

# Appendix I: Non-standard Features



Note: This list excludes the segments where we have DARs at Lusk on I-805, and at Voigt on I-5. All interchanges which belong to city of Encinitas will be assumed that the designs would stay the same as current designs.

## Preferred Alternative

<b>8+4 with Buffer (Preferred Alternative)</b>			
<b>Non-standard Features/Design Exceptions</b>			
LOCATIONS	STATION	DESCRIPTION	HDM INDEX
Genesee_NB -G1M	491_497	Non-standard Decision Sight Distance, Non-standard lengths 3 vertical curves	
Genesee_NB -R1B	493	Non-standard Decision Sight Distance	
Genesee_NB- R1B	494_499	Non-standard curve lengths (3 vertical curves) , Non-standard Sopping sight distance, Design Speed, Decision Sight Distance	
Genesee_SB_G4B	492_498	Non-standard Decision Sight Distance (2 vertical curves)	
Genesee_SB_R2M	495_500	Non-standard Decision Sight Distance	
Entire of the project		Multiple cross slopes for the mainlanes due to hydroplaning problems.	301.2
Entire of the project		Pavement structural	612.2
From Sorrento Valley to Del Mar Heights		Non-standard lane widths and shoulder widths(both sides- due to sign structures, ROW avoid impacts).	301.1, 302.1
From Sorrento Valley to Del Mar Heights		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2
Genesee	518-520	Non-standard outer separation	310.2
Genesee	518-520	Non-standard stopping sight distance, median width, superelevation	201.3, 305.1, 504.3(4)
Genesee	518-520	Non-standard horizontal clearance to fixed object	309.1
5/805 Merge		Non-standard lane drop (too short 2/3 WV)	504.4
5/805 Merge		Non-standard decision sight distance (110mph)	201.7
Carmel Valley SB on-ramp		Non-standard superelevation for the curve on the gore section. (does not match bridge)	504.3(4)
Carmel Valley SB on-ramp		Non-standard design speed after the gore	504.2
Carmel Valley SB on-ramp		Non-standard design for CHP enforcement path	
Carmel Mountain/56		Non-standard interchange spacing	501.3
Del Mar Heights	549-576	Non-standard lane widths and shoulder widths(both sides).	301.1, 302.1
Del Mar Heights	549-576	Non-standard horizontal clearance to fixed object	309.1
Del Mar Heights R4 (WB to SB on-ramp)		Non-standard taper to make lane drop (20:1 < 30:1)	504.3
Del Mar Heights R4 (WB to SB on-ramp)		Non-standard design speed after the gore (25 design < 50 MPH)	504.2
Via De La Valle		Non-standard lane and shoulder width on SB direction.	301.1, 302.1
Via De La Valle R4 (EB to SB on-ramp)		Non-standard superelevation to match city street @ its termini	504.3
Via De La Valle R5 (WB to SB on-ramp)		Non-standard design speed after the gore	504.2
Lomas Santa Fe	602-621	Need to check for stopping sight distance and vertical curve length.	
Lomas Santa Fe	602-621	Minimum distance (curb return to curb return) between ramp intersections and local road intersections (less than 125m or 165 m) (Lomas Santa Fe NB off-ramp and driveway access to Ross shopping center; Lomas Santa Fe NB on-ramp and Santa Helena; Lomas Santa Fe SB off-ramp Solana Hill Dr.; Lomas Santa Fe SB on-ramp and Solana Hill Dr.)	504.3
Lomas Santa Fe	602-621	Median planting to plant oleanders back in median along horizontal curve between Lomas Santa Fe and Manchester Ave.	902.1
Lomas Santa Fe	602-621	Non-standard interchange spacing between Lomas Santa Fe Dr. and Manchester Ave. 1.4km	501.3
Lomas Santa Fe Ramps	602-621	Check stopping sight distance and vertical curve length, shoulder width, and horizontal clearance	201.3, 204.4, 302.1, 309.1
Lomas Santa Fe Ramps	602-621	Non-standard shoulder width at spot locations of the modified Lomas Santa Fe NB and SB off-ramps	302.1
Lomas Santa Fe Local Street	602-621	Minimum distance (curb return to curb return) between ramp intersections and local road intersections (less than 125m or 165 m) (Lomas Santa Fe NB off-ramp and driveway access to Ross shopping center; Lomas Santa Fe NB on-ramp and Santa Helena; Lomas Santa Fe SB off-ramp Solana Hill Dr.; Lomas Santa Fe SB on-ramp and Solana Hill Dr.)	504.3
Lomas Santa Fe Local Street	602-621	Median planting to plant oleanders back in median along horizontal curve between Lomas Santa Fe and Manchester Ave.	902.1
Lomas Santa Fe Local Street	602-621	Non-standard interchange spacing between Lomas Santa Fe Dr. and Manchester Ave. 1.4km	501.3

<b>8+4 with Buffer (Preferred Alternative)</b>			
<b>Non-standard Features/Design Exceptions (cont.)</b>			
LOCATIONS	STATION	DESCRIPTION	HDM INDEX
Manchester Ave.	621-640	Shoulder width, horizontal clearance	302.1, 309.1
Manchester Ave.	621-640	Need to check for stopping sight distance and minimum distance (curb return to curb return) between ramp intersections and local road interactions (89m between the SB off-ramp/Manchester Ave. intersection and Ocean Cove Dr./Manchester Ave. intersection; 30m between the NB on-ramp/Manchester Ave intersection and the proposed Manchester Ave/access road to DAR park-and-ride facility intersection).	201.3, 504.3
Manchester Ave.	621-640	Median planting to plant oleanders back in median along horizontal curve between Lomas Santa Fe and Manchester Ave.	902.1
Manchester Ave.	621-640	Non-standard interchange spacing between Lomas Santa Fe Dr. and Manchester Ave. 1.4km	501.3
Manchester Ave. Ramps	621-640	Need to check vertical curve length, stopping sight distance, shoulder width, and horizontal clearance.	204.4, 201.3, 302.1, 309.1
Birmingham Dr.	640-657	Shoulder width, horizontal clearance, interchange spacing between Birmingham Dr. and Santa Fe Dr.	302.1, 309.1, 501.3
Birmingham Dr.	640-657	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
Birmingham Dr. Ramps	640-657	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
Birmingham Dr. Ramps	640-657	Distance between ramp intersections and local road intersections (Birmingham Dr. NB on-ramp and Villa Cardiff Dr; Birmingham Dr. SB off-ramp and MacKinnon Ave; Birmingham Dr. SB on-ramp and MacKinnon Ave.)	504.3
MacKinnon Ave.	654-656	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
Santa Fe Dr	654-656	Shoulder width, horizontal clearance, interchange spacing between Birmingham Dr. and Santa Fe Dr.; between Santa Fe Dr. and Encinitas Blvd.	302.1, 309.1, 501.3
Santa Fe Dr	654-656	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
Santa Fe Dr	654-656	Distance between ramp intersections and local road intersections less than 125m or 165 m (Santa Fe Dr. NB on-ramp and Regal Rd.; Santa Fe Dr. DB off-ramp and driveway access to Scripps Memorial Hospital; Santa Fe Dr. SB on-ramp and driveway access to Vons shopping center)	504.3
Santa Fe Dr Ramps	654-656	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
LOCATIONS	STATION	DESCRIPTION	HDM INDEX
Santa Fe Dr Ramps	654-656	Distance between ramp intersections and local road intersections less than 125m or 165 m (Santa Fe Dr. NB on-ramp and Regal Rd.; Santa Fe Dr. DB off-ramp and driveway access to Scripps Memorial Hospital; Santa Fe Dr. SB on-ramp and driveway access to Vons shopping center)	504.3
Requeza St.	671-673	Need check for stopping sight distance and vertical curve length	201.3, 204.4
Encinitas Blvd.	670-687	Shoulder width, horizontal clearance, interchange spacing between Santa Fe Dr. and Encinitas Blvd.	302.1, 309.1, 501.3
Encinitas Blvd.	670-687	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
Encinitas Blvd.	670-687	Distance between ramp intersection and local road intersection (less than 125m or 165m) (Encinitas blvd. NB on-ramp and Saxony Rd.; Encinitas Blvd NB off-ramp and Calle Magdalena; Encinitas Blvd. SB off-ramp and driveway to Petco Shopping Center; Encinitas Blvd. SB on-ramp and drive access to Radisson Inn Hotel)	504.3
Encinitas Blvd. Ramps	670-687	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
Encinitas Blvd. Ramps	670-687	Distance between ramp intersection and local road intersection (less than 125m or 165m) (Encinitas blvd. NB on-ramp and Saxony Rd.; Encinitas Blvd NB off-ramp and Calle Magdalena; Encinitas Blvd. SB off-ramp and driveway to Petco Shopping Center; Encinitas Blvd. SB on-ramp and drive access to Radisson Inn Hotel)	504.3
Leucadia Blvd.	687-708	Shoulder width, horizontal clearance	302.1, 309.1
Leucadia Blvd.	687-708	Need to check for stopping sight distance and vertical curve length.	201.3, 204.4
Leucadia Blvd.	687-708	Distance between ramp intersections and local road intersection (less than 125m or 165m) (Leucadia Blvd NB off-ramp and Clark Ave; Leucadia Blvd. NB on-ramp and Urania Ave; Leucadia Blvd. SB off-ramp and Orpheus Ave; Leucadia Blvd. SB on-ramp and Orpheus Ave.	504.3
Leucadia Blvd. Ramps	687-708	Shoulder width, horizontal clearance	302.1, 309.1
Leucadia Blvd. Ramps	687-708	Need to check for stopping sight distance and vertical curve length.	201.3, 204.4
Leucadia Blvd. Ramps	687-708	Distance between ramp intersections and local road intersection (less than 125m or 165m) (Leucadia Blvd NB off-ramp and Clark Ave; Leucadia Blvd. NB on-ramp and Urania Ave; Leucadia Blvd. SB off-ramp and Orpheus Ave; Leucadia Blvd. SB on-ramp and Orpheus Ave.	504.3
Leucadia Blvd. Local Streets	687-708	Distance between ramp intersections and local road intersection (less than 125m or 165m) (Leucadia Blvd NB off-ramp and Clark Ave; Leucadia Blvd. NB on-ramp and Urania Ave; Leucadia Blvd. SB off-ramp and Orpheus Ave; Leucadia Blvd. SB on-ramp and Orpheus Ave.	504.3
La Costa Ave	708-731	Shoulder width, horizontal clearance	302.1, 309.1

<b>8+4 with Buffer (Preferred Alternative)</b>			
<b>Non-standard Features/Design Exceptions (cont.)</b>			
<b>LOCATIONS</b>	<b>STATION</b>	<b>DESCRIPTION</b>	<b>HDM INDEX</b>
La Costa Ave	708-731	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
La Costa Ave Ramps	708-731	Shoulder width.	302.1
La Costa Ave Ramps	708-731	Need to check vertical curve length and stopping sight distance.	204.4, 201.3
La Costa Ave Ramps	708-731	Distance between ramp intersection and local road intersection (less than 125m or 165m) (La Costa Ave NB off-ramp and Piraeus St.; La Costa Ave. NB on-ramp and driveway access to Park and Ride facility)	504.3
La Costa Ave Local Streets	708-731	Distance between ramp intersection and local road intersection (less than 125m or 165m) (La Costa Ave NB off-ramp and Piraeus St.; La Costa Ave. NB on-ramp and driveway access to Park and Ride facility)	504.3
La Costa Ave Local Streets	708-731	Distance between ramp intersections (La Costa Ave. NB off-ramp and SB on-ramp; La Costa Ave. NB on-ramp and SB off-ramp)	504.3
Chinquapin Ave	798-809	NB inside three general-purpose lanes 3.3m following the NB off ramp and through Tamarack Ave. OC	301.1
Chinquapin Ave.	798-809	NB HOV shoulder lane 2.4m	302.1
Chinquapin Ave.	798-809	Interchange spacing between Tamarack Ave and Carlsbad Village Dr. 1.35km	501.3
Carlsbad Village Dr.	811-820	NB inside three general-purpose lanes 3.3m. NB outside shoulder width before the NB off-ramp 1.2m.	301.1, 302.1
Carlsbad Village Dr.	811-820	Interchange spacing between Tamarack Ave and Carlsbad Village Dr. 1.35km	501.3
Carlsbad Village Dr.	811-820	Interchange spacing between Carlsbad Village Dr. and Las Flores Dr. (0.911km)	501.3
SR-78	830-835	Interchange spacing between Las Flores Drive and SR-78 0.85Km	501.3
SR-78 Ramps	830-835	Distance between successive exits NB to WB and NB to EB 200m	504.3
SR-78 R1 (WB to NB on-ramp)		Non-standard design speed on the curve due to ROW impact.	504.2
SR-78 R2 (NB to WB off-ramp)		Non-standard geometric curve for the loop ramp(35 m)	
SR-78 R2 (NB to WB off-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
SR-78 R3 (NB to EB off-ramp)		Non-standard connector configuration in the east side due to weaving length problem.	
SR-78 R4 (SB on-ramp)		Non-standard connector configuration due to weaving length problem.	
SR-78 R4 (SB on-ramp)		Non-standard design speed after the gore	504.2
SR-78 R4 (SB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
SR-78 R5 (SB off-ramp)		Non-standard design speed after the gore	504.2
Cassidy St.	835-841	Non-standard lane width, shoulder width, horizontal clearance, median width to keep Soto St. in place.	301.1, 302.1, 309.1, 305.1
Cassidy St.	835-841	Vertical curve length	204.4
Cassidy St.	835-841	Interchange spacing between SR-78 and Cassidy St.; between Cassidy St. and California St.	501.3
Cassidy Ramps	835-841	Check for stopping and decision sight distance standards.	201.3, 201.7
Cassidy Ramps	835-841	Check for vertical curve length	204.4
Cassidy R2 (SB on-ramp)		Non-standard ramp configuration due to weaving length problem	
Cassidy R2 (SB on-ramp)		Non-standard design speed after the gore	504.2
SD NB Sta 840+00 to 843+00		Non-standard lane widths (3 - 3.3 m) & shoulders (1.2 m) due to ROW impact	301.1, 302.1
California St.	841-848	Shoulder width, horizontal clearance (as Soto St. shift to the east providing more room for freeway widening)	302.1, 309.1
California St.	841-848	Median width, vertical curve length, (between Cassidy St. and California St.)	305.1, 204.4
California St.	841-848	Interchange spacing (between California and Cassidy St. and between California St. and Oceanside Blvd.)	501.3
California St.	841-848	Contrast surface treatment	704.1
California St. Ramps	841-848	Check stopping sight distance and vertical curve length	201.3, 204.4
California NB on-ramp		Non-standard design speed before the gore	504.2
Loma Alta Creek Bridge	849-850	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Oceanside Blvd.	848-859	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Oceanside Blvd. Ramps	848-859	Lane drop taper (at modified Oceanside Blvd. SB onramp)	504.3
Oceanside Blvd. Ramps	848-859	Shoulder widths	302.1
Oceanside Blvd. Ramps	848-859	Check vertical curve length, stopping sight distance and horizontal clearance	204.4, 201.3, 309.1
Oceanside R2 (NB off-ramp)		Non-standard geometric curve for the loop ramp (37 m < 40 m )	
Oceanside R2 (NB off-ramp)		Non-standard design speed after the gore	504.2
Oceanside R3 (SB on-ramp)		Non-standard superelevation	504.3(4)

<b>8+4 with Buffer (Preferred Alternative)</b>			
<b>Non-standard Features/Design Exceptions (cont.)</b>			
<b>LOCATIONS</b>	<b>STATION</b>	<b>DESCRIPTION</b>	<b>HDM INDEX</b>
Oceanside R3 (SB on-ramp)		Non-standard taper to make lane drop	504.3
Oceanside R3 (SB on-ramp)		Non-standard design speed after the gore	504.2
Oceanside DAR		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2
Brooks St.	859-861	Shoulder width, horizontal clearance, vertical curve length (check if any), and median width	302.1, 309.1, 204.4, 305.1
Mission Avenue	861-872	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Mission Avenue	861-872	Median width, interchange spacing between I-5/Mission Ave. and I-5/SR-76 Interchanges	305.1, 501.3
Mission R1 (NB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
Mission R1 (NB on-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
Mission R2 (NB off-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
Mission R3 (SB on-ramp)		Non-standard superelevation	504.3(4)
Mission R4 (SB off-ramp)		Non-standard design speed after the gore	504.2
Neptune Way/Eight St. Overcrossing	874-875	Non-standard horizontal clearance	201.3
SR-76 R1 (NB on-ramp)		Non-standard taper to make lane drop	504.3
SR-76 R1 (NB on-ramp)		Non-standard design speed before the gore	504.2
SR-76 R2 (NB off-ramp)		Non-standard superelevation	504.3(4)
SR-76 R2 (NB off-ramp)		Non-standard design speed curves.	504.2
SD SB Sta 874+00 to 878+00		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2
Harbor R1 (NB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
Harbor R1 (NB on-ramp)		Non-standard design speed before the gore	504.2
Distance between Harbor R3 and R2		Non-standard distance between two off-ramps.	501.3
Harbor R3 (NB to EB off-ramp)		Non-standard lane drop taper	504.3
Harbor R3 (NB to EB off-ramp)		Non-standard superelevation	504.3(4)
Harbor R3 (NB to EB off-ramp)		Non-standard deceleration lane	403.5
Harbor R4 (SB on-ramp)		Non-standard taper to make lane drop	504.3
Entire of the project		Non-standard shoulders in various locations where traffic sign posts will be installed.	302.1

### Other Build Alternatives

<b>10+4 with Barrier</b>			
<b>Non-standard Features/Design Exceptions</b>			
<b>LOCATIONS</b>	<b>STATION</b>	<b>DESCRIPTION</b>	<b>HDM INDEX</b>
Genesee_NB -G1M	491_497	Non-standard Decision Sight Distance, non-standard lengths 3 vertical curves	
Genesee_NB -R1B	493	Non-standard Decision Sight Distance	
Genesee_NB- R1B	494_499	Non-standard curve lengths (3 vertical curves) , non-standard Sopping sight distance, Design Speed, Decision Sight Distance	
Genesee_SB_G4B	492_498	Non-standard Decision Sight Distance (2 vertical curves)	
Genesee_SB_R2M	495_500	Non-standard Decision Sight Distance	
Entire of the project		Multiple cross slopes for the mainlanes due to hydroplaning problems.	
Entire of the project		Pavement structural	
From Sorrento Valley to Del Mar Heights		Non-standard lane widths and shoulder widths(both sides- due to sign structures, ROW avoid impacts).	
From Sorrento Valley to Del Mar Heights		Non-standard cross slope in mainlanes because of keeping existing pavement	
Genesee	518-520	Non-standard outer separation	
Genesee	518-520	Non-standard stopping sight distance, median width, superelevation	
Genesee	518-520	Non-standard horizontal clearance to fixed object	

<b>10+4 with Barrier Non-standard Features/Design Exceptions (cont.)</b>			
LOCATIONS	STATION	DESCRIPTION	HDM INDEX
5/805 Merge		Non-standard lane drop (too short 2/3 WV)	
5/805 Merge		Non-standard decision sight distance (110mph)	
Carmel Valley SB on-ramp		Non-standard superelevation for the curve on the gore section. (does not match bridge)	
Carmel Valley SB on-ramp		Non-standard design speed after the gore	
Carmel Valley SB on-ramp		Non-standard design for CHP enforcement path	
Carmel Mountain/56		Non-standard interchange spacing	
Del Mar Heights	549-576	Non-standard lane widths and shoulder widths(both sides).	
Del Mar Heights	549-576	Non-standard horizontal clearance to fixed object	
Del Mar Heights R4 (WB to SB on-ramp)		Non-standard taper to make lane drop (20:1 < 30:1)	
Del Mar Heights R4 (WB to SB on-ramp)		Non-standard design speed after the gore (25 design < 50 MPH)	
Via De La Valle		Non-standard lane and shoulder width on SB direction.	
Via De La Valle R4 (EB to SB on-ramp)		Non-standard superelevation to match city street @ its termini	
Via De La Valle R5 (WB to SB on-ramp)		Non-standard design speed after the gore	
Manchester Ave.	621-640	Shoulder width, horizontal clearance, median width.	302.1, 309.1, 305.1
Manchester Ave.	621-640	Need to check for stopping sight distance and minimum distance (curb return to curb return) between ramp intersections and local road intersections (89m between the SB off-ramp/Manchester Ave intersection and Ocean Cove Dr./Manchester Ave. intersection; 30m between the NB on-ramp/Manchester Ave. intersection and the proposed Manchester Av./access road to DAR park-and-ride facility intersection).	201.3, 504.3
Manchester Ave.	621-640	Median planting to plant oleanders back in median along horizontal curve between Lomas Santa Fe and Manchester Ave.	902.1
Manchester Ave.	621-640	Non-standard interchange spacing between Lomas Santa Fe Dr. and Manchester Ave. 1.4km	501.3
Manchester Ave. Ramps	621-640	Need to check vertical curve length, stopping sight distance, shoulder width, and horizontal clearance	204.4, 201.3, 302.1, 309.1
Birmingham Dr.	640-657	Shoulder width, horizontal clearance, interchange spacing between Birmingham Dr. and Santa Fe Dr.	302.1, 309.1, 501.3
Birmingham Dr. Ramps	640-657	Need to check vertical curve length, stopping sight, and sight distance	204.4, 201.3
Santa Fe Dr.	657-670	Shoulder width, horizontal clearance	302.1, 309.1
Santa Fe Dr.	657-670	Interchange spacing between Birmingham Dr. and Santa Fe Dr.; between Santa Fe Dr. and Encinitas Blvd.	501.3
Santa Fe Dr.	657-670	Check for stopping sight distance and vertical curve length	201.3, 204.4
Santa Fe Dr. Ramps	657-670	Need to check vertical curve length and stopping sight distance	204.4, 201.3
Santa Fe Dr. Ramps	657-670	Probably distance between ramp intersections and local road intersections (Regal Road and Santa Fe Dr. NB on-ramp)	501.3
Requeza St.	671-673	Shoulder width (NB and SB HOV inside shoulder widths 1.5m)	302.1
Requeza St.	671-673	Horizontal clearance (NB and SB HOV inside shoulder adjacent to concrete barriers 1.5m)	309.1
Requeza St.	671-673	Check for stopping sight distance and vertical curve length	201.3, 204.4
Encinitas Blvd.	670-687	Shoulder width, horizontal clearance, interchange spacing between Santa Fe Dr. and Encinitas Blvd.	302.1, 309.1, 501.3
Encinitas Blvd.	670-687	Need to check for stopping sight distance and vertical curve length.	201.3, 204.4
Encinitas Blvd.	670-687	Interchange distance between ramp intersections and local road intersections (Encinitas Blvd. NB on-ramp and Saxony Rd. Encinitas Blvd NB off-ramp and Calle Magdalena, Encinitas Blvd. SB off-ramp and driveway access to Petco shopping center, Encinitas Blvd SB on-ramp and driveway access to Radisson Inn hotel)	504.3
Encinitas Blvd. Ramps	670-687	Need to check for stopping sight distance and vertical curve length.	201.3, 204.4
Encinitas Blvd. Ramps	670-687	Interchange distance between ramp intersections and local road intersections (Encinitas Blvd. NB on-ramp and Saxony Rd. Encinitas Blvd NB off-ramp and Calle Magdalena, Encinitas Blvd. SB off-ramp and driveway access to Petco shopping center, Encinitas Blvd SB on-ramp and driveway access to Radisson Inn hotel)	504.3
Leucadia Blvd.	687-708	Shoulder width, horizontal clearance	302.1, 309.1
Leucadia Blvd.	687-708	Check for stopping sight distance and vertical curve length	201.3, 204.4
Leucadia Blvd.	687-708	Probably distance between ramp intersections and local road intersections (Leucadia Blvd NB off-ramp and Clark Avenue; Leucadia NB on-ramp and Urania Ave; Leucadia Blvd SB off-ramp and Orpheus Ave; Leucadia Blvd SB on-ramp and Orpheus Ave.	504.3
Leucadia Blvd. Ramps	687-708	Shoulder width, horizontal clearance	302.1, 309.1
Leucadia Blvd. Ramps	687-708	Check for stopping sight distance and vertical curve length	201.3, 204.4

<b>10+4 with Barrier Non-standard Features/Design Exceptions (cont.)</b>			
<b>LOCATIONS</b>	<b>STATION</b>	<b>DESCRIPTION</b>	<b>HDM INDEX</b>
Leucadia Blvd. Ramps	687-708	Probably distance between ramp intersections and local road intersections (Leucadia Blvd NB off-ramp and Clark Avenue; Leucadia NB on-ramp and Urania Ave; Leucadia Blvd SB off-ramp and Orpheus Ave; Leucadia Blvd SB on-ramp and Orpheus Ave.	504.3
La Costa Ave.	708-731	Shoulder width, horizontal clearance	302.1, 309.1
La Costa Ave.	708-731	Check for stopping sight distance and vertical curve length	201.3, 204.4
La Costa Ave.	708-731	Check distance between ramp intersections and local road intersections (La Costa Ave NB off-ramp and Piraeus St.; La Costa Ave. NB on-ramp and driveway access to Park and Ride facility)	504.3
La Costa Ave. Ramps	708-731	Shoulder width	302.1
La Costa Ave. Ramps	708-731	Check vertical curve length and stopping sight distance	204.4, 201.3
La Costa Ave. Ramps	708-731	Check distance between ramp intersections and local road intersections (La Costa Ave NB off-ramp and Piraeus St.; La Costa Ave. NB on-ramp and driveway access to Park and Ride facility)	504.3
Cannon Rd.	775-798	Median width (< 6.6m)	305.1
Chinquapin Ave.	798-809	NB inside three general-purpose lanes 3.3m following the NB off ramp and through Tamarack Ave. OC	301.1
Chinquapin Ave.	798-809	NB HOV shoulder lane 2.4m	302.1
Chinquapin Ave.	798-809	Interchange spacing between Tamarack Ave and Carlsbad Village Dr. 1.35km	501.3
Chestnut Ave.	809-811	NB outside shoulder width 1.2m, NB HOV shoulder lane 2.4m	302.1, 302.1
Carlsbad Village Dr.	811-820	Interchange spacing between Tamarack Ave and Carlsbad Village Dr. 1.35km	501.3
Carlsbad Village Dr.	811-820	Interchange spacing between Carlsbad Village Dr. and Las Flores Dr. 0.911km	501.3
Las Flores Dr. Ramps	820-829	NB on-ramp grade 8.1% descending	504.2
Las Flores Dr. Ramps	820-829	SB off-ramp grade 8.6% ascending	504.2
I-5/SR-78 interchange	830-835	Interchange spacing between Las Flores Dr. and SR-78 Interchange 0.85km	504.3
I-5/SR-78 interchange	830-835	Distance between successive exits NB to WB and NB to EB 200m	504.3
Lomas Santa Fe	602-621	Need to check for stopping sight distance and vertical curve length.	201.3, 204.4
Lomas Santa Fe	602-621	Minimum distance (curb return to curb return) between ramp intersections and local road intersections (less than 125m or 165 m) (Lomas Santa Fe NB off-ramp and driveway access to Ross shopping center; Lomas Santa Fe NB on-ramp and Santa Helena; Lomas Santa Fe SB off-ramp Solana Hill Dr.; Lomas Santa Fe SB on-ramp and Solana Hill Dr.)	504.3
Lomas Santa Fe	602-621	Median planting to plant oleanders back in median along horizontal curve between Lomas Santa Fe and Manchester Ave.	902.1
Lomas Santa Fe	602-621	Non-standard interchange spacing between Lomas Santa Fe Dr. and Manchester Ave. 1.4km	
SR-78	830-835	Interchange spacing between Las Flores Drive and SR-78 0.85Km	501.3
SR-78 Ramps	830-835	Distance between successive exits NB to WB and NB to EB 200m	504.3
SR-78 R1 (WB to NB on-ramp)		Non-standard design speed on the curve due to ROW impact.	504.2
SR-78 R2 (NB to WB off-ramp)		Non-standard geometric curve for the loop ramp(35 m)	
SR-78 R2 (NB to WB off-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
SR-78 R3 (NB to EB off-ramp)		Non-standard connector configuration in the east side due to weaving length problem.	
SR-78 R4 (SB on-ramp)		Non-standard connector configuration due to weaving length problem.	
SR-78 R4 (SB on-ramp)		Non-standard design speed after the gore	504.2
SR-78 R4 (SB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
SR-78 R5 (SB off-ramp)		Non-standard design speed after the gore	504.2
Cassidy St.	835-841	Non-standard lane width, shoulder width, horizontal clearance, median width to keep Soto St. in place.	301.1, 302.1, 309.1, 305.1
Cassidy St.	835-841	Vertical curve length	204.4
Cassidy St.	835-841	Interchange spacing between SR-78 and Cassidy St.; between Cassidy St. and California St.	501.3
Cassidy Ramps	835-841	Check for stopping and decision sight distance standards.	201.3, 201.7
Cassidy Ramps	835-841	Check for vertical curve length	204.4
Cassidy R2 (SB on-ramp)		Non-standard ramp configuration due to weaving length problem	
Cassidy R2 (SB on-ramp)		Non-standard design speed after the gore	504.2
SD NB Sta 840+00 to 843+00		Non-standard lane widths (3 - 3.3 m) & shoulders (1.2 m) due to ROW impact	301.1, 302.1
California St.	841-848	Shoulder width, horizontal clearance (as Soto St. shift to the east providing more room for freeway widening)	302.1, 309.1



<b>10+4 with Barrier Non-standard Features/Design Exceptions (cont.)</b>			
<b>LOCATIONS</b>	<b>STATION</b>	<b>DESCRIPTION</b>	<b>HDM INDEX</b>
California St.	841-848	Median width, vertical curve length, (between Cassidy St. and California St.)	305.1, 204.4
California St.	841-848	Interchange spacing (between California and Cassidy St. and between California St. and Oceanside Blvd.)	501.3
California St.	841-848	Contrast surface treatment	704.1
California St. Ramps	841-848	Check stopping sight distance and vertical curve length	201.3, 204.4
California NB on-ramp		Non-standard design speed before the gore	504.2
Loma Alta Creek Bridge	849-850	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Oceanside Blvd.	848-859	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Oceanside Blvd. Ramps	848-859	Lane drop taper (at modified Oceanside Blvd. SB onramp)	504.3
Oceanside Blvd. Ramps	848-859	Shoulder widths	302.1
Oceanside Blvd. Ramps	848-859	Check vertical curve length, stopping sight distance and horizontal clearance	204.4, 201.3, 309.1
Oceanside R2 (NB off-ramp)		Non-standard geometric curve for the loop ramp (37 m < 40 m )	
Oceanside R2 (NB off-ramp)		Non-standard design speed after the gore	504.2
Oceanside R3 (SB on-ramp)		Non-standard superelevation	504.3(4)
Oceanside R3 (SB on-ramp)		Non-standard taper to make lane drop	504.3
Oceanside R3 (SB on-ramp)		Non-standard design speed after the gore	504.2
Oceanside DAR		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2
Brooks St.	859-861	Shoulder width, horizontal clearance, vertical curve length (check if any), and median width	302.1, 309.1, 204.4, 305.1
Mission Avenue	861-872	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Mission Avenue	861-872	Median width, interchange spacing between I-5/Mission Ave. and I-5/SR-76 Interchanges	305.1, 501.3
Mission R1 (NB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
Mission R1 (NB on-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
Mission R2 (NB off-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
Mission R3 (SB on-ramp)		Non-standard superelevation	504.3(4)
Mission R4 (SB off-ramp)		Non-standard design speed after the gore	504.2
Neptune Way/Eight St. Overcrossing	874-875	Non-standard horizontal clearance	201.3
SR-76 R1 (NB on-ramp)		Non-standard taper to make lane drop	504.3
SR-76 R1 (NB on-ramp)		Non-standard design speed before the gore	504.2
SR-76 R2 (NB off-ramp)		Non-standard superelevation	504.3(4)
SR-76 R2 (NB off-ramp)		Non-standard design speed curves.	504.2
SD SB Sta 874+00 to 878+00		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2
Harbor R1 (NB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
Harbor R1 (NB on-ramp)		Non-standard design speed before the gore	504.2
Distance between Harbor R3 and R2		Non-standard distance between two off-ramps.	501.3
Harbor R3 (NB to EB off-ramp)		Non-standard lane drop taper	504.3
Harbor R3 (NB to EB off-ramp)		Non-standard superelevation	504.3(4)
Harbor R3 (NB to EB off-ramp)		Non-standard deceleration lane	403.5
Harbor R4 (SB on-ramp)		Non-standard taper to make lane drop	504.3
Entire of the project		Non-standard shoulders in various locations where traffic sign posts will be installed.	302.1

<b>10+4 with Buffer</b>			
<b>Non-standard Features/Design Exceptions</b>			
<b>LOCATIONS</b>	<b>STATION</b>	<b>DESCRIPTION</b>	<b>HDM INDEX</b>
Genesee_NB -G1M	491_497	Non-standard Decision Sight Distance, Non-standard lengths 3 vertical curves	
Genesee_NB -R1B	493	Non-standard Decision Sight Distance	
Genesee_NB- R1B	494_499	Non-standard curve lengths (3 vertical curves) , Non-standard Sopping sight distance, Design Speed, Decision Sight Distance	
Genesee_SB_G4B	492_498	Non-standard Decision Sight Distance (2 vertical curves)	
Genesee_SB_R2M	495_500	Non-standard Decision Sight Distance	
Entire of the project		Multiple cross slopes for the mainlanes due to hydroplaning problems.	301.2
Entire of the project		Pavement structural	612.2
From Sorrento Valley to Del Mar Heights		Non-standard lane widths and shoulder widths(both sides- due to sign structures, ROW avoid impacts).	301.1, 302.1
From Sorrento Valley to Del Mar Heights		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2
Genesee	518-520	Non-standard outer separation	310.2
Genesee	518-520	Non-standard stopping sight distance, median width, superelevation	201.3, 305.1, 504.3(4)
Genesee	518-520	Non-standard horizontal clearance to fixed object	309.1
5/805 Merge		Non-standard lane drop (too short 2/3 WV)	504.4
5/805 Merge		Non-standard decision sight distance (110mph)	201.7
Carmel Valley SB on-ramp		Non-standard superelevation for the curve on the gore section. (does not match bridge)	504.3(4)
LOCATIONS	STATION	DESCRIPTION	HDM INDEX
Carmel Valley SB on-ramp		Non-standard design speed after the gore	504.2
Carmel Valley SB on-ramp		Non-standard design for CHP enforcement path	
Carmel Mountain/56		Non-standard interchange spacing	501.3
Del Mar Heights	549-576	Non-standard lane widths and shoulder widths(both sides).	301.1, 302.1
Del Mar Heights	549-576	Non-standard horizontal clearance to fixed object	309.1
Del Mar Heights R4 (WB to SB on-ramp)		Non-standard taper to make lane drop (20:1 < 30:1)	504.3
Del Mar Heights R4 (WB to SB on-ramp)		Non-standard design speed after the gore (25 design < 50 MPH)	504.2
Via De La Valle		Non-standard lane and shoulder width on SB direction.	301.1, 302.1
Via De La Valle R4 (EB to SB on-ramp)		Non-standard superelevation to match city street @ its termini	504.3
Via De La Valle R5 (WB to SB on-ramp)		Non-standard design speed after the gore	504.2
Lomas Santa Fe	602-607+50	Non-standard horizontal clearance to fixed objects	309.1
Lomas Santa Fe	602-621	Check for stopping sight distance	201.3
Lomas Santa Fe	602-621	Check for vertical curve length	204.4
Lomas Santa Fe	602-621	Minimum distance between ramp intersection and local road intersections	501.3
Lomas Santa Fe	602-621	Median planting to plant oleanders back to in median along horizontal curve between Lomas Santa Fe and Manchester Avenue	902.1
Lomas Santa Fe	602-621	Non-standard interchange spacing between Lomas Santa Fe and Manchester Avenue	501.3
Lomas Santa Fe Ramps	602-621	Check vertical curve length, stopping sight distance, shoulder width and horizontal clearance	204.4, 201.3, 302.1, 309.1
Lomas Santa Fe Local Street	602-621	Minimum distance between ramp intersections and local road intersections	501.3
Lomas Santa Fe R2 (EB to NB on-ramp)		Non-standard design speed after the gore	504.2
Manchester DAR		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2
Manchester R1 (NB on-ramp)		Non-standard superelevation for the curve at the gore (controlled by bridge)	504.3(4)
Manchester R3 (SB on-ramp)		Non-standard geometric curve for the loop ramp(35 m)	
Manchester R3 (SB on-ramp)		Non-standard taper to make lane drop	206.3
View Point SB on-ramp		Non-standard geometric design for ramp alignment	
View Point SB on-ramp		Non-standard weaving length bet the on-ramp and Manchester off-ramp	504.7
Birmingham R1 (NB on-ramp)		Non-standard superelevation to match city street @ its termini	504.3
Requeza St. Overcrossing	671-673	Shoulder width, horizontal clearance	302.1, 309.1
Requeza St. Overcrossing	671-673	Check for stopping sight distance and vertical curve length	201.3, 204.4
Encinitas R1 (NB on-ramp)		Non-standard design speed before the gore vertical curve length	504.2, 204.4
Leucadia R1 (NB on-ramp)		Non-standard design for CHP enforcement path (No CHP road)	

<b>10+4 with Buffer</b>			
<b>Non-standard Features/Design Exceptions (cont.)</b>			
<b>LOCATIONS</b>	<b>STATION</b>	<b>DESCRIPTION</b>	<b>HDM INDEX</b>
Leucadia R1 (NB on-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
Leucadia R1 (NB on-ramp)		Non-standard design speed after the gore	504.2
La Costa R3 (SB on-ramp)		Non-standard superelevation	504.3(4)
Poinsettia R1 (NB on-ramp)		4:1 slope	304.1
Poinsettia R3 (SB on-ramp)		4:1 slope	304.1
Poinsettia R4 (SB off-ramp)		4:1 slope	304.1
Palomar Airport Rd.	758-775	NB HOV shoulder width 2.4m	302.1
Palomar Airport Rd. Ramps	758-775	NB and SB HOV shoulder width 2.4m	302.1
Paloma R1 (NB on-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
Paloma R4 (WB to SB on-ramp)		Non-standard geometric curve for the ramp(1400 m instead of 1000 m)	
Paloma R4 (WB to SB on-ramp)		Non-standard taper to make lane drop	504.3
Paloma R4 (WB to SB on-ramp)		Non-standard superelevation for the curve at the gore	504.3(4)
SD SB Sta 769+60 to 779+80		Non-standard lane widths (2 - 3.3 m) & inside shoulder(2.4 m) due to ROW impact	301.1, 302.1
Canon Rd.		Non-standard inside shoulder (south of Canon)	302.1
Canon Rd. Ramps and DAR	775-796	Super DAR ramp < 12%	302.1
Cannon R3 (SB on-ramp)		No CHP enforcement path due to ROW impacts	
Cannon DAR		Non-standard cross slope in mainlanes because of keeping existing pavement (<1.5%)	301.2
SD NB Sta 802+20 to 823+20		Non-standard lane widths (3 - 3.3 m) & inside shoulder(2.4 m) due to ROW impact	301.1, 302.1
Chinquapin Avenue and Tamarack Avenue	798-809	NB inside general-purpose lanes 3.3m following the NB off ramp and through Tamarack Ave. OC	301.1
Chinquapin Avenue and Tamarack Avenue	798-809	NB HOV shoulder lane 2.4m	302.1
Chinquapin Avenue and Tamarack Avenue	798-809	Interchange spacing between Tamarack Ave. and Carlsbad Village Dr.	501.3
Agua Hedionda	792-798	Non-standard slope 2:1	304.1
Tamarack R1 (NB on-ramp)		Non-standard vertical clearance, stopping sight distance	309.2, 201.3
Tamarack R1 (NB on-ramp)		Non-standard design speed before the gore	504.2
Tamarack R1 (NB on-ramp)		Non-standard horizontal clearance to fixed object	309.1(2)
Chestnut Avenue	809-811	NB outside shoulder width 1.2, NB HOV shoulder lane 2.4m	302.1, 302.1
Carlsbad Village Dr.	809-811	NB inside general-purpose lanes 3.3m	301.1
Carlsbad Village Dr.	809-811	NB outside shoulder width 1.2 before NB off ramp	302.1
Carlsbad Village Dr.	809-811	Interchange spacing between Tamarack Ave. and Carlsbad Village Dr. 1.35Km	501.3
Carlsbad Village Dr.	809-811	Interchange spacing between Carlsbad Village Dr. and Las Flores Dr. 0.911Km	501.3
Carlsbad Village R1 (NB on-ramp)		Non-standard design speed before the gore	504.2
Carlsbad Village R1 (NB on-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
Carlsbad Village R3 (SB on-ramp)		Non-standard horizontal clearance to ROW	309.1
Carlsbad Village R3 (SB on-ramp)		Non-standard design speed after the gore	504.2
Las Flores Dr.	820-829	NB inside three general-purpose lanes 3.3m between NB off ramp and Las Flores OC	301.1
Las Flores Dr.	820-829	NB HOV shoulder lane 2.4m.	302.1
Las Flores Dr.	820-829	SB outside shoulder width after the SB onramp 2.4m	302.1
Las Flores R1 (NB on-ramp)		Non-standard ramp configuration due to weaving length problem	
Las Flores R1 (NB on-ramp)		Non-standard design speed before the gore	504.2
Las Flores R2 (NB off-ramp)		Non-standard lateral clearance to wall	309.4
Las Flores R3 (SB on-ramp)		Non-standard design speed after the gore ( < 75MPH )	504.2
Las Flores R3 (SB on-ramp)		Non-standard ramp configuration due to ROW impact.	
Las Flores R4 (SB off-ramp)		Non-standard design speed after the gore	504.2
SR-78	830-835	Interchange spacing between Las Flores Drive and SR-78 0.85Km	501.3
SR-78 Ramps	830-835	Distance between successive exits NB to WB and NB to EB 200m	504.3
SR-78 R1 (WB to NB on-ramp)		Non-standard design speed on the curve due to ROW impact.	504.2

<b>10+4 with Buffer</b>			
<b>Non-standard Features/Design Exceptions (cont.)</b>			
<b>LOCATIONS</b>	<b>STATION</b>	<b>DESCRIPTION</b>	<b>HDM INDEX</b>
SR-78 R2 (NB to WB off-ramp)		Non-standard geometric curve for the loop ramp(35 m)	
SR-78 R2 (NB to WB off-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
SR-78 R3 (NB to EB off-ramp)		Non-standard connector configuration in the east side due to weaving length problem.	
SR-78 R4 (SB on-ramp)		Non-standard connector configuration due to weaving length problem.	
SR-78 R4 (SB on-ramp)		Non-standard design speed after the gore	504.2
SR-78 R4 (SB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
SR-78 R5 (SB off-ramp)		Non-standard design speed after the gore	504.2
Cassidy St.	835-841	Non-standard lane width, shoulder width, horizontal clearance, median width to keep Soto St. in place.	301.1, 302.1, 309.1, 305.1
Cassidy St.	835-841	Vertical curve length	204.4
Cassidy St.	835-841	Interchange spacing between SR-78 and Cassidy St.; between Cassidy St. and California St.	501.3
Cassidy Ramps	835-841	Check for stopping and decision sight distance standards.	201.3, 201.7
Cassidy Ramps	835-841	Check for vertical curve length	204.4
Cassidy R2 (SB on-ramp)		Non-standard ramp configuration due to weaving length problem	
Cassidy R2 (SB on-ramp)		Non-standard design speed after the gore	504.2
SD NB Sta 840+00 to 843+00		Non-standard lane widths (3 - 3.3 m) & shoulders (1.2 m) due to ROW impact	301.1, 302.1
California St.	841-848	Shoulder width, horizontal clearance (as Soto St. shift to the east providing more room for freeway widening)	302.1, 309.1
California St.	841-848	Median width, vertical curve length, (between Cassidy St. and California St.)	305.1, 204.4
California St.	841-848	Interchange spacing (between California and Cassidy St. and between California St. and Oceanside Blvd.)	501.3
California St.	841-848	Contrast surface treatment	704.1
California St. Ramps	841-848	Check stopping sight distance and vertical curve length	201.3, 204.4
California NB on-ramp		Non-standard design speed before the gore	504.2
Loma Alta Creek Bridge	849-850	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Oceanside Blvd.	848-859	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Oceanside Blvd. Ramps	848-859	Lane drop taper (at modified Oceanside Blvd. SB onramp)	504.3
Oceanside Blvd. Ramps	848-859	Shoulder widths	302.1
Oceanside Blvd. Ramps	848-859	Check vertical curve length, stopping sight distance and horizontal clearance	204.4, 201.3, 309.1
Oceanside R2 (NB off-ramp)		Non-standard geometric curve for the loop ramp( 37 m < 40 m )	
Oceanside R2 (NB off-ramp)		Non-standard design speed after the gore	504.2
Oceanside R3 (SB on-ramp)		Non-standard superelevation	504.3(4)
Oceanside R3 (SB on-ramp)		Non-standard taper to make lane drop	504.3
Oceanside R3 (SB on-ramp)		Non-standard design speed after the gore	504.2
Oceanside DAR		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2
Brooks St.	859-861	Shoulder width, horizontal clearance, vertical curve length (check if any), and median width	302.1, 309.1, 204.4, 305.1
Mission Avenue	861-872	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Mission Avenue	861-872	Median width, interchange spacing between I-5/Mission Ave. and I-5/SR-76 Interchanges	305.1, 501.3
Mission R1 (NB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
Mission R1 (NB on-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
Mission R2 (NB off-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
Mission R3 (SB on-ramp)		Non-standard superelevation	504.3(4)
Mission R4 (SB off-ramp)		Non-standard design speed after the gore	504.2
Neptune Way/Eight St. Overcrossing	874-875	Non-standard horizontal clearance	201.3
SR-76 R1 (NB on-ramp)		Non-standard taper to make lane drop	504.3
SR-76 R1 (NB on-ramp)		Non-standard design speed before the gore	504.2
SR-76 R2 (NB off-ramp)		Non-standard superelevation	504.3(4)
SR-76 R2 (NB off-ramp)		Non-standard design speed curves.	504.2
SD SB Sta 874+00 to 878+00		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2

<b>10+4 with Buffer</b>			
<b>Non-standard Features/Design Exceptions (cont.)</b>			
LOCATIONS	STATION	DESCRIPTION	HDM INDEX
Harbor R1 (NB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
Harbor R1 (NB on-ramp)		Non-standard design speed before the gore	504.2
Distance between Harbor R3 and R2		Non-standard distance between two off-ramps.	501.3
Harbor R3 (NB to EB off-ramp)		Non-standard lane drop taper	504.3
Harbor R3 (NB to EB off-ramp)		Non-standard superelevation	504.3(4)
Harbor R3 (NB to EB off-ramp)		Non-standard deceleration lane	403.5
Harbor R4 (SB on-ramp)		Non-standard taper to make lane drop	504.3
Entire of the project		Non-standard shoulders in various locations where traffic sign posts will be installed.	302.1

<b>8+4 with Barrier</b>			
<b>Non-standard Features/Design Exceptions</b>			
LOCATIONS	STATION	DESCRIPTION	HDM INDEX
Genesee_NB -G1M	491_497	Non-standard Decision Sight Distance, Non-standard lengths 3 vertical curves	
Genesee_NB -R1B	493	Non-standard Decision Sight Distance	
Genesee_NB- R1B	494_499	Non-standard curve lengths (3 vertical curves) , Non-standard Sopping sight distance, Design Speed, Decision Sight Distance	
Genesee_SB_G4B	492_498	Non-standard Decision Sight Distance (2 vertical curves)	
Genesee_SB_R2M	495_500	Non-standard Decision Sight Distance	
Entire of the project		Multiple cross slopes for the mainlanes due to hydroplaning problems.	301.2
Entire of the project		Pavement structural	612.2
From Sorrento Valley to Del Mar Heights		Non-standard lane widths and shoulder widths(both sides- due to sign structures, ROW avoid impacts).	301.1, 302.1
From Sorrento Valley to Del Mar Heights		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2
Genesee	518-520	Non-standard outer separation	310.2
Genesee	518-520	Non-standard stopping sight distance, median width, superelevation	201.3, 305.1, 504.3(4)
Genesee	518-520	Non-standard horizontal clearance to fixed object	309.1
5/805 Merge		Non-standard lane drop (too short 2/3 WV)	504.4
5/805 Merge		Non-standard decision sight distance (110mph)	201.7
Carmel Valley SB on-ramp		Non-standard superelevation for the curve on the gore section. (does not match bridge)	504.3(4)
Carmel Valley SB on-ramp		Non-standard design speed after the gore	504.2
Carmel Valley SB on-ramp		Non-standard design for CHP enforcement path	
Carmel Mountain/56		Non-standard interchange spacing	501.3
Del Mar Heights	549-576	Non-standard lane widths and shoulder widths(both sides).	301.1, 302.1
Del Mar Heights	549-576	Non-standard horizontal clearance to fixed object	309.1
Del Mar Heights R4 (WB to SB on-ramp)		Non-standard taper to make lane drop (20:1 < 30:1)	504.3
Del Mar Heights R4 (WB to SB on-ramp)		Non-standard design speed after the gore (25 design < 50 MPH)	504.2
Via De La Valle		Non-standard lane and shoulder width on SB direction.	301.1, 302.1
Via De La Valle R4 (EB to SB on-ramp)		Non-standard superelevation to match city street @ its termini	504.3
Via De La Valle R5 (WB to SB on-ramp)		Non-standard design speed after the gore	504.2
Lomas Santa Fe	602-621	Need to check for stopping sight distance and vertical curve length.	201.3, 204.4
Lomas Santa Fe	602-621	Minimum distance (curb return to curb return) between ramp intersections and local road intersections (less than 125m or 165 m) (Lomas Santa Fe NB off-ramp and driveway access to Ross shopping center; Lomas Santa Fe NB on-ramp and Santa Helena; Lomas Santa Fe SB off-ramp Solana Hill Dr.; Lomas Santa Fe SB on-ramp and Solana Hill Dr.)	504.3
Lomas Santa Fe	602-621	Median planting to plant oleanders back in median along horizontal curve between Lomas Santa Fe and Manchester Ave.	902.1
Lomas Santa Fe	602-621	Non-standard interchange spacing between Lomas Santa Fe Dr. and Manchester Ave. 1.4km	501.3

<b>8+4 with Barrier Non-standard Features/Design Exceptions (cont.)</b>			
<b>LOCATIONS</b>	<b>STATION</b>	<b>DESCRIPTION</b>	<b>HDM INDEX</b>
Lomas Santa Fe Ramps	602-621	Check stopping sight distance and vertical curve length, shoulder width, and horizontal clearance	201.3, 204.4, 302.1, 309.1
Lomas Santa Fe Ramps	602-621	Non-standard shoulder width at spot locations of the modified Lomas Santa Fe NB and SB off-ramps	302.1
Lomas Santa Fe Local Street	602-621	Minimum distance (curb return to curb return) between ramp intersections and local road intersections (less than 125m or 165 m) (Lomas Santa Fe NB off-ramp and driveway access to Ross shopping center; Lomas Santa Fe NB on-ramp and Santa Helena; Lomas Santa Fe SB off-ramp Solana Hill Dr.; Lomas Santa Fe SB on-ramp and Solana Hill Dr.)	504.3
Lomas Santa Fe Local Street	602-621	Median planting to plant oleanders back in median along horizontal curve between Lomas Santa Fe and Manchester Ave.	902.1
Lomas Santa Fe Local Street	602-621	Non-standard interchange spacing between Lomas Santa Fe Dr. and Manchester Ave. 1.4km	501.3
Manchester Ave.	621-640	Shoulder width, horizontal clearance	302.1, 309.1
Manchester Ave.	621-640	Need to check for stopping sight distance and minimum distance (curb return to curb return) between ramp intersections and local road interactions (89m between the SB off-ramp/Manchester Ave. intersection and Ocean Cove Dr./Manchester Ave. intersection; 30m between the NB on-ramp/Manchester Ave intersection and the proposed Manchester Ave/access road to DAR park-and-ride facility intersection).	201.3, 504.3
Manchester Ave. Ramps	621-640	Need to check vertical curve length, stopping sight distance, shoulder width, and horizontal clearance.	204.4, 201.3, 302.1, 309.1
Birmingham Dr.	640-657	Shoulder width, horizontal clearance, interchange spacing between Birmingham Dr. and Santa Fe Dr.	302.1, 309.1, 501.3
Birmingham Dr.	640-657	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
Birmingham Dr. Ramps	640-657	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
MacKinnon Ave.	654-656	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
Santa Fe Dr	654-656	Shoulder width, horizontal clearance, interchange spacing between Birmingham Dr. and Santa Fe Dr.; between Santa Fe Dr. and Encinitas Blvd.	302.1, 309.1, 501.3
Santa Fe Dr	654-656	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
Santa Fe Dr Ramps	654-656	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
Santa Fe Dr Ramps	654-656	Distance between ramp intersections and local road intersections less than 125m or 165 m (Santa Fe Dr. NB on-ramp and Regal Rd.; Santa Fe Dr. DB off-ramp and driveway access to Scripps Memorial Hospital; Santa Fe Dr. SB on-ramp and driveway access to Vons shopping center)	504.3
Requeza St.	671-673	Shoulder width (NB and SB HOV inside shoulder widths = 1.5 m), horizontal clearance (NB and SB HOV inside shoulder adjacent to concrete barriers = 1.5m)	302.1, 309.1
Requeza St.	671-673	Need to check for stopping sight distance and vertical curve length.	201.3, 204.4
Encinitas Blvd.	670-687	Shoulder width, horizontal clearance, interchange spacing between Santa Fe Dr. and Encinitas Blvd.	302.1, 309.1, 501.3
Encinitas Blvd.	670-687	Need to check for stopping sight distance and vertical curve length.	201.3, 204.4
Encinitas Blvd.	670-687	Distance between ramp intersection and local road intersection (less than 125m or 165m) (Encinitas Blvd. NB on-ramp and Saxony Rd.; Encinitas Blvd NB off-ramp and Calle Magdalena; Encinitas Blvd. SB off-ramp and driveway to Petco Shopping Center; Encinitas Blvd. SB on-ramp and drive access to Radisson Inn Hotel)	504.3
Encinitas Blvd. Ramps	670-687	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
Encinitas Blvd. Ramps	670-687	Distance between ramp intersection and local road intersection (less than 125m or 165m) (Encinitas Blvd. NB on-ramp and Saxony Rd.; Encinitas Blvd NB off-ramp and Calle Magdalena; Encinitas Blvd. SB off-ramp and driveway to Petco Shopping Center; Encinitas Blvd. SB on-ramp and drive access to Radisson Inn Hotel)	504.3
Leucadia Blvd.	687-708	Shoulder width, horizontal clearance	302.1, 309.1
Leucadia Blvd.	687-708	Need to check for stopping sight distance and vertical curve length.	201.3, 204.4
Leucadia Blvd. Ramps	687-708	Shoulder width, horizontal clearance	302.1, 309.1
Leucadia Blvd. Ramps	687-708	Need to check for stopping sight distance and vertical curve length.	201.3, 204.4
Leucadia Blvd. Ramps	687-708	Distance between ramp intersections and local road intersection (less than 125m or 165m) (Leucadia Blvd NB off-ramp and Clark Ave; Leucadia Blvd. NB on-ramp and Urania Ave; Leucadia Blvd. SB off-ramp and Orpheus Ave; Leucadia Blvd. SB on-ramp and Orpheus Ave.	504.3
La Costa Ave	708-731	Shoulder width, horizontal clearance	302.1, 309.1
La Costa Ave	708-731	Need to check for stopping sight distance and vertical curve length	201.3, 204.4
La Costa Ave Ramps	708-731	Shoulder width.	302.1
La Costa Ave Ramps	708-731	Need to check vertical curve length and stopping sight distance.	204.4, 201.3

<b>8+4 with Barrier Non-standard Features/Design Exceptions (cont.)</b>			
<b>LOCATIONS</b>	<b>STATION</b>	<b>DESCRIPTION</b>	<b>HDM INDEX</b>
La Costa Ave Ramps	708-731	Distance between ramp intersection and local road intersection (less than 125m or 165m) (La Costa Ave NB off-ramp and Piraeus St.; La Costa Ave. NB on-ramp and driveway access to Park and Ride facility)	504.3
Palomar Airport Rd.	758-775	NB HOV shoulder width 2.4m	302.1
Canon Rd. Ramps and DAR	775-796	SB off ramp outside shoulder with 1.2m	302.1
Chinquapin Ave	798-809	NB inside three general-purpose lanes 3.3m following the NB off ramp and through Tamarack Ave. OC	301.1
Chinquapin Ave.	798-809	NB HOV shoulder lane 2.4m	302.1
Chinquapin Ave.	798-809	Interchange spacing between Tamarack Ave and Carlsbad Village Dr. 1.35km	501.3
Chestnut Ave.	809-811	NB outside shoulder width 1.2m, NB HOV shoulder lane 2.4m	302.1, 302.1
Carlsbad Village Dr.	811-820	NB inside three general-purpose lanes 3.3m. NB outside shoulder width before the NB off-ramp 1.2m.	301.1, 302.1
Carlsbad Village Dr.	811-820	Interchange spacing between Tamarack Ave and Carlsbad Village Dr. 1.35km	501.3
Carlsbad Village Dr.	811-820	Interchange spacing between Carlsbad Village Dr. and Las Flores Dr. (0.911km)	501.3
Las Flores Dr.	821-829	NB inside three general-purpose lanes 3.3m between NB off ramp and Las Flores OC	301.1
Las Flores Dr.	821-829	NB HOV shoulder lane 2.4m.	302.1
Las Flores Dr.	821-829	SB outside shoulder width after the SB onramp 2.4m	302.1
Las Flores Dr. Ramps	820-829	NB on-ramp grade 8.1% descending	504.2
Las Flores Dr. Ramps	820-829	SB off-ramp grade 8.6% ascending	504.2
I-5/SR-78 Interchange	830-835	Interchange spacing between Las Flores Dr. and SR-78 interchange 0.85km	501.3
I-5/SR-78 interchange	830-835	Distance between successive exits NB to WB and NB to EB 200m	504.3
SR-78	830-835	Interchange spacing between Las Flores Drive and SR-78 0.85Km	501.3
SR-78 Ramps	830-835	Distance between successive exits NB to WB and NB to EB 200m	504.3
SR-78 R1 (WB to NB on-ramp)		Non-standard design speed on the curve due to ROW impact.	504.2
SR-78 R2 (NB to WB off-ramp)		Non-standard geometric curve for the loop ramp(35 m)	
SR-78 R2 (NB to WB off-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
SR-78 R3 (NB to EB off-ramp)		Non-standard connector configuration in the east side due to weaving length problem.	
SR-78 R4 (SB on-ramp)		Non-standard connector configuration due to weaving length problem.	
SR-78 R4 (SB on-ramp)		Non-standard design speed after the gore	504.2
SR-78 R4 (SB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
SR-78 R5 (SB off-ramp)		Non-standard design speed after the gore	504.2
Cassidy St.	835-841	Non-standard lane width, shoulder width, horizontal clearance, median width to keep Soto St. in place.	301.1, 302.1, 309.1, 305.1
Cassidy St.	835-841	Vertical curve length	204.4
Cassidy St.	835-841	Interchange spacing between SR-78 and Cassidy St.; between Cassidy St. and California St.	501.3
Cassidy Ramps	835-841	Check for stopping and decision sight distance standards.	201.3, 201.7
Cassidy Ramps	835-841	Check for vertical curve length	204.4
Cassidy R2 (SB on-ramp)		Non-standard ramp configuration due to weaving length problem	
Cassidy R2 (SB on-ramp)		Non-standard design speed after the gore	504.2
SD NB Sta 840+00 to 843+00		Non-standard lane widths (3 - 3.3 m) & shoulders (1.2 m) due to ROW impact	301.1, 302.1
California St.	841-848	Shoulder width, horizontal clearance (as Soto St. shift to the east providing more room for freeway widening)	302.1, 309.1
California St.	841-848	Median width, vertical curve length, (between Cassidy St. and California St.)	305.1, 204.4
California St.	841-848	Interchange spacing (between California and Cassidy St. and between California St. and Oceanside Blvd.)	501.3
California St.	841-848	Contrast surface treatment	704.1
California St. Ramps	841-848	Check stopping sight distance and vertical curve length	201.3, 204.4
California NB on-ramp		Non-standard design speed before the gore	504.2
Loma Alta Creek Bridge	849-850	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Oceanside Blvd.	848-859	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Oceanside Blvd. Ramps	848-859	Lane drop taper (at modified Oceanside Blvd. SB onramp)	504.3
Oceanside Blvd. Ramps	848-859	Shoulder widths	302.1

<b>8+4 with Barrier</b>			
<b>Non-standard Features/Design Exceptions (cont.)</b>			
<b>LOCATIONS</b>	<b>STATION</b>	<b>DESCRIPTION</b>	<b>HDM INDEX</b>
Oceanside Blvd. Ramps	848-859	Check vertical curve length, stopping sight distance and horizontal clearance	204.4, 201.3, 309.1
Oceanside R2 (NB off-ramp)		Non-standard geometric curve for the loop ramp( 37 m < 40 m )	
Oceanside R2 (NB off-ramp)		Non-standard design speed after the gore	504.2
Oceanside R3 (SB on-ramp)		Non-standard superelevation	504.3(4)
Oceanside R3 (SB on-ramp)		Non-standard taper to make lane drop	504.3
Oceanside R3 (SB on-ramp)		Non-standard design speed after the gore	504.2
Oceanside DAR		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2
Brooks St.	859-861	Shoulder width, horizontal clearance, vertical curve length (check if any), and median width	302.1, 309.1, 204.4, 305.1
Mission Avenue	861-872	Shoulder width, horizontal clearance, vertical curve length (check if any)	302.1, 309.1, 204.4
Mission Avenue	861-872	Median width, interchange spacing between I-5/Mission Ave. and I-5/SR-76 Interchanges	305.1, 501.3
Mission R1 (NB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
Mission R1 (NB on-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
Mission R2 (NB off-ramp)		Non-standard superelevation to match city street @ its termini	504.3(4)
Mission R3 (SB on-ramp)		Non-standard superelevation	504.3(4)
Mission R4 (SB off-ramp)		Non-standard design speed after the gore	504.2
Neptune Way/Eight St. Overcrossing	874-875	Non-standard horizontal clearance	201.3
SR-76 R1 (NB on-ramp)		Non-standard taper to make lane drop	504.3
SR-76 R1 (NB on-ramp)		Non-standard design speed before the gore	504.2
SR-76 R2 (NB off-ramp)		Non-standard superelevation	504.3(4)
SR-76 R2 (NB off-ramp)		Non-standard design speed curves.	504.2
SD SB Sta 874+00 to 878+00		Non-standard cross slope in mainlanes because of keeping existing pavement	301.2
Harbor R1 (NB on-ramp)		Non-standard superelevation for the curve on the gore section.	504.3(4)
Harbor R1 (NB on-ramp)		Non-standard design speed before the gore	504.2
Distance between Harbor R3 and R2		Non-standard distance between two off-ramps.	501.3
Harbor R3 (NB to EB off-ramp)		Non-standard lane drop taper	504.3
Harbor R3 (NB to EB off-ramp)		Non-standard superelevation	504.3(4)
Harbor R3 (NB to EB off-ramp)		Non-standard deceleration lane	403.5
Harbor R4 (SB on-ramp)		Non-standard taper to make lane drop	504.3
Entire of the project		Non-standard shoulders in various locations where traffic sign posts will be installed.	302.1



The following tables for the Preferred Alternative (refined 8+4 with buffer) are provided for the reviewer's information and ease of review. The tables summarize the Mandatory and Advisory Design Exceptions for the 8+4 with Buffer Alternative. They are included consistent with NEPA guidance, which encourages efficiency in the environmental review process by allowing lead agencies to decide whether to develop the preferred alternative to a higher level of design detail (23 USC 139 [f][4][D]) than other alternatives, thereby facilitating the development of specific design or mitigation measures.

## Mandatory

Horizontal Stopping Sight Distance (Index 201.1)						
Location and Obstruction	Begin Non-Standard Horizontal SSD (Station)	End Non-Standard Horizontal SSD (Station)	Standard Design Speed	Provided Design Speed	Standard SSD	Provided SSD
	English (Metric)		ft	mph	ft	ft
Between Genesee Ave. and I-5/805 Merge (Median Barrier for SB Traffic)	1608+05.58 "SD-5" (490+13.64)	1617+53.52 "SD-5" (493+02.47)	75	68	840	717
I-5/805 Merge (Outside Barrier for SB Traffic)	1638+49.19 "SDL" (499+41.23)	1643+60.70 "SDL" (500+97.14)	75	55	840	507
I-5/805 Merge (Outside Barrier for SB Traffic)	1639+00.70 "SDH" (499+56.93)	1660+87.77 "SDH" (506+23.55)	75	63	840	633
I-5/805 Merge (Inside Barrier for NB Traffic)	1640+33.56 "SDR" (499+97.43)	1646+45.78 "SDR" (501+84.03)	75	62	840	613
Between I-5/805 Merge and Carmel Mountain Rd. (Median Barrier for NB Traffic)	1689+45.60 "SD-5" (514+94.72)	1701+54.93 "SD-5" (518+63.22)	75	62	840	622
Between I-5/805 Merge and Carmel Mountain Rd. (Outside Barrier at Existing Light Pedestal for SB Mainline Traffic)	1691+25.48 "SB" (538+35)	1696+64.70 "SB" (539+99)	75	57	840	543
Between I-5/805 Merge and Carmel Mountain Rd. (Median Barrier for SB Traffic)	1708+04.71 "SD-5" (520+61.28)	1737+82.22 "SD-5" (529+68.82)	75	62	840	617
Ramps						
Just South of Carmel Mountain Rd. (Outside Barrier for NB Mainline Traffic)	1711+87.20 "NB" (544+64)	1718+37.04 "NB" (546+62)	75	64	840	654
Just North of Carmel Mountain Rd. (Outside Barrier for NB Mainline Traffic)	1715+01.58 "NB" (545+59)	1722+65.56 "NB" (547+92)	75	71	840	768
I-5/SR 56 Junction (Median Barrier for SB Traffic)	1762+07.29 "SD-5" (537+07.98)	1772+43.75 "SD-5" (540+23.90)	75	66	840	669

### Horizontal Stopping Sight Distance (Index 201.1) (Continued)

Location and Obstruction	Begin Non-Standard Horizontal SSD (Station)	End Non-Standard Horizontal SSD (Station)	Standard Design Speed	Provided Design Speed	Standard SSD	Provided SSD
	English (Metric)		ft	mph	ft	ft
Between Via De La Valle and Lomas Santa Fe Dr. (Median Barrier for SB Traffic)	1959+20.55 "SD-5" (597+16.58)	1966+44.77 "SD-5" (599+37.33)	75	68	840	727
Between Lomas Santa Fe Dr. and Manchester Ave. (Median Barrier for NB Traffic)	2027+59.45 "SD-5" (618+01.20)	2046+23.02 "SD-5" (623+69.10)	75	62	840	622
Between Manchester Ave. and Birmingham Dr. (Median Barrier for SB Mainline Traffic)	2103+82.90 "SD-5" (641+24.71)	2111+37.59 "SD-5" (643+54.74)	75	70	840	759
Between Manchester Ave. and Birmingham Dr. (Median Barrier for NB Traffic)	2122+41.14 "SD-5" (646+91.23)	2136+30.82 "SD-5" (651+14.67)	75	68	840	718
Between Santa Fe Dr. and Requeza St. (Median Barrier for SB Traffic)	2193+91.78 "SD-5" (668+70.75)	2204+59.91 "SD-5" (671+96.18)	75	68	840	718
Just South of La Costa Ave. (Median Barrier for NB Traffic)	2352+13.94 "SD-5" (716+93.35)	2362+26.05 "SD-5" (720+01.70)	75	68	840	718
Between Cannon Rd. and Chinquapin Ave. (Median Barrier for SB Traffic)	2592+93.25 "SD-5" (790+32.58)	2600+04.71 "SD-5" (792+49.44)	75	63	840	625
Between Cannon Rd. and Chinquapin Ave. (Median Barrier for NB Traffic)	2610+24.00 "SD-5" (795+60.12)	2618+33.83 "SD-5" (798+06.95)	75	55	840	509
Just South of Mission Ave. (Median Barrier for NB traffic)	2825+77.30 "SD-5" (861+29.73)	2843+03.40 "SD-5" (866+55.68)	75	63	840	622
Just South of Neptune Way to North of I-5/SR 76 Junction (Median Barrier for SB Traffic)	2866+59.29 "SD-5" (873+73.75)	2883+92.35 "SD-5" (879+01.99)	75	63	840	624
Genesee Ave NB On-Ramp (Inside Barrier)	1628+16.03 "G1M" (496+26.33)	1631+95.45 "G1M" (497+41.97)	50	46	430	380
Via De La Valle NB Off-Ramp (Outside Barrier)	1935+54.6 "VV3M" (589+95.44)	1938+92.58 "VV3M" (590+98.46)	46	43	375	332
Via De La Valle SB On-Ramp (Outside Barrier)	1942+08.37 "VV4M" (591+94.71)	1944+39.68 "VV4M" (592+65.21)	38	32	276	223

<b>Horizontal Stopping Sight Distance (Index 201.1) (Continued)</b>						
<b>Location and Obstruction</b>	<b>Begin Non-Standard Horizontal SSD (Station)</b>	<b>End Non-Standard Horizontal SSD (Station)</b>	<b>Standard Design Speed</b>	<b>Provided Design Speed</b>	<b>Standard SSD</b>	<b>Provided SSD</b>
	<b>English (Metric)</b>		<b>ft</b>	<b>mph</b>	<b>ft</b>	<b>ft</b>
Lomas Santa Fe NB On-Ramp (Outside Barrier)	2007+53.59 "LSF-1M" (611+89.69)	2011+16.68 "LSF-1M" (613+00.36)	50	45	430	358
Manchester Ave SB Off-Ramp (Soundwall S633)	2071+59.79 "M-4M" (631+42.3)	2075+36.86 "M-4M" (632+57.23)	46	46	377	373
Manchester Ave NB On-Ramp (Outside Barrier)	2071+27.29 "M-1M" (631+32.4)	2073+85.38 "M-1M" (632+11.06)	45	36	366	255
Manchester Ave NB On-Ramp (Inside Barrier-worst case)	2066+11.59 "M-1M" (629+75.21)	2067+47.64 "M-1M" (630+16.68)	33	22	227	134
Birmingham Dr NB On-Ramp (Outside Barrier)	2133+84.07 "BD-1M" (650+39.46)	2135+40.34 "BD-1M" (650+87.1)	25	24	150	145
Poinsettia Ln SB On-Ramp (Outside Barrier)	2428+50.2 "PL-3M" (740+20.74)	2432+64.31 "PL-3M" (741+46.96)	50	48	427	406
Palomar Airport Rd SB Off-Ramp (Outside Retaining Wall)	2521+46.62 "PA-5M" (768+54.29)	2525+69.89 "PA-5M" (769+83.3)	50	49	426	419
Cassidy St SB On-Ramp (Outside Retaining Wall)	2745+27.81 "CS1" (836+76.08)	2747+50.4 "CS1" (837+43.92)	50	32	430	218
Cassidy St SB Off-Ramp (Outside Barrier)	2749+73.71 "CS2" (838+11.99)	2751+59.61 "CS2" (838+68.65)	42	28	322	182
Oceanside Blvd NB On-Ramp (Outside Retaining Wall)	2800+24.95 "OB1M" (853+51.6)	2803+70.28 "OB1M" (854+56.86)	50	43	430	335
Mission Ave NB On-Ramp (Inside Barrier)	2840+02.91 "MSA-1M" (865+64.09)	2841+10.91 "MSA-1M" (865+97.01)	37	18	274	112
Mission Ave NB On-Ramp (Outside Retaining Wall)	2842+39.83 "MSA-1M" (866+36.3)	2844+89.76 "MSA-1M" (867+12.48)	50	33	430	228

<b>Horizontal Stopping Sight Distance (Index 201.1) (Continued)</b>						
Location and Obstruction	Begin Non-Standard Horizontal SSD (Station)	End Non-Standard Horizontal SSD (Station)	Standard Design Speed	Provided Design Speed	Standard SSD	Provided SSD
	English (Metric)	English (Metric)	ft	mph	ft	ft
Mission Ave SB Off-Ramp (Outside Retaining Wall)	2845+95.31 "MSA-4M" (867+44.65)	2849+42.66 "MSA-4M" (868+50.52)	46	43	374	337
SR-76 SB On-Ramp (Outside Barrier)	2867+75.3 "SR76-3" (874+09.11)	2871+56.78 "SR76-3" (875+25.39)	50	46	430	372
Harbor Dr NB Off-Ramp (Outside Retaining Wall)	2899+52.58 "HD3M" (883+77.55)	2903+29.23 "HD3M" (884+92.35)	50	46	430	369

<b>Lane Widths (Index 301.1)</b>				
Location	Begin Station	End Station	Standard Lane Width	Provided Lane Width
	English (Metric)	English (Metric)	ft	ft
I-5/805 Merge North to Del Mar Heights Rd.	1663+00 "SDL" (506+88)	1839+40 "SD-5" (560+65)	12	11*
I-5/805 Merge North to Carmel Valley Rd.	1680+36 "SD-5" (512+17)	1775+80 "SD-5" (541+26)	12	11*
Between Cassidy and California	2746+75 "SD-5" (837+21)	2773+75 "SD-5" (845+44)	12	11*

\*Outermost through lane = 12'

<b>Cross Slope - Widening (Index 301.3)</b>					
Location	Begin Station	End Station	Standard Cross Slope	Existing Cross Slope	Widening: Provided Cross Slope
	English (Metric)	English (Metric)	%	%	%
Entire Project (I-5 Widening)	1525+60 "SD-5" (465+00)	2945+53 "SD-5" (897+80)	1.50% to Match Exist	1.50%	3.00%



<b>Shoulder Width (Index 302.1)</b>						
<b>(HOV and Inside Mainline, 10 ft Standard Width)</b>						
<b>Location</b>	<b>Shoulder type*</b>	<b>Begin Station</b>	<b>End Station</b>	<b>Length</b>	<b>Standard Shoulder Width</b>	<b>Provided Width</b>
		English (Metric)	English (Metric)	ft	ft	ft
La Jolla Village Dr to Voigt DAR	SB HOV Left Shoulder	1532+58 "SD-5" (467+13)	1543+15 "SD-5" (470+35)	1057	10	10 to 0
La Jolla Village Dr to Voigt DAR	NB HOV Left Shoulder	1541+51 "SD-5" (469+85)	1545+50 "SD-5" (471+07)	399	10	10 to 6.74
Between Genesee Ave and Roselle St	NB HOV Left Shoulder	1600+00 "SD-5" (487+68)	1608+56 SD-5" (490+29)	856	10	5.6 to 10
Between Genesee Ave and Roselle St	SB HOV Left Shoulder	1602+60 "SD-5" (488+47)	1609+20 "SD-5" (490+49)	670	10	5 to 10
<b>Outside Shoulders, 10 ft Standard Width</b>						
I-5/805 Merge	SB HOV Left Shoulder	1631+71 "SDH" (497+35)	1645+94 "SDH" (501+68)	1422	10	5 to 10
I-5/805	SB HOV Left Shoulder	1543+13 "A" (470+35)	1670+56 "SD-5" (509+19)	1216	10	2 (@ column) to 10
I-5/805	NB HOV Left Shoulder	1545+00 "A" (470+92)	1670+70 "SD-5" (509+23)	1037	10	4 to 10
Carmel Mountain Road to Carmel Valley Rd.	SB HOV Left Shoulder	1701+27 "SD-5" (518+55)	1839+40 "SD-5" (560+65)	13813	10	1 (@ column) to 10
Carmel Mountain Road to Carmel Valley Rd.	NB HOV Left Shoulder	1709+82 "SD-5" (521+15)	1775+80 "SD-5" (541+26)	6598	10	2 (@ column) to 10
Between Manchester and Lomas Santa Fe	SB HOV Left Shoulder	2038+62 "SD-5" (621+37)	2048+70 "SD-5" (624+44)	1008	10	4.2 to 10
Between Manchester and Lomas Santa Fe	NB HOV Left Shoulder	2049+24 "SD-5" (624+61)	2055+50 "SD-5" (626+52)	626	10	4 to 10
Between Birmingham and Manchester	SB HOV Left Shoulder	2092+03 "SD-5" (637+65)	2101+43 "SD-5" (640+52)	940	10	4 to 10
Between Birmingham and Manchester	NB HOV Left Shoulder	2101+47 "SD-5" (640+53)	2103+59 "SD-5" (641+17)	212	10	9 to 10
Between Cassidy and California	NB HOV Left Shoulder	2746+75 "SD-5" (837+21)	2773+75 "SD-5" (845+44)	2700	10	4 to 10
North of Harbor Drive to End of Project	NB HOV Left Shoulder	2935+00 "SD-5" (894+59)	2945+05 "SD-5" (897+65)	1005	10	7.8 to 10
<b>Due to sign and light structures, 10 ft Standard Width</b>						
I-5/805 Merge	SB Right Shoulder	1636+80 "SDL" (498+90)	1649+60 "SDL" (503+80)	1266	10	4 to 10
Between Carmel Mountain Rd. and I-5/SR 56	SB Right Shoulder	1740+76 "WS" (530+58)	1745+75 "WS" (532+10)	499	10	10 to 8.5
Carmel Valley Rd/ SR-56	SB Right Shoulder	1763+62 "SD-5" (537+55)	1768+00 "SD-5" (538+89)	438	10	1 (@ column) to 10
Carmel Valley Rd/ SR-56	NB Right Shoulder	1764+50 "SD-5" (537+82)	1767+00 "SD-5" (538+58)	250	10	5.5 (@ column) to 10



<b>Shoulder Width (Index 302.1)</b>						
<b>HOV and Inside Mainline, 10 ft Standard Width</b>						
<b>Location</b>	<b>Shoulder type*</b>	<b>Begin Station</b>	<b>End Station</b>	<b>Length</b>	<b>Standard Shoulder Width</b>	<b>Provided Width</b>
		English (Metric)	English (Metric)	ft	ft	ft
Between Via de la Valle and Lomas Santa Fe	NB Right Shoulder	1980+82 "SD-5" (603+75)	1987+78 "SD-5" (605+88)	696	10	3 (@ Conc Barrier) to 10
Between Cassidy and California	NB Right Shoulder	2746+75 "SD-5" (837+21)	2773+75 "SD-5" (845+44)	2700	10	4 (@ Ret Wall) to 10
Mission Ave	SB Right Shoulder	2837+08 "SD-5" (864+74)	2838+12 "SD-5" (865+06)	104	10	8 to 10
<b>Ramps</b>						
Leucadia Blvd. NB On-Ramp	Outside Shoulder Adjacent to Retaining Wall in Cut	2291+62 "LB-1M" (698+48)	2292+98 "LB-1M" (698+90)	130	10	8
Tamarack Ave. NB On-Ramp	Outside Shoulder Adjacent to Retaining Wall in Cut	2640+69 "TM-1M" (804+88)	2643+99 "SD-5" (805+89)	329	10	8
Converging-56 WB & I-5 SB Connector	Inside Shoulder of I-5 SB Bypass	1749+32 "WS" (533+19)	1760+38 "WS" (536+56)	1113	5	3.96 to 4.92
Converging-56 WB & I-5 SB Connector	Outside Shoulder of I-5 SB On-Ramp	1749+32 "WS" (533+19)	1760+38 "WS" (536+56)	1113	10	2.96 to 10
<b>Due to sign and light structures, 10 ft Standard Width</b>						
I-5/805 Merge	NB Mainline Right Shoulder	1669+66.30 "NB" (531+77)	1669+99.09 "NB" (531+87)	32.79	10	10 to 9.4
I-5/805 Merge	NB Mainline Right Shoulder	1672+89.09 "NB" (532+75.38)	1673+28 "NB" (532+87.24)	38.91	10	10 to 9.12
Between I-5/805 Merge and Carmel Mountain Rd.	SB Mainline Right Shoulder	1688+32.80 "SB" (537+45.82)	1706+64.73 "SB" (543+04.30)	1831.93	10	10 to 7.63
Between I-5/805 Merge and Carmel Mountain Rd.	NB Mainline Right Shoulder	1689+25.68 "NB" (537+74.21)	1689+72.77 "NB" (537+88.57)	47.09	10	10 to 9.07
Between I-5/805 Merge and Carmel Mountain Rd.	NB Mainline Right Shoulder	1692+48.08 "NB" (538+72.48)	1693+07.55 "NB" (538+90.61)	59.47	10	10 to 8.83
Between I-5/805 Merge and Carmel Mountain Rd.	NB Mainline Right Shoulder	1695+83.96 "NB" (539+74.86)	1696+27.63 "NB" (539+88.18)	43.67	10	10 to 9.11
Between I-5/805 Merge and Carmel Mountain Rd.	NB Mainline Right Shoulder	1699+15.44 "NB" (540+75.92)	1702+72.22 "NB" (541+84.70)	356.78	10	10 to 8.94
South of Carmel Mountain Rd.	NB HOV Left Shoulder	1703+20.04 "SD-5" (519+13.55)	1703+25.09 "SD-5" (519+15.09)	5.05	10	10 to 9.97
Between Carmel Mountain Rd. and I-5/SR 56 Junction	SB Mainline Right Shoulder	1713+54.99 "SB" (545+14.69)	1738+31.86 "WS" (529+84.06)	2476.87	10	10 to 7.68

\*Shoulder Type is based on directional of travel



<b>Minimum Horizontal Clearances</b>						
<b>To Fixed Objects- (Index 309.1(3)a and b)</b>						
<b>Location</b>	<b>Object Type</b>	<b>Direction</b>	<b>Begin Station</b>	<b>End Station</b>	<b>Standard Horizontal Clearance</b>	<b>Provided Horizontal Clearance (Provided Shoulder Width*)</b>
			<b>English (Metric)</b>	<b>English (Metric)</b>	<b>ft</b>	<b>ft</b>
La Jolla Village Dr to Voigt DAR	Existing and Proposed Inside Barrier	SB	1532+58 "SD-5" (467+13.03)	1543+15.30 "SD-5" (470+35.29)	10	10 to 0
La Jolla Village Dr to Voigt DAR	Existing Inside Barrier	NB	1541+51.30 "SD-5" (469+85.32)	1545+49.50 "SD-5" (471+06.70)	10	10 to 6.74
Between Genesee Ave. and Roselle Street	Inside Barrier	NB	1600+00 "SD-5" (487+68)	1608+56 "SD-5" (490+29)	10	10 to 5.6
Between Genesee Ave. and I-5/805 Merge	Inside Barrier	SB	1602+59.87 "SD-5" (488+47.21)	1609+20.29 "SD-5" (490+48.50)	10	10 to 5
I-5/805 Merge	Inside Barrier	SB	1631+70.65 "SDH" (497+34.51)	1645+94.49 "SDH" (501+68.19)	10	10 to 5
I-5/805 Merge	Outside Barrier	SB	1636+79.90 "SDL" (498+89.73)	1649+59.85 "SDL" (503+79.88)	10	4 to 10
I-805 Merge	Existing and Proposed Inside Barrier and Existing Overhead Sign Pedestals	SB	1543+13 "A" (470+35)	1670+55.89 "SD-5" (509+18.64)	10	2 to 10
I-805 Merge	Existing Inside Barrier and Existing Overhead Sign Pedestal	NB	1545+00 "A" (470+92)	1670+69.51 "SD-5" (509+22.79)	10	4 to 10
I-5/805 Merge	Existing Outside Barrier Light Pedestal	NB Mainline	1669+66.30 "NB" (531+77)	1669+99.09 "NB" (531+87)	10	10 to 9.4
I-5/805 Merge	Existing Outside Barrier Light Pedestal	NB Mainline	1672+89.09 "NB" (532+75.38)	1673+28 "NB" (532+87.24)	10	10 to 9.12
Between I-5/805 Merge and Carmel Mountain Rd.	Existing Outside Barrier and Light and Overhead Sign Pedestals	SB Mainline	1688+32.80 "SB" (537+45.82)	1706+64.73 "SB" (543+04.30)	10	10 to 7.63
Between I-5/805 Merge and Carmel Mountain Rd.	Existing Outside Barrier Light Pedestal	NB Mainline	1689+25.68 "NB" (537+74.21)	1689+72.77 "NB" (537+88.57)	10	10 to 9.07
Between I-5/805 Merge and Carmel Mountain Rd.	Existing Outside Barrier Light Pedestal	NB Mainline	1692+48.08 "NB" (538+72.48)	1693+07.55 "NB" (538+90.61)	10	10 to 8.83
Between I-5/805 Merge and Carmel Mountain Rd.	Existing Outside Barrier Light Pedestal	NB Mainline	1695+83.96 "NB" (539+74.86)	1696+27.63 "NB" (539+88.18)	10	10 to 9.11
Between I-5/805 Merge and Carmel Mountain Rd.	Existing Outside Barrier at Light and Overhead Sign Pedestals	NB Mainline	1699+15.44 "NB" (540+75.92)	1702+72.22 "NB" (541+84.70)	10	10 to 8.94
South of Carmel Mountain Rd. to North of Del Mar Heights Rd.	Inside Barrier	SB	1701+26.81 "SD-5" (518+54.65)	1839+40.03 "SD-5" (560+64.92)	10	10 to 1

<b>Minimum Horizontal Clearances (Continued)</b>						
<b>To Fixed Objects- (Index 309.1(3)a and b)</b>						
<b>Location</b>	<b>Object Type</b>	<b>Direction</b>	<b>Begin Station</b>	<b>End Station</b>	<b>Standard Horizontal Clearance</b>	<b>Provided Horizontal Clearance (Provided Shoulder Width*)</b>
			<b>English (Metric)</b>	<b>English (Metric)</b>	<b>ft</b>	<b>ft</b>
<b>To Fixed Objects- (Index 309.1(3)a and b)</b>						
South of Carmel Mountain Rd.	Existing Inside Barrier at Overhead Sign Pedestal	NB	1703+20.04 "SD-5" (519+13.55)	1703+25.09 "SD-5" (519+15.09)	10	10 to 9.97
Just South of Carmel Mountain Rd. to North of I-5/SR 56 Junction	Inside Barrier	NB	1709+81.47 "SD-5" (521+15.15)	1775+80.00 "SD-5" (51+26.38)	10	10 to 2
Between Carmel Mountain Rd. and I-5/SR 56 Junction	Existing Outside Barrier and Overhead Sign Pedestal	SB Mainline	1713+54.99 "SB" (545+14.69)	1738+31.86 "WS" (529+84.06)	10	10 to 7.68
Between Carmel Mountain Rd. and I-5/SR 56 Junction	Existing Outside Barrier	SB Mainline	1740+76.03 "WS" (530+58.48)	1745+74.54 "WS" (532+10.43)	10	10 to 8.5
I-5/SR 56 Junction	Outside Barrier	SB	1763+61.97 "SD-5" (537+55.13)	1767+99.93 "SD-5" (538+88.62)	10	1 to 10
I-5/SR 56 Junction	Outside Barrier	NB	1764+87.43 "SD-5" (537+93.37)	1766+84.63 "SD-5" (538+53.48)	10	9.69 to 5.5
Between Via de la Valle and Lomas Santa Fe Dr.	Outside Barrier	NB	1981+59.98 "SD-5" (603+99.16)	1987+00 "SD-5" (605+63.76)	10	10 to 3 (7.5 to 3)
Between Lomas Santa Fe Dr. and Manchester Ave.	Inside Barrier	SB	2038+62.04 "SD-5" (621+37.15)	2048+70.60 "SD-5" (624+44.56)	10	10 to 4.2
Between Lomas Santa Fe Dr. and Manchester Ave.	Inside Barrier	NB	2049+23.71 "SD-5" (624+60.75)	2055+49.87 "SD-5" (626+51.60)	10	10 to 4
Between Manchester Ave. and Birmingham Dr.	Inside Barrier	SB	2092+03.42 "SD-5" (637+65.20)	2101+43.53 "SD-5" (640+51.75)	10	10 to 4
Between Manchester Ave. and Birmingham Dr.	Inside Barrier	NB	2101+47.16 "SD-5" (640+52.85)	2103+59.21 "SD-5" (641+17.49)	10	10 to 8.96
South of Cassidy St. to North of California St.	Inside Barrier	NB	2746+74.94 "SD-5" (837+21.09)	2773+75 "SD-5" (845+44.07)	10	10 to 4
Between Cassidy St. and California St.	Outside MBGR, Retaining Wall and Barrier	NB	2755+24.89 "SD-5" (839+79.99)	2765+45.52 "SD-5" (842+91.07)	10	4.12 to 10 (3.94 to 9.02)
Just South of Mission Avenue	Outside Barrier	SB	2837+07.68 "SD-5" (864+74.10)	2838+11.94 "SD-5" (865+05.88)	10	8 to 10
<b>Ramps</b>						
La Jolla Village Dr NB Loop On-Ramp	Outside Retaining Wall in Cut	NB	1533+05 "LD2M" (467+27)	1534+88 "LD2M" (467+83)	10	9 to 10 (8)
Del Mar Hts NB On-Ramp	Outside Retaining Wall in Cut	NB	1839+72 "DEL-1M" (560+75)	1841+21 "DEL-1M" (561+20)	10	8.8 to 10 (4)



<b>Minimum Horizontal Clearances (Continued)</b>						
To Fixed Objects- (Index 309.1(3)a and b)						
Location	Object Type	Direction	Begin Station English (Metric)	End Station English (Metric)	Standard Horizontal Clearance ft	Provided Horizontal Clearance (Provided Shoulder Width*) ft
Santa Fe Drive NB Off-Ramp	Sound Wall	NB	2163+00 "SD-5" (659+40)	2173+00 "SD-5" (662+40)	10	8.8-10 (8)
Encinitas Blvd SB On-Ramp	Outside Retaining Wall in Cut	SB	2221+91 "ENB-3M" (677+24)	2222+07 "ENB-3M" (677+29)	10	8 to 10 (8)
Leucadia Blvd SB On-Ramp	Outside Retaining Wall in Cut	SB	2278+86 "LB3M" (694+60)	2280+87 "LB3M" (695+21)	10	9 to 10 (8)
Leucadia Blvd NB On-Ramp	Outside Retaining Wall in Cut	NB	2291+80 "LB1M" (698+54)	2292+97 "LB1M" (698+90)	10	9 to 10 (8 to 9.32)
Palomar Airport Rd NB On-Ramp	Outside Retaining Wall in Cut	NB	2521+63 "PA-1M" (768+59)	2522+28 "PA-1M" (768+79)	10	8.8 to 10 (8)
Tamarack Ave NB On-Ramp	Outside Retaining Wall in Cut	NB	2640+69 "TM-1M" (804+88)	2643+99 "SD-5" (805+89)	10	8.3 to 10 (8)
Las Flores SB On-Ramp	Outside Retaining Wall in Cut	SB	2698+95 "LF-3M" (822+64)	2700+34 "LF-3M" (823+06)	10	9 to 10 (8)
Cassidy St SB Off -Ramp	Soundwall	SB	2750+63 "CS2" (838+39)	2757+55 "SD-5" (840+50)	10	9.5 (8)

Index 309.1(3)(a) - Minimum Horizontal Clearance to all objects (barriers, MBGR, crash cushions, bridge rails, etc) shall be 10' Left and Right Shoulder Width

Index 309.1(3)(b) - Minimum Horizontal Clearance to Walls (Retaining Walls in Cut, Abutments, noise barriers) shall be 10'

\*Shoulder width only noted if different than Provided Horizontal Clearance

<b>Interchange Spacing (Index 501.3)</b>				
Southern Interchange	Northern Interchange	Standard Spacing	Existing Spacing	Provided Spacing
		5,280 ft or 10,560 ft	ft	ft
I-5/La Jolla Village Dr	Voigt DAR	5,280	N/A	3,544
Voigt DAR	I-5/Genesee Ave	5,280	N/A	1,975
I-5/Genesee Ave	I-5/Roselle St	5,280	5,308	5,259
I-5/Roselle St	I-5/I-805	10,560	2,363	2,436
I-5/I-805	I-5/Carmel Mtn Rd	10,560	3,450	3,103
I-5/Carmel Mtn Rd	I-5/SR-56	10,560	5,767	5,767
I-5/SR-56	I-5/Del Mar Heights Rd	10,560	6,433	6,433
I-5/Birmingham Dr	I-5/Santa Fe Dr	5,280	4,125	4,123
I-5/Santa Fe Dr	I-5/Encinitas Blvd	5,280	4,807	4,807

<b>Interchange Spacing (Index 501.3) (Continued)</b>				
<b>Southern Interchange</b>	<b>Northern Interchange</b>	<b>Standard Spacing</b>	<b>Existing Spacing</b>	<b>Provided Spacing</b>
		5,280 ft or 10,560 ft	ft	ft
I-5/Palomar Airport Rd	I-5/Cannon Rd	5,280	5,062	5,062
I-5/Tamarack Ave	I-5/Carlsbad Village Dr	5,280	4,431	4,431
I-5/Carlsbad Village Dr	I-5/Las Flores Dr	5,280	2,990	2,990
I-5/Las Flores Dr	I-5/SR-78	10,560	2,731	2,731
I-5/SR-78	I-5/Cassidy St	10,560	1,400	1,400
I-5/Cassidy St	I-5/California St	5,280	2,012	2,012
I-5/California St	I-5/Oceanside Blvd	5,280	2,512	2,512
I-5/Oceanside Blvd	I-5/Mission Ave	5,280	4,679	4,679
I-5/Mission Ave	I-5/SR-76	5,280	3,818	3,818
I-5/SR-76	I-5/Harbor Dr	5,280	2,453	2,453

<b>Isolated Off-Ramps and Partial Interchanges (Index 502.2)</b>				
<b>Location</b>	<b>Existing Interchange Configuration</b>	<b>Proposed Interchange Configuration</b>	<b>On-Ramp(s) required for full interchange?</b>	<b>Off-Ramp(s) required for full interchange?</b>
I-5/Roselle Street	Partial Interchange	Same as Existing	NB I-5 On-Ramp	SB I-5 Off-Ramp
I-5/SR-56	Partial Interchange	Same as Existing	WB SR-56 to NB I-5 Connector	SB I-5 to EB SR-56 Connector
I-5/SR-78	Partial Interchange	Removing EB to NB connector	EB SR-78 to NB I-5 Connector	N/A
I-5/Cassidy Street	Partial Interchange	Same as Existing	NB I-5 On-Ramp	NB I-5 Off-Ramp
I-5/California Street	Isolated On-Ramp	Same as Existing	SB I-5 On-Ramp	NB and SB I-5 Off-Ramp

<b>Access Control (Index 504.8)</b>	
<b>Location</b>	<b>Access Rights Opposite of Ramp Terminal?</b>
Roselle St SB On-Ramp	NO
Roselle St NB Off-Ramp	NO
Lomas Santa Fe NB Off-Ramp	NO
Santa Fe Dr NB Off-Ramp	NO
Leucadia Blvd NB Off-Ramp	NO
Las Flores SB Off-Ramp	NO
Vista Way (SR-78) SB On and Off-Ramps	NO
California St NB On-Ramp	NO
Oceanside Blvd SB On and Off-Ramp	NO
Oceanside Blvd NB On and Off-Ramp	NO
Mission Ave SB Off-Ramp	NO
SR-76 NB On and Off-Ramps	NO
Harbor Dr SB On and Off-Ramps	NO
Harbor Dr NB On and Off-Ramps	NO

<b>Access Control (Index 504.8)</b>		
<b>Location</b>	<b>Access Control Extend 50' Beyond?</b>	<b>Proposed Distance</b>
		<b>ft</b>
Birmingham Dr NB Off-Ramp	NO	10' to Dwy
Tamarack Ave NB On-Ramp	NO	39' to Pio Pico Dr.
Tamarack Ave NB Off-Ramp	NO	22' to Dwy
Tamarack Ave SB On-Ramp	NO	8' to Dwy
Tamarack Ave SB Off-Ramp	NO	70' to Dwy
Carlsbad Village Dr NB On-Ramp	NO	140' to Pio Pico Dr.
Carlsbad Village Dr NB Off-Ramp	NO	45' to Dwy
Carlsbad Village Dr SB On-Ramp	NO	0' to Dwy
Carlsbad Village Dr SB Off-Ramp	NO	37' to Dwy
Las Flores NB On-Ramp	NO	12' to Dwy
Las Flores NB Off-Ramp	NO	45' to Dwy
Las Flores SB On-Ramp	NO	10' to Tuttle St
Las Flores SB Off-Ramp	NO	39' to Dwy
Vista Way (SR-78) SB On-Ramp	NO	8' to Dwy
California St NB On-Ramp	NO	0' to Dwy
Oceanside Blvd NB On-Ramp	NO	285' to Dwy
Oceanside Blvd SB Off-Ramp	NO	50' to Dwy
Mission Ave NB On-Ramp	NO	24' to Dwy
Mission Ave SB Off-Ramp	NO	392' to Dwy
Harbor Dr SB Off-Ramp	NO	144' to Dwy

<b>Route Continuity (Index 502.3)</b>		
<b>Location</b>	<b>Existing Route Continuity</b>	<b>Provided Route Continuity</b>
I-5 and I-805	NO: through traffic on right	NO: through traffic on right



<b>Minimum Weaving Length (Index 504.7)</b>					
<b>Southern Interchange</b>	<b>Northern Interchange</b>	<b>Direction</b>	<b>Standard Weaving Length</b>	<b>Existing Weaving Length</b>	<b>Provided Weaving Length</b>
		<b>NB/SB</b>	<b>2,000 ft or 5,000 ft</b>	<b>ft</b>	<b>ft</b>
I-5/805	I-5/Carmel Mountain Rd.	NB	5,000	4,390	4,343
I-5/805	I-5/Carmel Mountain Rd.	SB	5,000	1,770	1,660
I-5/Carmel Mountain Rd.	I-5/SR-56	NB	5,000	2,910	3,300
I-5/Carmel Mountain Rd.	I-5/SR-56	SB	5,000	2,630	1,850
I-5/Manchester Ave.	Vista Point	SB	2,000	922	1,108
I-5/Birmingham Dr	I-5/Santa Fe Dr	NB	2,000	2,100	1,900
I-5/Birmingham Dr	I-5/Santa Fe Dr	SB	2,000	2,010	1,600
I-5/Carlsbad Village Dr	I-5/Las Flores Dr	NB	2,000	970	1,165
I-5/Carlsbad Village Dr	I-5/Las Flores Dr	SB	2,000	830	1,255
I-5/Las Flores Dr	I-5/SR-78	NB	5,000	950	840
I-5/Las Flores Dr	I-5/SR-78	SB	5,000	690	885
I-5/SR-78	I-5/Cassidy St	SB	5,000	1,270	1,050
I-5/California St	I-5/Oceanside Blvd	NB	2,000	1,510	1,136
I-5/Mission Ave	I-5/SR-76	NB	2,000	1,465	1,468
I-5/Mission Ave	I-5/SR-76	SB	2,000	1,075	1,218
I-5/SR-76	I-5/Harbor Drive	NB	2,000	1,240	1,540
I-5/SR-76	I-5/Harbor Drive	SB	2,000	1,470	1,322

<b>Horizontal Clearance to Noise Barrier (Index 1102.2)</b>				
<b>Minimum Standard Clearance, 10 feet</b>				
<b>Noise Barrier ID Number and Location</b>	<b>Begin Station</b>	<b>End Station</b>	<b>Provided Lateral Clearance</b>	<b>Placed on Safety Shape Barrier?</b>
	<b>English (Metric)</b>	<b>English (Metric)</b>	<b>ft</b>	<b>YES/NO</b>
S811 - SB, south of Carlsbad Village Drive near Oak Ave	2671+60 "SD-5" (814+30)	2672+50 "SD-5" (814+57)	8.8	YES, on retaining wall with barrier
S827 - SB, north of Las Flores Drive	2709+38 "SD-5" (825+82)	2709+56 "SD-5" (825+87)	4.3	YES
S841 - SB, north of Cassidy Street	2751+00 "SD-5" (838+50)	2756+00 "SD-5" (840+02)	9.3	YES, on retaining wall with barrier
S868 - NB, north of Mission Ave	2846+00 "SD-5" (867+46)	2848+26 "SD-5" (868+15)	8.8	YES, on retaining wall with



				barrier
--	--	--	--	---------

Superelevation (Index 202.2)						
Location	Direction	Begin Station	Radius (Direction)*	Standard Rate	Rate on Proposed Widening (Max)	Comfortable Speed
	NB/SB	English (Metric)	ft	ft/ft	ft/ft	in mph per HDM (fig. 202.2)
<b>I-5 Northbound Mainline at Voigt DAR</b>						
Between La Jolla Village Drive and Voigt Drive	NB	1555+50.30 "SD-5" (474+11.72)	10,004 (Left)	0.02	0.0302 (Adverse)	80
Between La Jolla Village Drive and Voigt Drive	NB	1563+94.40 "SD-5" (476+69)	10,004 (Left)	0.02	0.03 (Adverse)	80
Between Voigt Drive and Genesee Avenue	NB	1568+50.80 "SD-5" (478+08.13)	10,004 (Left)	0.02	0.0307 (Adverse)	80
Genesee Ave.	NB	1583+50.30 "SD-5" (482+65.18)	10,004 (Left)	0.02	0.0303 (Adverse)	80
<b>I-5 Southbound Mainline at Voigt DAR</b>						
Between La Jolla Village Drive and Voigt Drive	SB	1555+43 "SD-5" (474+09.51)	10,003.3 (Right)	0.02	0.0302 (Adverse)	80
Between La Jolla Village Drive and Voigt Drive	SB	1567+23.90 "SD-5" (477+69.45)	10,004 (Right)	0.02	0.03 (Adverse)	80
Between Voigt Drive and Genesee Avenue	SB	1572+14.80 "SD-5" (479+19.08)	10,004 (Right)	0.02	0.0313 (Adverse)	80
Genesee Ave.	SB	1586+10.30 "SD-5" (483+44.42)	10,000 (Right)	0.02	0.0303 (Adverse)	80
<b>I-5 Northbound Mainline at Manchester DAR</b>						
On San Elijo Bridge	NB	2066+17.69 "SD-5" (629+77.07)	10,000 (Left)	0.02	0.03 (Adverse)	80
Between Manchester Avenue and Birmingham Drive	NB	2084+50 "SD-5" (635+35.56)	10,000 (Left)	0.02	0.03 (Adverse)	80
<b>I-5 Southbound Mainline at Manchester DAR</b>						
On San Elijo Bridge	SB	2066+68.44 "SD-5" (629+92.54)	10,000 (Right)	0.02	0.03 (Adverse)	80

<b>Distance Between Ramp Intersections and Local Road Intersections (Index 504.3 (j) (3))</b>				
<b>Location</b>	<b>Ramp</b>	<b>Crossroad Intersection</b>	<b>Standard Distance</b>	<b>Provided Distance</b>
	<b>NB/SB</b>		<b>ft</b>	<b>ft</b>
Voigt Drive	SB DAR on-ramp	Gilman Drive	400	149
Carmel Valley Road	NB on-ramp	Old El Camino Real	400	207
Carmel Valley Road	SB on-ramp	Sorrento Valley Road	400	271
Lomas Santa Fe Drive	NB on-ramp	Santa Helena	400	72
Lomas Santa Fe Drive	SB off-ramp	Solana Hills Drive	400	289
Manchester Avenue	SB off-ramp	Ocean Cove Drive	400	246
Birmingham Drive	SB on-ramp	Carol View Drive	400	210
Santa Fe Drive	NB on-ramp	Regal Road	400	33
Encinitas Boulevard	NB on-ramp	Saxony Road	400	157
Leucadia Boulevard	NB on-ramp	Piraeus Street	400	8
Leucadia Boulevard	SB off-ramp	Orpheus Avenue	400	109
La Costa Avenue	NB off-ramp	Piraeus Street	400	253
Poinsettia Lane	NB off-ramp	Lowder Lane	400	325
Palomar Airport Road	NB off-ramp	Paseo del Norte	400	367
Palomar Airport Road	SB off-ramp	Avenida Encinas	400	187
Cannon Road	NB off-ramp	Paseo del Norte	400	384
Cannon Road	SB off-ramp	Avenida Encinas	400	147
Tamarack Avenue	NB on-ramp	Pio Pico Drive	400	39
Tamarack Avenue	SB on-ramp	Jefferson Street	400	220
Carlsbad Village Drive	NB on-ramp	Pio Pico Drive	400	140
Las Flores Drive	NB off-ramp	Pio Pico Drive	400	213
Las Flores Drive	SB on-ramp	Tuttle Street	400	0
Cassidy Street	SB on/off ramps	Stewart Street	400	340
California Street	NB on-ramp	Bellaire Street	400	136
Oceanside Boulevard	SB off-ramp	Vine Street	400	276
Harbor Drive	SB on-ramp	Carmelo Drive	400	154

### Standards for Curvature - Minimum Radius (Index 203.2)

Location	Begin Horizontal Curve (Station)	Design Speed (mph)	Standard Radius	Provided Radius	Provided Design Speed
			ft	ft	
Between I-5/805 Merge and Carmel Mountain Road	1692+33.15 "SB" (538+67.88)	75	3000	2500	72
Between Cannon Road and Chiquapin Avenue	2592+93.26 "SD-5" (790+32.74)	75	3000	2000	69
Between Cannon Road and Chiquapin Avenue	2610+24.01 "SD-5" (795+60.27)	75	3000	2000	69
North of Harbor Drive	2916+25.59 "SD-5" (888+87.66)	75	3000	2500	72
<b>Ramps</b>					
La Jolla Village Dr. NB On-Ramp	1534+26 "LD1M" (467+64)	44	661	260	28
La Jolla Village Dr. SB Off-Ramp	1533+03 "LD6M" (467+27)	32	338	221	25
Carmel Valley Rd. NB Off-Ramp	1763+91 "CV-2M" (537+64)	48	778	650	43
Del Mar Heights Rd. SB Loop On-Ramp	1835+17 "DEL-4M" (559+36)	50	850	174	23
Via De La Valle NB Loop On-Ramp	1939+42 "VV-2M" (591+14)	50	850	142	21
Via De La Valle SB Loop On-Ramp	1950+07 "VV-5M" (594+38)	50	850	137	20
Lomas Santa Fe Dr. NB Loop On-Ramp	1999+82 "LSF-2M" (609+55)	50	850	130	20
Lomas Santa Fe Dr. SB Loop On-Ramp	2008+68 "LSF-5M" (612+25)	36	460	65	16
Manchester Ave. NB On-Ramp	2066+16 "M-1M" (629+77)	36	450	215	25
Manchester Ave. NB On-Ramp	2071+22 "M-1M" (631+31)	43	639	300	30
Manchester Ave. NB Loop Off-Ramp	2069+14 "M-2M" (630+67)	41	589	190	24
Manchester Ave. SB Loop On-Ramp	2069+96 "M-3M" (630+92)	40	559	130	20
Manchester Ave. SB Off-Ramp	2071+87 "M-4M" (631+51)	45	705	500	38
Vista Point SB Loop On-Ramp	2094+22 "VP2" (638+32)	33	368	91	18
Vista Point SB Loop On-Ramp	2092+71 "VP2" (637+86)	50	850	53	15
Birmingham Dr. NB On-Ramp	2135+56 "BD-1M" (650+92)	30	305	150	21
Palomar Airport Rd. SB Loop On-Ramp	2518+63 "PA-4M" (767+68)	50	850	131	20
SR-78 SB On-Ramp	2726+10 "SR78-4" (830+92)	50	850	246	27
SR-78 SB On-Ramp	2730+08 "SR78-4" (832+13)	39	528	160	22
SR-78 SB Loop Off-Ramp	2725+72 "SR78-5" (830+80)	45	700	140	21
SR-78 NB Loop Off-Ramp	2736+26 "SR78-2" (834+01)	39	513	118	19
Cassidy St. SB On-Ramp	2745+00 "CS1" (836+68)	50	850	263	28
Cassidy St. SB On-Ramp	2748+66 "CS1" (837+79)	31	338	250	27
Oceanside Blvd. NB On-Ramp	2795+90 "OB-1M" (852+19)	36	443	256	27



<b>Standards for Curvature - Minimum Radius (Index 203.2) (Continued)</b>					
Location	Begin Horizontal Curve (Station)	Design Speed	Standard Radius	Provided Radius	Provided Design Speed
		mph	ft	ft	
Oceanside Blvd. NB On-Ramp	2799+70 "OB-1M" (853+35)	50	850	492	38
Oceanside Blvd. NB Loop Off-Ramp	2795+15 "OB-2M" (851+96)	38	508	146	21
Oceanside Blvd. SB Loop On-Ramp	2797+13 "OB-3M" (852+57)	41	661	136	20
Mission Ave. NB On-Ramp	2838+78 "MSA-1M" (865+26)	36	445	149	21
Mission Ave. NB On-Ramp	2842+44 "MSA-1M" (866+38)	50	850	328	31
Mission Ave. NB Loop Off-Ramp	2841+53 "MSA-2M" (866+10)	34	408	140	21
Mission Ave. SB Loop On-Ramp	2843+80 "MSA-3M" (866+79)	50	378	131	20
SR-76 NB Loop On-Ramp	2871+31 "SR76-1" (875+18)	50	850	182	23
SR-76 NB Off-Ramp ("SR76-2")	2878+44 "SR76-2" (877+35)	50	850	600	42
SR-76 NB Off-Ramp ("SR76-2A")	2876+73 "SR76-2A" (876+83)	31	348	230	26
SR-76 SB Loop Off-Ramp	2866+78 "SR76-4" (873+79)	50	850	180	23
Harbor Dr. NB On-Ramp	2909+84 "HD1M" (886+92)	50	850	184	23
Harbor Dr. SB Loop On-Ramp	2904+81 "HD4M" (885+39)	46	699	177	23
Harbor Dr. NB Off-Ramp	2908+44 "HD2M" (886+49)	39	533	223	25

<b>Minimum Deceleration Length</b>						
<b>Index 504.2 (Figure 504.2B)</b>						
Interchange	Direction	Ramp	Station English (Metric)	Proposed Radius	Standard DL	Proposed DL
Lomas Santa Fe Dr.	NB	Off-Ramp	1996+20 "LSF-3M" (608+44)	980'	420'	240'
Cassidy St.	SB	Off-Ramp	2751+59 "CS2" (838+68)	295'	570'	494'



Minimum Separation					
Index 1003.1(6)					
Location	Direction	Begin Station	End Station	Standard Separation	Proposed Separation
		English (Metric)	English (Metric)	ft	ft
San Dieguito River to Via de la Valle SB On-Ramp	SB	1927+65 "SD-5" (587+55)	1935+46 "SD-5" (589+93)	15	13.5
Between La Costa Ave and Batiquitos Lagoon	SB	2371+29 "LCA-4M" (722+77)	2374+24 "SD-5" (723+67)	15	13.4

## Advisory

Side Slopes 4:1 or Flatter (Index 304.1)				
Location	Direction	Begin Station	End Station	Proposed Side Slope
	NB/SB?	English (Metric)	English (Metric)	
Mainline				
Sorrento Valley Rd.	NB	1647+64 "SDH" (502+20)	1650+92 "SDH" (503+20)	2:1
Sorrento Valley Rd.	SB	1648+29 "SDH" (502+40)	1650+26 "SDH" (503+00)	2:1
Carmel Valley Rd.	NB	1765+09 "SD-5" (538+00)	1767+06 "SD-5" (538+60)	3:1
Carmel Valley Rd.	NB	1768+04 "SD-5" (538+90)	1769+03 "SD-5" (539+20)	2:1
Del Mar Heights to Via de le Valle	NB	1870+08 "SD-5" (570+00)	1944+00 "SD-5" (592+53)	2:1
Del Mar Heights to Via de le Valle	SB	1873+03 "SD-5" (570+90)	1945+50 "SD-5" (592+99)	2:1
Via de la Valle	NB	1937+66 "SD-5" (590+60)	1942+42 "SD-5" (592+05)	2:1
Via de la Valle	SB	1941+27 "SD-5" (591+70)	1946+03 "SD-5" (593+15)	2:1
Via de la Valle	NB	1947+51 "SD-5" (593+60)	1953+41 "SD-5" (595+40)	2:1
Manchester Ave./San Elijo Lagoon	NB	2045+28 "SD-5" (623+40)	2063+65 "SD-5" (629+00)	2:1
Manchester Ave./San Elijo Lagoon	SB	2045+28 "SD-5" (623+40)	2063+65 "SD-5" (629+00)	2:1
North of Manchester Ave.	NB	2111+65 "SD-5" (643+63)	2116+14 "SD-5" (645+00)	2:1
Santa Fe Dr.	SB	2155+51 "SD-5" (657+00)	2170+00 "SD-5" (661+42)	2:1
Santa Fe Dr.	NB	2171+92 "SD-5" (662+00)	2174+21 "SD-5" (662+70)	2:1
Santa Fe Dr.	NB	2175+20 "SD-5" (663+00)	2186+35 "SD-5" (666+40)	2:1
Santa Fe Dr. to Encinitas	SB	2175+20 "SD-5" (663+00)	2209+00 "SD-5" (673+30)	2:1
North of Santa Fe Dr.	NB	2189+63 "SD-5" (667+40)	2191+60 "SD-5" (668+00)	2:1
North of Santa Fe Dr.	NB	2198+82 "SD-5" (670+20)	2204+72 "SD-5" (672+00)	2:1
Encinitas Blvd.	NB	2224+41 "SD-5" (678+00)	2228+67 "SD-5" (679+30)	2:1
North of Encinitas Blvd.	NB	2248+69 "SD-5" (685+40)	2250+66 "SD-5" (686+00)	2:1

Side Slopes 4:1 or Flatter (Index 304.1) (Continued)				
Location	Direction	Begin Station	End Station	Proposed Side Slope
		English (Metric)	English (Metric)	
Between Encinitas & Leucadia	SB	2249+00 "SD-5" (685+49)	2260+43 "SD-5" (688+98)	2:1
Leucadia Blvd.	SB	2264+44 "SD-5" (690+20)	2270+34 "SD-5" (692+00)	2:1
South of Leucadia Blvd.	NB	2267+06 "SD-5" (691+00)	2270+01 "SD-5" (691+90)	2:1
Leucadia Blvd.	SB	2292+65 "SD-5" (698+80)	2307+55 "SD-5" (703+34)	2:1
Leucadia to La Costa Blvd.	SB	2310+14 "SD-5" (704+13)	2353+00 "SD-5" (717+20)	2:1
La Costa Ave to Batiquitos Lagoon	SB	2363+55 "SD-5" (720+41)	2383+00 "SD-5" (726+34)	2:1
North of Batiquitos Lagoon	SB	2386+00 "SD-5" (727+25)	2395+00 "SD-5" (730+00)	2:1
La Costa Ave to Batiquitos Lagoon	NB	2365+49 "SD-5" (721+00)	2397+64 "SD-5" (730+80)	2:1
South of Poinsettia Ln	SB	2419+72 "SD-5" (737+53)	2420+60 "SD-5" (737+80)	2:1
South of Palomar Airport Rd.	NB	2489+50 "SD-5" (758+80)	2493+11 "SD-5" (759+90)	2:1
Cannon Rd.	SB	2558+40 "SD-5" (779+80)	2568+90 "SD-5" (783+00)	2:1
Agua Hedionda Lagoon	NB	2599+15 "SD-5" (792+22)	2615+09 "SD-5" (797+08)	2:1
Agua Hedionda Lagoon	SB	2600+72 "SD-5" (792+70)	2612+20 "SD-5" (796+20)	2:1
Carlsbad Village Drive	NB	2672+24 "SD-5" (814+50)	2681+76 "SD-5" (817+40)	2:1
Carlsbad Village Drive	SB	2673+23 "SD-5" (814+80)	2681+76 "SD-5" (817+40)	2:1
Jefferson to SR-78	NB	2717+52 "SD-5" (828+30)	2732+65 "SD-5" (832+91)	2:1
Jefferson to SR-78	SB	2718+50 "SD-5" (828+60)	2730+25 "SD-5" (832+18)	2:1
Loma Alta Creek to Oceanside Blvd.	SB	2787+40 "SD-5" (849+60)	2791+99 "SD-5" (851+00)	2:1
North of Oceanside Blvd.	SB	2806+43 "SD-5" (855+40)	2809+55 "SD-5" (856+35)	2:1
North of Mission Ave.	NB	2849+74 "SD-5" (868+60)	2858+92 "SD-5" (871+40)	2:1
Ramps				
Carmel Valley Rd. NB On-Ramp	NB	1771+80 "CV1M" (540+04)	1779+00 "CV1M" (542+24)	2:1
Del Mar Heights NB Off-Ramp	NB	1825+83 "DEL-2M" (556+51)	1832+70 "DEL-2M" (558+61)	2:1
Manchester Ave SB Loop On-Ramp	SB	2070+00 "M-3M" (630+94)	2071+58 "M-3M" (631+42)	2:1
Birmingham Dr. NB Off-Ramp	NB	2128+00 "BD-2M" (648+61)	2130+60 "BD-2M" (649+41)	2:1
Santa Fe Dr. NB Off-Ramp	NB	2166+66 "SF-2M" (660+40)	2169+94 "SF-2M" (661+40)	2:1
Encinitas Blvd. NB Off-Ramp	NB	2215+26 "ENB-2M" (675+21)	2220+42 "ENB-2M" (676+78)	2:1
Encinitas Blvd. SB Off-Ramp	SB	2233+20 "ENB-4M" (680+68)	2236+40 "ENB-4M" (681+65)	2:1
La Costa NB Off-Ramp	NB	2350+39 "LCA-2M" (716+40)	2356+95 "LCA-2M" (718+40)	2:1
La Costa NB On-Ramp	NB	2359+10 "LCA-1M" (719+05)	2362+20 "LCA-1M" (720+00)	2:1
La Costa SB Off-Ramp	SB	2359+57 "LCA-4M" (719+20)	2362+86 "LCA-4M" (720+20)	2:1
Palomar Airport Rd. SB Off-Ramp	SB	2517+27 "PA-5M" (767+26)	2519+93 "PA-5M" (768+07)	2:1
Cannon Rd. NB Off-Ramp	NB	2554+46 "CAN-2M" (778+60)	2559+05 "CAN-2M" (780+00)	2:1
Cannon Rd. SB Off-Ramp	SB	2571+89 "CAN-4M" (783+91)	2575+45 "CAN-4M" (785+00)	2:1
Carlsbad Village Dr. NB On-Ramp	NB	2681+97 "CVD-1M" (817+46)	2683+08 "CVD-1M" (817+80)	2:1
Mission Ave. NB On-Ramp	NB	2837+92 "MSA-1M" (865+00)	2841+95 "MSA-1M" (866+23)	2:1
SR-76 NB Loop On-Ramp	NB	2876+75 "SR76-1" (876+83)	2879+00 "SR76-1" (877+52)	3:1
SR-76 NB Loop On-Ramp	NB	2880+62 "SR76-1" (878+01)	2885+15 "SD-5" (879+39)	2:1

Side Slopes 4:1 or Flatter (Index 304.1) (Continued)				
Location	Direction	Begin Station	End Station	Proposed Side Slope
		NB/SB?	English (Metric)	
Harbor Dr. NB Off-Ramp	NB	2904+87 "HD2M" (885+40)	2905+50 "HD2M" (885+60)	2:1
Harbor Dr. SB Off-Ramp	SB	2905+52 "HD5M" (885+60)	2908+13 "HD5M" (886+40)	2:1

18 ft Minimum Catch Distance (Index 304.1)				
Location	Direction	Begin Station	End Station	Proposed Catch Distance
		NB/SB?	English (Metric)	
<b>Mainline</b>				
North of Del Mar Heights	NB	1869+29 "SD-5" (569+76)	1871+09 "SD-5" (570+31)	Var 8 to 18
Lomas Santa Fe SB On-Ramp	SB	1995+73 "SD-5" (608+30)	1999+97 "SD-5" (609+59)	Var 6.6 to 13
South of Santa Fe Dr.	SB	2151+94 "SD-5" (655+91)	2156+23 "SD-5" (657+22)	Var 3 to 18
North of Santa Fe Dr.	SB	2197+60 "SD-5" (669+83)	2201+29 "SD-5" (670+95)	Var 8 to 18
North of Encinitas Blvd.	NB	2250+65 "SD-5" (686+00)	2251+63 "SD-5" (686+30)	Var 7 to 18
North of Encinitas Blvd.	SB	2258+04 "SD-5" (688+25)	2259+84 "SD-5" (688+80)	Var 13.8 to 14.3
North of Encinitas Blvd.	SB	2269+84 "SD-5" (691+85)	2276+35 "SD-5" (693+83)	Var 10.5 to 18
North of Leucadia Blvd.	SB	2292+60 "SD-5" (698+78)	2307+19 "SD-5" (703+23)	Var 10.6 to 18
North of Leucadia Blvd.	SB	2310+79 "SD-5" (704+33)	2315+83 "SD-5" (705+86)	Var 13.7 to 18
La Costa Ave	NB	2361+25 "SD-5" (719+71)	2367+49 "SD-5" (721+61)	Var 15.1 to 18
Poinsettia Lane	SB	2424+45 "SD-5" (738+97)	2428+59 "SD-5" (740+23)	Var 11 to 18
North of Poinsettia Lane	SB	2445+53 "SD-5" (745+40)	2454+29 "SD-5" (748+07)	Var 5.5 to 16.5
North of Poinsettia Lane	NB	2449+76 "SD-5" (746+69)	2470+89 "SD-5" (753+13)	Var 8.8 to 18
North of Poinsettia Lane	SB	2485+26 "SD-5" (757+51)	2487+89 "SD-5" (758+31)	Var 8.6 to 18
South of Palomar Airport Rd	NB	2493+33 "SD-5" (759+97)	2494+43 "SD-5" (760+30)	Var 16.7 to 18
South of Palomar Airport Rd	SB	2498+78 "SD-5" (761+63)	2499+96 "SD-5" (761+99)	Var 7 to 18
North of Palomar Airport Rd	SB	2546+12 "SD-5" (776+06)	2554+35 "SD-5" (778+57)	Var 1 to 6
North of Cannon Rd	SB	2579+49 "SD-5" (786+23)	2580+72 "SD-5" (786+60)	Var 16 to 18
North of Cannon Rd	SB	2592+95 "SD-5" (790+33)	2593+64 "SD-5" (790+54)	Var 16 to 18
North of Tamarack Rd	SB	2633+70 "SD-5" (802+75)	2644+45 "SD-5" (806+03)	Var 14.7 to 18
Carlsbad Village Dr.	SB	2683+50 "SD-5" (817+93)	2687+02 "SD-5" (819+00)	Var 7.7 to 17
North of Harbor Drive	NB	2943+09 "SD-5" (897+05)	2943+95 "SD-5" (897+32)	Var 5.4 to 18
<b>Ramps</b>				
Carmel Valley Rd. SB On-ramp	SB	1761+40 "CV3M" (536+87)	1763+92 "CV3M" (537+64)	Var 8.5 to 18
Birmingham NB On-ramp	NB	2142+40 "BD-1M" (653+00)	2143+73 "BD-1M" (653+41)	Var 9.3 to 18
Santa Fe Dr NB Off-ramp	NB	2168+92 "SF-2M" (661+09)	2172+28 "SF-2M" (662+11)	Var 3.2 to 18
Leucadia Blvd. SB On-ramp	SB	2283+07 "LB-3M" (695+88)	2284+22 "LB-3M" (696+23)	Var 7.3 to 13

18 ft Minimum Catch Distance (Index 304.1) (Continued)					
Location	Direction	Begin Station		End Station	Proposed Catch Distance
		NB/SB?	English (Metric)	English (Metric)	
La Costa Ave NB Off-ramp	NB		2346+93 "LCA-2M" (715+34)	2348+27 "LCA-2M" (715+75)	Var 6.6 to 9.5
Palomar Airport Road SB Off-ramp	SB		2517+27 "PA-5M" (767+26)	2522+27 "PA-5M" (768+79)	Var 4.3 to 12.6
Tamarack Ave. NB Off-ramp	NB		2631+78 "TM-2M" (802+17)	2632+75 "TM-2M" (802+46)	Var 9.2 to 13.3
Carlsbad Village Dr. SB Off-ramp	SB		2678+83 "CVD-4M" (816+51)	2681+43 "CVD-4M" (817+30)	Var 5.1 to 18
Cassidy St. SB On-ramp	SB		2747+09 "CS1" (837+31)	2749+30 "CS1" (837+99)	Var 13.1 to 16.6
Mission Ave. NB On-ramp	NB		2837+82 "MSA-1M" (864+97)	2843+09 "MSA-1M" (866+57)	Var 11.8 to 16.5
Mission Ave. SB Off-ramp	SB		2848+50 "MSA-4M" (868+22)	2850+54 "MSA-4M" (868+84)	Var 5.5 to 10.5
SR-76 SB On-ramp	SB		2870+39 "SR76-3" (874+89)	2876+00 "SR76-3" (876+60)	Var 1.1 to 15.4
Harbor Drive SB On-ramp	SB		2899+60 "HD4M" (883+80)	2902+10 "HD4M" (884+56)	Var 6.1 to 7.6

Median Width (Index 305.1)				
Location	Begin Station		Standard Median Width	Proposed Median Width
	English (Metric)		ft	ft
South of Voigt DAR	1531+25 "SD-5" (466+73)	1553+91 "SD-5" (473+63)	36	22 to 36
North of Genesee Ave	1590+03 "SD-5" (484+64)	1601+30 "SD-5" (488+08)	36	22 to 30.67
North of Genesee Ave	1607+63 "SD-5" (490+00)	1627+96 "SD-5" (496+20)	36	22 to 25.72
South of Carmel Mountain Rd.	1627+96 "SD-5" (496+20)	1701+27 "SD-5" (518+55)	36	22
Del Mar Heights	1833+95 "SD-5" (558+99)	2056+33 "SD-5" (626+77)	36	22 to 36
South of Manchester DAR	2063+16 "SD-5" (628+85)	2064+92 "SD-5" (629+39)	36	22 to 36
North of Manchester DAR	2086+67 "SD-5" (636+02)	2089+05 "SD-5" (636+74)	36	22 to 36
North of Manchester DAR	2094+89 "SD-5" (638+52)	2104+13 "SD-5" (641+34)	36	27.5 to 36
North of Manchester to Batiquitos	2109+59 "SD-5" (643+00)	2379+91 "SD-5" (725+40)	36	32 to 36
Batiquitos Lagoon to Cannon Rd.	2389+35 "SD-5" (728+27)	2556+36 "SD-5" (779+18)	36	32 to 36
Cannon Rd.	2556+36 "SD-5" (779+18)	2585+95 "SD-5" (788+20)	36	31.5 (9.6m) to 35.4 (10.8m)
North of Cannon Rd. to Harbor Dr.	2610+97 "SD-5" (795+82)	2909+52 "SD-5" (886+82)	36	22.77 (6.94m) to 35.4 (10.8m)

Compound Curves (Index 203.5)				
Location	Begin Station	Radius 1	Radius 2	Smaller Radius at least 2/3 the Larger Radius?
	English (Metric)	ft	ft	
Manchester Ave. NB On-Ramp	2071+21 "M-1M" (631+30)	300	850	No
Vista Point SB On-Ramp	2092+71 "VP1" (637+86)	91	53	No
SR-78 SB On Ramp	2730+08 "SR78-4" (832+13)	440	160	No
SR-78 SB Loop Off-Ramp	2727+93 "SR78-5" (831+47)	140	430	No
Harbor Dr. SB Loop On-Ramp	2904+81 "HD4M" (885+39)	476	177	No

Outer Separation (Index 310.2)						
Location	Adjacent Local Road	Direction	Begin Station	End Station	Standard Separation	Proposed Separation
		NB/SB?	English (Metric)	English (Metric)	ft	ft
<b>Mainline</b>						
South of Voigt Dr.	Gilman Dr.	SB	1564+25 "SD-5" (476+78)	1564+80 "SD-5" (476+95)	26	24.9
South of Lomas Santa Fe	Ida Ave	SB	1985+65 "SD-5" (605+23)	1987+36 "SD-5" (605+75)	26	24.5
North of Birmingham Dr.	Villa Cardiff	NB	2137+54 "SD-5" (651+52)	2140+06 "SD-5" (652+29)	26	15.1
South of Requeza St.	Devonshire Rd.	SB	2202+02 "SD-5" (671+18)	2203+28 "SD-5" (671+56)	26	19.56
North of Palomar Airport Rd.	Avenida Encinas	SB	2542+07 "SD-5" (774+82)	2545+78 "SD-5" (775+95)	26	23.6
Tamarack Ave to Carlsbad Village Dr.	Pio Pico Dr.	NB	2636+20 "SD-5" (803+51)	2673+40 "SD-5" (814+85)	26	10.2
Carlsbad Village Dr. to Las Flores Dr.	Pio Pico Dr.	NB	2683+55 "SD-5" (817+95)	2696+08 "SD-5" (821+77)	26	15.9
South of Cassidy St.	Soto Rd.	NB	2741+80 "SD-5" (835+70)	2744+98 "SD-5" (836+67)	26	12
Cassidy to California	Soto Rd.	NB	2756+22 "SD-5" (840+10)	2765+53 "SD-5" (842+93)	26	6
South of Mission Ave.	Garfield St.	SB	2826+59 "SD-5" (861+54)	2828+16 "SD-5" (862+02)	26	13
South of Harbor Drive	North Coast Highway	SB	2884+60 "SD-5" (879+23)	2892+47 "SD-5" (881+62)	26	12.3
<b>Ramps</b>						
Carmel Valley Rd. SB On-ramp	Sorrento Valley Rd.	SB	1757+87 "CV3M" (535+80)	1760+81 "CV3M" (536+69)	26	18
Santa Fe Dr. NB On-ramp	Regal Rd.	NB	2178+56 "SF-1M" (664+03)	2180+03 "SF-1M" (664+47)	26	7.8
Leucadia Blvd. NB On-ramp	Piraeus St.	NB	2289+97 "LB-1M" (697+98)	2295+01 "LB-1M" (699+52)	26	9.8
La Costa Ave. NB Off-ramp	Piraeus St.	NB	2347+28 "LCA-2M" (715+45)	2350+36 "LCA-2M" (716+39)	26	15
Carlsbad Village Dr. SB On-ramp	Pine Ave.	SB	2667+01 "CVD-3M" (812+90)	2667+34 "CVD-3M" (813+01)	26	20.2
Carlsbad Village Dr. SB On-ramp	Oak Ave.	SB	2671+86 "CVD-3M" (814+38)	2672+34 "CVD-3M" (814+53)	26	12.1
Las Flores Dr. SB On-ramp	Buena Vista Way	SB	2699+73 "LF-3M" (822+89)	2700+37 "LF-3M" (823+07)	26	17.1
Las Flores Dr. SB On-ramp	Tuttle St.	SB	2704+76 "LF-3M" (824+41)	2706+08 "LF-3M" (824+81)	26	16.1
Cassidy St. SB Off-ramp	Griffin Rd.	SB	2755+81 "CS2" (839+97)	2756+03 "CS2" (840+04)	26	23.8
Mission Ave. NB On-ramp	Santa Barbara St.	NB	2837+67 "MSA-1M" (864+92)	2839+09 "MSA-1M" (865+35)	26	21.3
Mission Ave. NB On-ramp	Buena St.	NB	2843+69 "MSA-1M" (866+76)	2843+88 "MSA-1M" (866+81)	26	24.8



Outer Separation (Index 310.2) (Continued)						
Location	Adjacent Local Road	Direction	Begin Station	End Station	Standard Separation	Proposed Separation
			English (Metric)	English (Metric)	ft	ft
SR-76 SB On-ramp	N. Horne St.	SB	2864+15 "SR76-3" (872+99)	2864+91 "SR76-3" (873+22)	26	14.8
Harbor Dr. NB Off-ramp	Harbor Dr. right turn bypass	NB	2904+38 "HD3M" (885+26)	2906+99 "HD3M" (886+05)	26	12.5

Angle of Intersection (Index 403.3)			
Location	Station	Standard Angle	Proposed Angle
	English (Metric)	Degrees	Degrees
Voigt DAR	1569+20 "SD-5" (478+29)	90 to 75	57.80
Carmel Valley Rd. NB Off-ramp	1770+67 "CVD-2M" (539+70)	90 to 75	61.51
Lomas Santa Fe NB ramps	2005+61 "SD-5" (611+31)	90 to 75	53.99
Lomas Santa Fe SB ramps	2005+61 "SD-5" (611+31)	90 to 75	57.75
Santa Fe Dr. NB On-Ramp	2174+58 "SF-1M" (662+81)	90 to 75	60.69
Leucadia Blvd. SB On-ramp	2286+64 "LB-3M" (696+98)	90 to 75	70.44
Carlsbad Village Dr. NB Off-ramp	2677+71 "CVD-2M" (816+17)	90 to 75	72.00
Las Flores Dr. NB On-ramp	2705+62 "LF-1M" (824+67)	90 to 75	46.97
Las Flores Dr. SB On-ramp	2708+47 "LF-3M" (825+54)	90 to 75	42.03

Distance Between Successive Exits (Index 504.3)			
First Exit	Second Exit	Required Distance	Provided Distance
		Between Successive Exits	Between Successive Exits
		1,000 ft	ft
Carmel Valley Rd. SB off-ramp	SB I-5/SR-56 Connector	1000	690
NB I-5 to EB SR-78 Connector	NB I-5 to WB SR-78 Loop Ramp	1000	786
SB I-5 to WB SR-76 Connector	SB I-5 to EB SR-76 Loop Ramp	1000	745
NB I-5 to EB Harbor Dr.	NB I-5 to WB Harbor Dr.	1000	622



2 Lane Exit Auxiliary Lane (Index 504.3 (6))					
Location	Begin Station	2 Lane Exit?	Auxiliary Lane Provided?	Required Length of Auxiliary Lane	Provided Length of Auxiliary Lane
	English (Metric)	YES/NO	YES/NO	ft	ft
Mission Ave. SB Off-Ramp	2853+67 "MSA-4M" (869+80)	YES	YES	1300	780
Harbor Dr. NB Off-Ramp	2883+85 "SD-5" (879+00)	YES	YES	1300	1240

Planting on Freeway Medians (Index 902.1)			
Location	Begin Station	End Station	Median Planting?
	English (Metric)	English (Metric)	YES
Del Mar Heights Rd to Manchester Ave	1841+00 "SD-5" (561+14)	2046+70 "SD-5" (623+84)	YES
Manchester Ave to Agua Hedionda Lagoon	2087+00 "SD-5" (636+10)	2600+40 "SD-5" (792+60)	YES
Agua Hedionda Lagoon to Neptune Ave	2609+60 "SD-5" (795+40)	2866+80 "SD-5" (873+80)	YES

Freeway Entrances and Exits (Index 504.2, Figures 504.2A-B, 504.3L, 504.4)					
Location	Ramp Type	Begin Station	Non-Standard Feature	Standard	Proposed
		English (Metric)		ft	ft
SB I-5 at 805 Merge	Diverging Branch Connection Case 3	1547+74 "SD-5" (471+75)	Auxiliary Lanes	2,500	835
SB I-5 at 805 Merge	Diverging Branch Connection Case 3	1671+41 "SD-5" (509+45)	Auxiliary Lanes	1,500	948
Lomas Santa Fe Dr. SB Loop On-Ramp	One Lane	2004+61 "LSF-5M" (611+00)	3000' Radius Curve	167.11' Length	150.7' Length
SR-78 SB On-Ramp	Two Lane	2726+10 "SR78-4" (830+92)	3000' Radius Curve	3000' Radius	246' Radius
NB I-5 to EB SR-78	Diverging Branch Connection Case 2	2722+50 "SD-5" 829+80	Auxiliary Lanes	4250' Total	1545'
Cassidy St. SB On-Ramp	One Lane	2742+61 "CS1" (835+95)	Tangent	300' Length	238' Length
Cassidy St. SB On-Ramp	One Lane	2745+00 "CS1" (836+68)	3000' Radius Curve	3000' Radius	262' Radius
NB I-5 to EB SR-76	Diverging Branch Connection Case 1	2863+00 "SD-5" 872+60	Auxiliary Lanes	2500	1168
Harbor Dr. NB On-Ramp	One Lane	2912+58 "HD1M" (888+69)	3000' Radius Curve	3000' Radius	Tangent



Mainline Lane Reduction at Interchanges (Index 504.6)					
Location	Direction	Begin Station	End Station	Number of Mainline Lanes approaching Interchange	Number of Mainline Lanes through Interchange
	NB/SB	English (Metric)	English (Metric)	#	#
La Jolla Village Drive	SB	1535+14 "SD-5" (467+91)	1545+96 "SD-5" (471+21)	5	4

Distance Between Ramp Intersections and Local Road Intersections (Index 504.3 (j) (3))				
Location	Direction	Crossroad Intersection	Standard Distance	Provided Distance
	NB/SB		ft	ft
Del Mar Heights Road	SB	Portofino Drive	500	410
Via de la Valle	SB	Jimmy Durante Blvd	500	446
Poinsettia Lane	SB	Avenida Encinas	500	404
Carlsbad Village Drive	SB	Hope Avenue	500	417
SR-78	SB	Stewart Street	500	472
SR-76	SB	North Coast Highway	500	466

Lane Reductions (Index 206.3)							
Location	Ramp	Begin Station	Reduction Width	Design Speed	Standard Lane Reduction Length (WV)	Proposed Lane Reduction Length	Proposed Ratio
		English (Metric)	ft	mph	ft	ft	
Vista Point	SB On-Ramp	2090+91 "VP2" (637+31)	6	50	300	179	30:1
SR-78	SB Loop Off-Ramp	2724+44 "SR78-5" (830+41)	6.6	50	330	118	18:1
Mission Ave.	NB On-Ramp	2841+09 "MSA-1M" (865+96)	4.27	50	213	135	32:1
Mission Ave.	SB Loop On-Ramp	2841+77 "MSA-3M" (866+17)	6.56	50	328	203	31:1
SR-76	SB Loop Off-Ramp	2866+78 "SR76-4" (873+79)	4.27	50	213	130	31:1



Ramp Lane Drop Location (Index 504.3)						
Location	Ramp	Begin Station	Dropped Lane Width	Proposed Lane Drop Taper Length	Proposed Ratio	Taper Length beyond 6' Point
		English (Metric)	ft	ft		ft
Lomas Santa Fe Dr.	NB Loop On-Ramp	2002+41 "LSF-2M" (610+34)	18	540	30:1	300
Lomas Santa Fe Dr.	SB Loop On-Ramp	2001+61 "LSF-5M" (610+09)	12	360	30:1	300
Mission Ave.	NB On-Ramp	2843+95 "MSA-1M" (868+84)	12	355	30:1	328
SR-76	SB On-Ramp	2862+86 "SR76-3" (872+60)	12	397	34:1	328

Metered Multilane Ramp Lane Drop Taper (Index 504.3 2b)						
Location	Ramp	Begin Station	Minimum Standard Lane Drop Taper	Dropped Lane Width	Proposed Lane Drop Taper Length	Proposed Ratio
		English (Metric)		ft	ft	
Palomar Airport Rd.	SB Loop On-Ramp	2516+00 "PA-4M" (766+88)	30:1	24.0	360	15:1

Free Right-Turns at Ramp Terminals (Index 504.3)		
Location	Ramp	Approximate Station
		English (Metric)
La Jolla Village Drive	NB on-ramp	1531+47 "LD1M" (466+79)
Palomar Airport Rd.	SB on-ramp	2517+00 "PA-3M" (767+18)
SR-78	NB off-ramp	2741+20 "SR78-2" (835+52)
Cassidy St.	SB on-ramp	2749+50 "CS1" (838+05)
Cassidy St.	SB off ramp	2746+82 "CS2" (837+23)



Single Lane Ramp-Lane Drop (Index 504.3 (5))						
Location	Ramp	Begin Station	Lane Width Being Dropped	Standard Lane Drop Length (WV) (V=50 mph)	Proposed Length of Lane Drop	Lane Drop Ratio Provided
		English (Metric)	ft	ft	ft	
Del Mar Heights Rd.	SB Loop On-Ramp	1830+50 "DEL-4M" (557+94)	28.0	1400	777	28:1
Poinsettia Ln.	NB On-Ramp	2443+40 "PL-1M" (744+75)	12.0	600	240	20:1
Palomar Airport Rd.	SB Loop On-Ramp	2513+00 "PA-4M" (765+96)	30.2	1510	687	23:1
Mission Ave.	SB Loop On-Ramp	2829+92 "MSA-3M" (862+56)	23.6	1180	659	28:1
SR-76	NB Loop On-Ramp	2876+68 "SR76-1" (876+81)	27.9	1395	718	26:1

Branch Connection Auxiliary Lane (Index 504.4 (6))				
Location	Branch Type	Begin Station	Required Length of Auxiliary Lane	Provided Length of Auxiliary Lane
		English (Metric)	ft	ft
NB I-5 to EB SR-76	Diverging Branch Connection Case 1	2863+00 "SD-5" 872+60	1300	780