	SPAN (mm)	1220						1520							1830						2135						2440					
	HEIGHT (mm)	610	915	1220				610	915	1220				1520	915	1220	1520		1830		915	1220					1220	1520		1830		2135	2440
	Maximum Earth Cover (m)	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6
Conc	Roof T1(mm)	180	180	180	180	180	180	180	190	180	190	180	190	180	190	180	230	180	230	180	230	180	230	190	255	190	255	190	255	190	255	205	255	205	280	205	280	205	280	205	280	205	280
	Exterior Walls T2(mm)	150	150	150	150	150	180	150	150	150	150	150	180	165	190	150	150	150	180	165	205	180	215	150	150	150	180	165	190	180	230	205	240	150	190	165	205	180	230	205	255	215	280
	Invert T3(mm)	180	180	180	180	180	180	180	205	180	205	180	200	180	205	180	230	180	230	180	230	180	230	190	270	190	270	190	270	190	270	190	270	205	290	205	290	205	290	205	290	205	290
Reinf	Spacing (mm)	400	375	400	375	400	375	290	350	290	350	290	350	290	380	290	300	290	300	290	300	290	300	275	265	275	265	275	265	275	265	275	265	225	250	225	250	225	250	225	250	225	250
	"g" Size Bar #	13	22	13	22	13	22	13	22	13	22	13	22	13	22	19	22	19	22	19	22	19	22	19	22	19	22	19	22	19	22	19	22	22	22	22	22	22	22	22	22	22	22
	"f" Size Bar #	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	19	16	19	16	19	16	19	16	19	16	16	16	16	16	16	16	16	16	16	16
	"a" Size Bar #	19	13	19	13	19	13	19	13	19	13	19	13	19	13	22	13	22	13	22	13	22	13	19	13	19	13	19	13	19	13	19	13	19	13	19	13	19	13	19	13	19	13
	*"e" Size Bar #	13	13	13	16	19	19	13	13	13	16	16	19	16	22	13	16	13	19	16	19	19	22	13	16	16	16	16	19	19	22	19	22	13	16	16	19	19	19	19	22	19	22
Quan-tity	Concrete m^3/m	1.30	1.30	1.44	1.44	1.58	1.65	1.51	1.65	1.65	1.79	1.79	2.00	1.98	2.21	1.87	2.29	2.00	2.51	2.19	2.76	2.40	3.00	2.20	2.86	2.34	3.10	2.53	3.30	2.73	3.63	3.03	3.88	2.71	3.73	2.90	3.94	3.10	4.23	3.38	4.54	3.62	4.89
	Reinforcement kg/m	116	132	125	141	138	167	177	167	182	180	199	204	201	241	277	241	286	266	307	283	338	315	308	293	327	310	338	339	375	390	387	411	421	353	449	396	506	415	521	464	536	485

	SPAN (mm)	3050						3660						4270										
	HEIGHT (mm)	1520	1830	2135	2440	2745	3050	1830	2135	2440	2745	3050	3350	3660	2135	2440	2745	3050	3350	3660	3960	4270
	Maximum Earth Cover (m)	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6
Conc	Roof T1(mm)	230	320	230	320	230	320	230	320	240	320	240	320	255	370	255	370	255	370	255	370	255	370	255	370	255	370	290	420	290	420	290	420	290	420	290	420	290	420	290	420	290	420
	Exterior Walls T2(mm)	205	205	205	215	205	240	205	270	215	290	240	320	205	215	205	230	215	270	230	290	240	320	255	355	280	380	215	240	215	270	230	290	240	320	270	355	290	380	320	420	330	445
	Invert T3(mm)	230	320	230	320	230	320	230	320	230	320	230	320	255	380	255	380	255	380	255	380	255	380	255	380	255	380	290	430	290	430	290	430	290	430	290	430	290	430	290	430	290	430
Reinf	Spacing (mm)	275	190	265	190	250	200	250	200	265	200	265	215	225	200	225	200	200	190	200	190	215	190	215	200	215	200	215	200	215	200	215	200	215	200	215	200	215	200	225	200	225	200
	"g" Size Bar #	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
	"f" Size Bar #	22	16	19	16	19	16	19	16	19	16	19	16	22	22	22	22	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
	"a" Size Bar #	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
	Size Bar #	16	16	13	16	16	16	19	19	19	19	19	16	16	16	16	19	16	19	16	19	19	19	16	19	19	19	19	19	19	19	16	19	19	19	19	19	19	22	22	22	22	22
	"b" Dim "B" (mm)	1550	800	625	850	700	850	800	950	800	950	800	950	800	950	925	975	1075	975	1075	1025	1150	1025	1150	1025	1150	1025	800	800	1000	1000	1225	1225	1225	1225	1400	1325	1400	1500	1600	1500	1600	1500
	Dim "Bw" (mm)	1225	1500	1225	1500	1225	1500	1225	1500	1225	1500	1225	1500	1250	975	1250	1025	1250	1025	1250	1100	1150	1100	1150	1100	1150	1100	1525	1150	1525	1375	1525	1525	1525	1525	1450	1675	1450	1875	1575	1875	1575	1875
	"c" Size Bar #	16	16	19	19	19	19	19	19	22	19	22	19	19	19	19	19	19	19	19	19	19	19	22	22	22	22	19	19	19	22	22	22	22	22	22	22	22	22	22	22	25	25
	Dim "C" (mm)	950	850	1150	1000	1375	1300	1675	1375	1850	1450	1850	1450	1175	1100	1375	325	1700	1525	2000	1575	2200	1625	2275	1700	2275	1700	1300	1200	1675	1575	2350	1725	2575	1950	2700	2000	2750	2075	2825	2075	2825	2075
	*"e" Size Bar #	13	13	13	13	13	13	13	13	13	13	16	16	13	13	13	13	13	13	13	13	13	13	16	16	16	16	13	13	13	13	13	13	13	13	13	13	16	16	16	16	19	19
Quan-tity	Concrete m^3/m	3.97	4.15	4.15	5.41	4.34	5.74	4.52	6.09	4.88	6.50	5.23	6.92	5.11	7.09	5.30	7.35	5.56	7.79	5.82	8.18	6.12	8.61	6.42	9.18	6.85	9.66	6.67	9.26	6.87	9.66	7.14	10.0	7.43	10.5	7.82	11.1	8.25	11.5	8.74	12.2	9.11	12.7
	Reinforcement kg/m	551	567	567	735	622	735	684	759	723	818	711	845	808	899	838	961	892	987	914	1024	933	1028	1043	1115	1091	1137	985	1056	1064	1165	1125	1220	1201	1259	1240	1299	1311	1426	1315	1455	1491	1652

* See Note 5

"a" bars, for earth covers up to and including 3.0 m								
Span (mm)	1220	1520	1830	2135	2440	3050	3660	4270
Number	5	6	8	10	13	14	16	19

Caltrans Metric

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

July 1, 2004
PLANS APPROVAL DATE

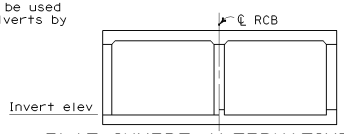
REGISTERED PROFESSIONAL ENGINEER Dallas Forester No. C37765 Exp. 12-31-04 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

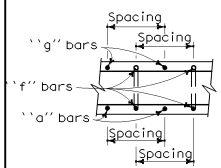
To get to the Caltrans web site, go to: http://www.dot.ca.gov

NOTES

1. For boxes with span or height less than any of those shown in table, use next greater size box concrete dimensions and reinforcement. Make necessary changes in bar lengths and quantities.
2. For boxes with span or height or cover greater than those shown in tables, a special design is required.
3. Quantities are approximate and for design purposes only.
4. It is permissable to eliminate the 180° hooks on every other "e" bar.
5. "e" bars are at half spacing.
6. Provide paving notch when top is exposed and when pavement is portland cement concrete, and adjust quantities.
7. For design and details not shown, see Standard Plan D82.
8. This plan sheet may be used for multiple cell culverts by making necessary adjustments.

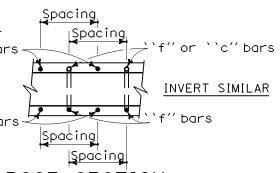


FLAT INVERT ALTERNATIVE

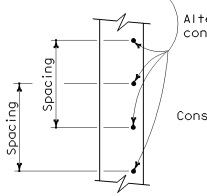


ROOF SECTION
SPANS 1220 mm
THRU 2440 mm

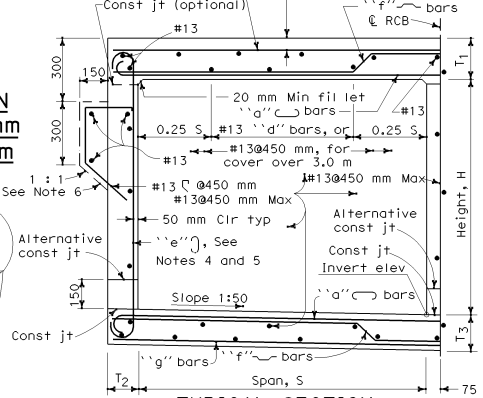
INVERT SIMILAR



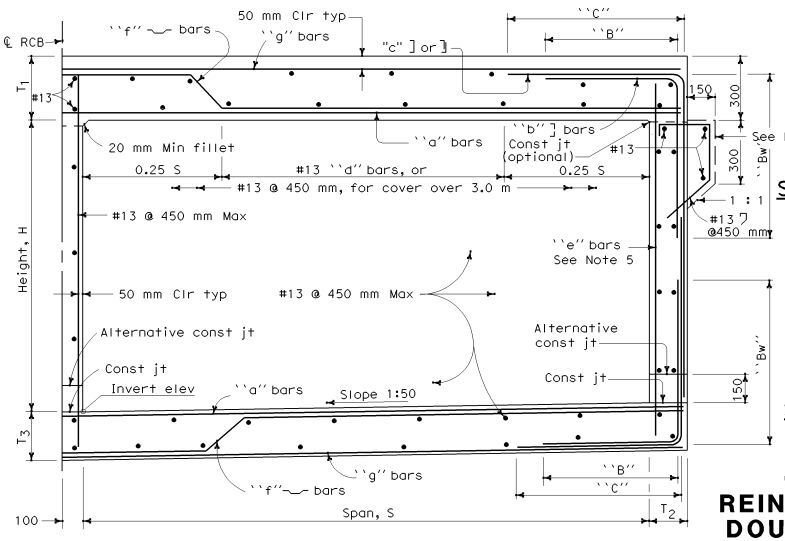
ROOF SECTION
SPANS 3050 mm THRU 4270 mm



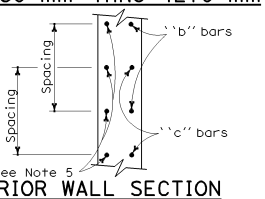
EXTERIOR WALL SECTION
SPANS 1220 mm
THRU 2440 mm



TYPICAL SECTION
SPANS 1220 mm THRU 2440 mm



TYPICAL SECTION
SPANS 3050 mm THRU 4270 mm



EXTERIOR WALL SECTION
SPANS 3050 mm THRU 4270 mm

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CAST-IN-PLACE REINFORCED CONCRETE DOUBLE BOX CULVERT

NO SCALE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

D81

2004 Std PLAN D81

04-20-04