

This Supplemental Material accompanies Wirtz, Y., and Behl, R.J., 2022, Compositional and diagenetic control of bed- to formational-scale deformation in siliceous sedimentary rocks, Santa Maria Basin, California, *in* Aiello, I., Barron, J., and Ravelo, C., eds., Understanding the Monterey Formation and Similar Biosiliceous Units across Space and Time: Geological Society of America Special Paper 556, [https://doi.org/10.1130/2022.2556\(03\)](https://doi.org/10.1130/2022.2556(03)).

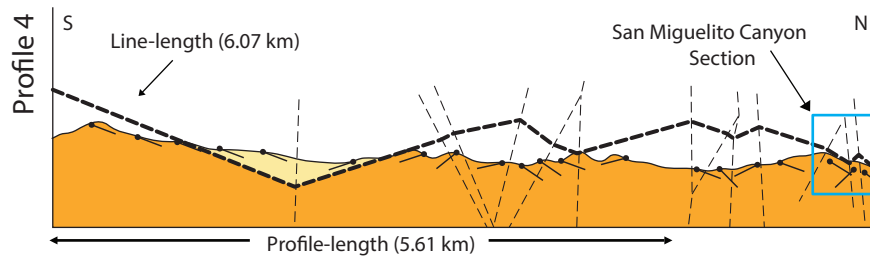
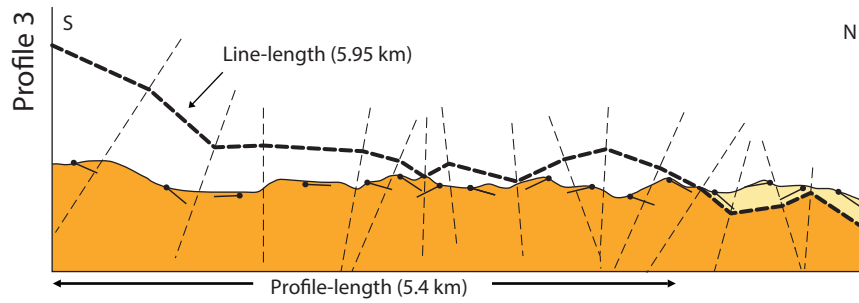
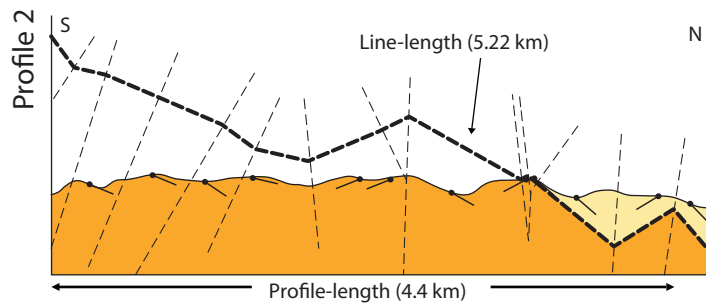
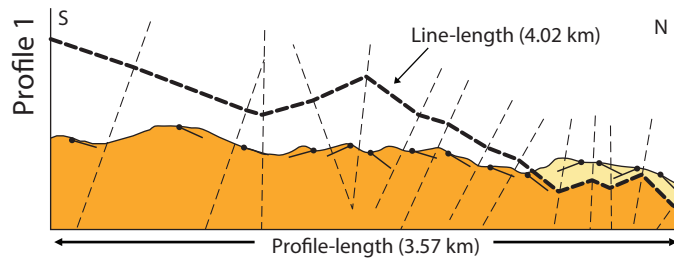
SUPPLEMENTAL MATERIALS

MAP SCALE STRAIN ANALYSIS RESULTS TABLE AND
CONSTRUCTED CROSS-SECTIONS USED FOR
STRAIN QUANTIFICATION IN THE LOMPOC - SANTA ROSA FOLD BELT
AND LOMPOC - PURISIMA ANTICLINE FOLD BELT

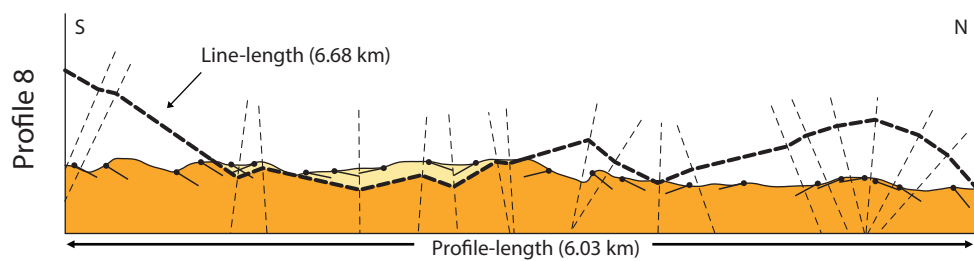
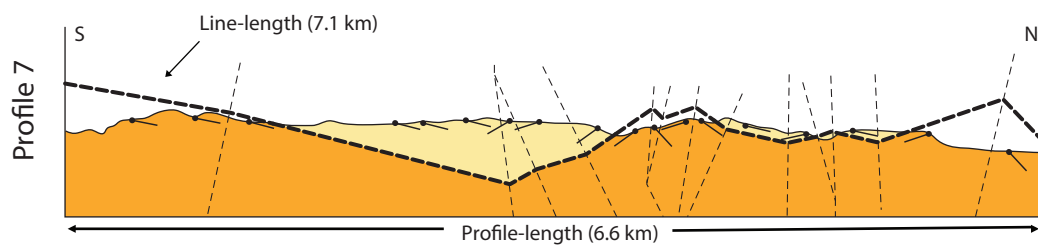
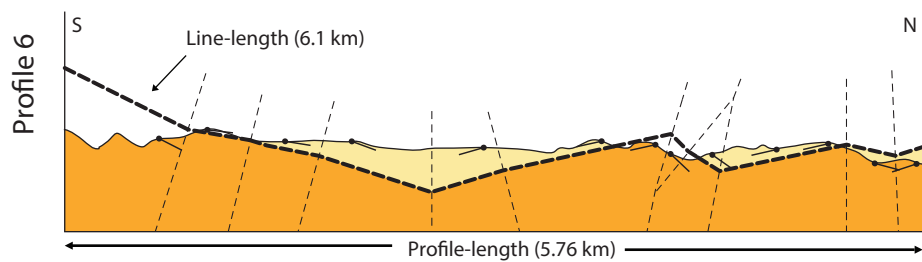
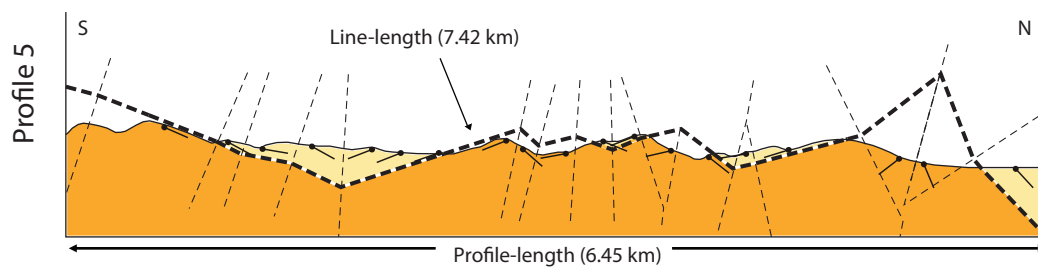
Map-Scale Strain Analysis Results

	Total Profile Shortening				Sisquoc Formation					Monterey Formation					Tsq : Tm
LSR	Profile-Length [km]	Line-Length [km]	Shortening [km]	Shortening [%]	Profile - Length [km]	[%]	Line-Length [km]	Shortening [km]	Shortening [%]	Profile - Length [km]	[%]	Line-Length [km]	Shortening [km]	Shortening [%]	Shortening
1	3.57	4.02	0.46	11.32	0.93	26.11	1.11	0.18	15.90	2.63	73.89	2.91	0.28	9.61	1.65:1
2	4.41	5.22	0.81	15.55	1.18	26.88	1.56	0.38	24.20	3.22	73.12	3.65	0.43	11.85	2.04:1
3	5.41	5.95	0.54	9.13	1.10	20.28	1.25	0.16	12.53	4.31	79.72	4.70	0.39	8.24	1.52:1
4	5.61	6.07	0.46	7.58	1.48	26.38	1.57	0.09	5.73	4.14	73.62	4.50	0.36	8.00	0.72:1
5	6.45	7.42	0.97	13.01	2.75	42.58	2.92	0.17	5.89	3.71	57.42	4.50	0.79	17.63	0.33:1
6	5.76	6.09	0.34	5.51	4.16	72.18	4.33	0.17	3.91	1.60	27.82	1.77	0.17	9.49	0.41:1
7	6.60	7.11	0.51	7.13	3.59	54.39	3.78	0.19	5.03	3.01	45.61	3.33	0.32	9.69	0.52:1
8	6.03	6.68	0.65	9.73	2.06	34.16	2.19	0.13	5.94	3.97	65.84	4.49	0.52	11.58	0.51:1
9	6.39	7.32	0.93	12.69	0	0	0	0		6.39	100	7.32	0.93	12.69	
10	7.00	8.87	1.87	21.08	0	0	0	0		7.00	100	8.87	1.87	21.12	
11	6.25	7.40	1.16	15.61	0	0	0	0		6.25	100	7.40	1.16	15.61	
12	6.28	7.55	1.27	16.77	2.28	36.30	2.59	0.31	11.87	4.00	63.70	4.92	0.92	18.70	0.63:1
13	6.78	7.60	0.82	10.79	2.83	41.74	3.20	0.37	11.56	3.95	58.26	4.40	0.45	10.23	1.13:1
14	8.44	9.18	0.74	8.06	2.89	34.24	3.00	0.11	3.67	5.55	65.76	6.17	0.62	10.05	0.36:1
15	7.76	8.55	0.79	9.24	1.04	13.40	1.13	0.09	7.96	6.72	86.60	7.41	0.69	9.31	0.86:1
ND	7.71	8.27	0.56	6.77											
16	8.60	9.21	0.61	6.66	2.10	24.42	2.21	0.11	4.76	6.50	75.58	7.01	0.51	7.26	0.66:1
17	11.51	13.21	1.69	12.82	3.13	27.19	3.50	0.37	10.57	8.38	72.81	9.71	1.32	13.62	0.78:1
18	9.34	10.55	1.21	11.44	1.53	16.42	1.63	0.10	6.06	7.81	83.58	8.92	1.11	12.43	0.49:1
19	7.48	9.09	1.61	17.72	0.72	0	0.77	0.05	6.14	6.76	100	8.32	1.56	18.79	0.33:1
Mean				11.43					6.36					12.13	0.52:1
LPA	Profile-Length [km]	Line-Length [km]	Shortening [km]	Shortening [%]	Profile - Length [km]	[%]	Line-Length [km]	Shortening [km]	Shortening [%]	Profile - Length [km]	[%]	Line-Length [km]	Shortening [km]	Shortening [%]	Tsq : Tm Short.
20	4.08	4.30	0.22	5.19	4.08	100	4.30	0.22	5.19	0	0	0	0		
21	5.41	5.68	0.27	4.67	5.41	100	5.68	0.27	4.67	0	0	0	0		
ND	5.61	5.98	0.37	6.19											
22	5.68	6.07	0.39	6.38	5.68	100	6.07	0.39	6.38	0	0	0	0		
23	6.37	6.79	0.41	6.10	6.37	100	6.79	0.41	6.10	0	0	0	0		
24	5.83	6.14	0.31	5.04	4.72	80.97	4.94	0.22	4.53	1.11	19.03	1.19	0.08	7.04	0.64:1
25	5.76	6.58	0.82	12.45	4.43	76.91	5.04	0.61	12.18	1.34	23.09	1.53	0.20	12.78	0.95:1
26	4.75	5.13	0.38	7.35	2.58	54.28	2.77	0.19	6.86	2.17	45.72	2.35	0.17	7.33	0.94:1
27	4.62	5.34	0.72	13.44	2.07	44.69	2.14	0.08	3.55	2.56	55.31	3.20	0.64	20.07	0.18:1
28	4.59	5.52	0.93	16.77	0	0	0	0		4.59	100	5.52	0.93	16.77	
Mean				8.36					6.18					12.80	0.48:1

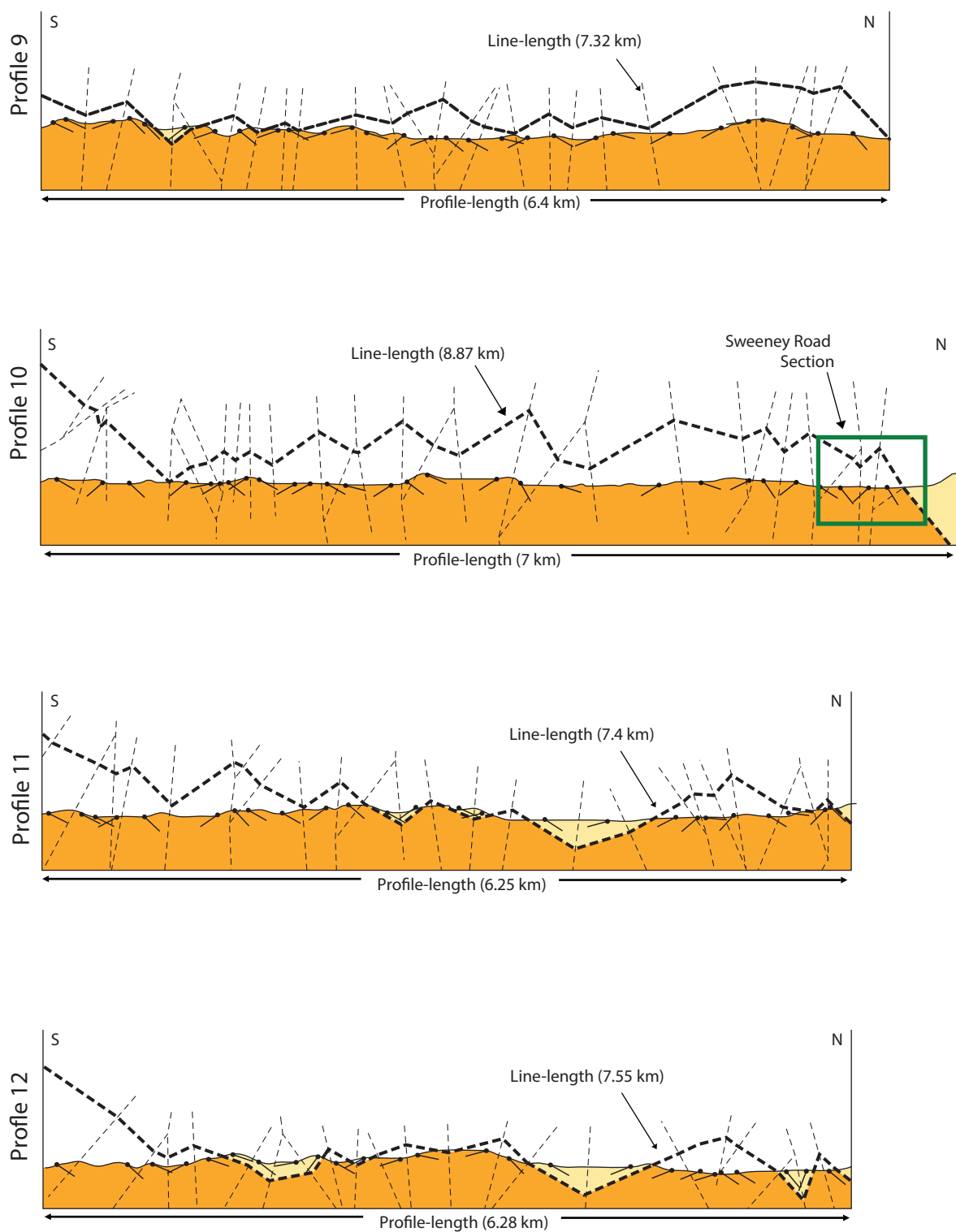
Lompoc - Santa Rosa Fold Belt; Profiles 1 - 4



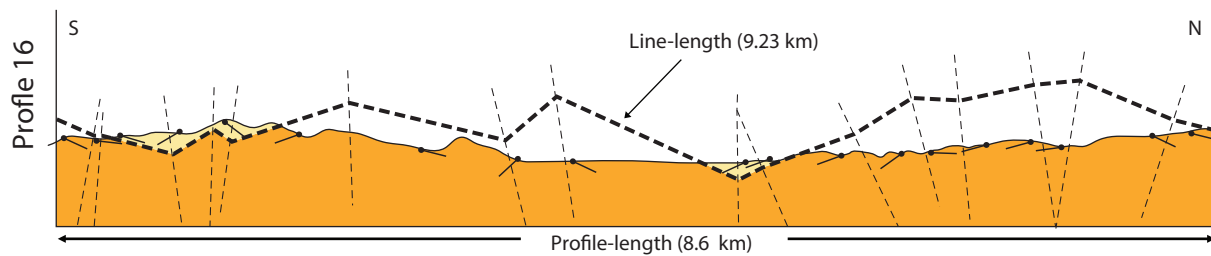
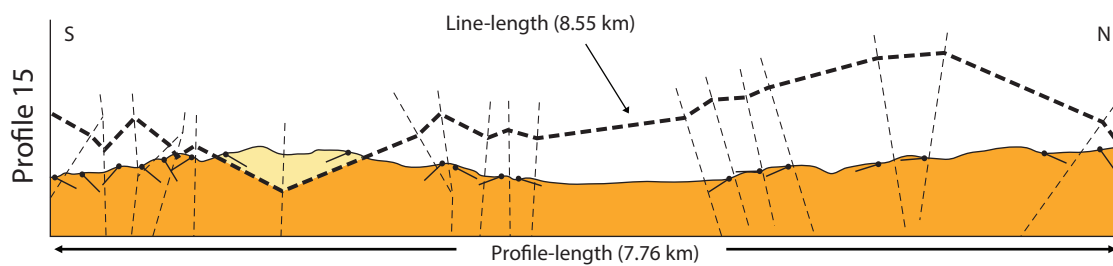
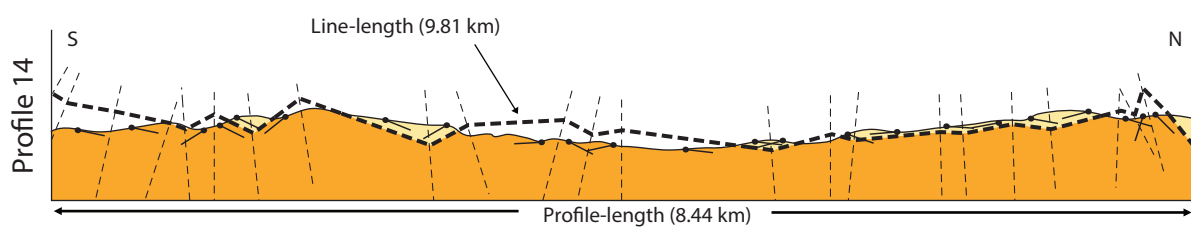
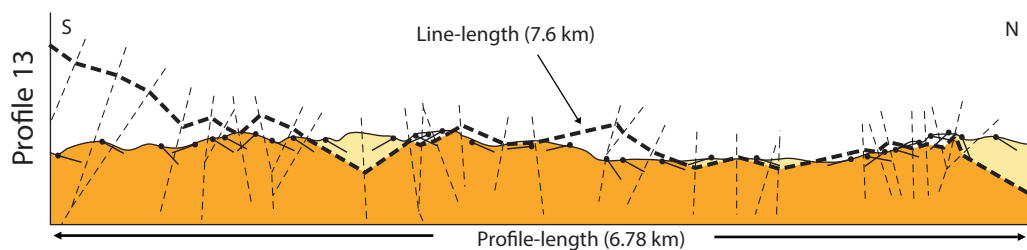
Lompoc - Santa Rosa Fold Belt; Profiles 5 - 8



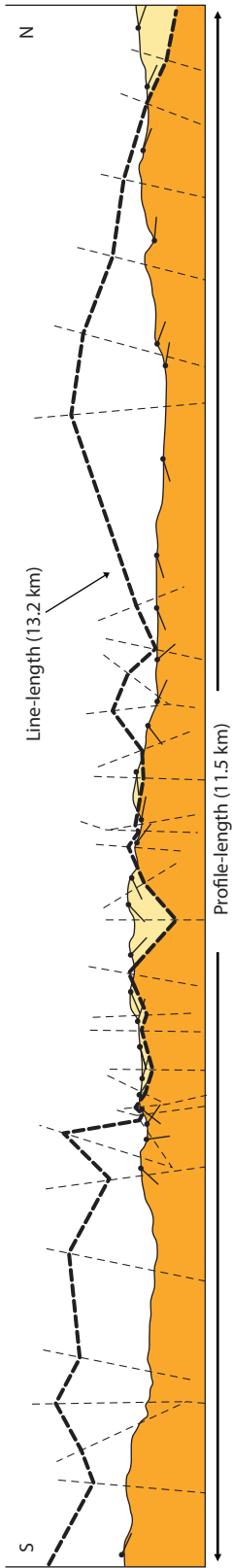
Lompoc - Santa Rosa Fold Belt; Profiles 9 - 12



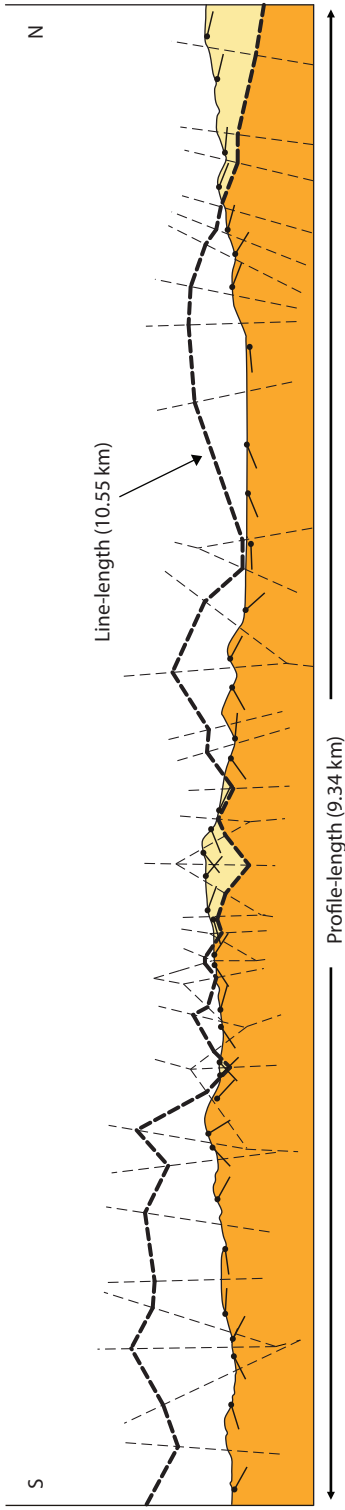
Lompoc - Santa Rosa Fold Belt; Profiles 13 - 16



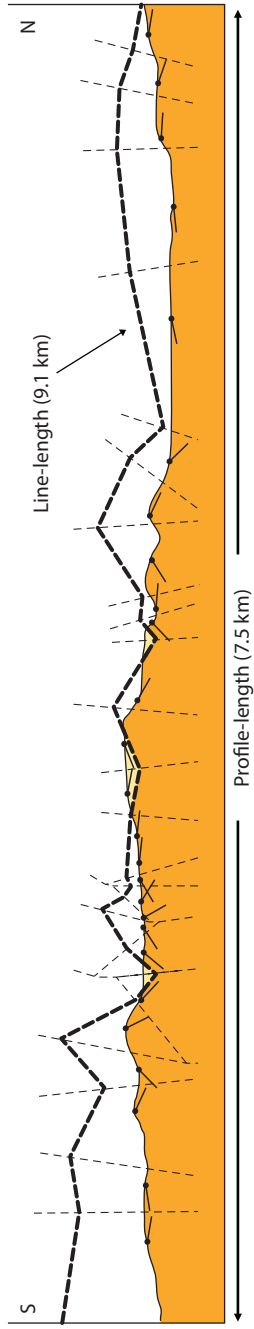
Lompoc - Santa Rosa Fold Belt; Profiles 17 - 19



Profile 17

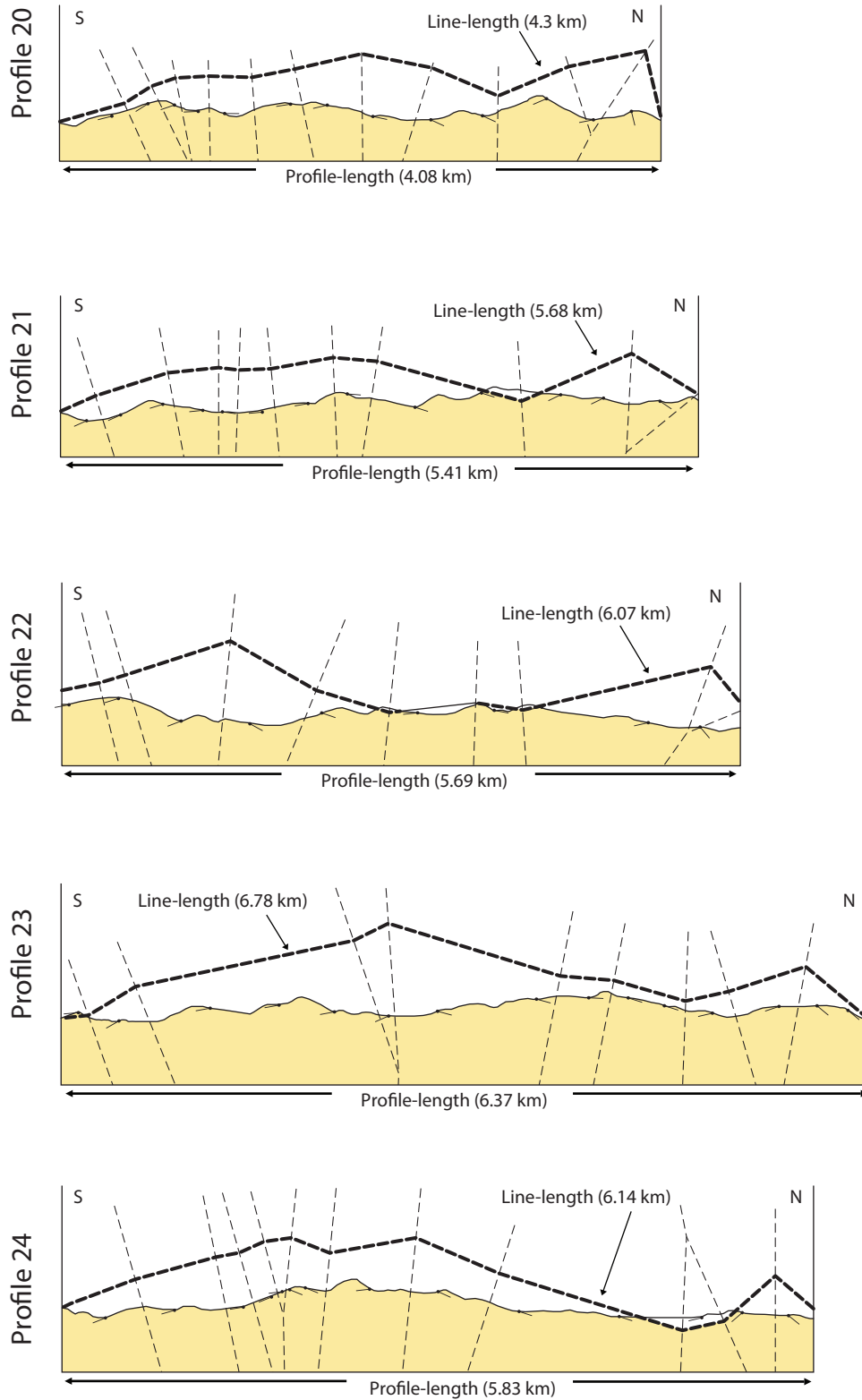


Profile 18



Profile 19

Lompoc Purisima Anticline Fold Belt; Profiles 20 - 24



Lompoc Purisima Anticline Fold Belt; Profiles 25 - 28

