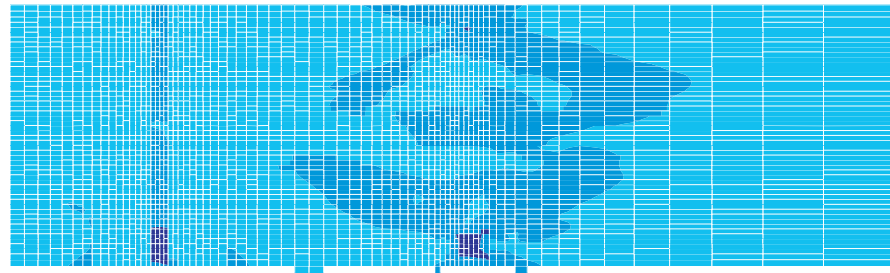
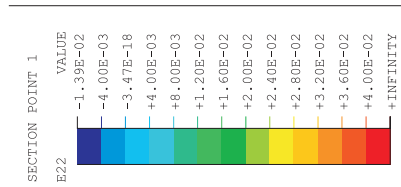
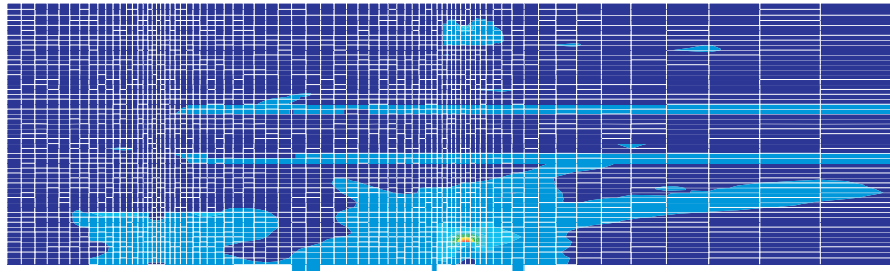
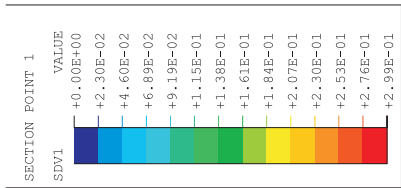


Horizontal Strain



Vertical Strain



Effective Plastic Strain

Figure 8-87. PCCV Liner Model, Liner Seam Rat-Hole Study Case 7c, Stress Contour, Vertical and Horizontal Back-Up Bars, No Horizontal Gap, Similar to Case 4b, Thinning in Gap Region

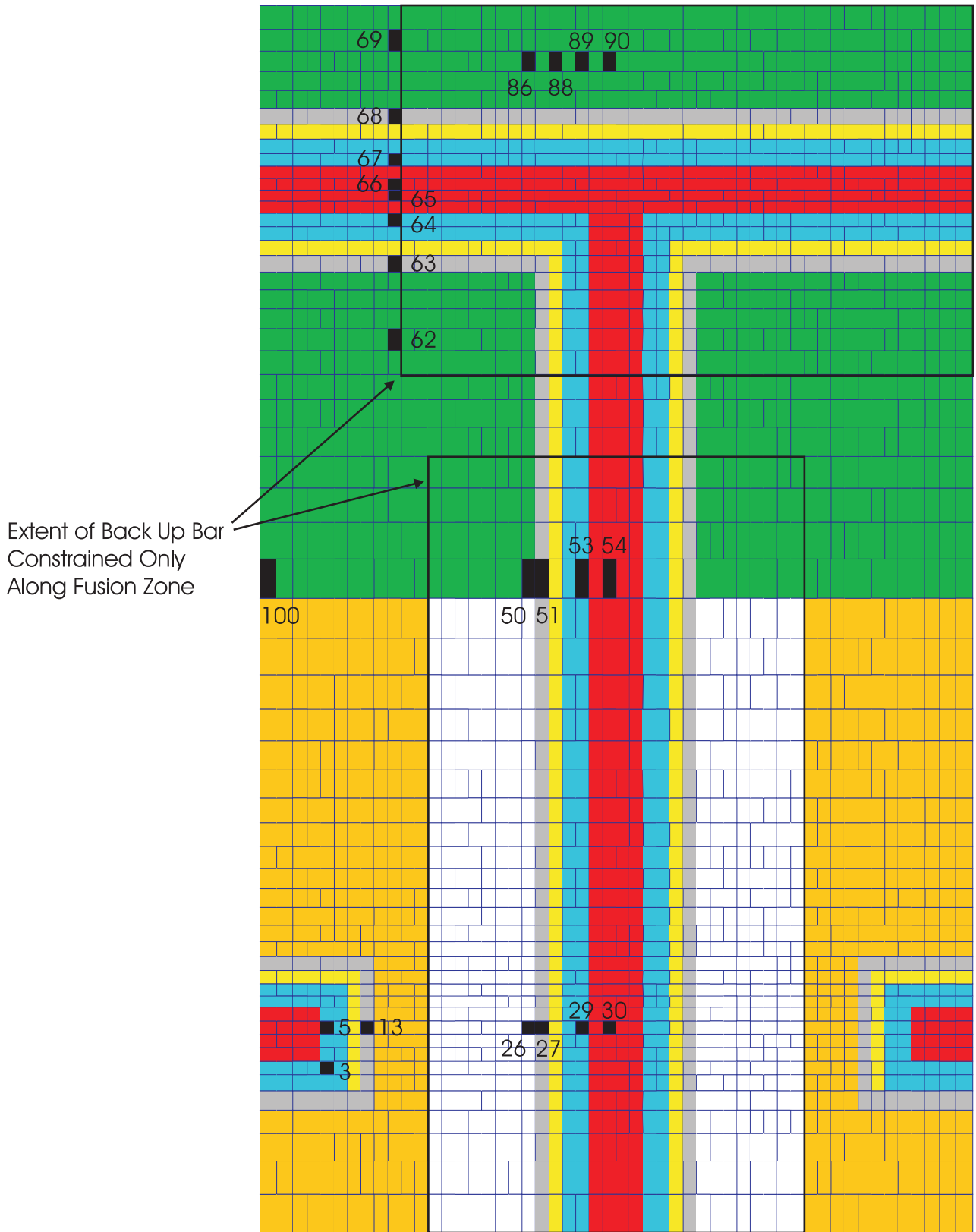


Figure 8-88. PCCV Liner Weld/Rat-Hole Study; Locations of Strain Profile Comparisons

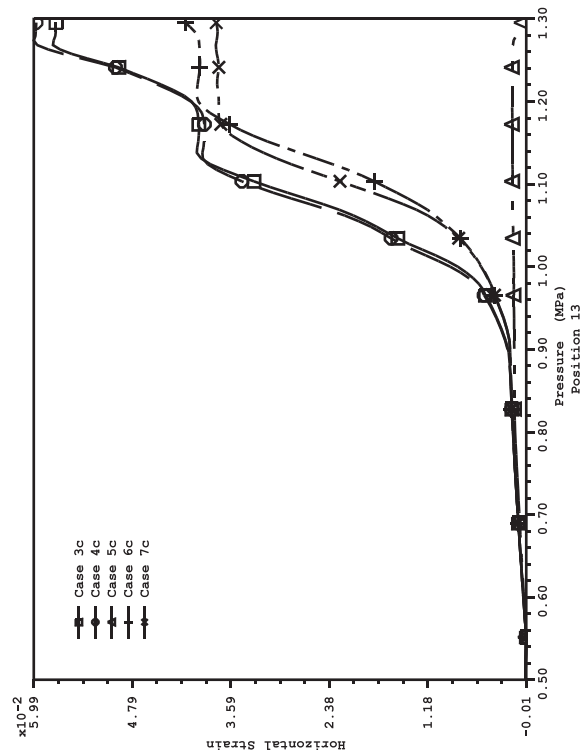
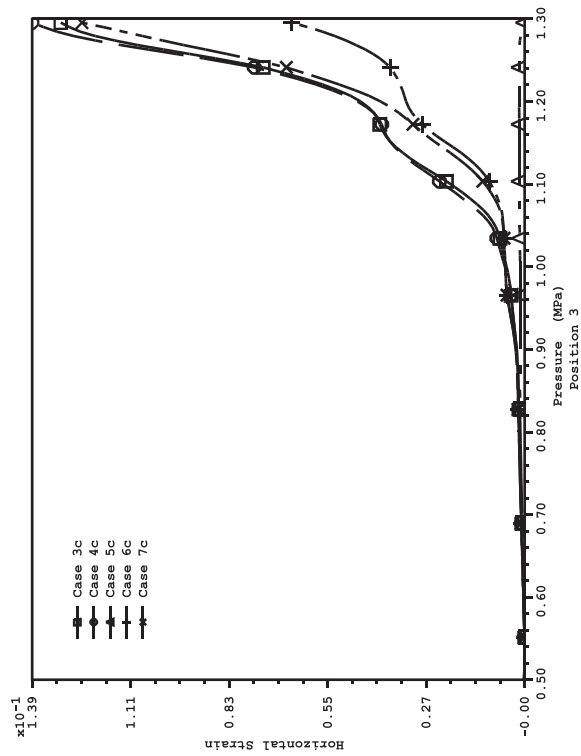
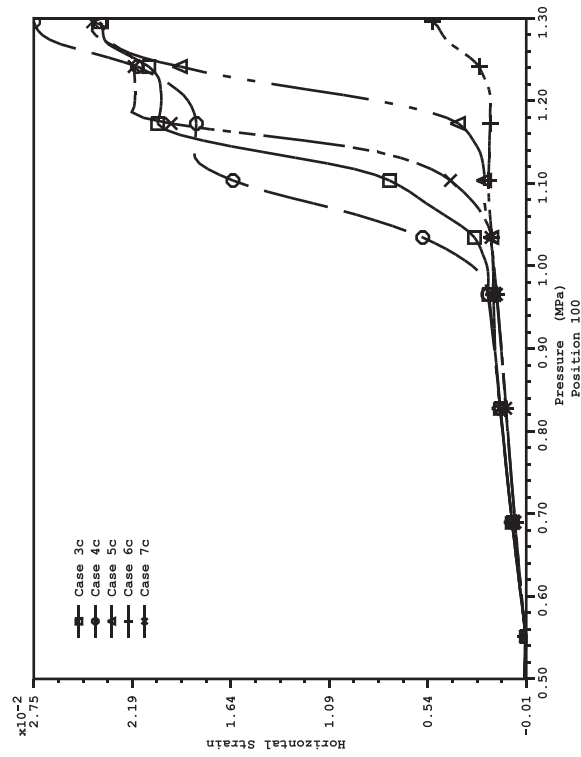
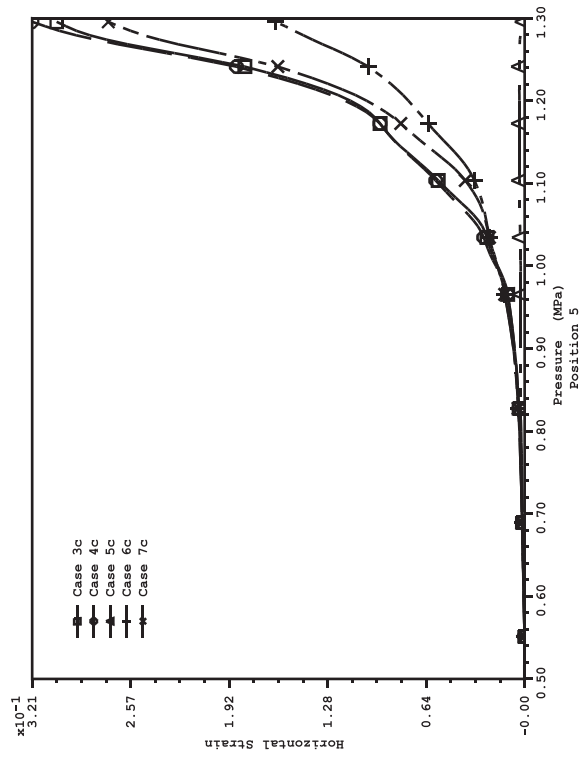


Figure 8-89. PCCV Liner Weld/Rat-Hole Study; Horizontal Strain Comparisons

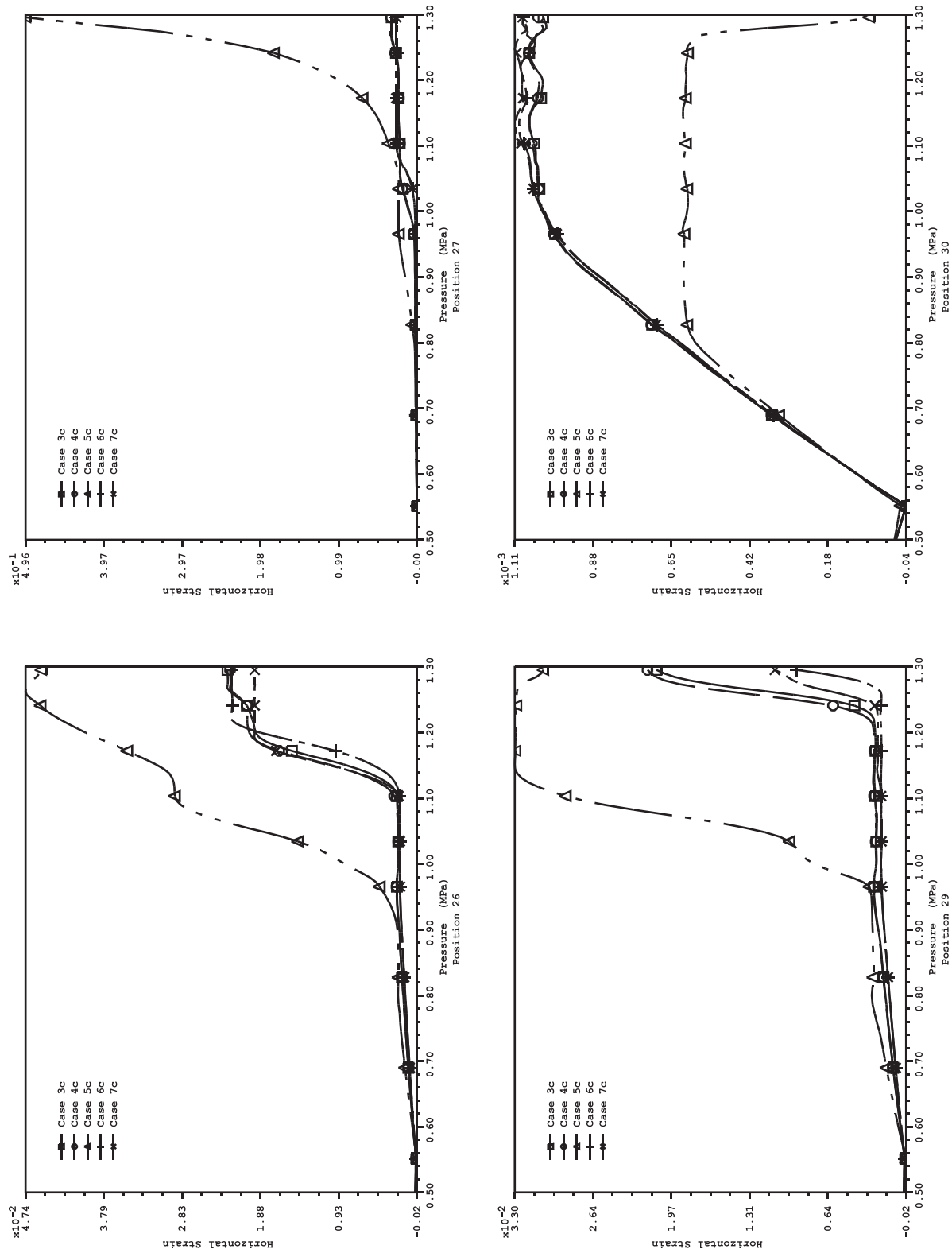


Figure 8-90. PCCV Liner Weld/Rat-Hole Study; Horizontal Strain Comparisons

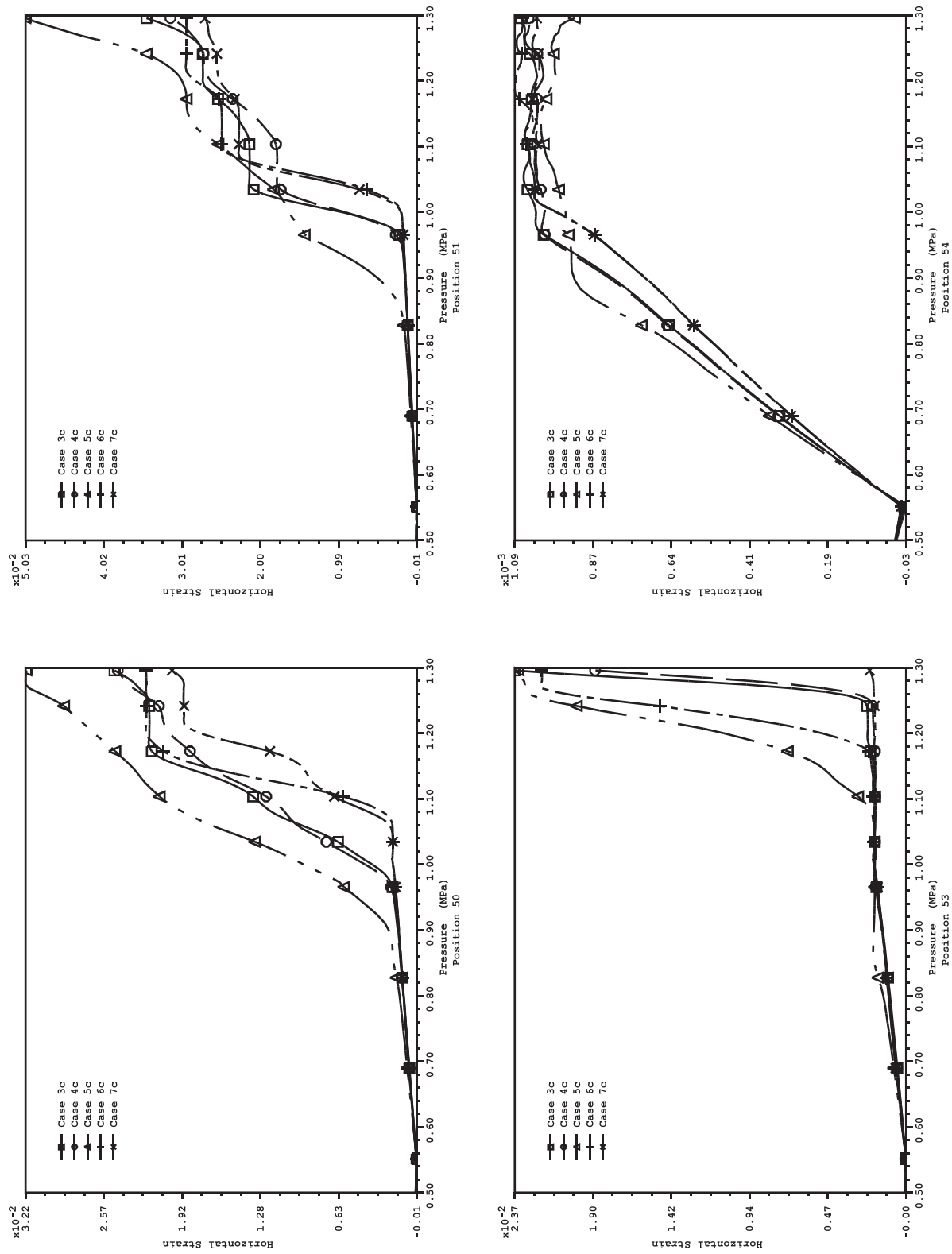


Figure 8-91. PCCV Liner Weld/Rat-Hole Study; Horizontal Strain Comparisons

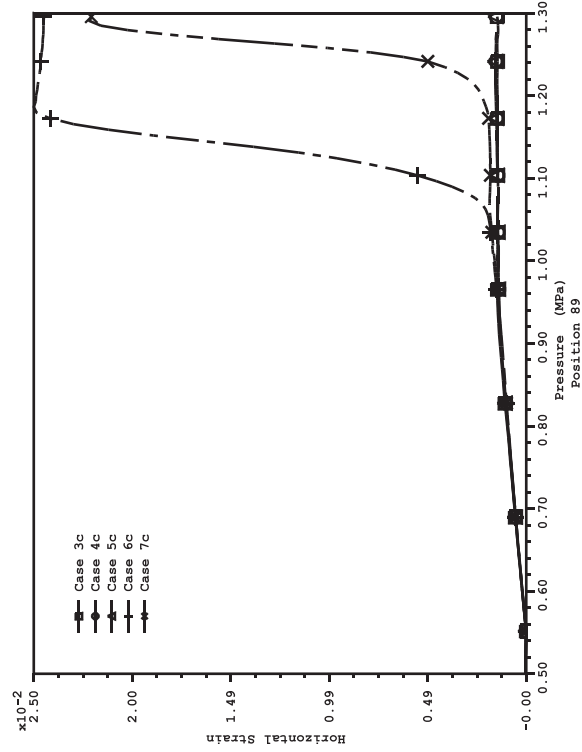
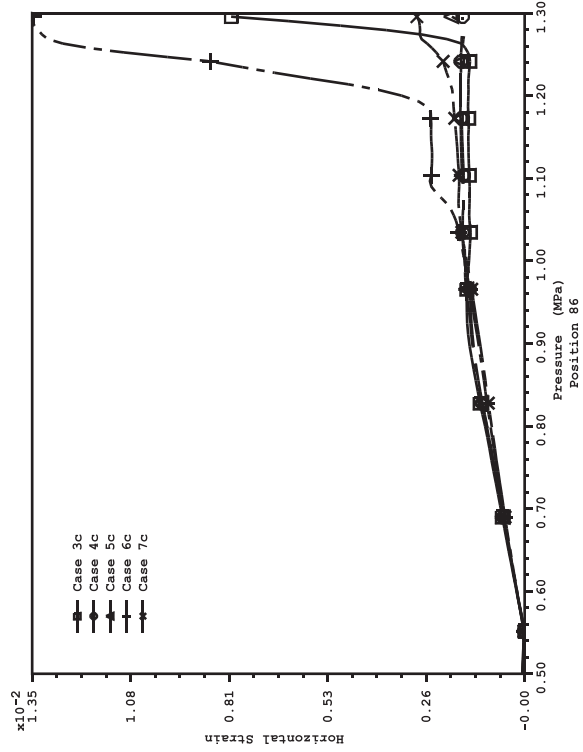
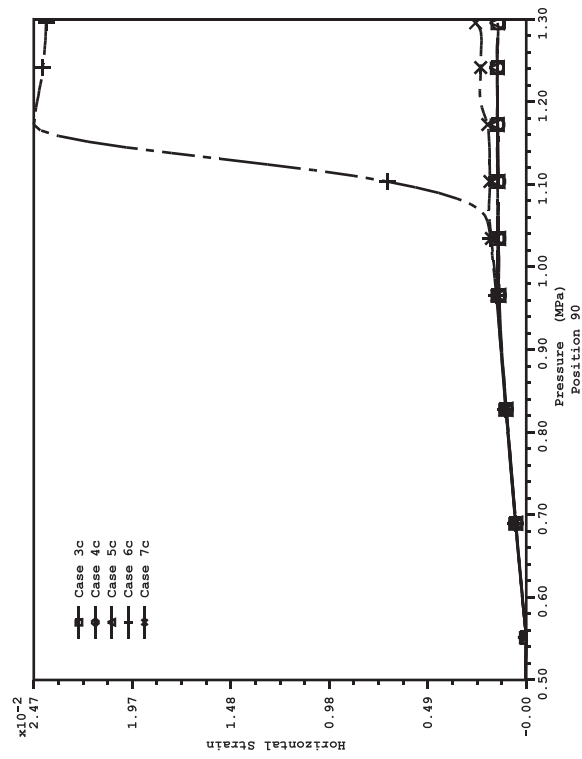
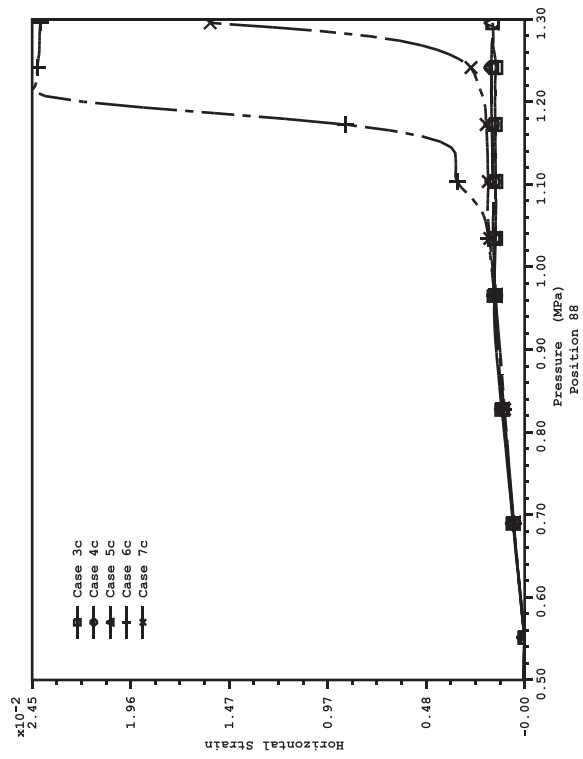


Figure 8-92. PCCV Liner Weld/Rat-Hole Study; Horizontal Strain Comparisons

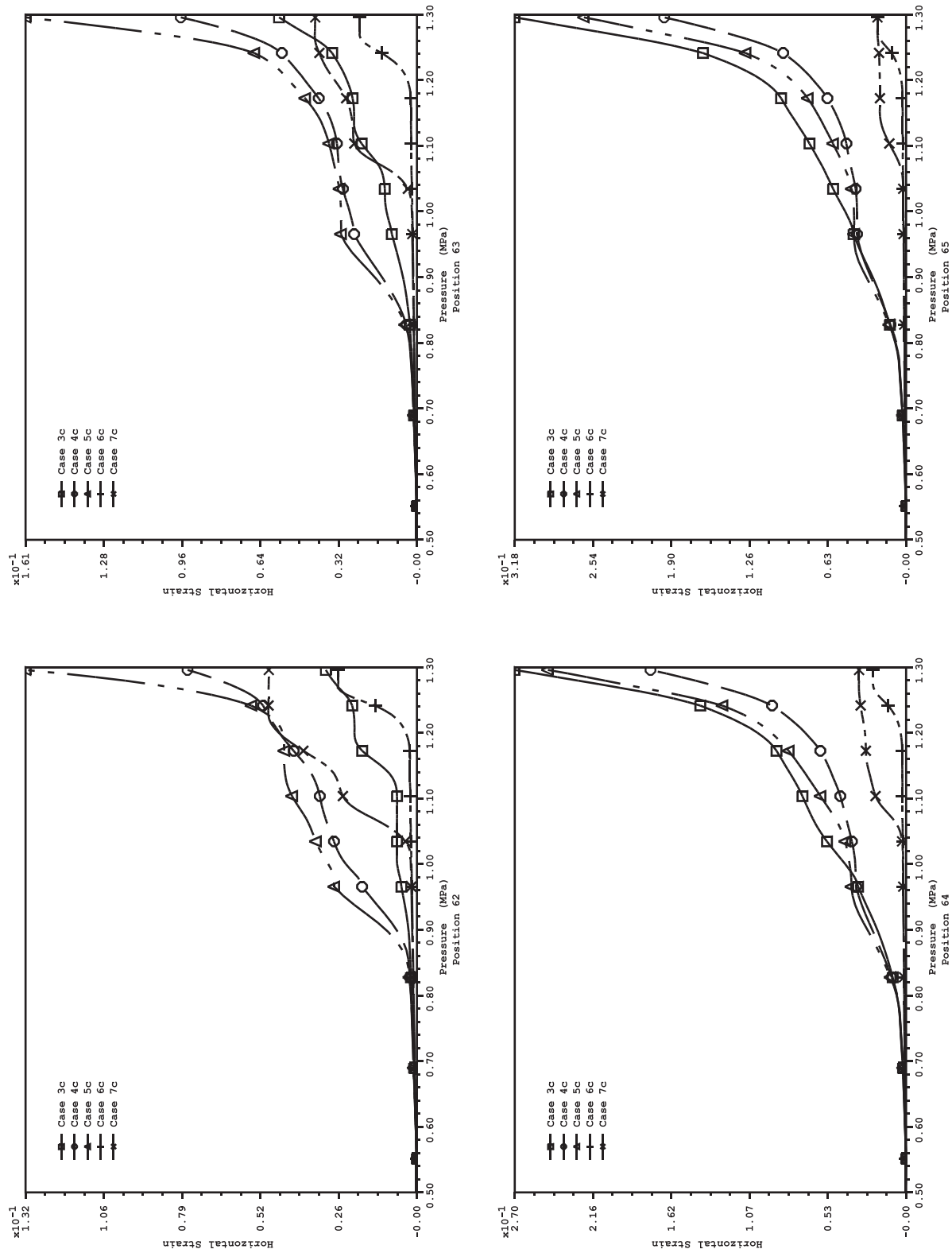


Figure 8-93. PCCV Liner Weld/Rat-Hole Study; Horizontal Strain Comparisons

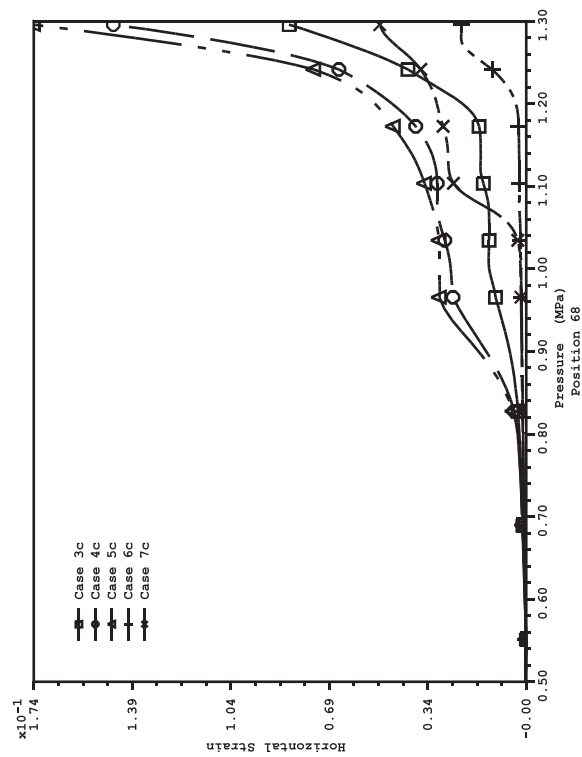
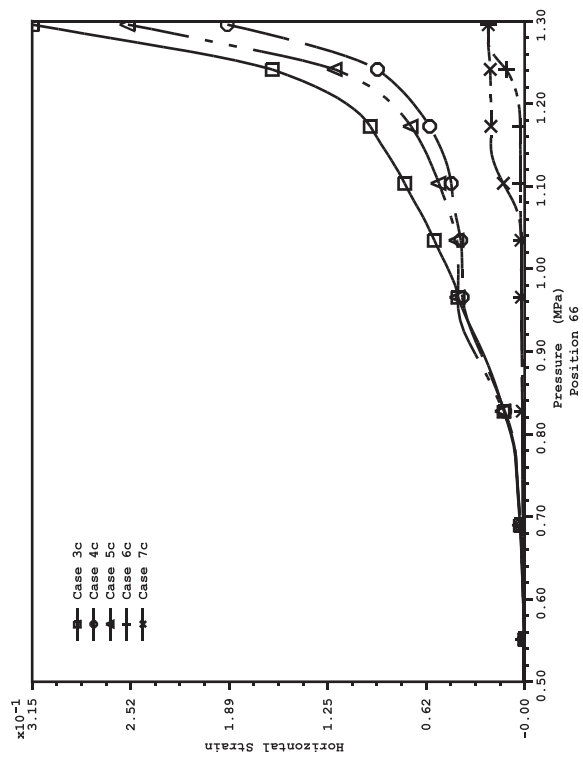
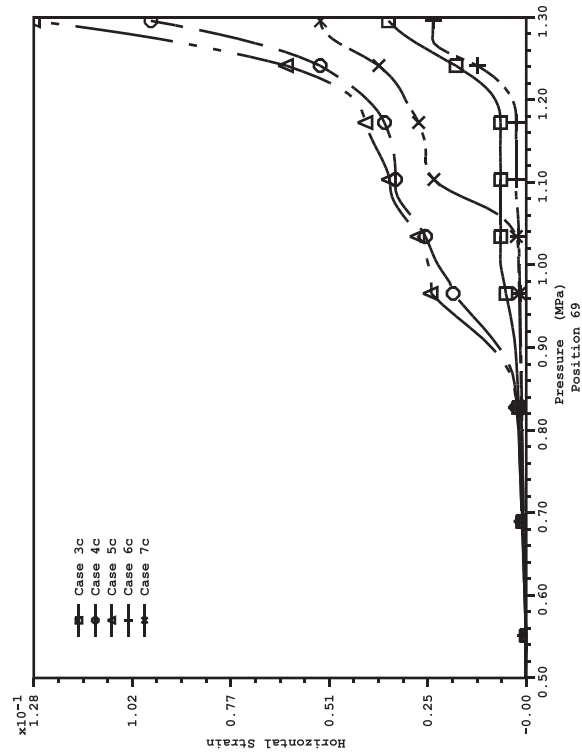
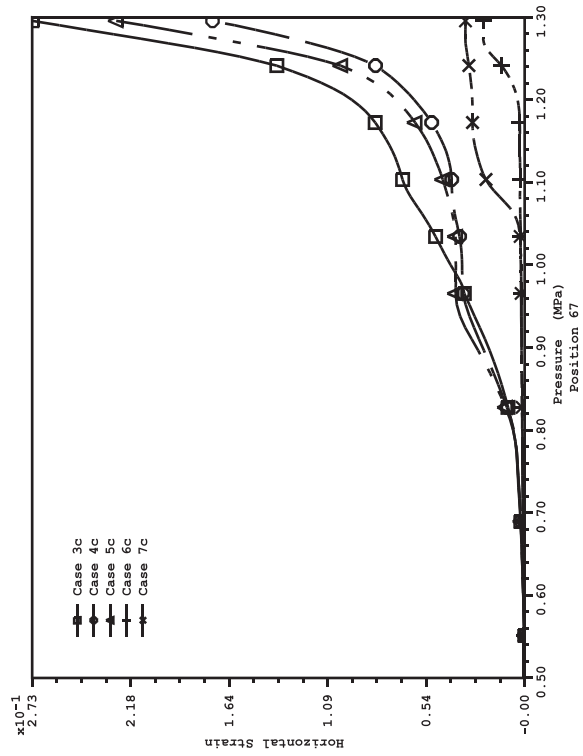


Figure 8-94. PCCV Liner Weld/Rat-Hole Study; Horizontal Strain Comparisons

Additional Strain Gages Near Buttress

	Gage ID	Azimuth (°)	Elevation (m)
①	LSI-C-J5-05	271.9	4.750
②	LSI-C-J5-06	271.9	4.700
③	LSI-C-J5-07	274	4.750
④	LSI-C-J5-08	276	4.750
⑤	LSI-C-J5-09	278	4.750
⑥	LSI-C-J5-10	280	4.750

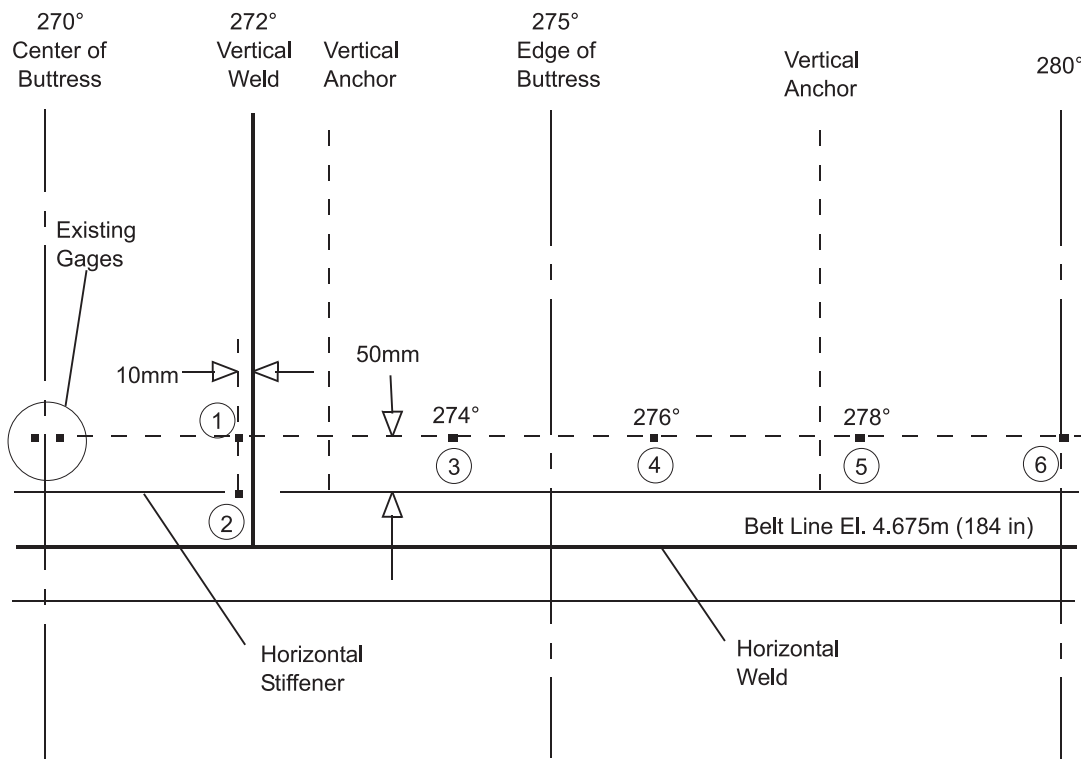


Figure 8-95. Locations of Liner Strain Gages at “J5”

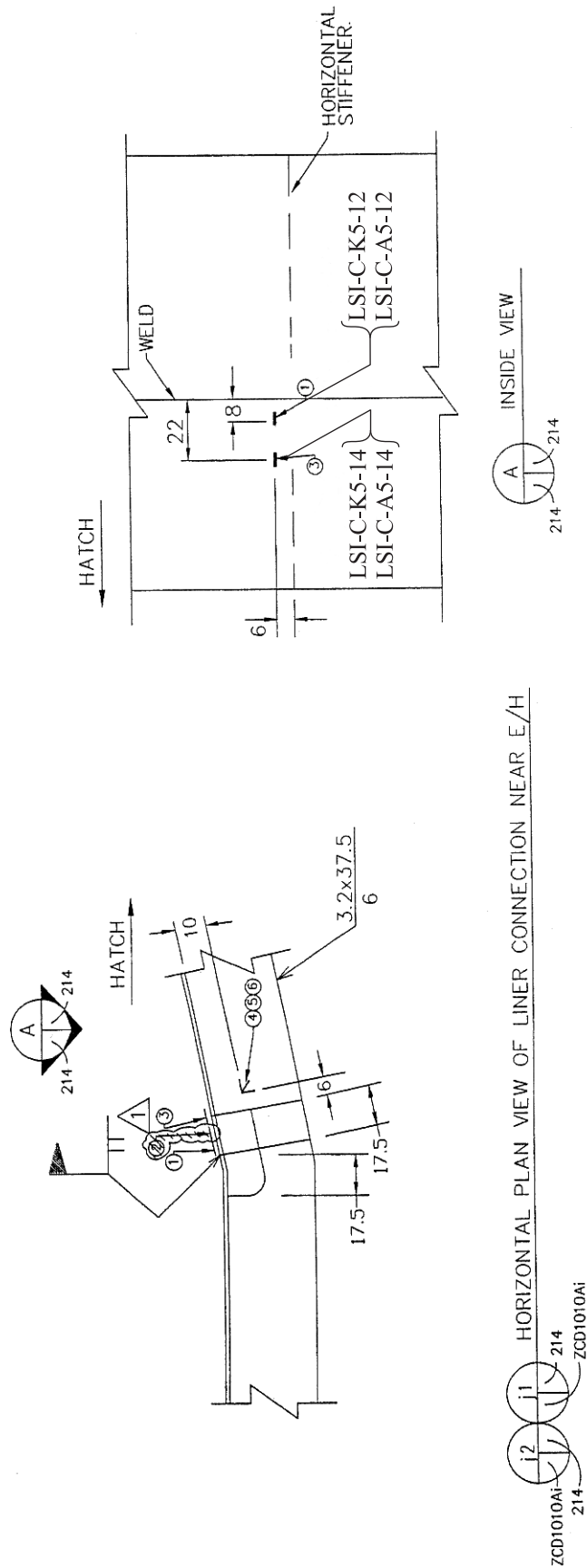


Figure 8-96. Locations of Liner Strain Gages at "KS" and "AS" (Dimensions in mm)

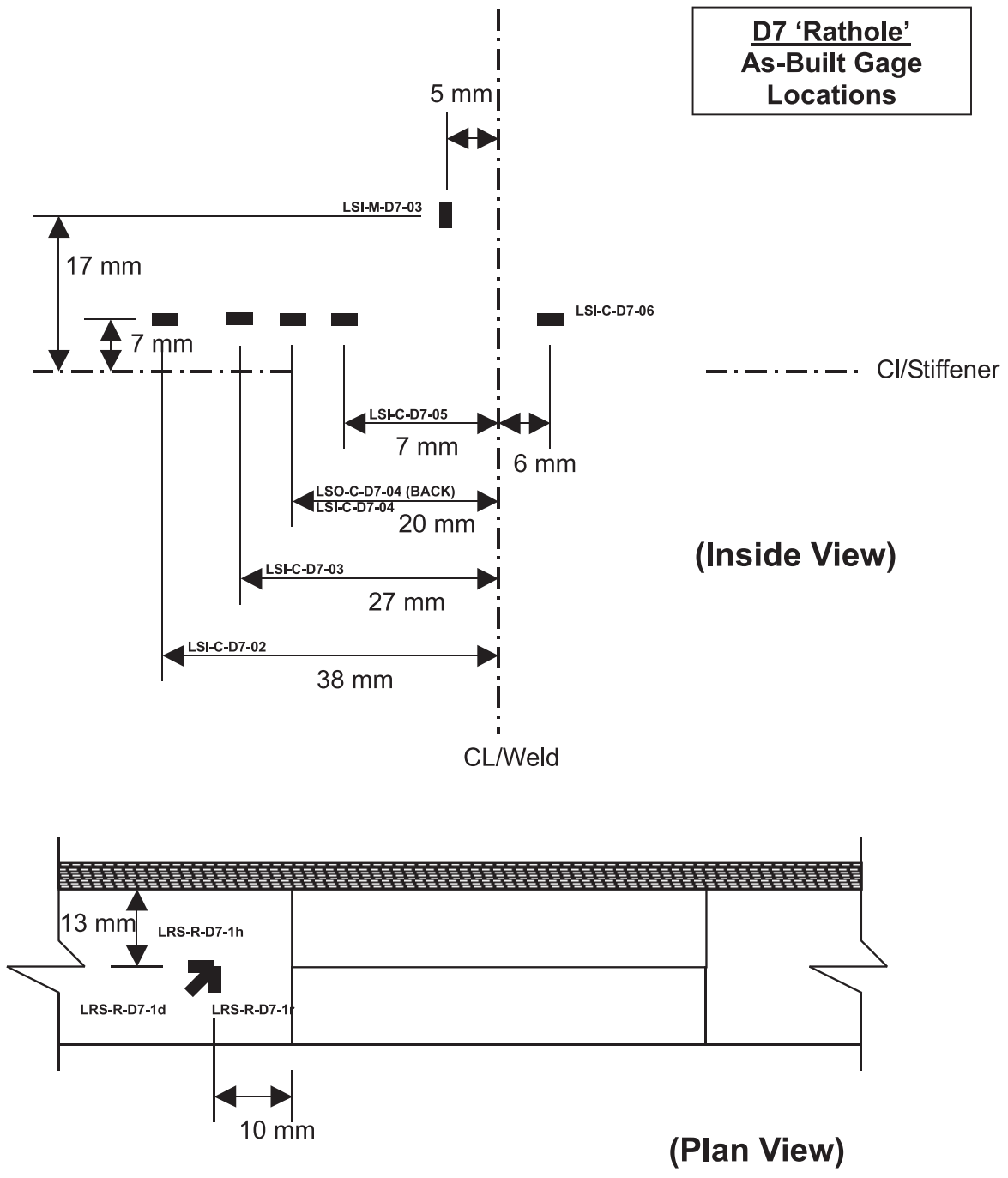
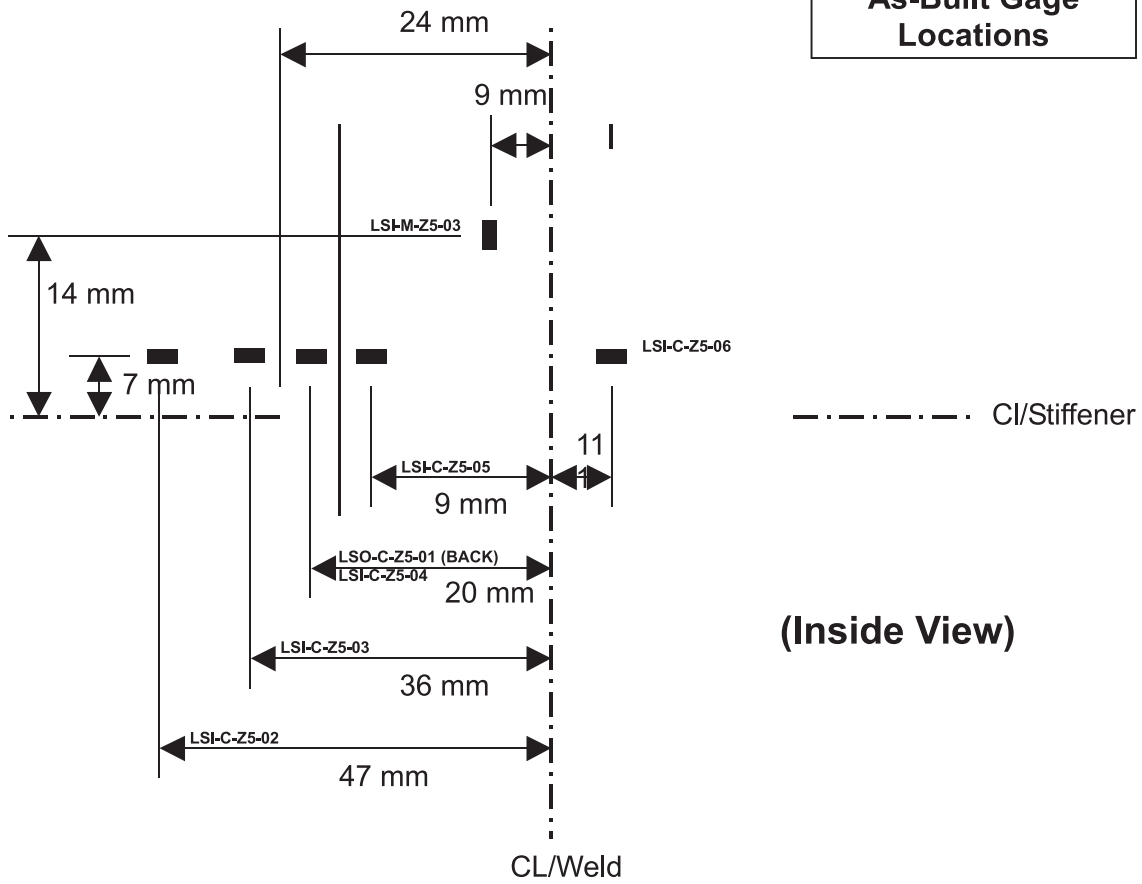
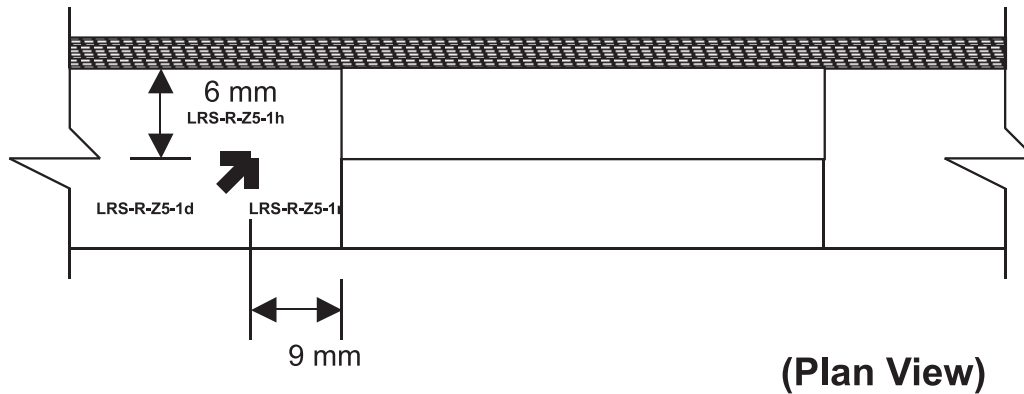


Figure 8-97. Locations of Liner Strain Gages at "D7"

**Z5 'Rathole'
As-Built Gage
Locations**



(Inside View)



(Plan View)

Figure 8-98. Locations of Liner Strain Gages at "Z5"

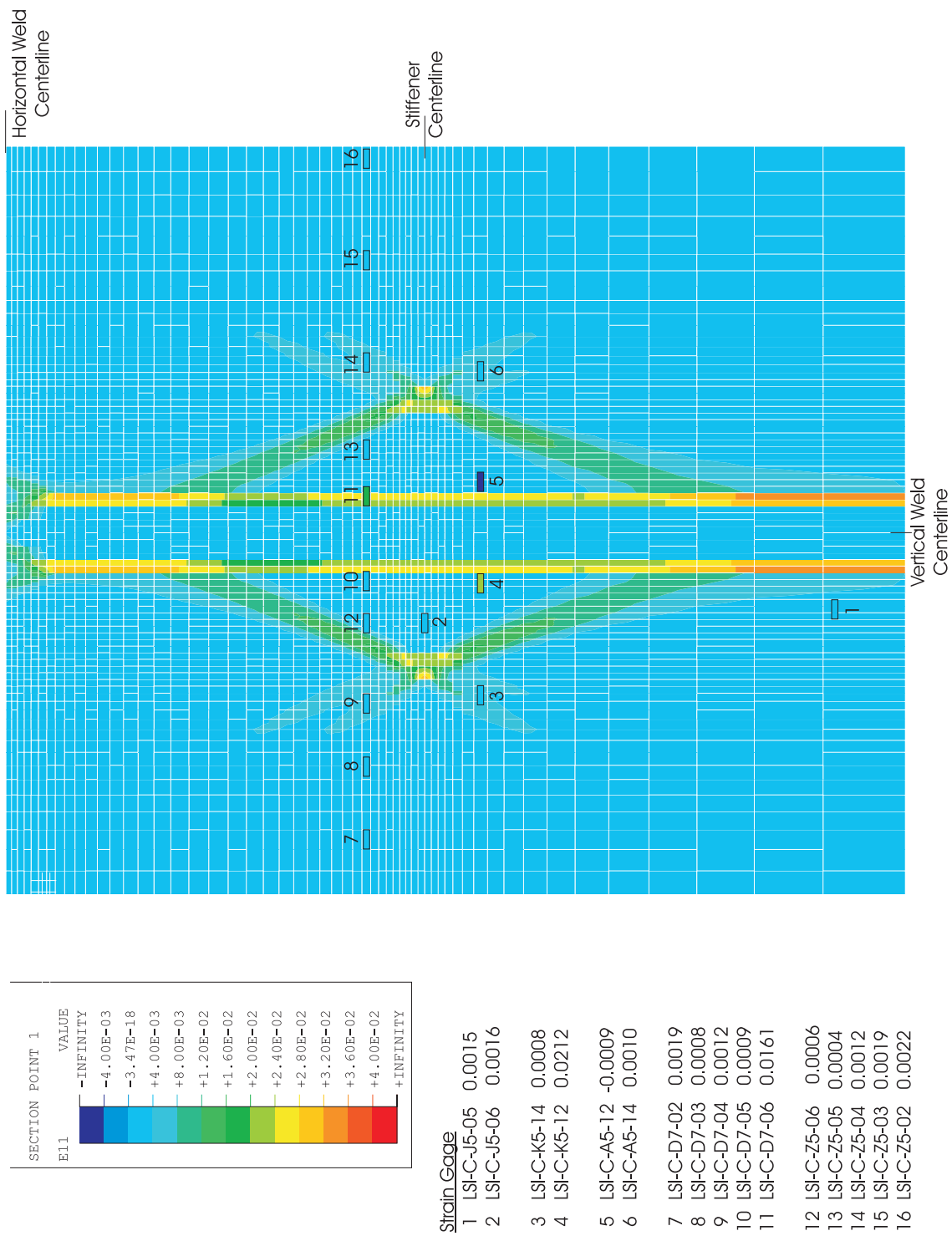
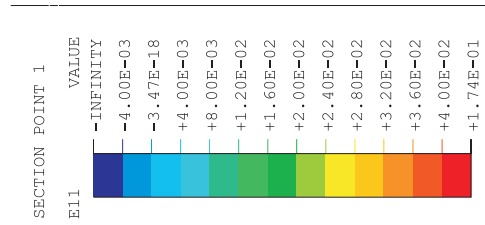
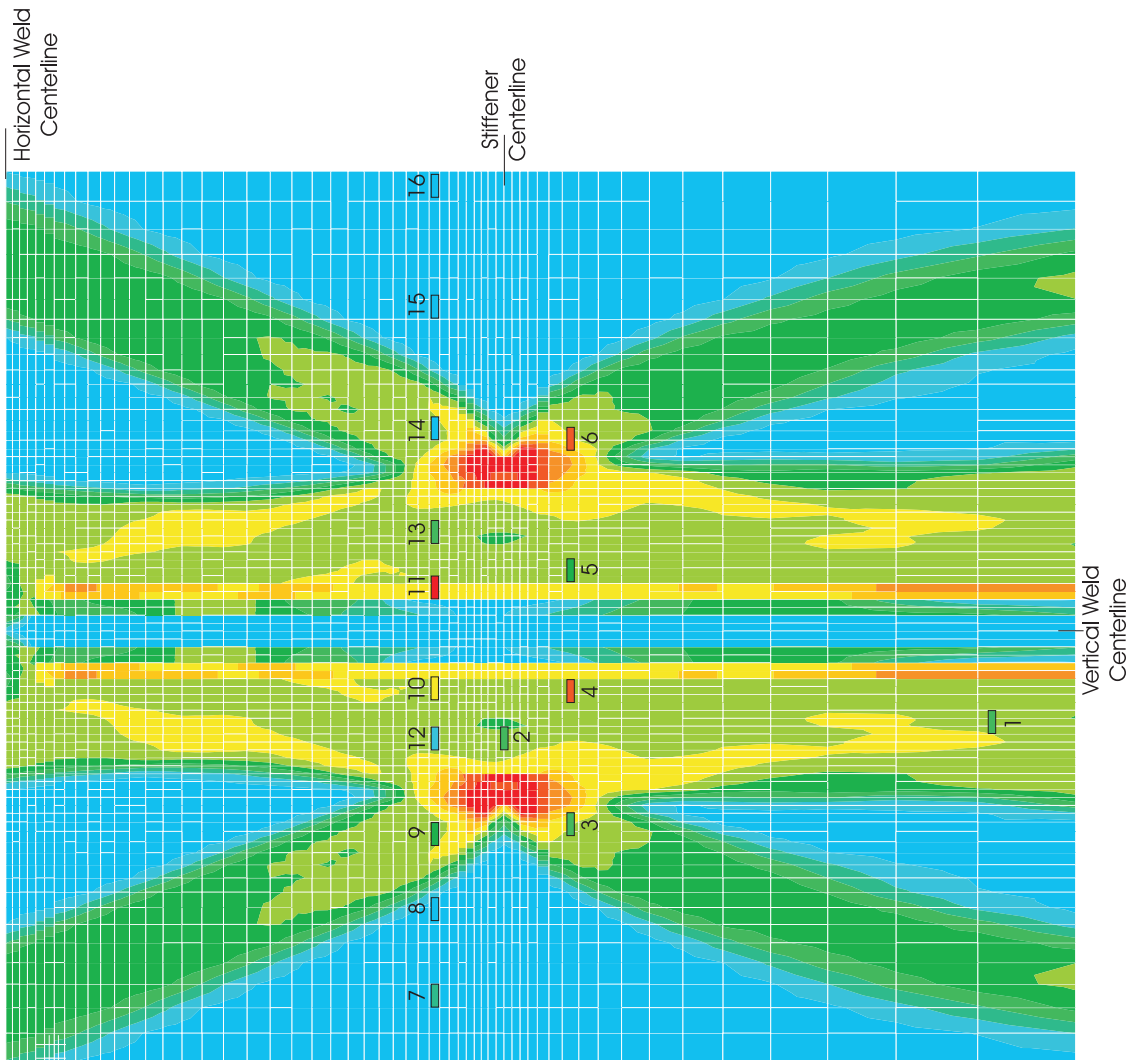
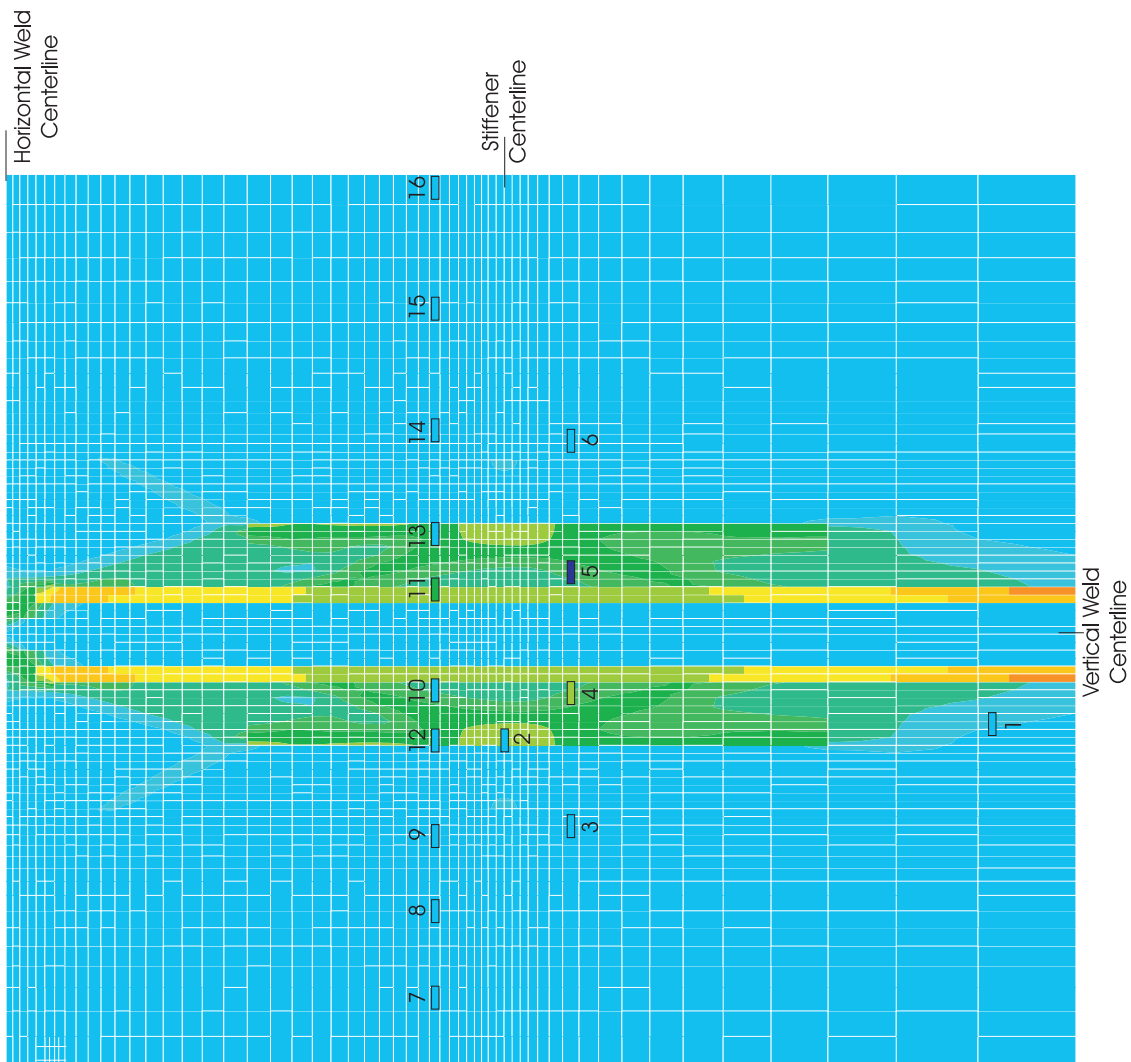


Figure 8-99. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case 4, LST Strain Gage Data Superimposed at 2.8 Pd



Strain Gage	Value
1 LSt-C-J5-05	0.0126
2 LSt-C-J5-06	0.0145
3 LSt-C-K5-14	0.0123
4 LSt-C-K5-12	0.0380
5 LSt-C-A5-12	0.0194
6 LSt-C-A5-14	0.0388
7 LSt-C-D7-02	0.0089
8 LSt-C-D7-03	0.0021
9 LSt-C-D7-04	0.0173
10 LSt-C-D7-05	0.0263
11 LSt-C-D7-06	0.0574
12 LSt-C-Z5-06	0.0046
13 LSt-C-Z5-05	0.0124
14 LSt-C-Z5-04	0.0034
15 LSt-C-Z5-03	0.0026
16 LSt-C-Z5-02	0.0023

Figure 8-100. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case 4, LST Strain Gage Data Superimposed at 3.3 Pd



Strain Gage	Value
1 LSt-C-J5-05	0.0015
2 LSt-C-J5-06	0.0016
3 LSt-C-K5-14	0.0008
4 LSt-C-K5-12	0.0212
5 LSt-C-A5-12	-0.0009
6 LSt-C-A5-14	0.0010
7 LSt-C-D7-02	0.0019
8 LSt-C-D7-03	0.0008
9 LSt-C-D7-04	0.0012
10 LSt-C-D7-05	0.0009
11 LSt-C-D7-06	0.0161
12 LSt-C-Z5-06	0.0006
13 LSt-C-Z5-05	0.0004
14 LSt-C-Z5-04	0.0012
15 LSt-C-Z5-03	0.0019
16 LSt-C-Z5-02	0.0022

Figure 8-101. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case 6, LST Strain Gage Data Superimposed at 2.8 Pd

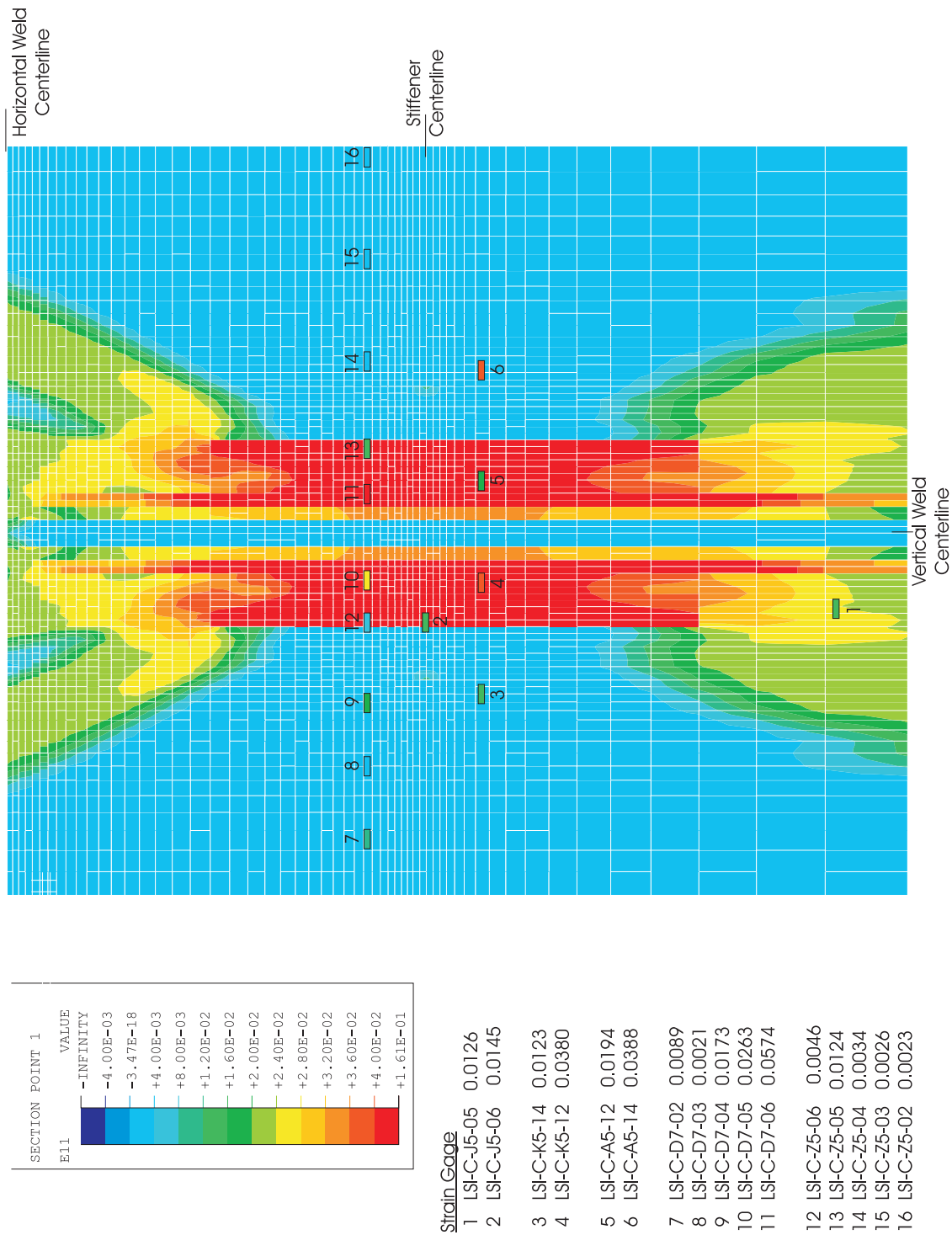
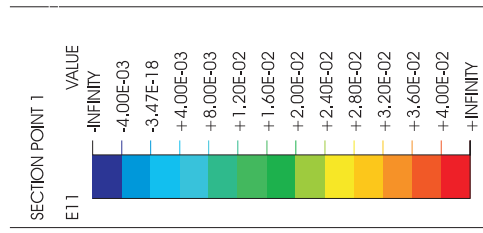
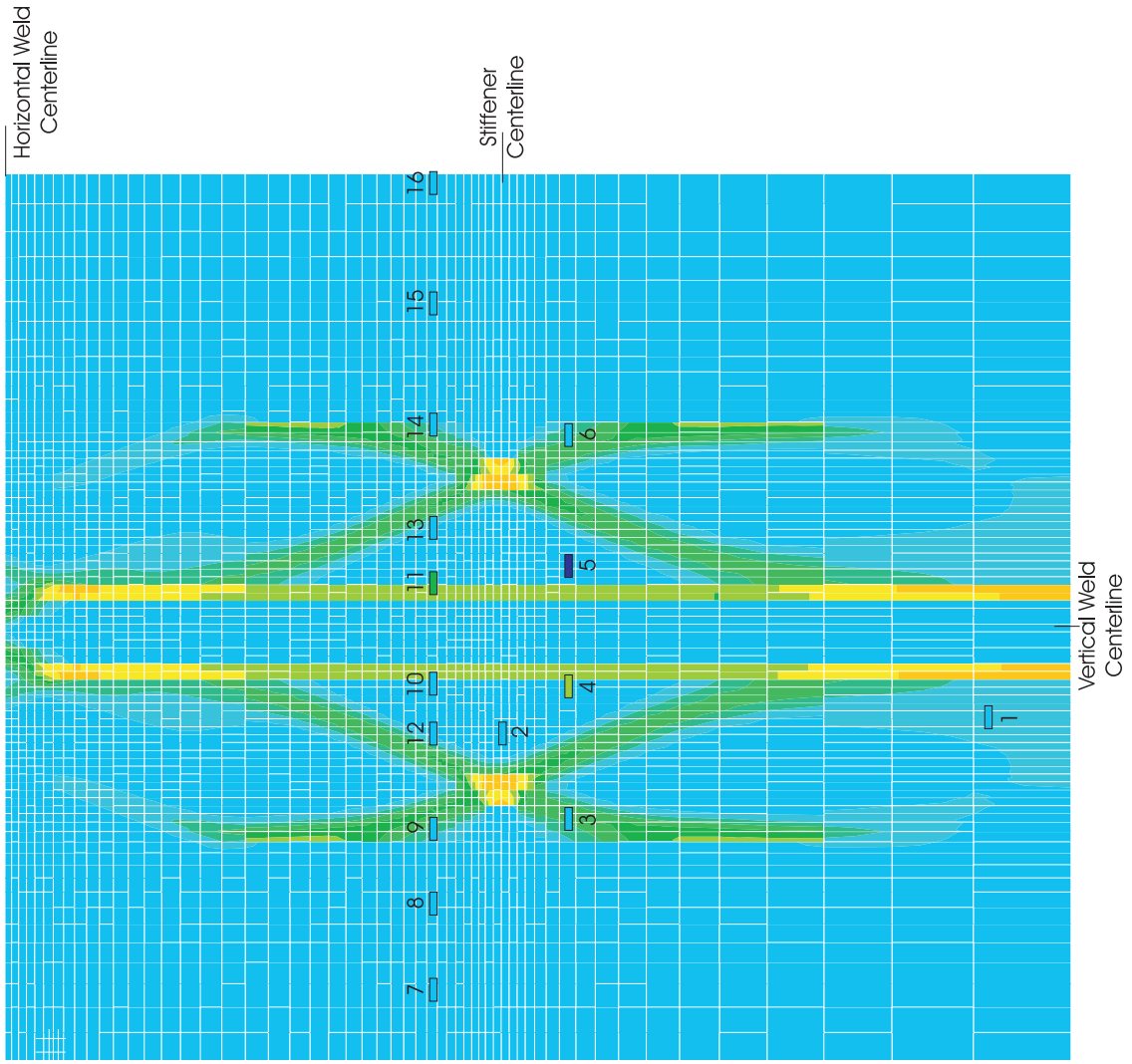


Figure 8-102. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case 6, LST Strain Gage Data Superimposed at 3.3 Pd



Strain Gage	Value
1 LSI-C-J5-05	0.0015
2 LSI-C-J5-06	0.0016
3 LSI-C-K5-14	0.0008
4 LSI-C-K5-12	0.0212
5 LSI-C-A5-12	-0.0009
6 LSI-C-A5-14	0.0010
7 LSI-C-D7-02	0.0019
8 LSI-C-D7-03	0.0008
9 LSI-C-D7-04	0.0012
10 LSI-C-D7-05	0.0009
11 LSI-C-D7-06	0.0161
12 LSI-C-Z5-06	0.0006
13 LSI-C-Z5-05	0.0004
14 LSI-C-Z5-04	0.0012
15 LSI-C-Z5-03	0.0019
16 LSI-C-Z5-02	0.0022

Figure 8-103. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case 7, LST Strain Gage Data Superimposed at 2.8 Pd

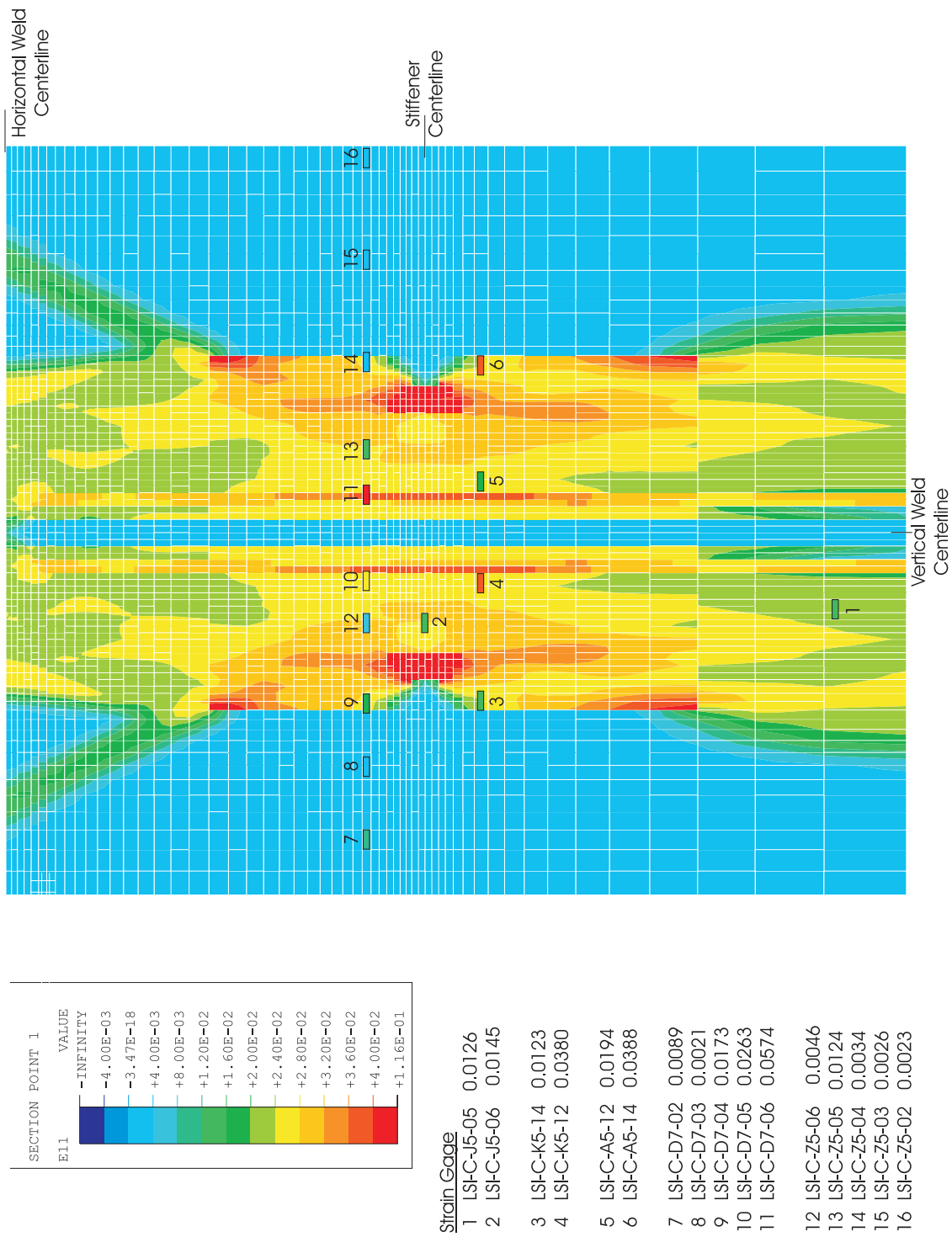
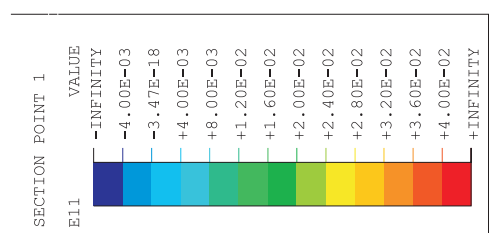
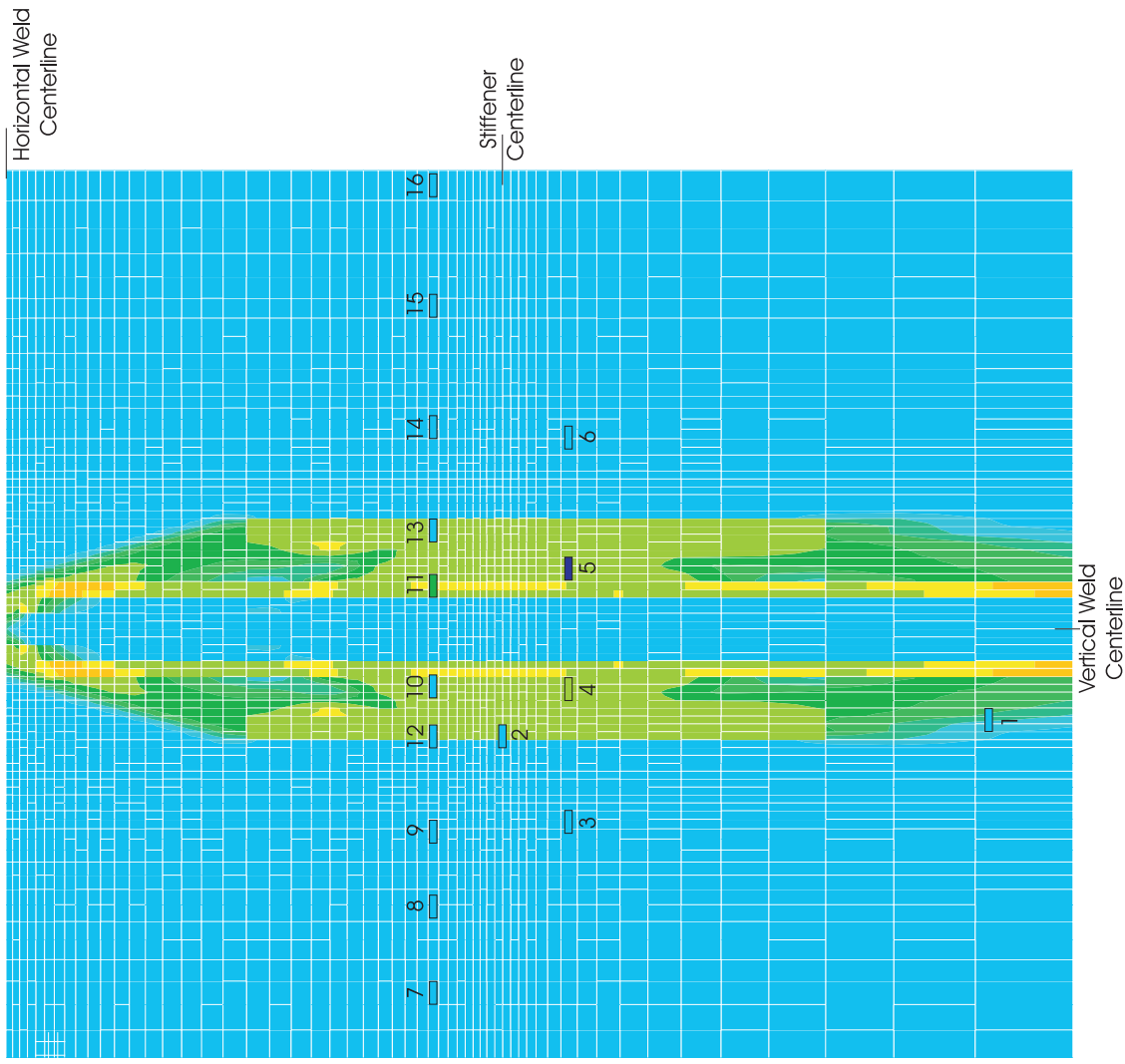
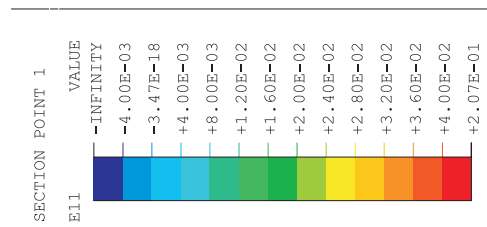
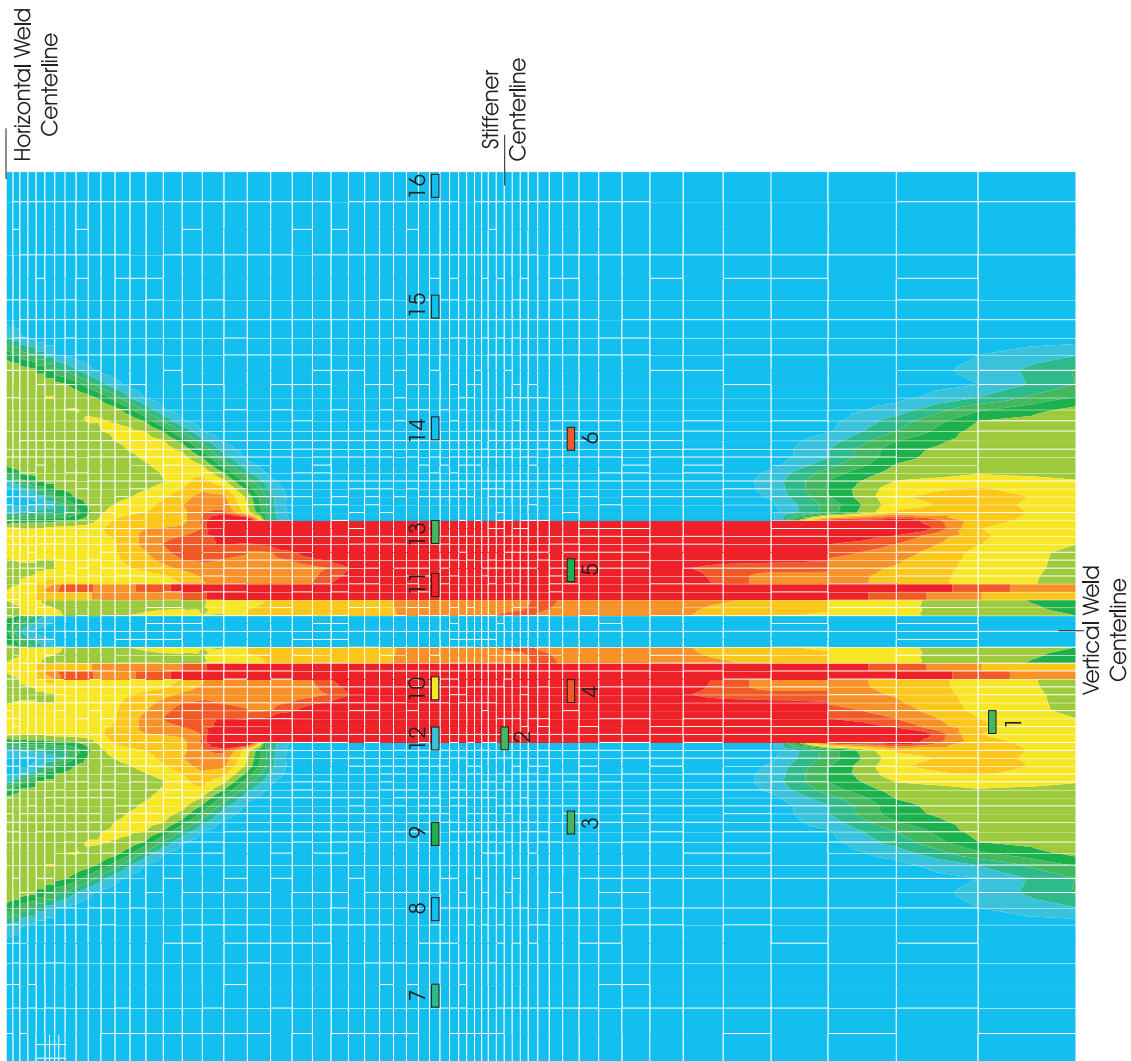


Figure 8-104. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case 7, LST Strain Gage Data Superimposed at 3.3 Pd



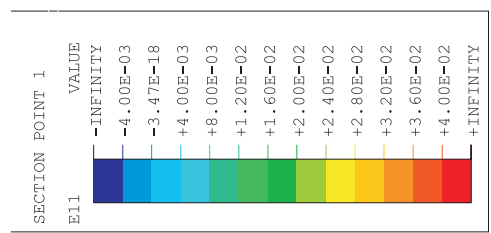
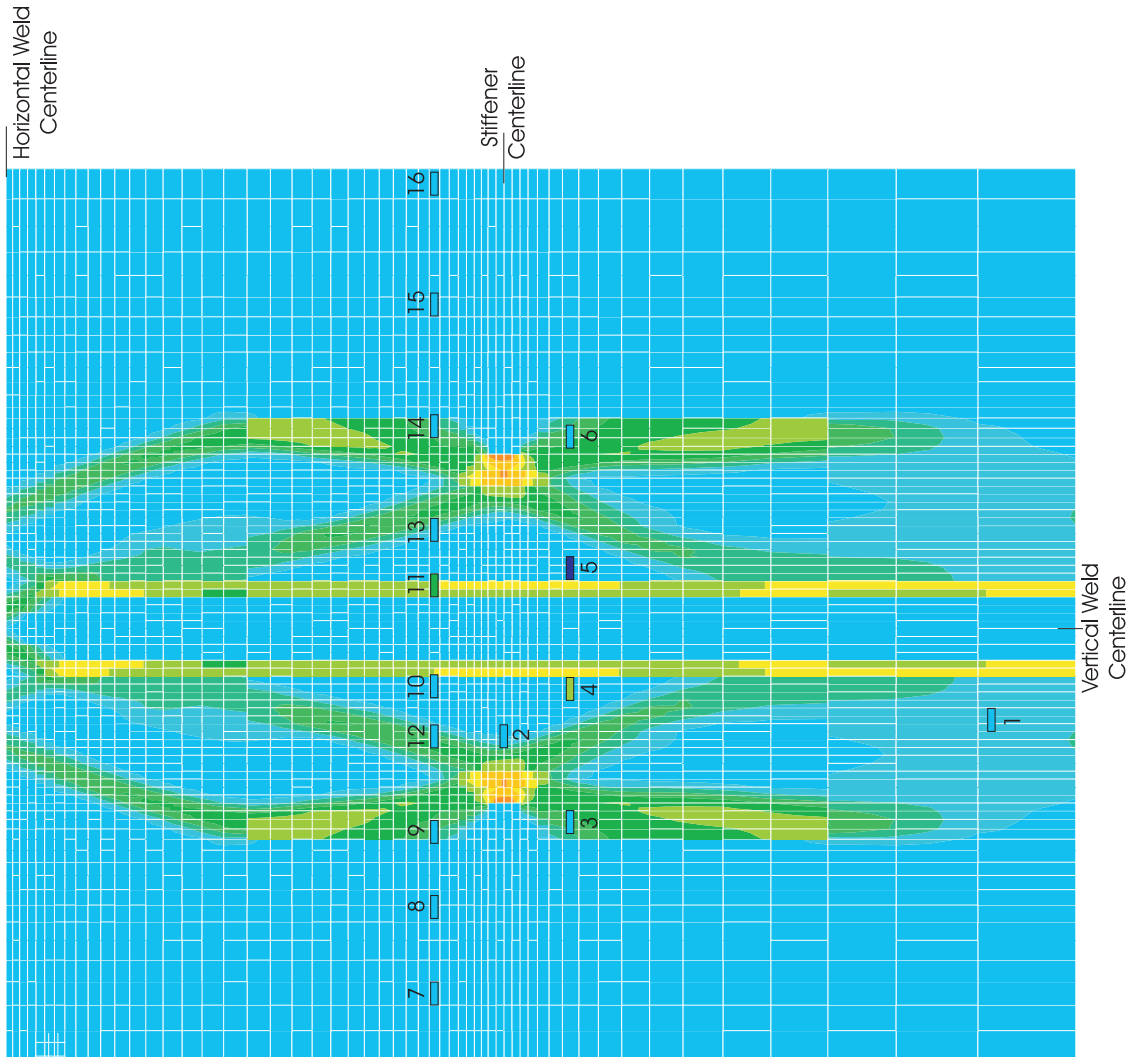
Strain_Gage	Value
1 LSI-C-J5-05	0.0015
2 LSI-C-J5-06	0.0016
3 LSI-C-K5-14	0.0008
4 LSI-C-K5-12	0.0212
5 LSI-C-A5-12	-0.0009
6 LSI-C-A5-14	0.0010
7 LSI-C-D7-02	0.0019
8 LSI-C-D7-03	0.0008
9 LSI-C-D7-04	0.0012
10 LSI-C-D7-05	0.0009
11 LSI-C-D7-06	0.0161
12 LSI-C-Z5-06	0.0006
13 LSI-C-Z5-05	0.0004
14 LSI-C-Z5-04	0.0012
15 LSI-C-Z5-03	0.0019
16 LSI-C-Z5-02	0.0022

Figure 8-105. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case 10, LST Strain Gage Data Superimposed at 2.8 Pd



Strain Gage	Value
1	LSI-C-J5-05 0.0126
2	LSI-C-J5-06 0.0145
3	LSI-C-K5-14 0.0123
4	LSI-C-K5-12 0.0380
5	LSI-C-A5-12 0.0194
6	LSI-C-A5-14 0.0388
7	LSI-C-D7-02 0.0089
8	LSI-C-D7-03 0.0021
9	LSI-C-D7-04 0.0173
10	LSI-C-D7-05 0.0263
11	LSI-C-D7-06 0.0574
12	LSI-C-Z5-06 0.0046
13	LSI-C-Z5-05 0.0124
14	LSI-C-Z5-04 0.0034
15	LSI-C-Z5-03 0.0026
16	LSI-C-Z5-02 0.0023

Figure 8-106. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case 10, LST Strain Gage Data Superimposed at 3.3 Pd



Strain_Gage	Value	Value
1	LSI-C-J5-05	0.0015
2	LSI-C-J5-06	0.0016
3	LSI-C-K5-14	0.0008
4	LSI-C-K5-12	0.0212
5	LSI-C-A5-12	-0.0009
6	LSI-C-A5-14	0.0010
7	LSI-C-D7-02	0.0019
8	LSI-C-D7-03	0.0008
9	LSI-C-D7-04	0.0012
10	LSI-C-D7-05	0.0009
11	LSI-C-D7-06	0.0161
12	LSI-C-Z5-06	0.0006
13	LSI-C-Z5-05	0.0004
14	LSI-C-Z5-04	0.0012
15	LSI-C-Z5-03	0.0019
16	LSI-C-Z5-02	0.0022

Figure 8-107. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case 11, LST Strain Gage Data Superimposed at 2.8 Pd

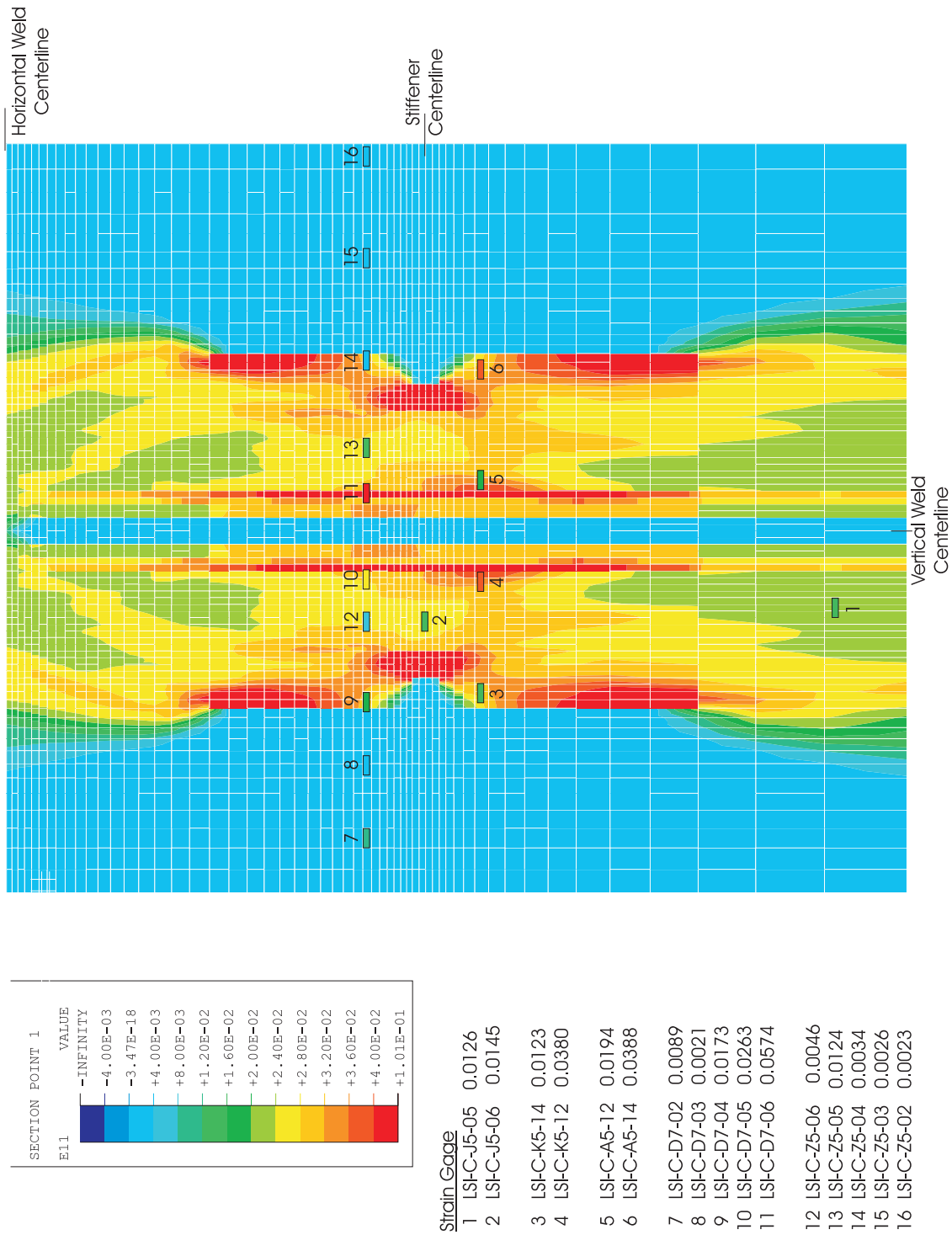
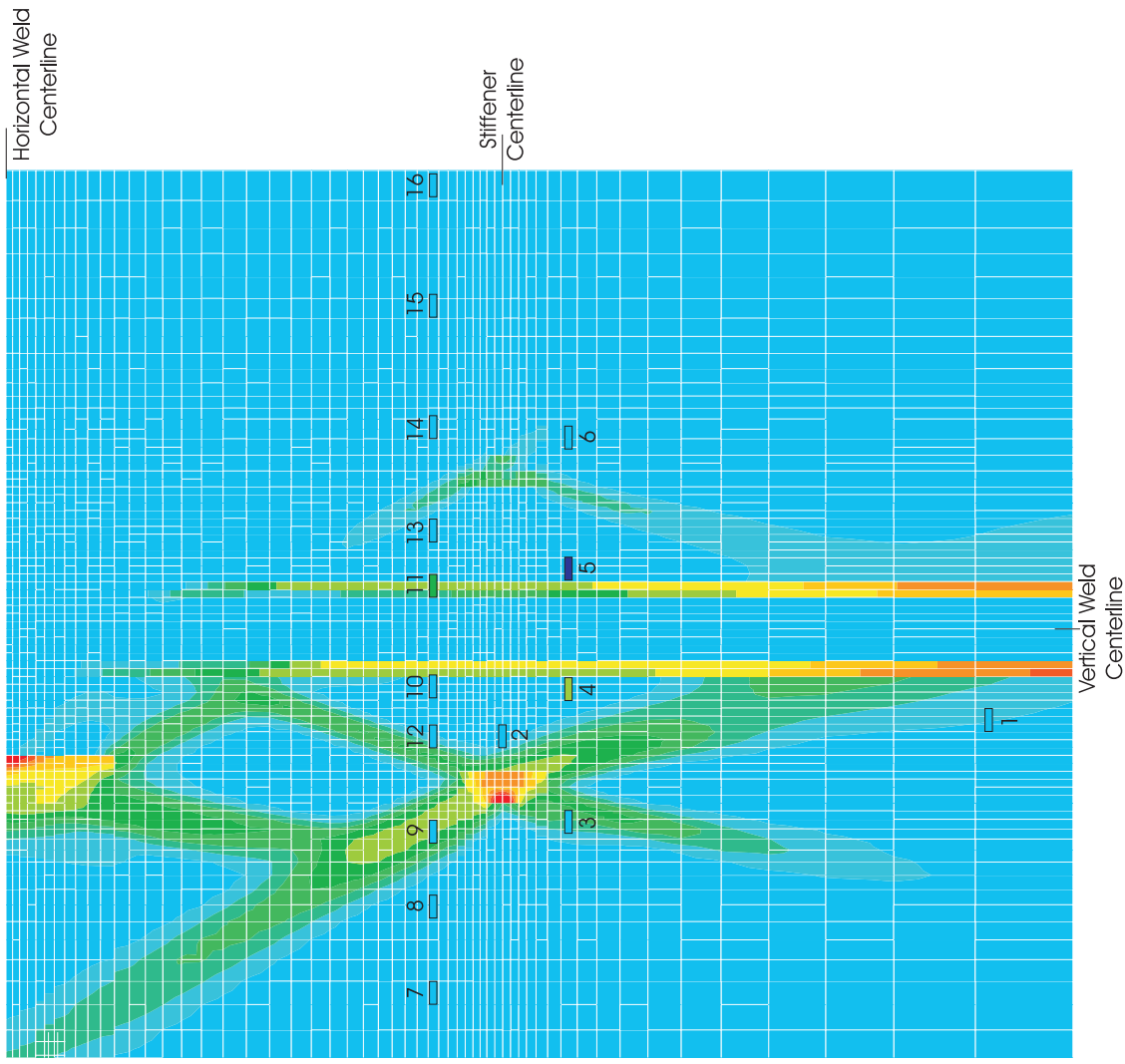


Figure 8-108. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case 11, LST Strain Gage Data Superimposed at 3.3 Pd



SECTION POINT 1	VALUE
E11	-INFINITY
	-4.00E-03
	-3.47E-18
	+4.00E-03
	+8.00E-03
	+1.20E-02
	+1.60E-02
	+2.00E-02
	+2.40E-02
	+2.80E-02
	+3.20E-02
	+3.60E-02
	+4.00E-02
	+5.75E-02

Strain_Gage	Value
1 LSI-C-J5-05	0.0015
2 LSI-C-J5-06	0.0016
3 LSI-C-K5-14	0.0008
4 LSI-C-K5-12	0.0212
5 LSI-C-A5-12	-0.0009
6 LSI-C-A5-14	0.0010
7 LSI-C-D7-02	0.0019
8 LSI-C-D7-03	0.0008
9 LSI-C-D7-04	0.0012
10 LSI-C-D7-05	0.0009
11 LSI-C-D7-06	0.0161
12 LSI-C-Z5-06	0.0006
13 LSI-C-Z5-05	0.0004
14 LSI-C-Z5-04	0.0012
15 LSI-C-Z5-03	0.0019
16 LSI-C-Z5-02	0.0022

Figure 8-109. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case C4, LST Strain Gage Data Superimposed at 2.8 Pd

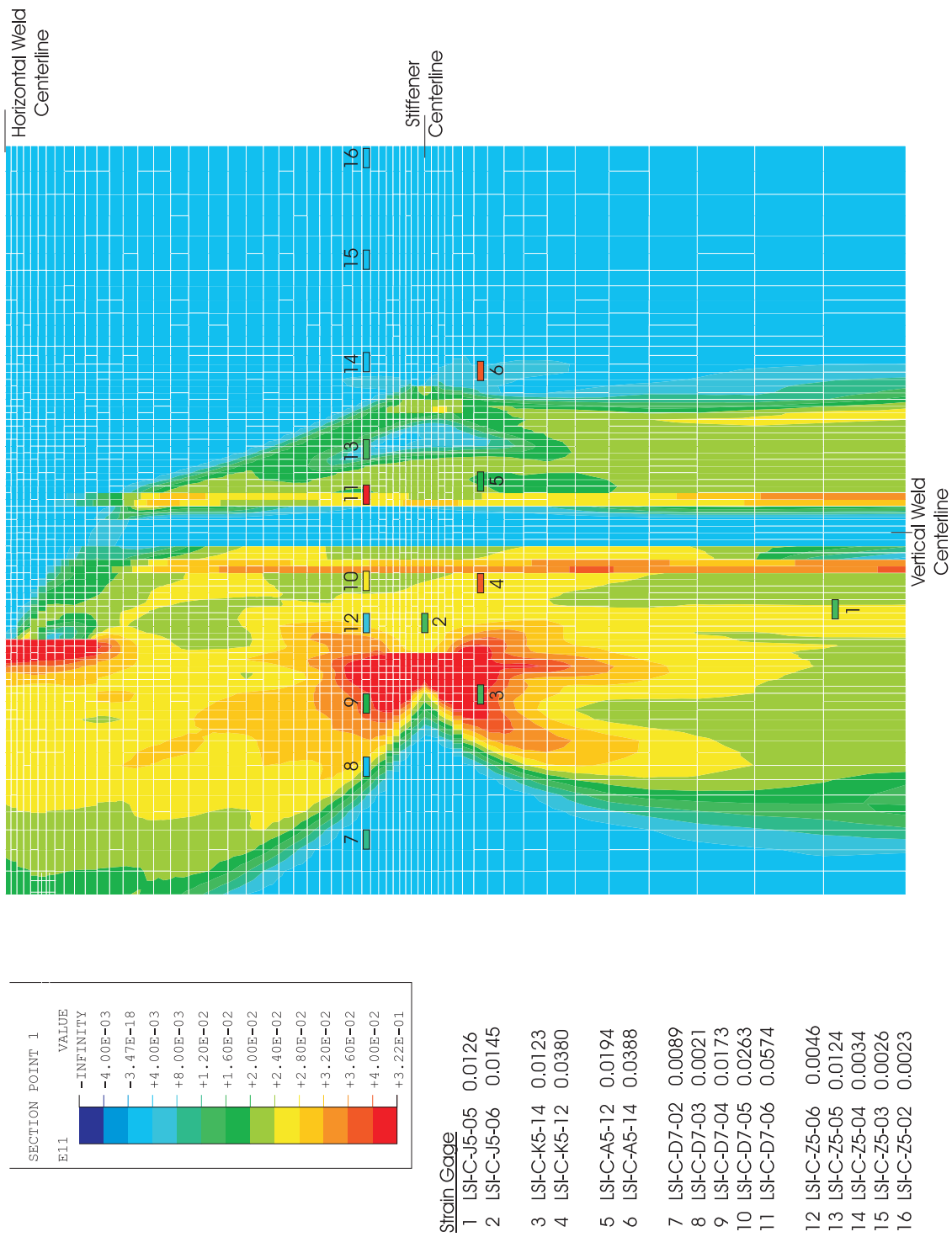


Figure 8-110. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case C4, □
LST Strain Gage Data Superimposed at 3.3 Pd

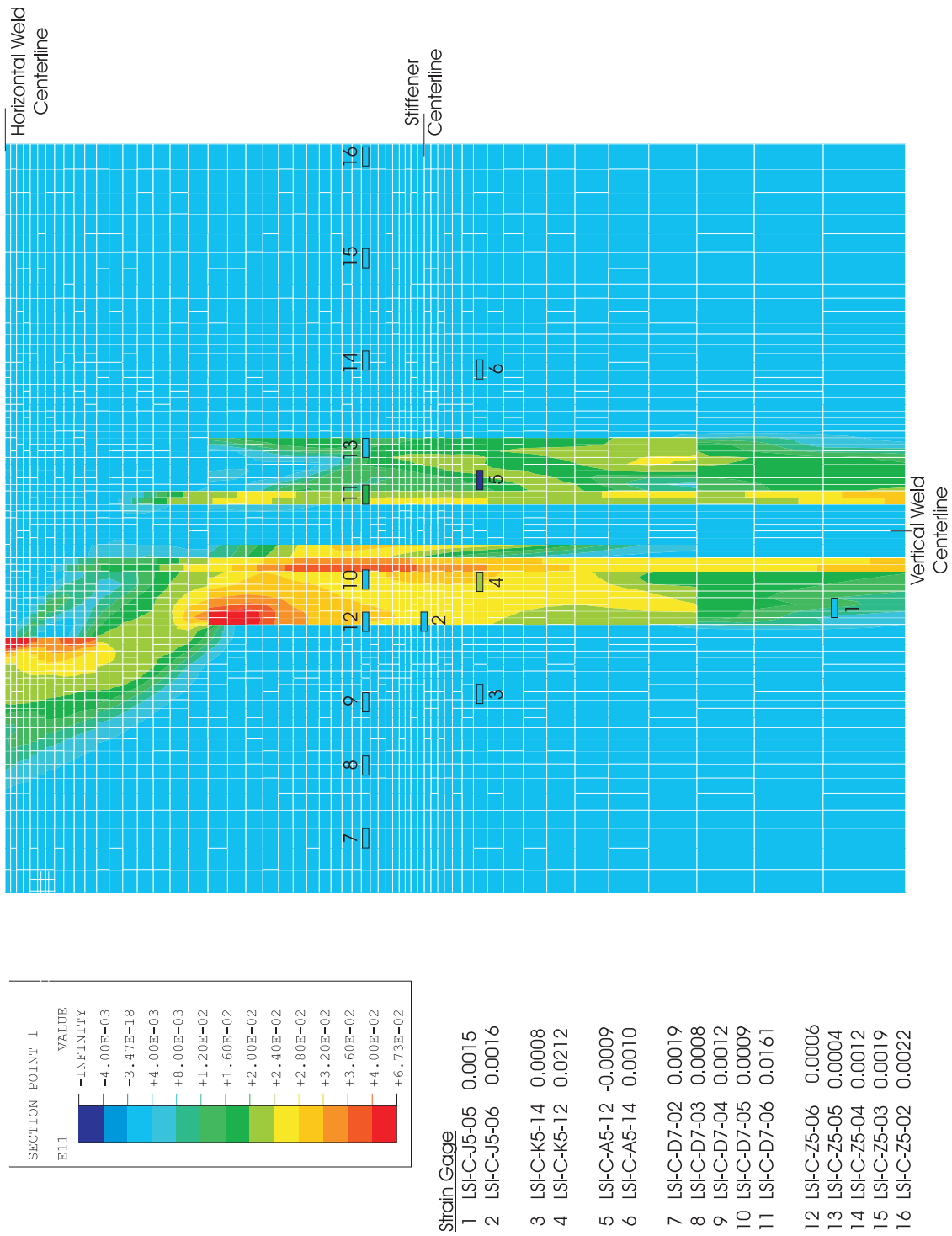


Figure 8-111. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case C5, □
LST Strain Gage Data Superimposed at 2.8 Pd

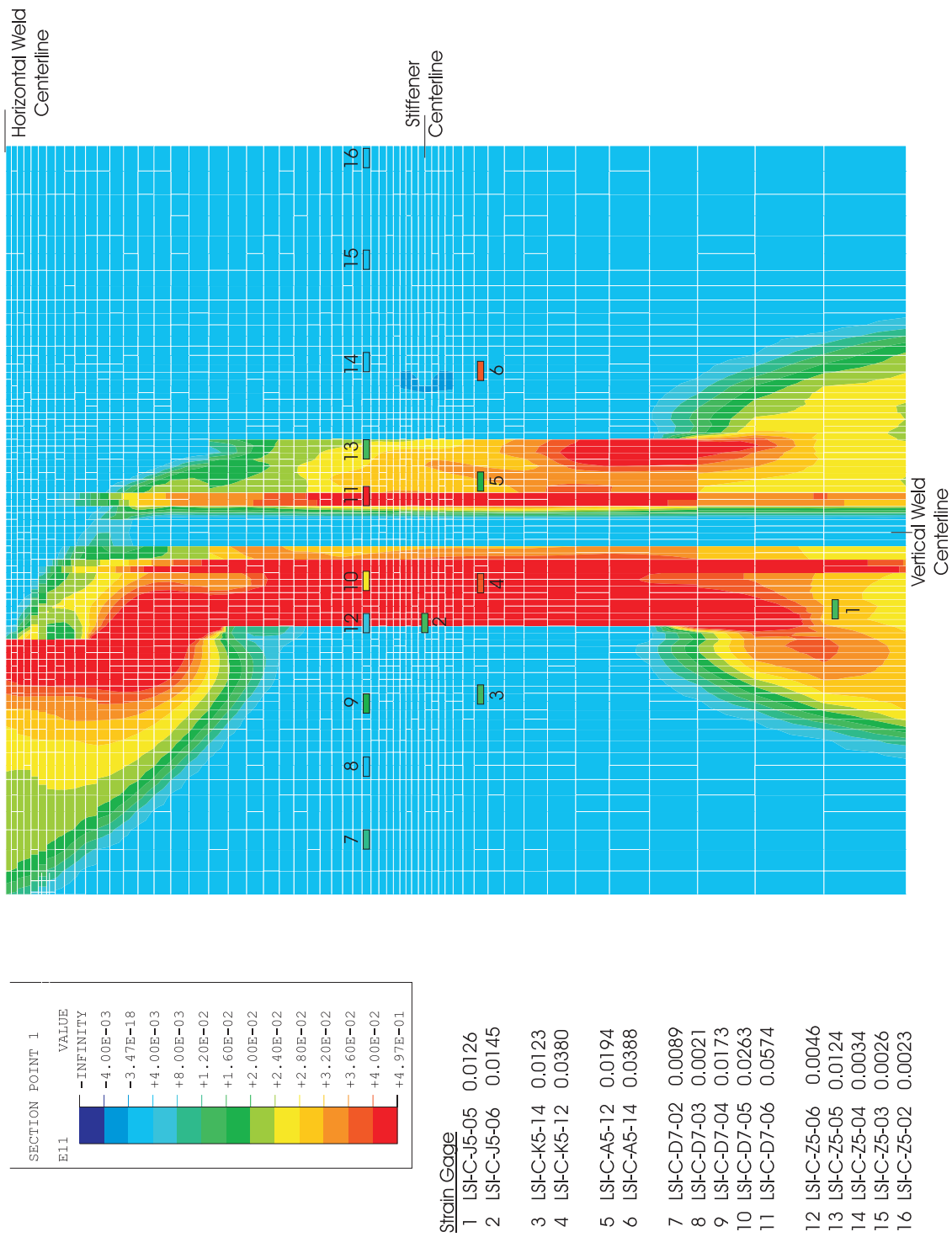


Figure 8-112. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case C5, LST Strain Gage Data Superimposed at 3.3 Pd

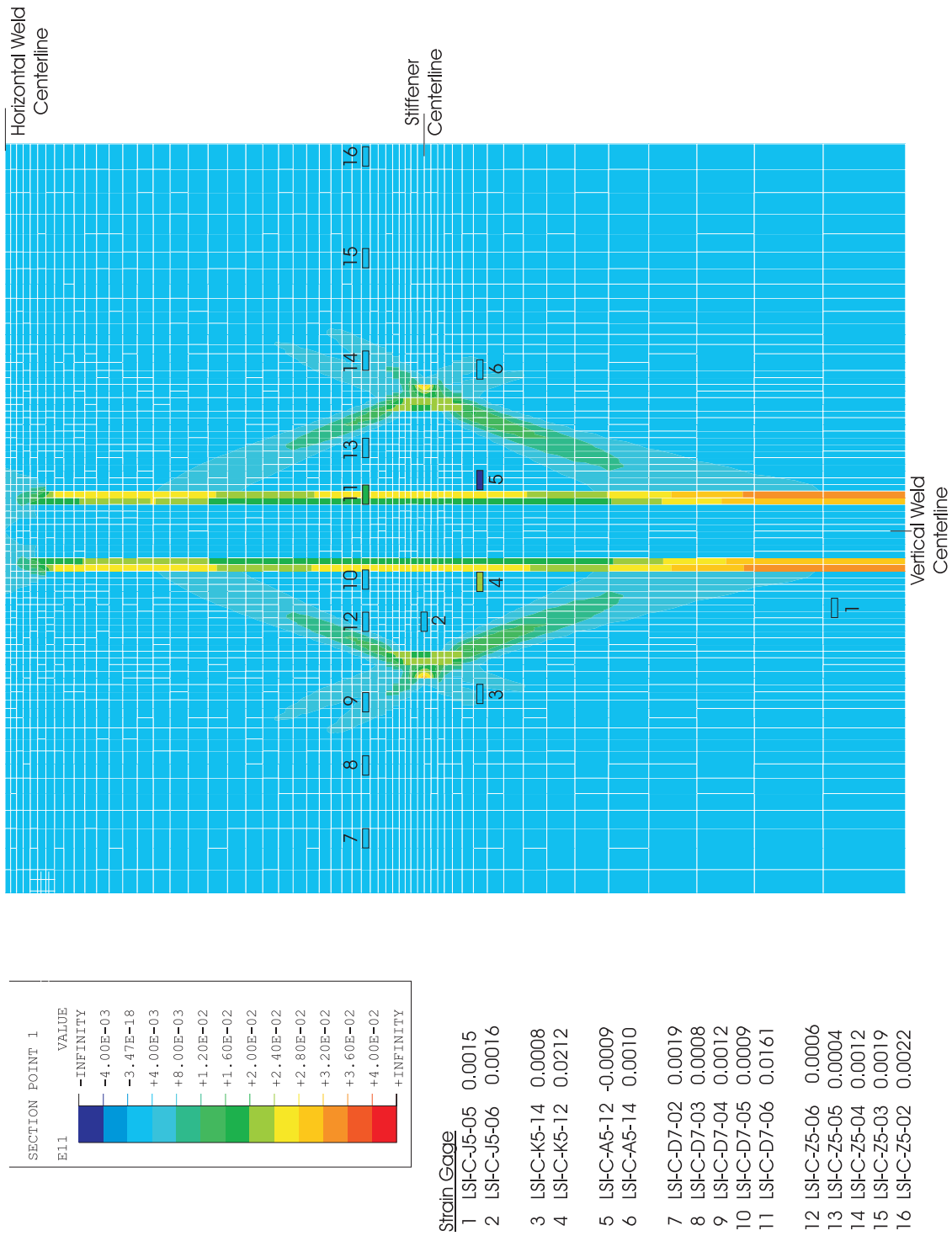
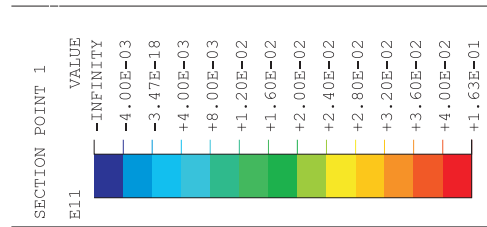
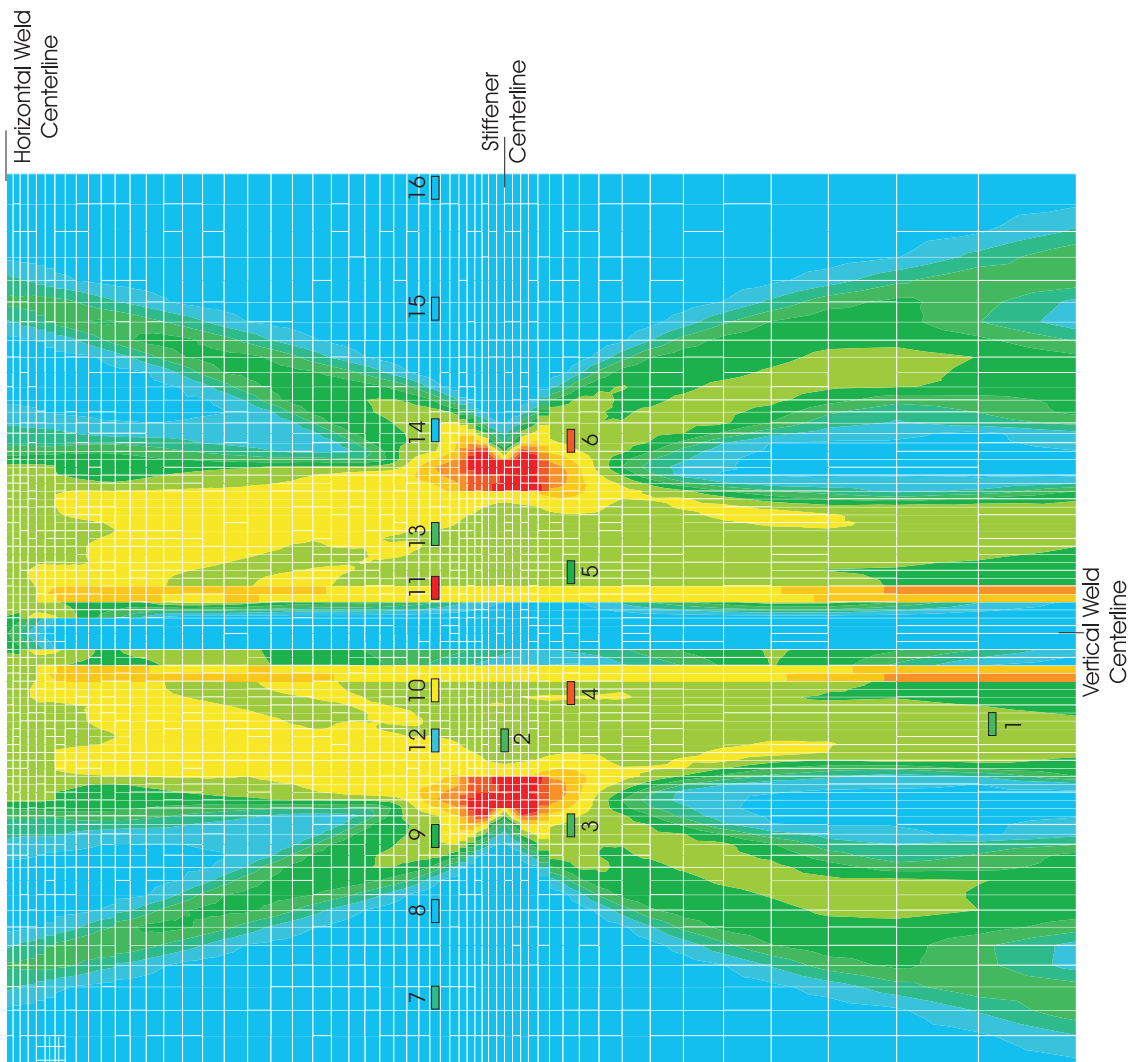


Figure 8-113. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case C6, LST Strain Gage Data Superimposed at 2.8 Pd



Strain Gage	Value
1 LSt-C-J5-05	0.0126
2 LSt-C-J5-06	0.0145
3 LSt-C-K5-14	0.0123
4 LSt-C-K5-12	0.0380
5 LSt-C-A5-12	0.0194
6 LSt-C-A5-14	0.0388
7 LSt-C-D7-02	0.0089
8 LSt-C-D7-03	0.0021
9 LSt-C-D7-04	0.0173
10 LSt-C-D7-05	0.0263
11 LSt-C-D7-06	0.0574
12 LSt-C-Z5-06	0.0046
13 LSt-C-Z5-05	0.0124
14 LSt-C-Z5-04	0.0034
15 LSt-C-Z5-03	0.0026
16 LSt-C-Z5-02	0.0023

Figure 8-114. PCCV Liner Seam Rat-Hole Study, Horizontal Strain Contour, Case C6, LST Strain Gage Data Superimposed at 3.3 Pd