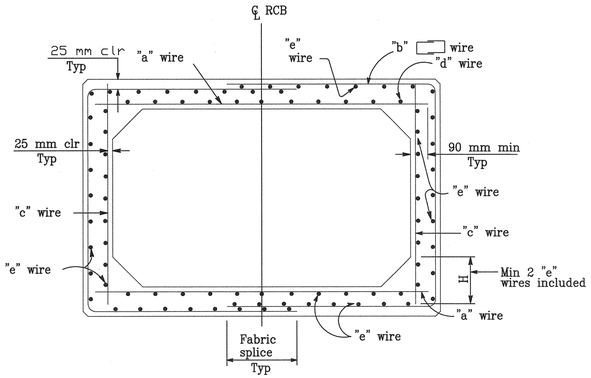
FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES

PLANS	BY	DATE
DESIGNED		
CHECKED		
DELINEATED		

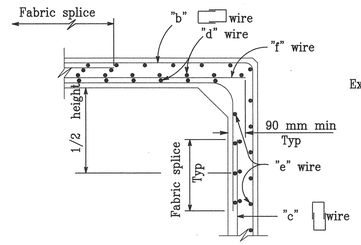
REGISTERED PROFESSIONAL ENGINEER — Gerard Dalziel, No. 36333, Exp. 06/30/06, CIVIL, STATE OF CALIFORNIA

WILLDAN – Serving Public Agencies
5930 Cornerstone ct. West, Ste 300
San Diego, California 92121
Tel 858.467.6950, Fax 858.467.1346

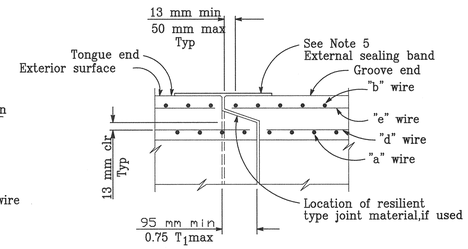
REGISTERED CIVIL ENGINEER — DATE 8/15/05



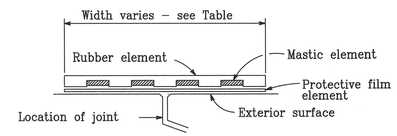
TYPICAL SECTION – SPANS 1.2 m THRU 3.7 m



ALTERNATIVE DETAILING OPTION



END JOINT DETAIL



EXTERNAL SEALING BAND SCHEMATIC

TABLE	
SPAN (m)	EXTERNAL SEALING BAND WIDTH (mm)
1.2 m–1.8 m	230
2.1 m–2.4 m	280
3 m–3.7 m	330

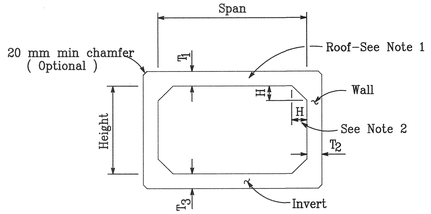
DESIGN BEARING PRESSURE (MPa)		
SPAN \ COVER	3 m	6 m
1.2 m thru 2.4 m	0.11	0.19
3 m thru 3.7 m	0.12	0.20

AASHTO STANDARD SHAPE		M259						M273						M259								M273								M259				M273			
SPAN (m)		1.2						1.2						1.5								1.5								1.8				1.8			
HEIGHT (m)		0.6		0.9		1.2		0.6		0.9		1.2		0.6		0.9		1.2		1.5		0.6		0.9		1.2		1.5		0.9		1.2		1.5		1.8	
Maximum earth cover (m)		3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Concrete (mm)	Roof T_1	125	125	125	125	125	125	190	190	190	190	190	190	150	150	150	150	150	150	150	150	205	205	205	205	205	205	205	205	180	180	180	180	180	180	180	180
	Side wall T_2	125	125	125	125	125	125	125	125	125	125	125	125	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	180	180	180	180	180	180	180	180
	Invert T_3	125	125	125	125	125	125	150	150	150	150	150	150	150	150	150	150	150	150	150	150	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
Minimum welded wire fabric Reinf areas (Square mm/m)	"a"	870	870	910	910	955	955	615	615	655	655	655	655	805	805	870	870	890	890	910	910	655	655	700	700	720	720	720	720	825	825	870	870	890	890	890	890
	"b"	760	530	675	570	675	740	295	485	320	595	425	785	720	635	655	655	635	740	635	910	380	570	340	635	400	740	530	955	635	760	615	805	615	930	740	1100
	"c"	275	275	275	275	275	380	275	275	275	275	275	425	275	275	275	275	275	275	295	485	275	275	275	275	275	275	295	530	295	295	295	295	295	295	360	615
	"d"	445	275	465	275	485	275	320	275	340	275	340	275	360	275	400	275	400	275	425	275	295	275	320	275	340	275	340	275	340	275	360	275	380	275	380	275
	"e"	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275
	"f"	595	595	635	635	675	570	340	340	380	380	380	235	530	530	595	595	615	615	615	425	380	380	425	425	445	445	425	190	530	530	570	570	595	595	530	275
✳ Quantity	Conc m^3/m	0.55		0.65		0.73		0.70		0.78		0.85		0.80		0.88		0.98		1.08		0.93		1.03		1.10		1.20		1.18		1.28		1.38		1.48	
	Reinf kg/m	79	67	83	79	92	94	52	60	60	71	70	91	83	77	91	86	97	100	106	124	63	70	67	82	77	95	92	122	100	106	107	121	116	134	134	164

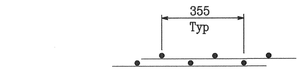
AASHTO STANDARD SHAPE		M259 AND M273												M259 AND M273												M259 AND M273											
SPAN (m)		2.1												2.4								3.0								3.7							
HEIGHT (m)		0.9		1.2		1.5		1.8		2.1		1.2		1.5		1.8		2.1		2.4		1.5		1.8		2.1		2.4		2.7		3.0		1.8		2.1	
Maximum earth cover (m)		3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Concrete (m)	$T_1 = T_2 = T_3$	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	205	255	255	255	255	255	255	255	255	255	255	255	255	305	305	305	305
Minimum welded wire fabric Reinf areas (Square mm/m)	"a"	825	930	845	995	890	1015	890	1015	910	1015	950	1250	995	1290	1015	1310	1015	1310	1035	1290	950	1500	975	1565	975	1590	995	1610	995	1590	995	1565	1080	1800	1100	1840
	"b"	655	890	635	910	635	995	740	1120	890	1310	720	1165	785	1230	870	1335	995	1505	1165	1735	955	1420	995	1480	1060	1565	1165	1715	1315	1905	1505	2160	1120	1885	1165	1755
	"c"	340	340	340	340	340	340	340	380	465	740	340	340	340	340	340	340	380	570	615	995	445	445	445	445	445	445	445	445	570	845	845	1270	530	530	530	530
	"d"	320	275	340	275	340	275	340	275	340	275	340	275	360	275	360	275	360	275	380	275	320	275	320	275	320	275	320	275	320	275	320	275	320	275	320	275
	"e"	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275
	"f"	485	595	510	655	550	675	550	635	445	275	615	910	655	955	675	975	635	740	425	295	510	1060	530	1120	530	1145	550	1165	425	740	150	295	550	1270	570	1310
✳ Quantity	Conc m^3/m	1.48		1.60		1.73		1.85		1.98		1.73		1.85		1.98		2.10		2.23		2.70		2.85		3.00		3.20		3.35		3.50		3.90		4.10	
	Reinf kg/m	115	133	122	145	125	153	145	180	170	217	143	185	158	208	175	222	195	254	232	305	198	265	213	288	228	305	250	340	280	440	330	452	260	360	275	385

AASHTO STANDARD SHAPE		M259 AND M273											
SPAN (m)		3.7											
HEIGHT (m)		2.4		2.7		3.0		3.4		3.7			
Maximum earth cover (m)		3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0		
Concrete (m)	$T_1 = T_2 = T_3$	305	305	305	305	305	305	305	305	305	305		
Minimum welded wire fabric Reinf areas (Square mm/m)	"a"	1900	1100	1145	1905	1145	1905	1145	1885	1120	1865		
	"b"	2160	1120	1885	1145	1905	1145	1905	1145	1885	1120	1865	
	"c"	530	530	530	530	530	740	605	1145	1080	1610		
	"d"	320	275	340	275	340	275	340	275	340	275		
	"e"	275	275	275	275	275	275	275	275	275	275		
	"f"	1375	615	1375	615	1165	340	740	45	255			
✳ Quantity	Conc m^3/m	4.26		4.47		4.65		4.85		5.00			
	Reinf kg/m	295	410	320	442	347	490	395	555	450	635		

✳ See Note 3



SCHEMATIC



FABRIC SPLICE DETAIL

NOTES:

1. The inside and outside surfaces of the RCB roof shall be marked "TOP".
2. H minimum shall equal the wall thickness. H maximum shall be 200 mm for spans through 2.4 m and 355 mm for spans over 2.4 m.
3. Quantities are approximate and for design purposes only.
4. For design and details not shown see "Precast RCB Culvert,Miscellaneous Details" sheet.
5. For external sealing band applications see "Precast RCB Culvert,Excavation and Backfill Details" sheet.

NO SCALE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

S:\LDD Design\Valley Center Road\UJ1101\Addendum #2\VCR-NORTH\ C-SH221R-A – DETI-VCRN.dwg 17:00 08/15/05

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS
5555 OVERLAND AVENUE, SAN DIEGO, CA 92123-1295

REVISIONS	BY	APPROVED	DATE

COORDINATE INDEX: 370 N. 1761 E.
CONST. COMPL.
FIELD REVISIONS

VALLEY CENTER ROAD
CULVERT - PRECAST RCB

REINFORCEMENT AND DESIGN TABLES

SCALE: HOR. AS NOTED VERT. AS NOTED
W.A. UJ1101 R.S. 1838-3 TO -6
FILE NO.
SHEET 221R-A OF 256 SHEETS