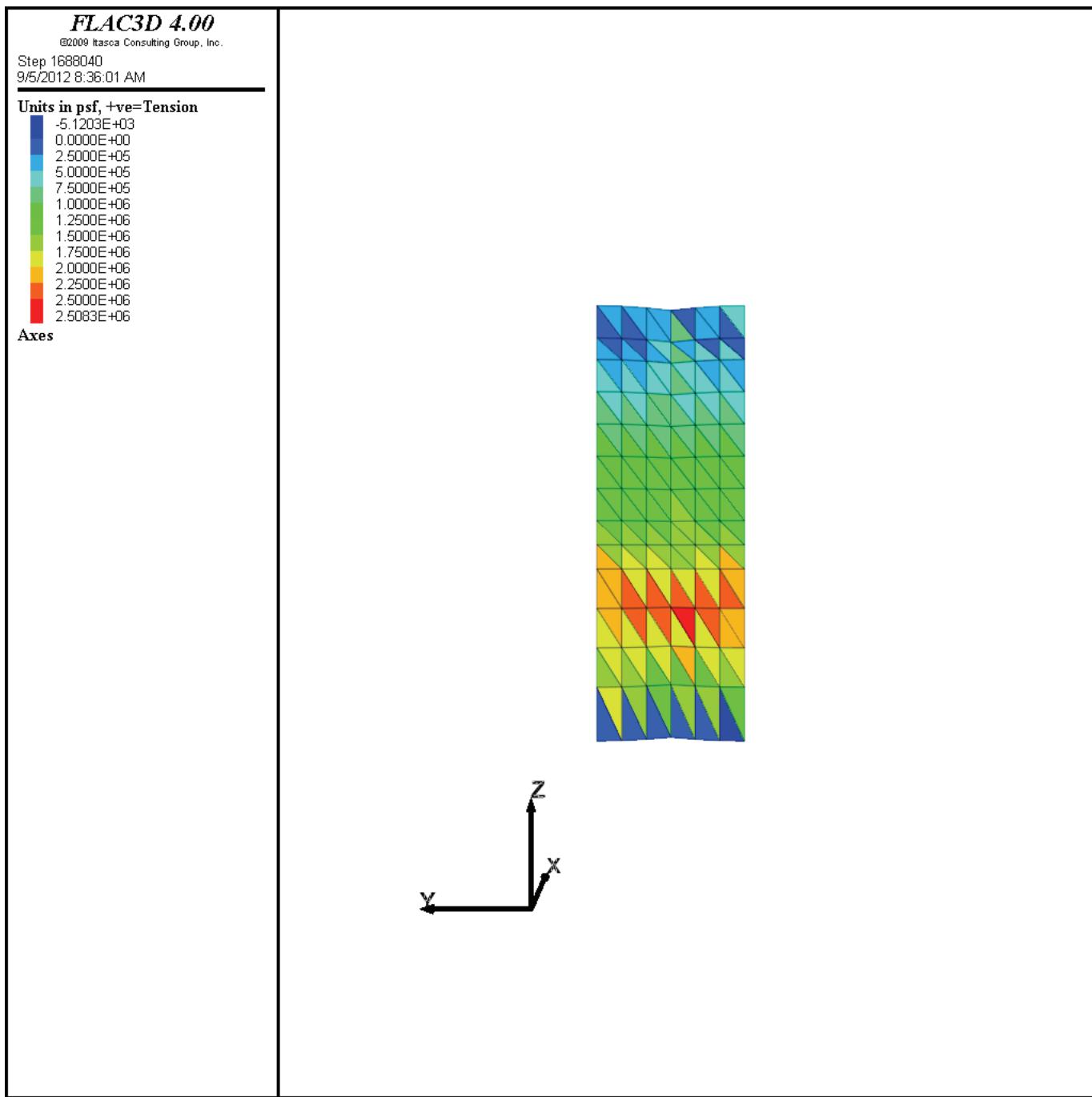


Figure F-3.3.4.a Facewall Membrane Stress – Independent Design Snapshot 75 Sec – Michoacan EQ Record

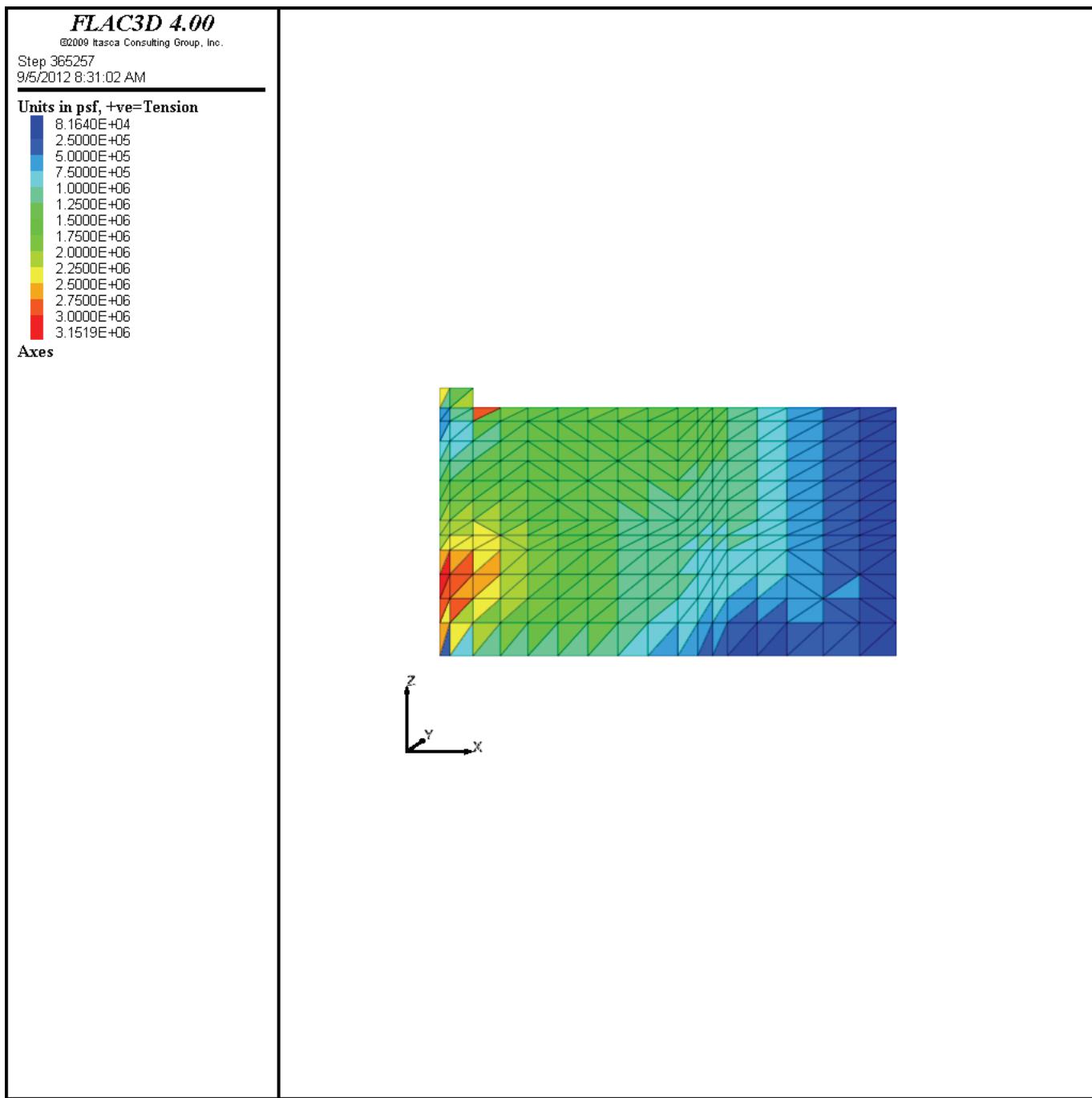


Figure F-3.3.5.a Tailwall Membrane Stress – Independent Design Snapshot 10 Sec – Michoacan EQ Record

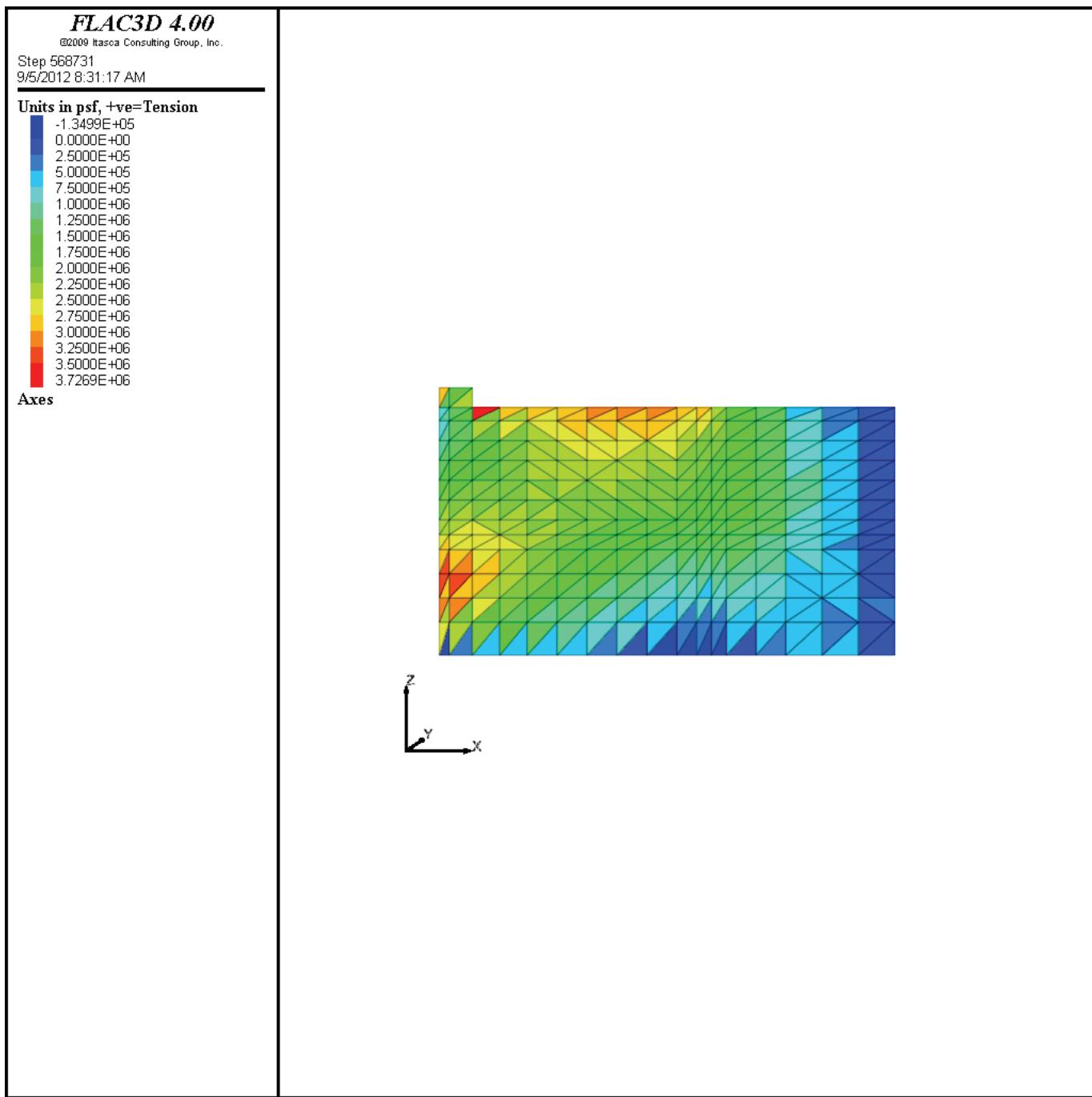


Figure F-3.3.6.a Tailwall Membrane Stress – Independent Design Snapshot 20 Sec – Michoacan EQ Record

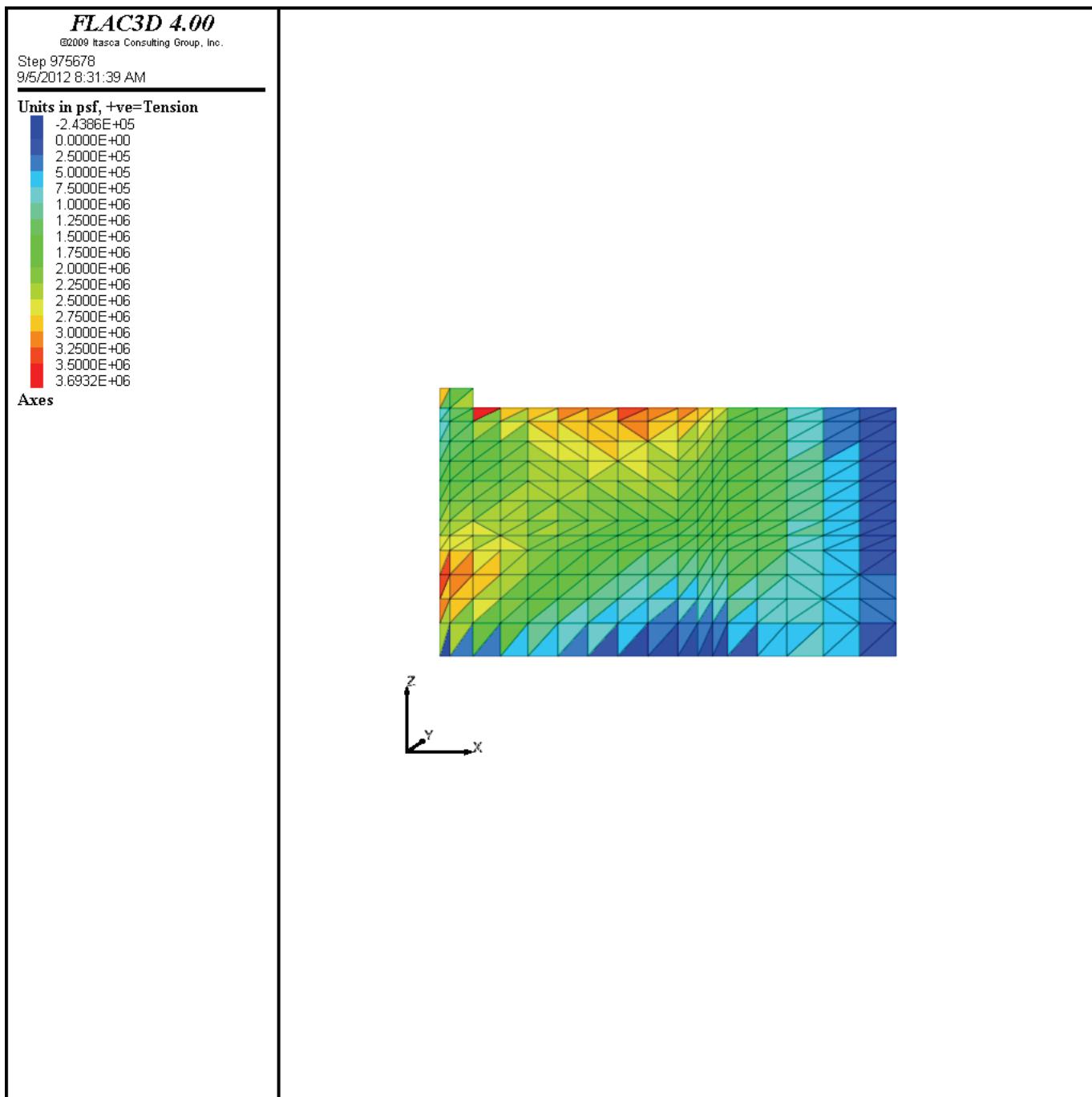


Figure F-3.3.7.a Tailwall Membrane Stress – Independent Design Snapshot 40 Sec – Michoacan EQ Record

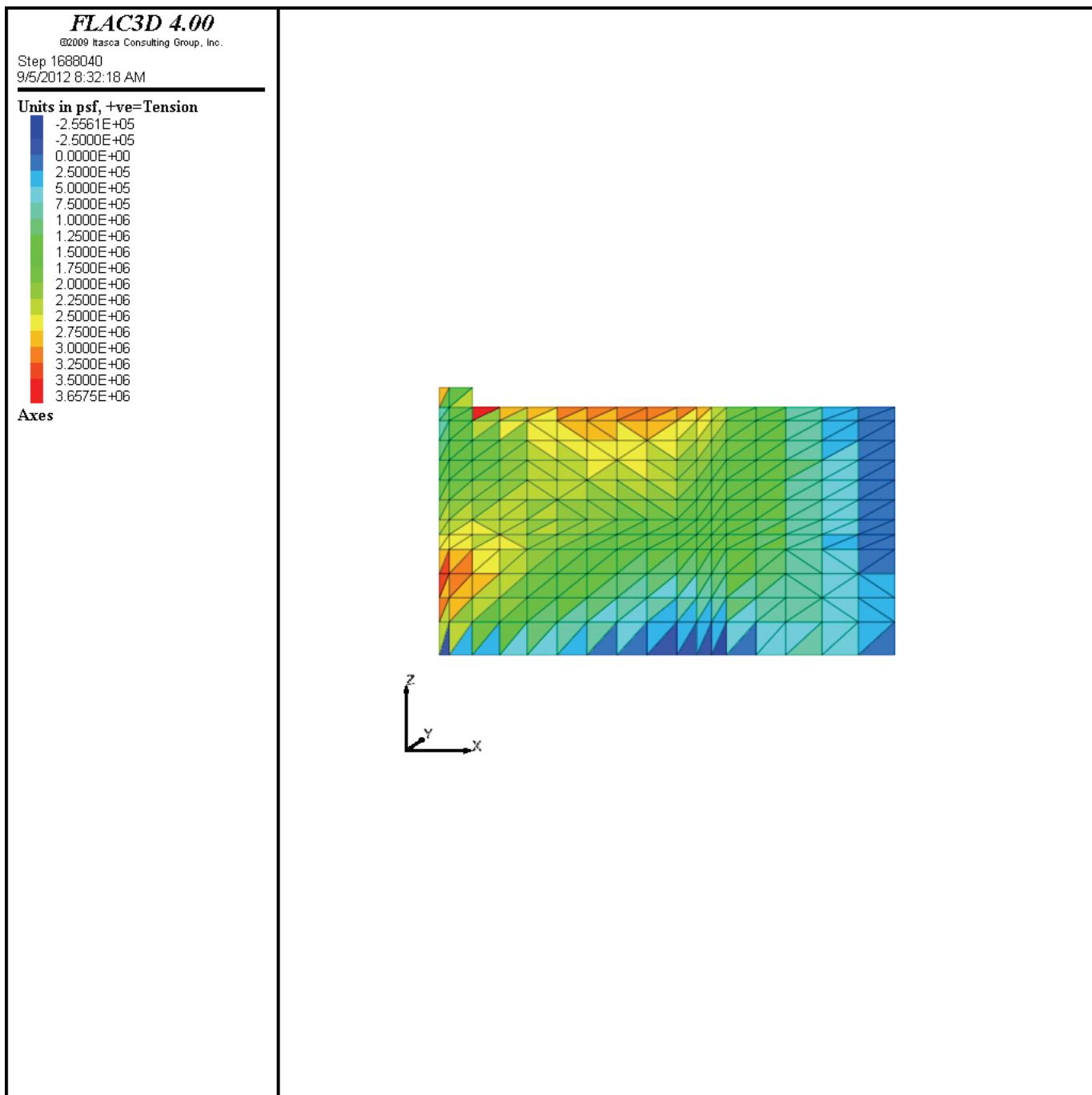


Figure F-3.3.8.a Tailwall Membrane Stress – Independent Design Snapshot 75 Sec – Michoacan EQ Record

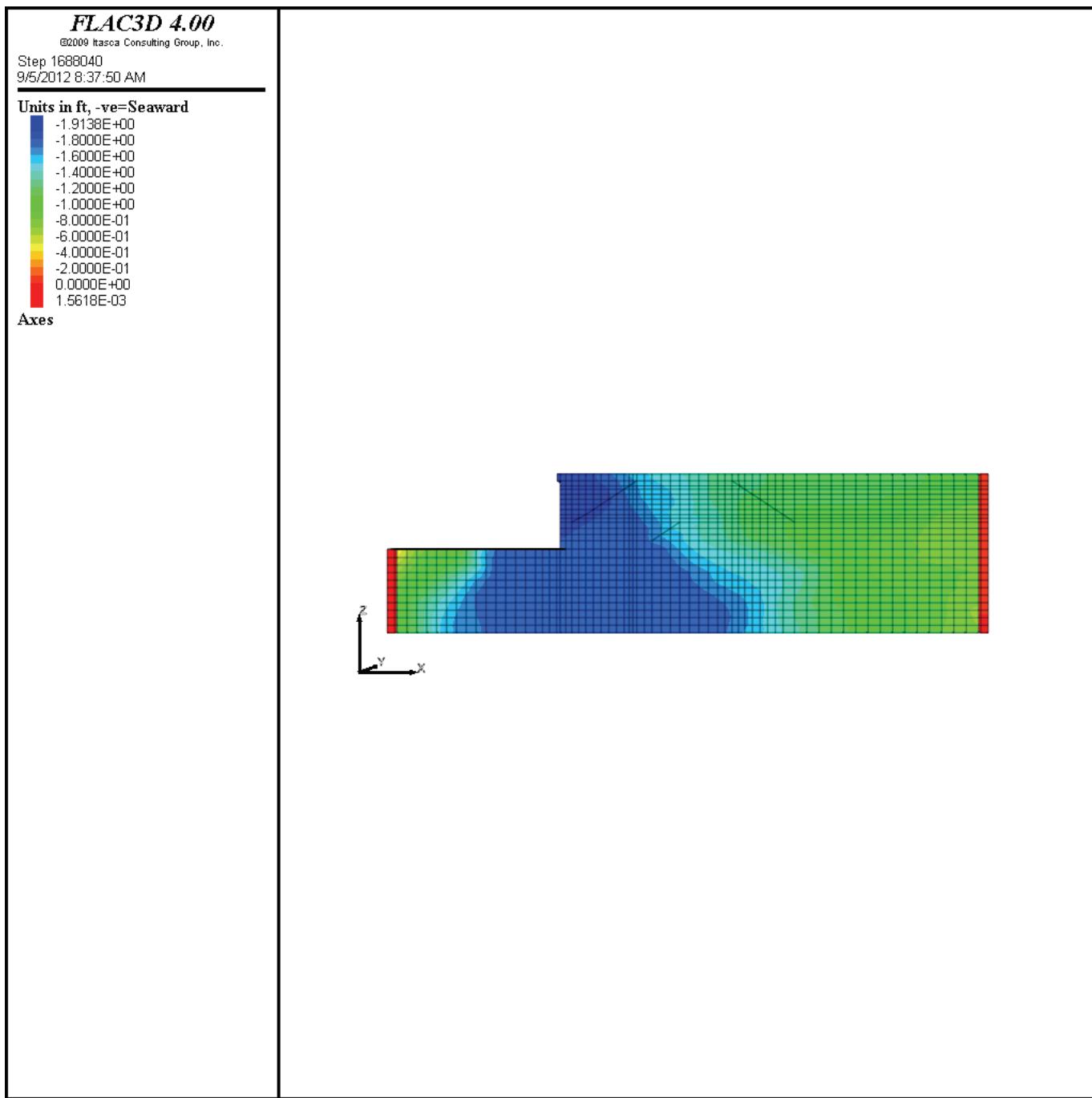


Figure F-3.3.9.a Permanent Soil X-Displacement Contours – Independent Design – Michoacan EQ Record

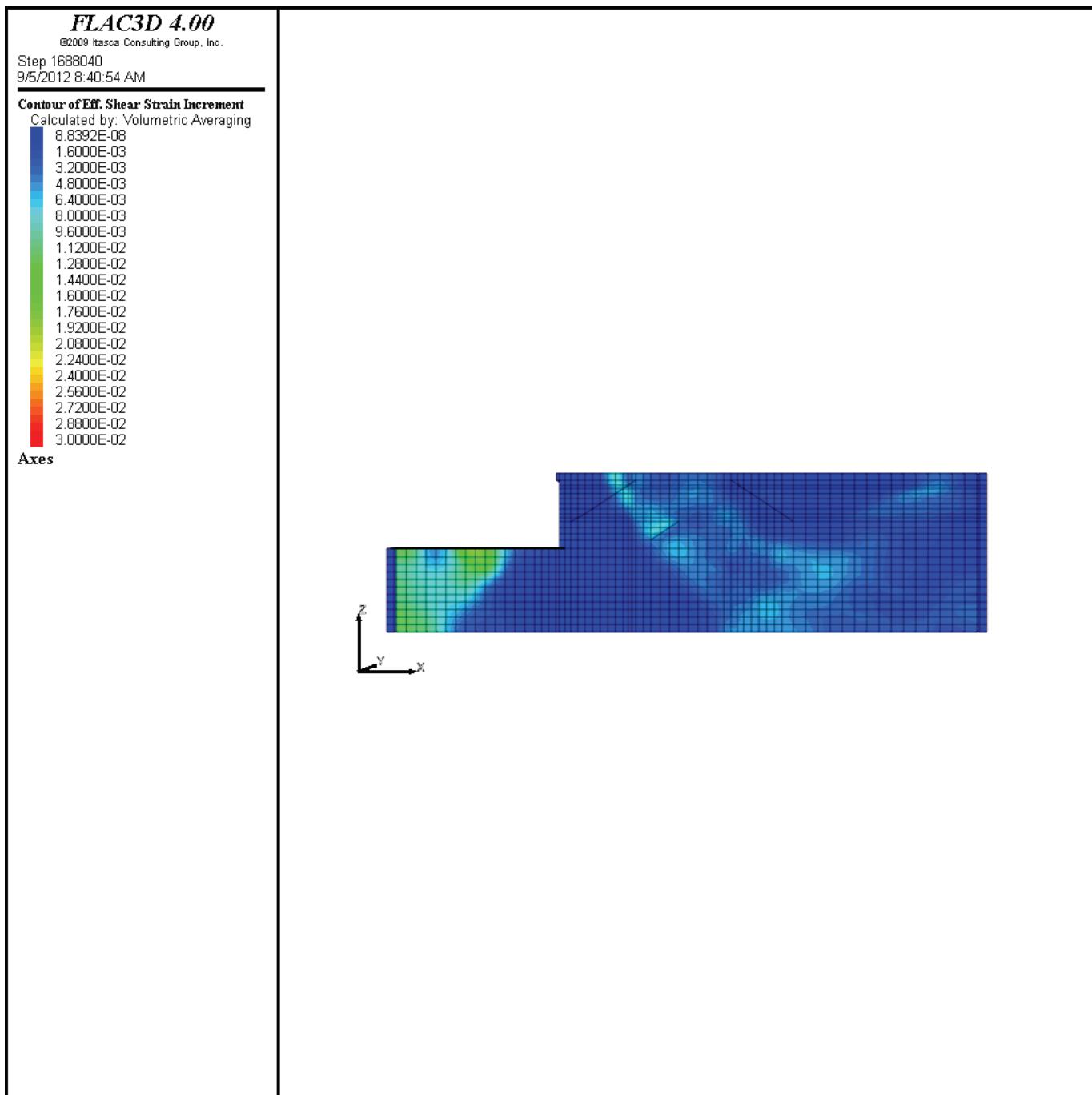


Figure F-3.3.10.a Effective Shear Strain Contours – Independent Design – Michoacan EQ Record

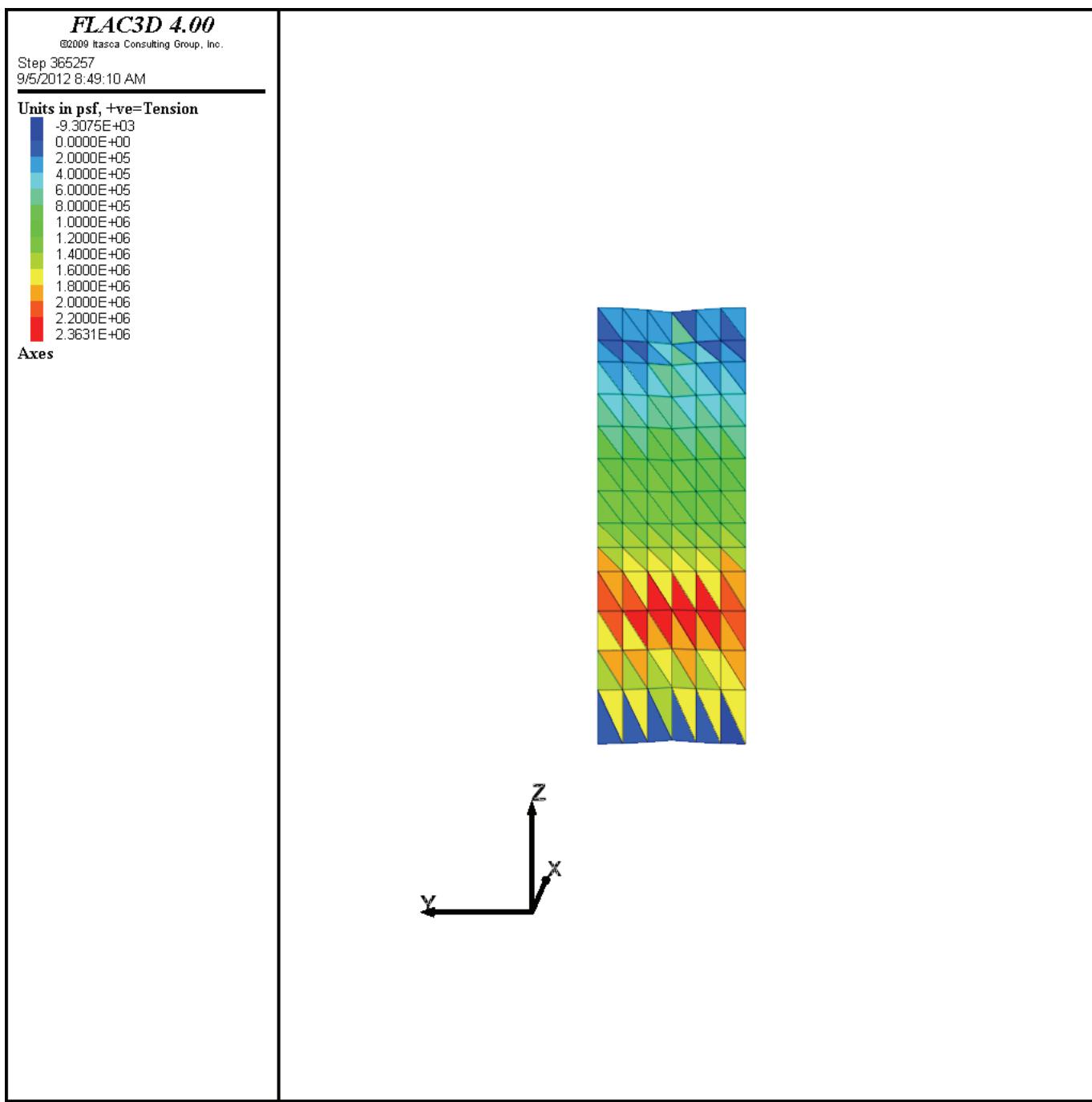


Figure F-3.3.1.b Facewall Membrane Stress – Independent Design Snapshot At 10 Sec – Puget Sound EQ Record

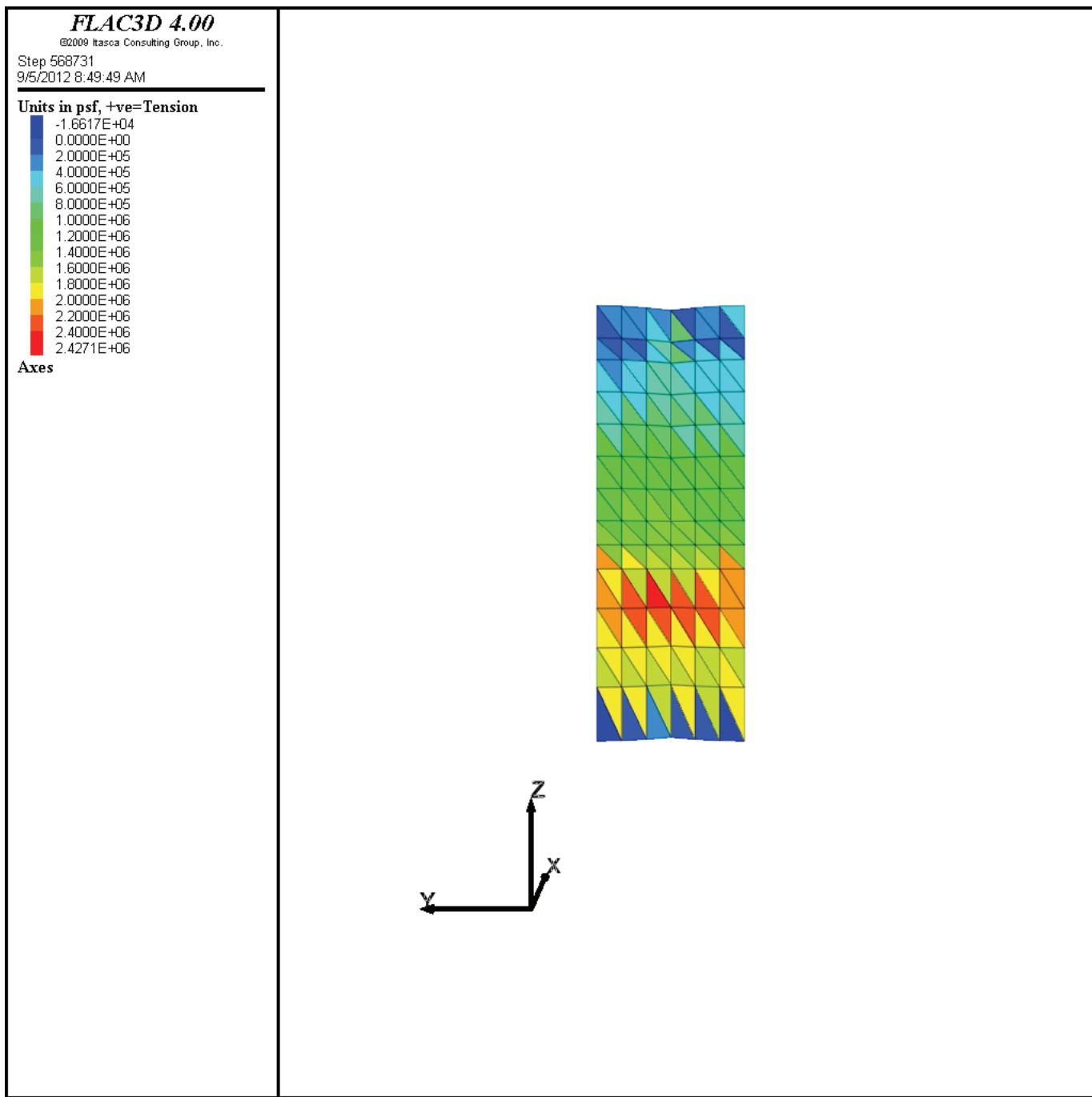


Figure F-3.3.2.b Facewall Membrane Stress – Independent Design Snapshot 20 Sec – Puget Sound EQ Record

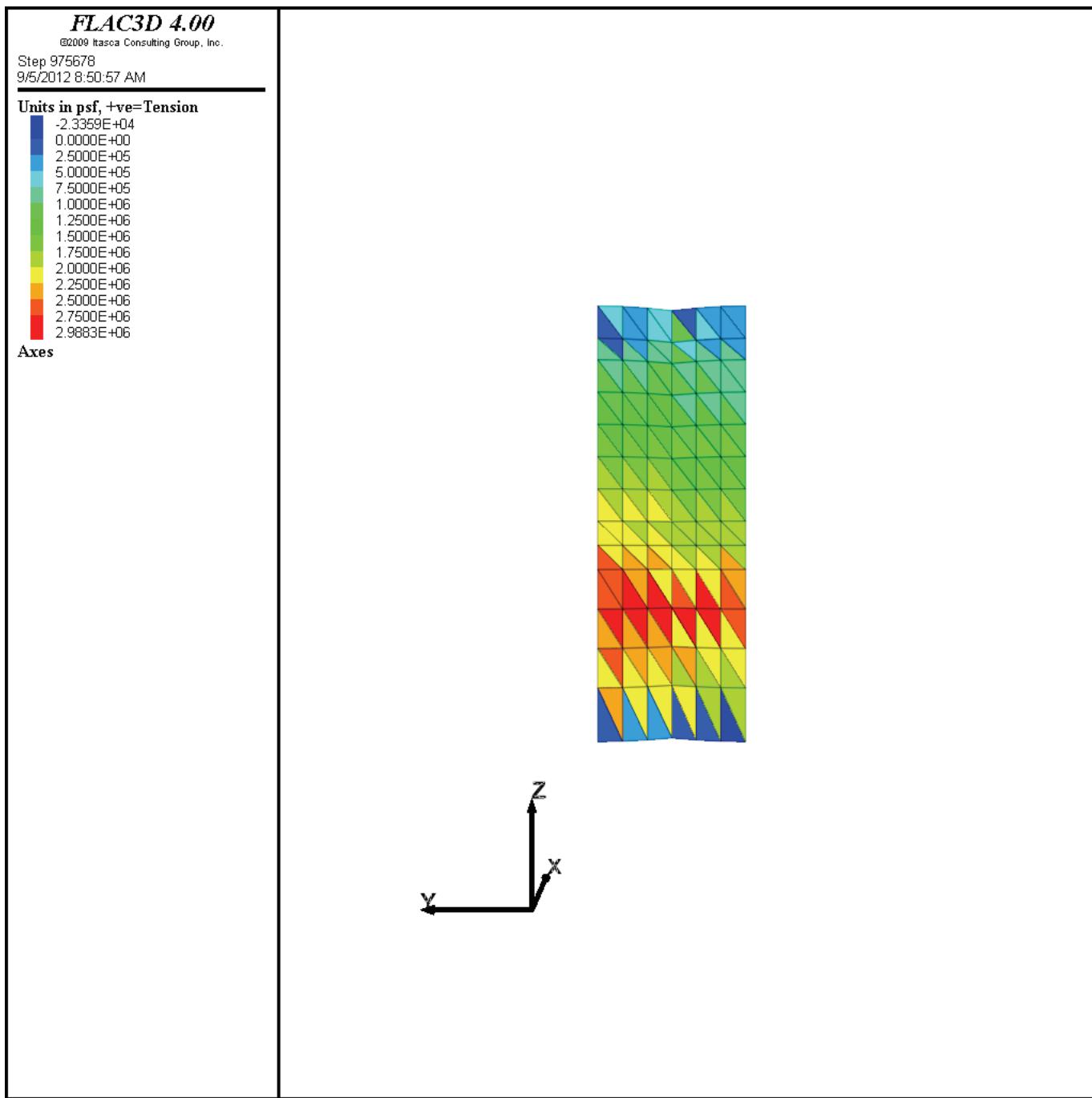


Figure F-3.3.3.b Facewall Membrane Stress – Independent Design Snapshot 40 Sec – Puget Sound EQ Record

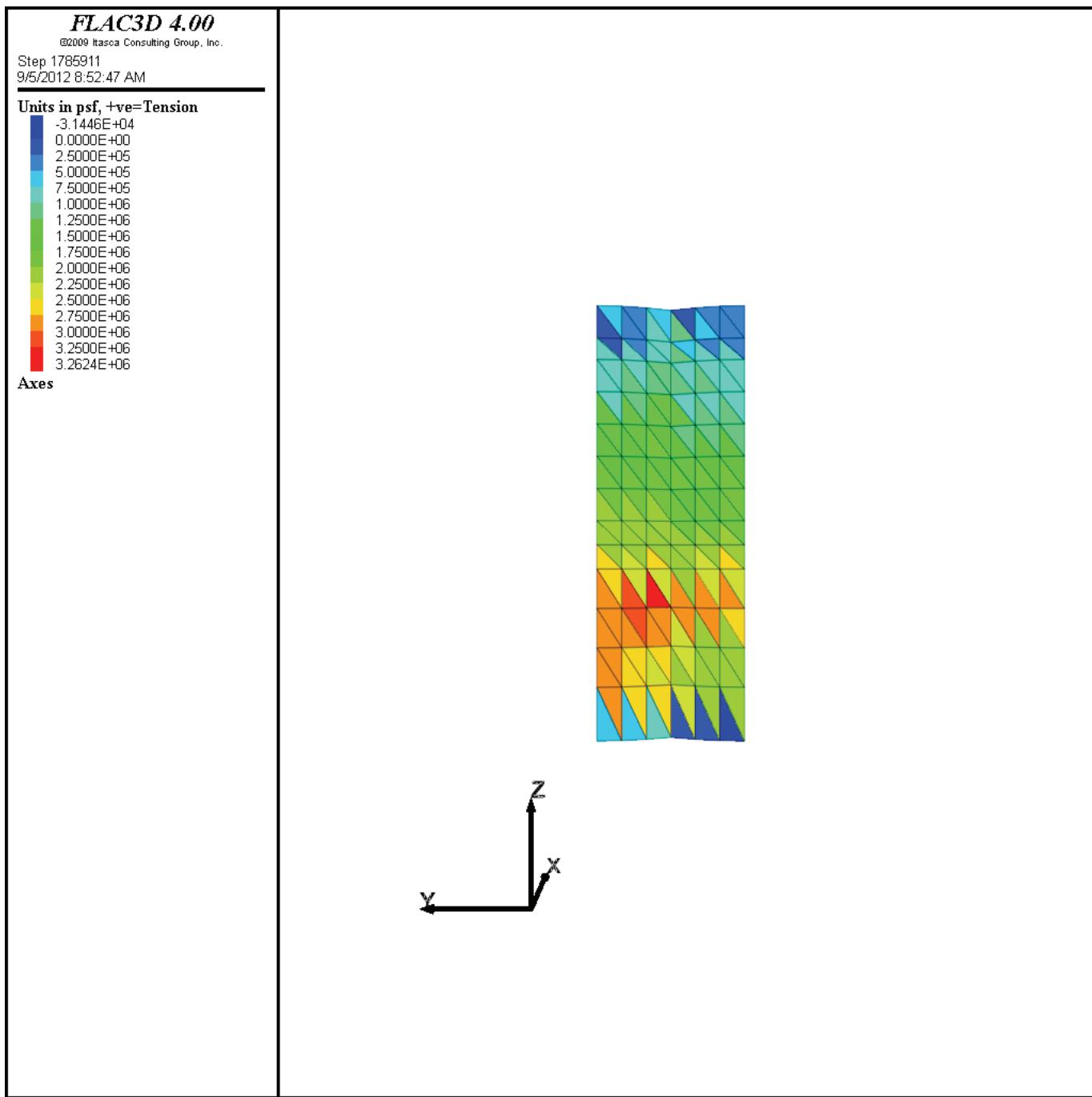


Figure F-3.3.4.b Facewall Membrane Stress – Independent Design Snapshot 80 Sec – Puget Sound EQ Record

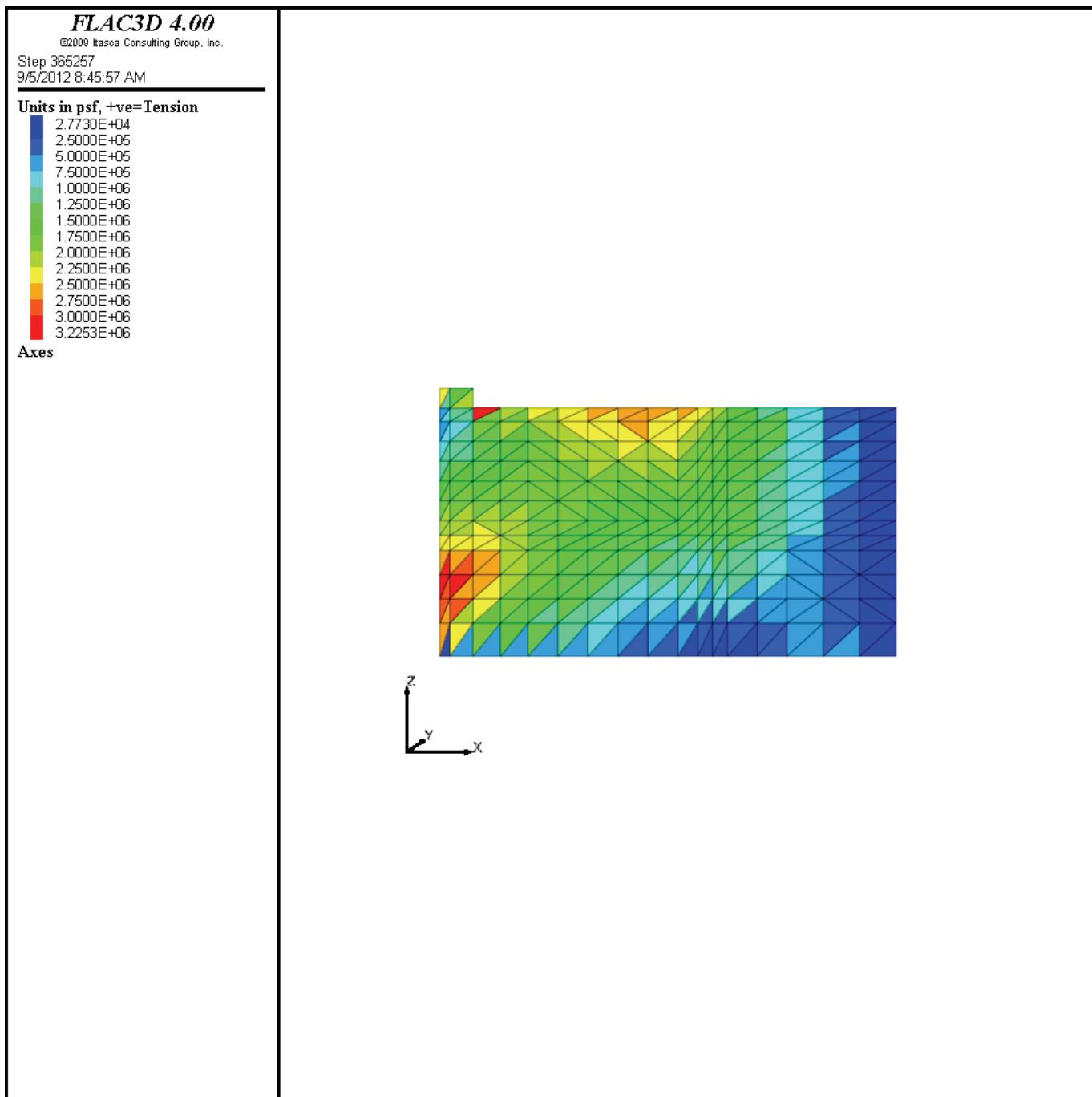


Figure F-3.3.5.b Tailwall Membrane Stress – Independent Design Snapshot 10 Sec – Puget Sound EQ Record

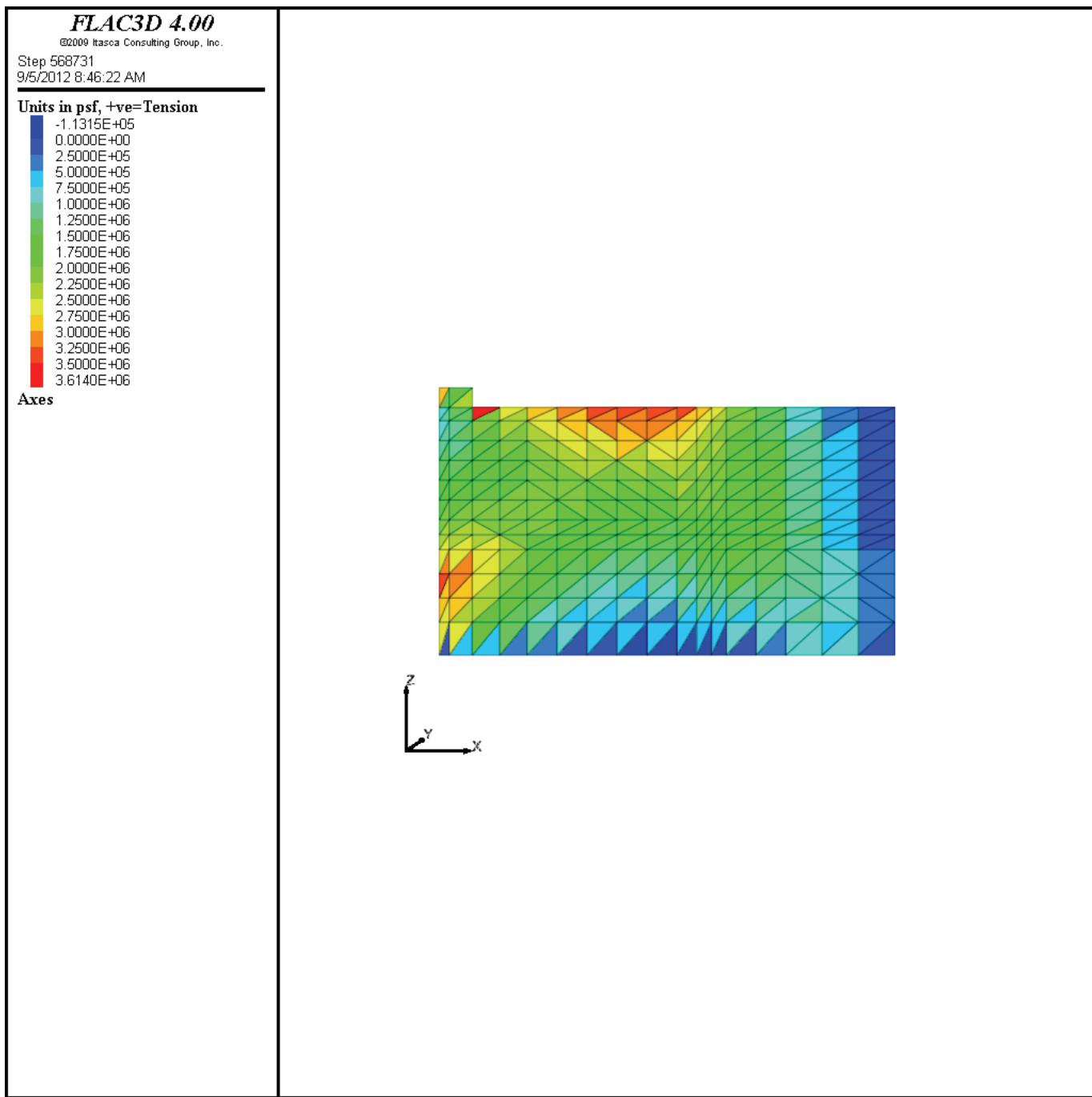


Figure F-3.3.6.b Tailwall Membrane Stress – Independent Design Snapshot 20 Sec – Puget Sound EQ Record

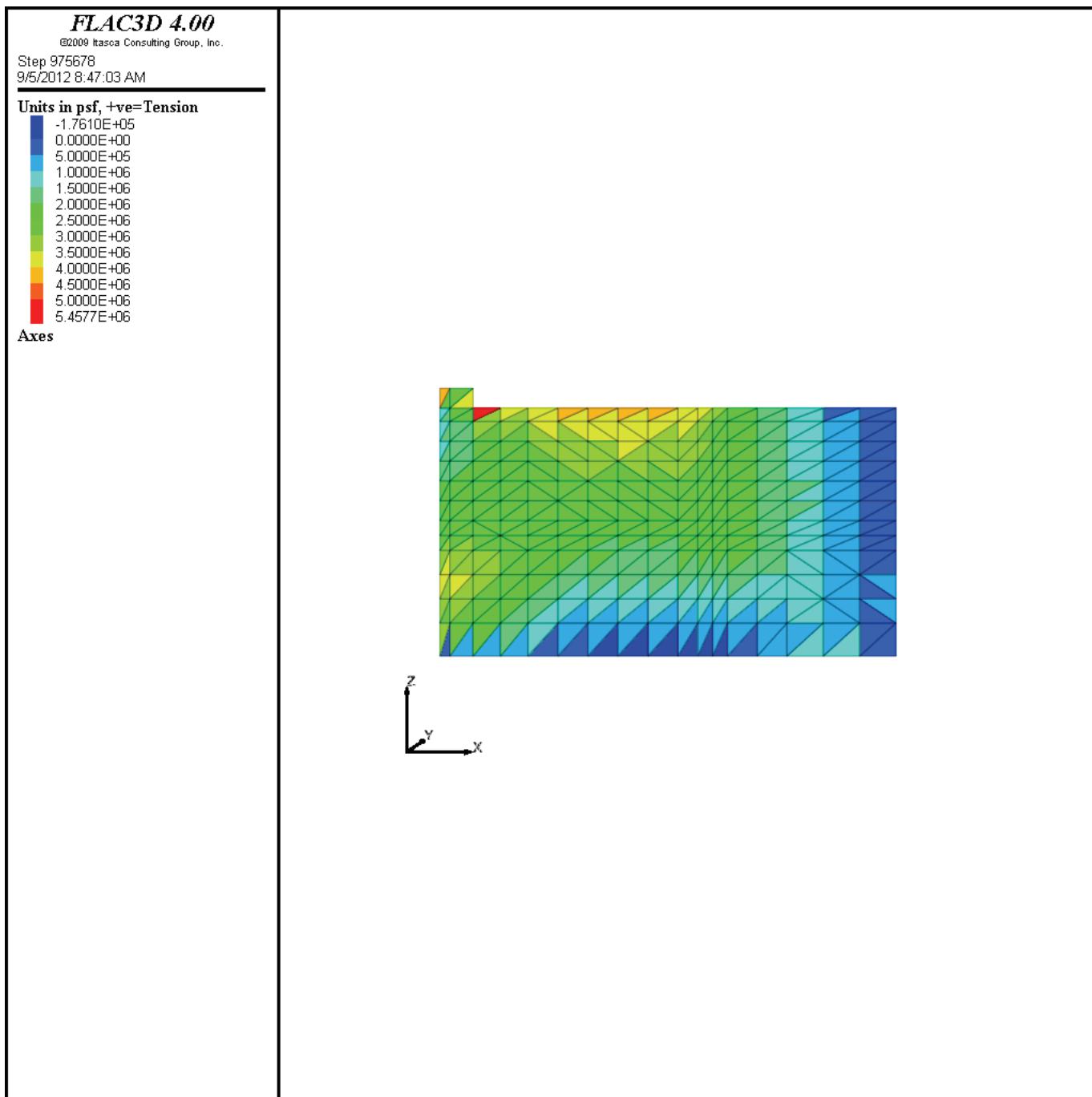


Figure F-3.3.7.b Tailwall Membrane Stress – Independent Design Snapshot 40 Sec – Puget Sound EQ Record

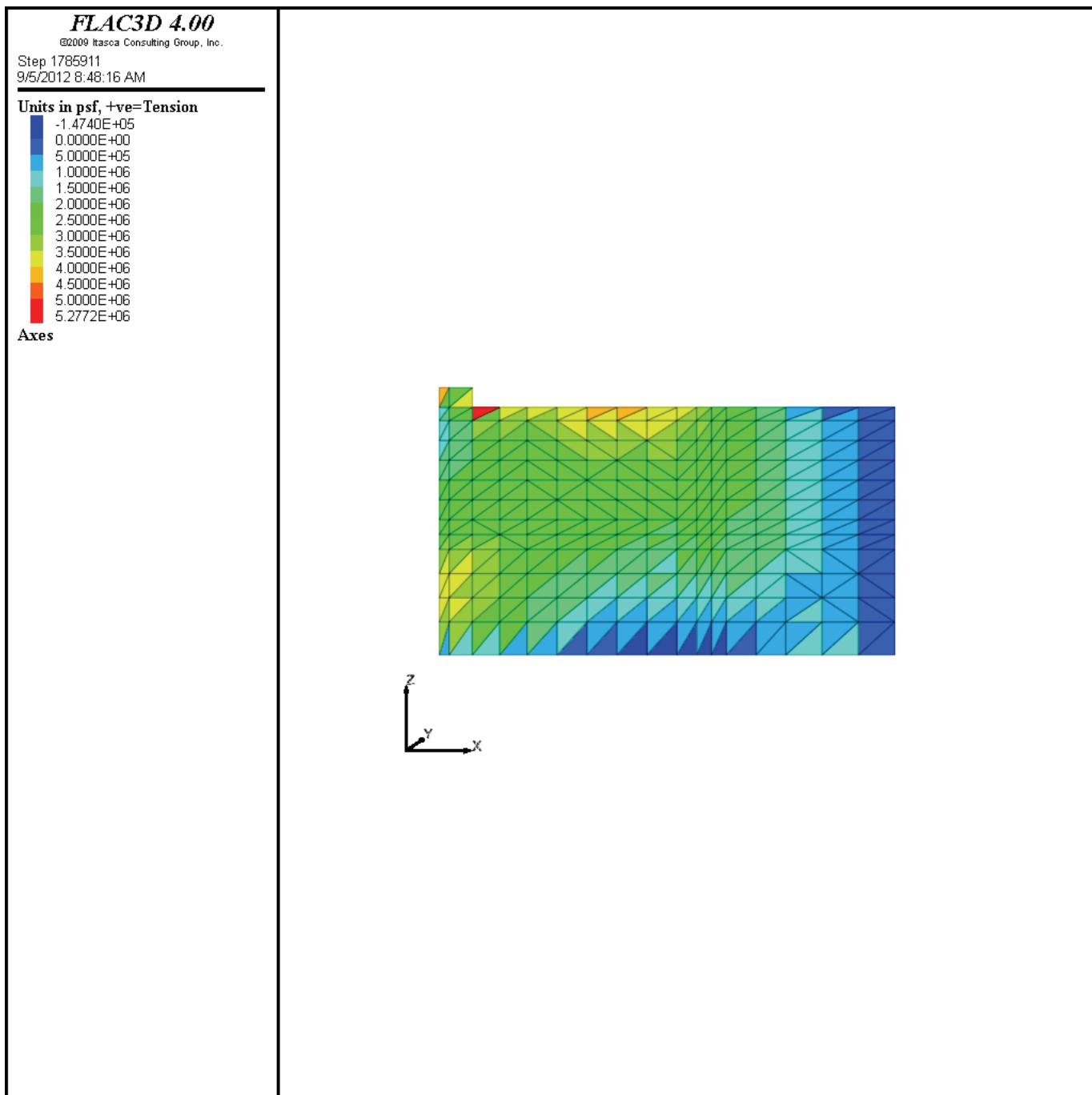


Figure F-3.3.8.b Tailwall Membrane Stress – Independent Design Snapshot 80 Sec – Puget Sound EQ Record

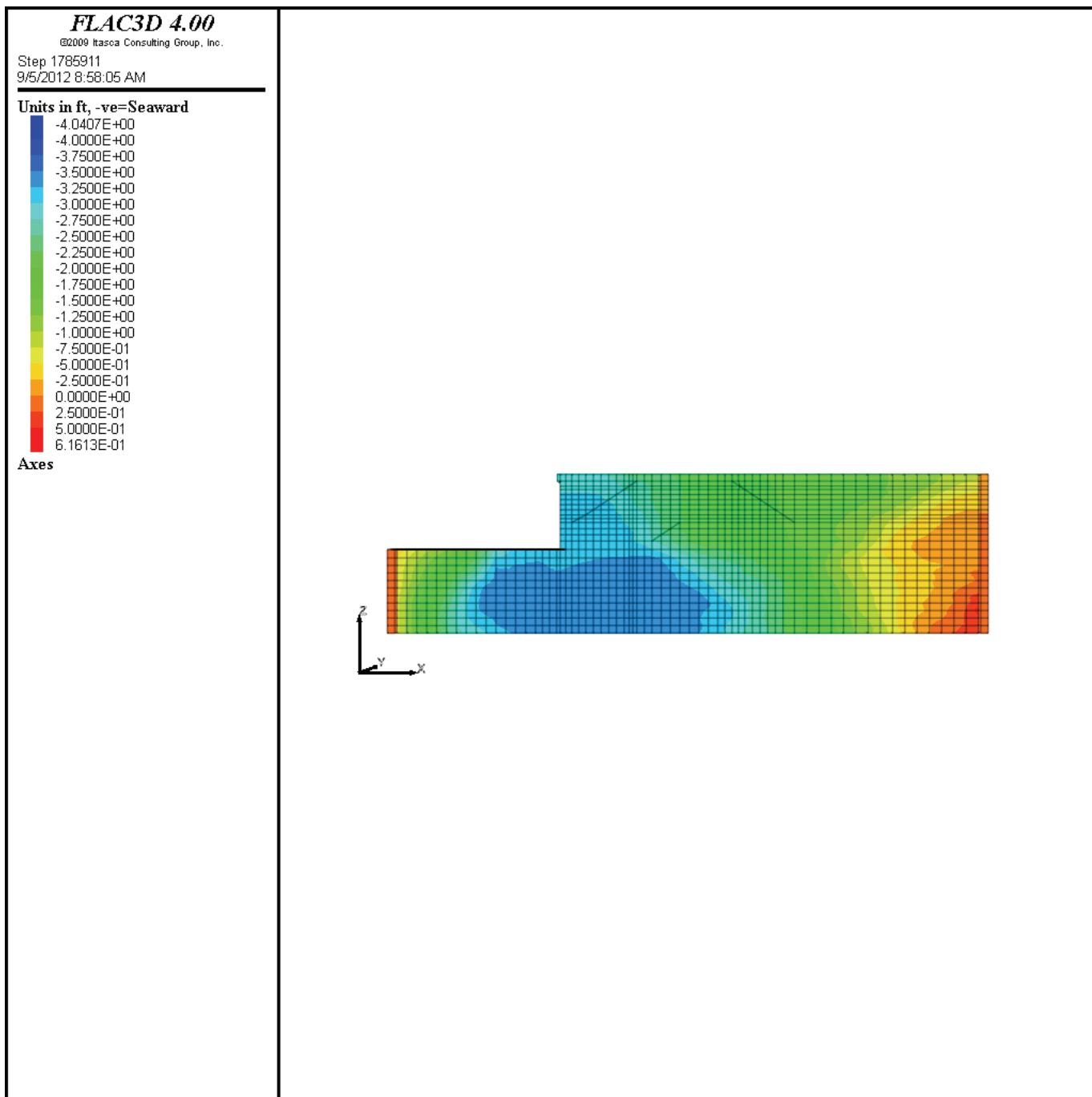


Figure F-3.3.9.b Permanent Soil X-Displacement Contours – Independent Design – Puget Sound EQ Record

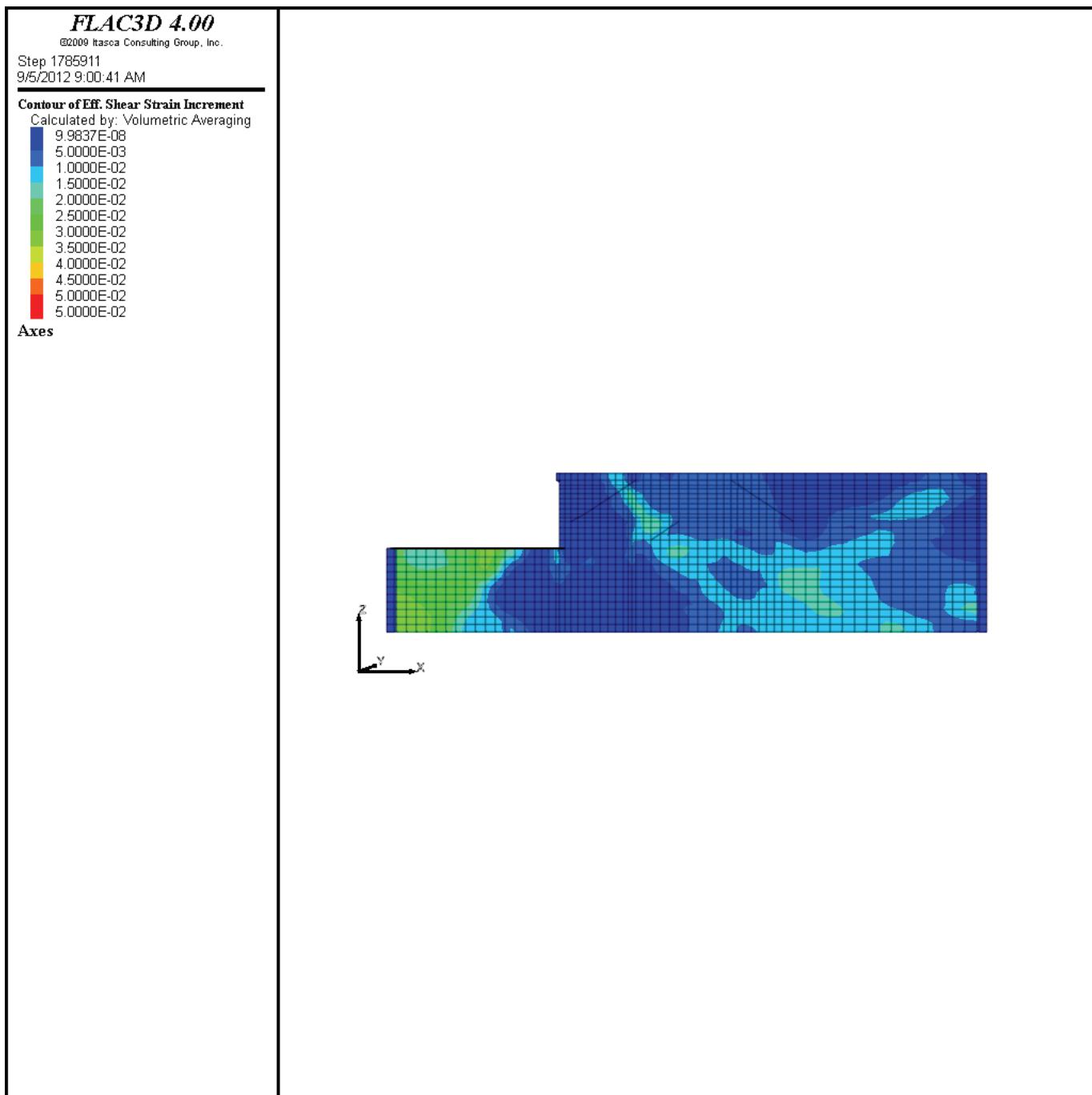


Figure F-3.3.10.b Effective Shear Strain Contours – Independent Design – Puget Sound EQ Record

