CALIFORNIA HIGH SPEED TRAIN PROJECT
PALMDALE TO LOS ANGELES
15 % ALIGNMENT DESIGN
PALMDALE TO SYLMAR ALIGNMENT "SR14W"
HORIZONTAL AND VERTICAL ALIGNMENT DATA

Revision: **00**
Date: **11/18/2010**
Engr Alignment Ref: **SR 14 WEST SB-7.0**

Notes
1. Stationing increases from north to south for all tracks.
2. Negative curve radii are left hand curves, facing direction of increasing stationing.
3. Negative gradients fall in the direction of increasing stationing.

HORIZONTAL ALIGNMENT

TYPE	START STATION (FT)	LENGTH (FT)	RADIUS (R) (FT)	DESIGN SPEED (MPH)
Linear	0+00	3196		220
Cosine	31+96	1716		220
Circular	49+12	4030	22000	220
Cosine	89+42	1716		220
Linear	106+58	13649		220
Cosine	243+08	1500		220
Circular	258+08	6401	28000	220
Cosine	322+08	500		220
Circular	327+08	13509	26500	220
Cosine	462+18	1498		220
Linear	477+16	8436		220
Cosine	561+52	900		220
Circular	570+52	10328	40000	220
Cosine	673+81	900		220
Linear	682+81	21562		220
Cosine	898+43	901		220
Circular	907+44	16967	-50068.5	220
Cosine	1077+11	901		220
Linear	1086+12	5929		220
Cosine	1145+40	1430		220
Circular	1159+70	9248	26500	220
Cosine	1252+19	1430		220
Linear	1266+49	5654		220
Cosine	1323+03	1145		220
Circular	1334+48	2718	-35068.5	220

VERTICAL ALIGNMENT

TYPE	START STATION (FT)	START ELEVATION (FT)	GRADIENT (FT)	LENGTH (FT)
Linear	0+00	2531	0.64%	13645
Parabola	136+45	2619		775
Linear	144+20	2622	0.25%	1551
Parabola	159+71	2626		775
Linear	167+46	2630	0.70%	4612
Parabola	213+58	2662		2300
Linear	236+58	2705	3.00%	3236
Parabola	268+94	2802		2475
Linear	293+69	2862	1.90%	4682
Parabola	340+51	2951		2800
Linear	368+51	2986	0.60%	22460
Parabola	593+11	3121		3100
Linear	624+11	3108	-1.45%	11700
Parabola	741+12	2938		2400
Linear	765+12	2890	-2.50%	46985
Parabola	1234+97	1716		1500
Linear	1249+97	1689	-1.05%	8770
Parabola	1337+66	1597		2400

CALIFORNIA HIGH SPEED TRAIN PROJECT
PALMDALE TO LOS ANGELES
15 % ALIGNMENT DESIGN
PALMDALE TO SYLMAR ALIGNMENT "SSU"
HORIZONTAL AND VERTICAL ALIGNMENT DATA

Revision: **00**
Date: **11/18/2010**
Engr Alignment Ref: **SSU SB-7.0**

Notes
1. Stationing increases from north to south for all tracks.
2. Negative curve radii are left hand curves, facing direction of increasing stationing.
3. Negative gradients fall in the direction of increasing stationing.

HORIZONTAL ALIGNMENT

TYPE	START STATION (FT)	LENGTH (FT)	RADIUS (R) (FT)	DESIGN SPEED (MPH)
Circular	1570+00	5317	-35068.5	220
Cosine	1623+17	1145		220
Linear	1634+62	5690		220
Cosine	1691+52	2000		220
Circular	1711+52	26749	-19500	220
Cosine	1979+01	500		220
Circular	1984+01	6785	-20650	220
Cosine	2051+85	2000		220
Linear	2071+85	5508		220

VERTICAL ALIGNMENT

TYPE	START STATION (FT)	START ELEVATION (FT)	GRADIENT (FT)	LENGTH (FT)
Linear	1570+00	1542	-3.50%	1920
Parabola	1589+20	1475		3800
Linear	1627+20	1401	-0.40%	16092
Parabola	1788+12	1337		2100
Linear	1809+12	1338	0.50%	17659
Parabola	1985+70	1426		4900
Linear	2034+70	1377	-2.53%	5560
Parabola	2090+31	1236		1470
Linear	2105+01	1207	-1.40%	2193

CALIFORNIA HIGH SPEED TRAIN PROJECT
PALMDALE TO LOS ANGELES
15 % ALIGNMENT DESIGN
SYLMAR TO LAUS "SFV"
HORIZONTAL AND VERTICAL ALIGNMENT DATA

Revision: **00**
Date: **12/13/2010**
Engr Alignment Ref: **SFV 7.6, HST SB**

Notes
1. Stationing increases from north to south for all tracks.
2. Negative curve radii are left hand curves, facing direction of increasing stationing.
3. Negative gradients fall in the direction of increasing stationing.

HORIZONTAL ALIGNMENT

TYPE	START STATION (FT)	LENGTH (FT)	RADIUS (R) (FT)	DESIGN SPEED (MPH)
Linear	2555+00.00	2650.61		
Spiral	2581+50.61	1500		
Circular	2596+50.61	1485.66	30000	220
Spiral	2611+36.26	1500		
Linear	2626+36.26	25927.91		
Spiral	2885+64.18	1720		
Circular	2902+84.18	1904.75	-21600	220
Spiral	2921+88.92	1720		
Linear	2939+08.92	6433.6		
Spiral	3003+42.52	900		
Circular	3012+42.52	798.13	180000	220
Spiral	3020+40.64	900		
Linear	3029+40.64	9410.32		
Spiral	3123+50.96	840		
Circular	3131+90.96	1460.9	17000	160
Spiral	3146+51.86	840		
Linear	3154+91.86	578.66		
Spiral	3160+70.52	980.45		
Circular	3170+50.97	3355.06	-18016.5	160
Spiral	3204+06.03	980.45		
Linear	3213+86.48	6253.49		
Spiral	3276+39.96	1138.87		
Circular	3287+78.83	2999.36	8283.5	140
Spiral	3317+78.19	2487.53		
Linear	3342+65.72	7680.47		
Spiral	3419+46.19	910.72		
Circular	3428+56.91	2910.33	-10416.5	140
Spiral	3457+67.24	910.72		
Linear	3466+77.96	1322.04		

VERTICAL ALIGNMENT

TYPE	START STATION (FT)	START ELEVATION (FT)	GRADIENT (FT)	LENGTH (FT)
Linear	2555+00	1253.23	-1.40%	1185.02
Parabola	2566+85	1159.64		1050
Linear	2577+35	1144.15	-1.55%	2058.44
Parabola	2597+93	1112.25		1200
Linear	2609+93	1099.05	-0.65%	5031.56
Parabola	2660+25	1066.32		800
Linear	2668+25	1059.72	-1.00%	1575
Parabola	2684+00	1043.97		800
Linear	2692+00	1037.37	-0.65%	3800
Parabola	2730+00	1012.67		2000
Linear	2750+00	993.67	-1.25%	4375
Parabola	2793+75	938.99		1650
Linear	2810+25	928.67	0.00%	1440
Parabola	2824+65	928.67		1110
Linear	2835+75	923.96	-0.85%	10738
Parabola	2943+13	832.68		2150
Linear	2964+63	810.75	-1.19%	6727
Parabola	3031+90	730.72		1120
Linear	3043+10	722.21	-0.33%	1412
Parabola	3057+22	717.55		1650
Linear	3073+72	702.04	-1.55%	6063
Parabola	3134+35	608.06		970
Linear	3144+05	596.62	-0.81%	7620
Parabola	3220+25	534.89		600
Linear	3226+25	529.16	-1.10%	1600
Parabola	3242+25	511.57		1550
Linear	3257+75	511.95	1.15%	422
Parabola	3261+97	516.81		1140
Linear	3273+37	520.51	-0.50%	2413
Parabola	3297+50	508.45		850
Linear	3306+00	498.88	-1.75%	1410
Parabola	3320+10	474.21		930
Linear	3329+40	466.08	0.00%	2020
Parabola	3349+60	466.08		500
Linear	3354+60	466.7	0.25%	1465
Parabola	3369+25	470.37		500
Linear	3374+25	469.97	-0.41%	7625
Parabola	3450+50	438.73		500
Linear	3455+50	435.33	-0.95%	2450

CALIFORNIA HIGH SPEED TRAIN PROJECT
PALMDALE TO LOS ANGELES
15 % ALIGNMENT DESIGN
SR-2 TO LAUS "LT1"
HORIZONTAL AND VERTICAL ALIGNMENT DATA

Revision: **00**
Date: **12/13/2010**
Engr Alignment Ref: **LT1 9.6, HST SB**

Notes
1. Stationing increases from north to south for all tracks.
2. Negative curve radii are left hand curves, facing direction of increasing stationing.
3. Negative gradients fall in the direction of increasing stationing.

HORIZONTAL ALIGNMENT

TYPE	START STATION (FT)	LENGTH (FT)	RADIUS (R) (FT)	DESIGN SPEED (MPH)
Linear	3480+00	886.38		140
Spiral	3488+86	870		140
Circular	3497+56	1876.04	11000	140
Spiral	3516+32	870		140
Linear	3525+02	2484.13		140
Spiral	3549+87	960		140
Circular	3559+47	2409.8	10000	140
Spiral	3583+56	960		140
Linear	3593+16	1632.88		140
Spiral	3609+49	960		140
Circular	3619+09	448.86	10000	140
Spiral	3623+58	960		140
Linear	3633+18	2728.37		140
Spiral	3660+46	100		35
Circular	3661+46	539.34	3000	35
Spiral	3666+86	100		35
Linear	3667+86	257.84		35
Spiral	3670+44	100		35
Circular	3671+44	386.81	-3000	35
Spiral	3675+30	100		35
Linear	3676+30	158.44		35
Spiral	3677+89	120		35
Circular	3679+09	213.33	2000	35
Spiral	3681+22	120		35
Linear	3682+42	2150		35
Spiral	3703+92	100		35
Circular	3704+92	91.9	3500	35
Spiral	3705+84	100		35
Spiral	3706+84	100		35
Circular	3707+84	91.9	-3500	35
Spiral	3708+76	100		35
Linear	3709+76	68.19		35

VERTICAL ALIGNMENT

TYPE	START STATION (FT)	START ELEVATION (FT)	GRADIENT (FT)	LENGTH (FT)
Linear	3480+00	412.06	-0.95%	1825
Parabola	3498+25	394.72		1250
Linear	3510+75	368.78	-3.20%	5752
Parabola	3568+27	184.70		1820
Linear	3586+47	157.86	0.25%	6008
Parabola	3646+55	172.88		1190
Linear	3658+45	189.24	2.50%	4580
Parabola	3704+25	303.73		550
Linear	3709+75	310.60	0.00%	69.19