Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	163	4.1/4.9	142	737

REGISTERED CIVIL ENGINEER DATE 08-30-16

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARY ELIZABETH NORTHEIMER No. C75418 Exp. 12/31/17 CIVIL STATE OF CALIFORNIA

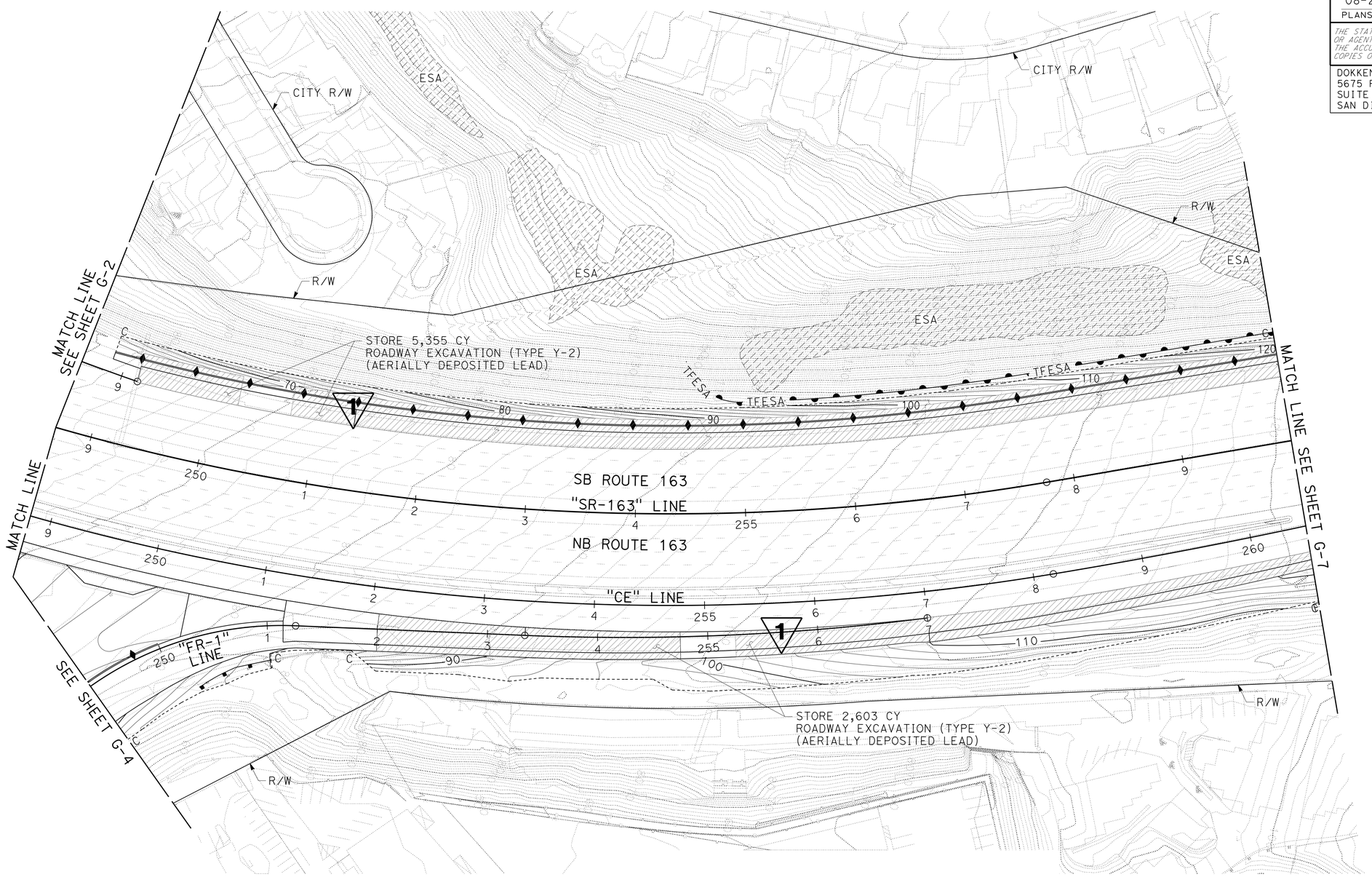
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DOKKEN ENGINEERING
5675 RUFFIN Rd
SUITE 250
SAN DIEGO, CA 92123

CITY OF SAN DIEGO
525 B STREET
SUITE 750
SAN DIEGO, CA 92101

NOTE:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



1 **REPLACED PER ADDENDUM No. 1 DATED NOVEMBER 4, 2016**

CONTOUR GRADING

APPROVED FOR CONTOUR GRADING WORK ONLY

SCALE: 1" = 50'

G-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: CHRIS THOMAS
CALCULATED-DESIGNED BY: JUSTIN TALAGO
CHECKED BY: MARY ELIZABETH NORTHEIMER
REVISED BY
DATE REVISED

LAST REVISION 11-01-16 | DATE PLOTTED => 01-NOV-2016 | TIME PLOTTED => 09:41

DRAINAGE QUANTITIES

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	163	4.1/4.9	184	737

REGISTERED CIVIL ENGINEER 08-30-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER PAMELA DALCIN-WALLING No. C52187 Exp. 12/31/16 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DOKKEN ENGINEERING
5675 RUFFIN Rd
SUITE 250
SAN DIEGO, CA 92123

CITY OF SAN DIEGO
525 B STREET
SUITE 750
SAN DIEGO, CA 92101

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No. ⬡	DRAINAGE UNIT No. ◯	ABANDON CULVERT (EA)	ABANDON INLET (EA)	ABANDON INLET (EA)	REMOVE INLET (EA)	REMOVE INLET (EA)	REMOVE MANHOLE (EA)	REMOVE CULVERT (LF)	REMOVE CULVERT (LF)	REMOVE CONCRETE (CY)	STRUCTURAL CONCRETE, DRAINAGE INLET (CY)	MINOR CONCRETE (BACKFILL) (CY)	STRUCTURAL CONCRETE (BOX CULVERT) (CY)	BAR REINFORCING STEEL (BOX CULVERT) (LB)	STRUCTURE EXCAVATION (CULVERT) (CY)	STRUCTURE BACKFILL (CULVERT) (CY)	18" RCP (LF)	24" RCP (LF)	30" RCP (LF)	36" RCP (LF)	48" JACKED RCP (LF)	18" CSP (0.064" THICK) (LF)	18" CSP DOWNDRAIN (0.064" THICK) (LF)	SAND BACKFILL (CY)	24" CONCRETE FES (EA)	48" CONCRETE FES (EA)	DRILL AND BOND DOWEL (LF)	CABLE RAILING (LF)	CONCRETE (CHANNEL LINING) (CY)	ROCK SLOPE PROTECTION (No. 3, METHOD B) (CY)	ROCK SLOPE PROTECTION FABRIC (CLASS 8) (SQYD)	MISCELLANEOUS IRON AND STEEL (LB)	FLAP GATE (EA)	ADJUST MANHOLE TO GRADE (EA)	24" MH FRAME AND COVER (EA)	36" MH FRAME AND COVER (EA)	GRATE 24-9 (EA)	GRATE 24-12 (EA)	GRATE 24-12X (EA)	GRATE CHAIN (EA)	CONCRETE COLLAR/CONCRETE LUG (EA)	HEIGHT OF INLET / MANHOLE (FT)	PIPE JOINT TYPE	MAXIMUM HEIGHT COVER (FT)	DESCRIPTION	STATION / OFFSET	DRAINAGE SYSTEM No. ⬡	DRAINAGE UNIT No. ◯
					(N)		(N)	(N)		(N)		1																							(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)					
	1	a																			6.0																			1		S	4.1	36" RCP	'FR' 55+38.69/4.76' R+ TO 'FR' 55+38.67/10.76' R+	1	a
	1	b										3.6																					242						1	1		7.00			G2 INLET	'FR' 55+38.67/10.76' R+	1	b
	1	c																			3.0																			1		S	3.9	36" RCP	'FR' 55+38.67/10.76' R+ TO 'FR' 55+39.37/15.72' R+	1	c
	1	d																	28.1																							S	5.1	24" RCP	'FR' 55+38.67/10.76' R+ TO 'FR' 55+70.00/5.69' R+	1	d
	1	e										3.4																					242						1	1		6.35			G2 INLET	'FR' 55+70.00/5.69' R+	1	e
	1	f					1																																			7.45			REMOVE INLET	'FR' 55+38.68/8.13' R+	1	f
D-1	1	g								16																																		5.8	REMOVE 18" RCP	'FR' 55+38.68/8.13' R+ TO 'FR' 55+58.36/5.47' R+	1	g
	1	h			1																																					5.37			ABANDON INLET	'FR' 55+58.36/5.47' R+	1	h
	2	a																			3.0																			1		S	4.6	36" RCP	'FR' 55+42.48/51.02' R+ TO 'FR' 55+43.39/55.96' R+	2	a
	2	b										4.7																					864				1					8.20			TYPE A4 CLEANOUT	'FR' 55+43.39/55.96' R+	2	b
	2	c																			3.0																			1		S	5.0	36" RCP	'FR' 55+43.39/55.96' R+ TO 'FR' 55+43.03/61.00' R+	2	c
	2	d																3.0																						1		S	6.7	18" RCP	'FR' 55+38.09/55.32' R+ TO 'FR' 55+43.39/55.96' R+	2	d
	2	e																	350.0																							S	6.1	24" RCP	'FR' 55+43.39/55.96' R+ TO 'FR' 58+83.27/78.00' R+	2	e
D-2	2	f										1.6																					242						1	1		4.50			GO INLET	'FR' 58+83.27/78.00' R+	2	f
D-1	2	g					1																																			8.27			REMOVE INLET	'FR' 55+42.91/56.00' R+	2	g
	3	a										2.6																					864				1					4.50			SHALLOW Jct Str	'U' 66+60.33/30.27' L+	3	a
	3	b																	11.3																							S	3.0	24" RCP	'U' 66+70.07/41.00' L+ TO 'U' 66+60.33/30.27' L+	3	b
	3	c										3.9																					242						1	1		4.50			GOL-10 INLET	'U' 66+70.07/41.00' L+	3	c
	3	d																98.3																								S	3.8	18" RCP	'U' 66+70.07/41.00' L+ TO 'U' 67+71.00/41.00' L+	3	d
	3	e										4.0																					242						1	1		5.00			GOL-10 INLET	'U' 67+71.00/41.00' L+	3	e
	3	f																82.2																								S	4.7	18" RCP	'U' 67+71.00/41.00' L+ TO 'U' 68+57.70/34.70' L+	3	f
	3	g										4.2																					242						1	1		5.50			GOL-10 INLET	'U' 68+57.70/34.70' L+	3	g
	3	h				1																																	X			4.61			REMOVE INLET	'U' 66+60.81/38.47' L+	3	h
	4	a																	3.0																					1		S	5.8	24" RCP	'U' 66+61.52/32.12' R+ TO 'U' 66+62.95/37.32' R+	4	a
	4	b										3.6																					864				1					6.80			SHALLOW Jct Str	'U' 66+61.52/32.12' R+	4	b
	4	c																	57.9																							S	8.5	24" RCP	'U' 66+61.52/33.12' R+ TO 'U' 67+18.87/53.00' R+	4	c
	4	d										2.2																					242						1	1		6.90			GO INLET	'U' 67+18.87/53.00' R+	4	d
	4	e																	3.0																					1		S	5.5	24" RCP	'U' 66+61.49/27.59' R+ TO 'U' 66+61.52/32.12' R+	4	e
	4	f																3.0																						1		S	5.9	18" RCP	'U' 66+56.78/33.51' R+ TO 'U' 66+61.52/33.12' R+	4	f
D-2	4	g					1																															X				7.62			REMOVE INLET	'U' 66+61.52/33.12' R+	4	g
	5	a										2.7																					864				1					4.70			SHALLOW Jct Str	'FR' 60+35.70/8.46' L+	5	a
	5	b																3.0																						1		S	3.7	18" RCP	'FR' 60+35.70/8.46' L+ TO 'FR' 60+37.12/4.37' L+	5	b
	5	c						21																																			4.2	REMOVE 18" SCSP	'FR' 60+34.78/8.36' L+ TO 'FR' 60+56.65/7.61' L+	5	c
	5	d					1																															X				4.88			REMOVE INLET	'FR' 60+34.78/8.36' L+	5	d
	6	a																3.0																						1		S	1.6	18" RCP	'FR' 60+86.37/56.95' R+ TO 'FR' 60+88.57/61.28' R+	6	a
	6	b										2.3																					864				1					3.70			SHALLOW Jct Str	'FR' 60+88.57/61.28' R+	6	b
	6	c																26.3																								S	1.7	18" RCP	'FR' 60+88.57/61.28' R+ TO 'FR' 61+17.87/61.00' R+	6	c
	6	d										2.9																					242						1	1		4.50			GOL-7 INLET	'FR' 61+17.87/61.00' R+	6	d
	6	e																130.4																								S	3.8	18" RCP	'FR' 61+19.34/61.25' R+ TO 'FR' 62+49.22/51.25' R+	6	e
	6	f										2.6																					864				1					4.51			SHALLOW Jct Str	'FR' 62+49.72/51.25' R+	6	f
	6	g																35.3																								S	3.8	18" RCP	'FR' 62+53.22/51.25' R+ TO 'FR' 62+63.00/61.24' R+	6	g
	6	h										2.8																					242						1	1		4.00			GOL-7 INLET	'FR' 62+89.47/61.00' R+	6	h
	6	j				1																																	X			2.02			REMOVE INLET	'FR' 60+94.12/67.61' R+	6	j
	6	k						20																																			1.4	REMOVE 18" SCSP	'FR' 60+94.12/67.61' R+ TO 'FR' 61+16.14/66.85' R+	6	k
	6	l								13																																	1.3	REMOVE 18" RCP	'FR' 60+86.06/56.56' R+ TO 'FR' 60+86.06/66.31' R+	6	l
SUBTOTAL DQ-1					1	2	4		41	29		47.1						384.5	453.3		15.0												7362																

NOTE: 1. (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
2. "X" LABLED IN GRATE COLUMNS INDICATES SALVAGEABLE GRATE FROM A REMOVED OR ABANDONED INLET.

1 REPLACED PER ADDENDUM No. 1 DATED NOVEMBER 4, 2016

DRAINAGE QUANTITIES DQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: CHRIS THOMAS
CALCULATED-DESIGNED BY: RYAN NEVES
CHECKED BY: PAMELA DALCIN-WALLING
REVISED BY
DATE REVISED

LAST REVISION 11-01-16
DATE PLOTTED => 01-NOV-2016
TIME PLOTTED => 09:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	163	4.1/4.9	185	737

REGISTERED CIVIL ENGINEER 08-30-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER PAMELA DALCIN-WALLING No. C52187 Exp. 12/31/16 CIVIL STATE OF CALIFORNIA

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DOKKEN ENGINEERING
5675 RUFFIN Rd
SUITE 250
SAN DIEGO, CA 92123

CITY OF SAN DIEGO
525 B STREET
SUITE 750
SAN DIEGO, CA 92101

DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No. ⬡	DRAINAGE UNIT No. ◯	ABANDON CULVERT	ABANDON INLET	ABANDON INLET	REMOVE INLET	REMOVE INLET	REMOVE MANHOLE	REMOVE CULVERT	REMOVE CULVERT	REMOVE CONCRETE	STRUCTURAL CONCRETE, DRAINAGE INLET ▽1	MINOR CONCRETE (BACKFILL)	STRUCTURAL CONCRETE (BOX CULVERT)	BAR REINFORCING STEEL (BOX CULVERT)	STRUCTURE EXCAVATION (CULVERT)	STRUCTURE BACKFILL (CULVERT)	18" RCP	24" RCP	30" RCP	36" RCP	48" JACKED RCP	18" CSP (0.064" THICK)	18" CSP DOWNDRAIN (0.064" THICK)	SAND BACKFILL	24" CONCRETE FES	48" CONCRETE FES	DRILL AND BOND DOWEL	CABLE RAILING	CONCRETE (CHANNEL LINING)	ROCK SLOPE PROTECTION (No. 3, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	MISCELLANEOUS IRON AND STEEL	FLAP GATE	ADJUST MANHOLE TO GRADE	24" MH FRAME AND COVER	36" MH FRAME AND COVER	GRATE 24-9	GRATE 24-12	GRATE 24-12X	GRATE CHAIN	CONCRETE COLLAR/CONCRETE LUG	HEIGHT OF INLET / MANHOLE	PIPE JOINT TYPE	MAXIMUM HEIGHT COVER	DESCRIPTION	STATION / OFFSET	DRAINAGE SYSTEM No. ⬡	DRAINAGE UNIT No. ◯
					(N)		(N)	(N)		(N)																										(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)				
			EA	EA	EA	EA	EA	EA	LF	LF	CY	CY	CY	CY	LB	CY	CY	LF	LF	LF	LF	LF	LF	LF	CY	EA	LF	LF	LF	CY	CY	SQYD	LB	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		FT				
D-2	7	a										0.8																					329						1		1		2.50			G1 INLET	'FR5' 239+89.50/79.50' Lt	7	a
	7	b																32.1																										S	8.9	18" RCP	'FR5' 239+89.50/79.50' Lt TO 'FR5' 238+95.50/88.00' Lt	7	b
	7	c										0.8																					329						1		1		2.50			G1 INLET	'FR5' 239+25.00/88.00' Lt	7	c
	7	d																111.9																										S	9.6	18" RCP	'FR5' 239+25.00/88.00' Lt TO 'FR5' 237+50.00/2.00' Rt	7	d
	7	e										5.6																					864				1						12.55			Junc Str	'FR5' 237+50.00/2.00' Rt	7	e
	7	f																	42.7																									S	10.0	24" RCP	'FR5' 237+50.00/2.00' Rt TO 'FR5' 237+42.80/47.81' Rt	7	f
	7	g										4.6																					864				1						10.4			Junc Str	'FR5' 237+42.80/47.81 Rt	7	g
	7	h																	207.7																									S	6.7	24" RCP	'FR5' 237+42.80/47.81' Rt TO 'FR4' 237+25.52/29.53' Lt	7	h
	7	j										2.7																					864				1						4.60			SHALLOW Junc Str	'FR5' 237+25.52/29.53' Lt	7	j
	7	k																	96.8																							1		S	2.3	24" RCP	'FR5' 237+25.52/29.53' Lt TO 'FR5' 236+10.96/ 31.23' Lt	7	k
	7	m																85.3																										S	7.1	18" RCP	'FR5' 236+69.31/80.04' Lt TO 'FR5' 239+25.00/88.00' Lt	7	m
	7	n										3.2																					329						1		1		6.00			G2 INLET	'FR5' 236+69.31/80.04' Lt	7	n
	7	p																	36.8																									S	1.8	24" RCP	'FR5' 237+50.00/2.00' Rt TO 'FR5' 237+10.50/2.30' Rt	7	p
	7	q										3.4																					622						2		2		4.00			GD2 INLET	'FR5' 237+10.50/2.30' Rt	7	q
	7	r		1																																							2.10			ABANDON INLET	'FR5' 239+20.41/31.19' Lt	7	r
	7	s	1																						5.7																				3.4	ABANDON 18" RCP	'FR5' 239+20.41/31.19' Lt TO 'FR5' 239+33.22/55.50' Rt	7	s
	8	a											28.7							26.0																						1		S	1.6	30" RCP	'CE' 240+12.32/41.55' Rt TO 'CE' 239+90.70/58.00' Rt	8	a
	8	b										2.3																					329						1		1		3.70			G2 INLET	'CE' 239+90.70/58.00' Rt	8	b
	8	c																		19.9																								S	2.0	30" RCP	'CE' 239+90.70/58.00' Rt TO 'CE' 239+90.70/80.38' Rt	8	c
	8	d										2.7																					864				1						4.70			SHALLOW Junc Str	'CE' 239+90.70/80.38' Rt	8	d
	8	e																		3.0																						1		S	2.0	30" RCP	'CE' 239+85.95/79.87' Rt TO 'CE' 239+90.70/80.38' Rt	8	e
D-3	8	f																4.9																										S	2.7	18" RCP	'CE' 239+90.70/58.00' Rt TO 'CE' 240+00.00/58.00' Rt	8	f
	8	g										2.3																					329						1		1		3.70			G2 INLET	'CE' 240+00.00/58.00' Rt	8	g
	8	h						35																																					2.0	REMOVE 30" RCP	'CE' 239+96.63/79.89' Rt TO 'CE' 240+09.72/44.44' Rt	8	h
	8	j					1																																				3.80			REMOVE INLET	'CE' 240+09.72/44.44' Rt	8	j
	8	k						1																																			4.10			REMOVE MANHOLE	'CE' 239+96.63/79.89' Rt	8	k
	8	m								12																																			1.4	REMOVE 30" RCP	'CE' 239+96.63/79.89' Rt TO 'CE' 239+85.45/79.91' Rt	8	m
	9	a										3.9																					242						1	1			4.50			GOL-10 INLET	'FR' 68+87.00/62.65' Rt	9	a
	9	b																	190.8																									S	4.0	24" RCP	'FR' 68+87.00/62.65' Rt TO 'FR' 70+93.67/61.75' Rt	9	b
	9	c										5.0																					242							1	1		8.70			GOL-10 (MOD) INLET	'FR' 70+93.67/61.75' Rt	9	c
	9	d																	76.5																									S	5.8	24" RCP	'FR' 70+93.67/61.75' Rt TO 'FR' 71+69.00/65.00' Rt	9	d
	9	e										1.6																					242							1	1		4.40			GO INLET	'FR' 71+69.00/65.00' Rt	9	e
D-4	9	f																				256.4																						S	15.8	48" RCP	'FR' 69+40.03/141.92' Lt TO 'FR' 70+90.00/65.00' Rt	9	f
	9	g																									1																	S		48" Conc FES	'FR' 69+40.03/141.92' Lt	9	g
	9	h																													6.9	20.5														RSP	'FR2' 247+29.53/151.51' Rt TO 'FR2' 247+41.32/128.08 Rt	9	h
	9	j		1																																			X				3.50			ABANDON INLET	'FR' 70+60.43/8.90' Lt	9	j
	9	k						95																																					4.5	REMOVE 18" RCP	'FR' 70+60.43/8.90' Lt TO 'FR' 69+84.97/52.22' Rt	9	k
	9	m				1																																	X				6.41			REMOVE INLET	'FR' 69+84.97/52.22' Rt	9	m
	9	n	1																						2.4																				6.6	ABANDON 12" CSP	'FR' 69+84.97/52.22' Rt TO 'FR' 70+18.12/126.04' Rt	9	n
SUBTOTAL DQ-2			2	2		1	1	1	130	12		38.9	28.7					234.2	651.3	48.9		256.4			8.1		1				6.9	20.5	6449																

NOTE:
1. (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
2. "X" LABLED IN GRATE COLUMNS INDICATES SALVAGEABLE GRATE FROM A REMOVED OR ABANDONED INLET.

▽1 **REPLACED PER ADDENDUM No. 1 DATED NOVEMBER 4, 2016**

DRAINAGE QUANTITIES

DQ-2

REVISED BY | DATE REVISED
RYAN NEVES | PAMELA DALCIN-WALLING
CALCULATED-DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR | CHRIS THOMAS
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 11-01-16 | DATE PLOTTED => 01-NOV-2016 | TIME PLOTTED => 09:41

DRAINAGE QUANTITIES

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	163	4.1/4.9	186	737

REGISTERED CIVIL ENGINEER 08-30-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER PAMELA DALCIN-WALLING No. C52187 Exp. 12/31/16 CIVIL STATE OF CALIFORNIA

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DOKKEN ENGINEERING
5675 RUFFIN Rd
SUITE 250
SAN DIEGO, CA 92123

CITY OF SAN DIEGO
525 B STREET
SUITE 750
SAN DIEGO, CA 92101

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No. ⬡	DRAINAGE UNIT No. ◯	ABANDON CULVERT (EA)	ABANDON INLET (EA)	ABANDON INLET (N) (EA)	REMOVE INLET (EA)	REMOVE INLET (N) (EA)	REMOVE MANHOLE (N) (EA)	REMOVE CULVERT (LF)	REMOVE CULVERT (N) (LF)	REMOVE CONCRETE (CY)	STRUCTURAL CONCRETE, DRAINAGE INLET 1 (CY)	MINOR CONCRETE (BACKFILL) (CY)	STRUCTURAL CONCRETE (BOX CULVERT) (CY)	BAR REINFORCING STEEL (BOX CULVERT) (LB)	STRUCTURE EXCAVATION (CULVERT) (CY)	STRUCTURE BACKFILL (CULVERT) (CY)	18" RCP (LF)	24" RCP (LF)	30" RCP (LF)	36" RCP (LF)	48" JACKED RCP (LF)	18" CSP (0.064" THICK) (LF)	18" CSP DOWNDRAIN (0.064" THICK) (LF)	SAND BACKFILL (CY)	24" CONCRETE FES (EA)	48" CONCRETE FES (EA)	DRILL AND BOND DOWEL (LF)	CABLE RAILING (LF)	CONCRETE (CHANNEL LINING) (CY)	ROCK SLOPE PROTECTION (No. 3, METHOD B) (CY)	ROCK SLOPE PROTECTION FABRIC (CLASS 8) (SQYD)	MISCELLANEOUS IRON AND STEEL (LB)	FLAP GATE (EA)	ADJUST MANHOLE TO GRADE (EA)	24" MH FRAME AND COVER (N) (EA)	36" MH FRAME AND COVER (N) (EA)	GRATE 24-9 (N) (EA)	GRATE 24-12 (N) (EA)	GRATE 24-12X (N) (EA)	GRATE CHAIN (N) (EA)	CONCRETE COLLAR/CONCRETE LUG (N) (EA)	HEIGHT OF INLET / MANHOLE (N) (FT)	PIPE JOINT TYPE (N)	MAXIMUM HEIGHT COVER (N) (FT)	DESCRIPTION	STATION / OFFSET	DRAINAGE SYSTEM No. ⬡	DRAINAGE UNIT No. ◯
	10	a																					3.0																			1		S	1.8	18" CSP	'FR2' 246+65.20/25.00' Rt TO 'FR2' 246+64.66/29.50' Rt	10	a
	10	b										2.7																					864				1						4.70			SHALLOW Junc Str	'FR2' 246+64.66/29.50' Rt	10	b
	10	c																	48.3																								S	6.0	24" RCP	'FR2' 246+64.66/29.50' Rt TO 'FR2' 246+96.47/66.77' Rt	10	c
	10	d																								1																	S		24" Conc FES	'FR2' 246+96.47/66.77' Rt	10	d
	10	e																												14.0	42.1														RSP	'FR2' 246+95.12/65.30' Rt TO 'FR2' 247+31.19/104.41' Rt	10	e
	10	f																					3.0																			1		S	0.9	18" CSP	'FR2' 246+64.66/29.50' Rt TO 'FR2' 246+69.10/28.92' Rt	10	f
	10	g	1																						11.8																			13.0	ABANDON 18" CSP	'FR2' 246+64.99/30.12' Rt TO 'FR2' 245+23.00/28.67' Lt	10	g
	10	h					1																																			4.71			REMOVE INLET	'FR2' 246+64.99/30.12' Rt	10	h
	11	a																												8.2	24.5														RSP	'FR2' 251+31.35/144.01 Rt TO 'FR2' 249+75.87/152.63 Rt	11	a
	11	b																									1																S		48" Conc FES	'FR' 70+03.77/163.13' Lt	11	b
	11	c																				255.7																					S		48" RCP	'FR' 69+92.79/166.46' Lt TO 'FR' 72+51.64/ 99.50' Lt	11	c
	11	d										4.5																					864				1						8.50			LARGE Junc Str	'FR' 72+51.64/99.50' Lt	11	d
	11	e																	34.3																								S	6.3	24" RCP	'FR' 72+51.64/99.50' Lt TO 'FR' 872+83.12/82.5' Lt	11	e
	11	f																																1											FLAP GATE	'FR' 72+83.12/82.58' Lt	11	f
	12	a																												9.8	29.2														RSP	'FR2' 250+71.41/108.14 Rt TO 'FR2' 249+79.43/132.45 Rt	12	a
	12	b																								1																	S		24" Conc FES	'FR1' 247+16.50/144.00' Lt	12	b
	12	c																	149.5																								S	13.8	24" RCP	'FR1' 246+21.54/4.00' Lt TO 'FR1' 247+16.50/144.00' Lt	12	c
	12	d										4.0																					329					1		1		7.80			G2 INLET	'FR1' 246+21.54/ 4.00' Lt	12	d
D-4	12	e																	94.2																								S	12.4	24" RCP	'FR1' 245+20.98/7.00' Lt TO 'FR1' 246+21.54/4.00' Lt	12	e
	12	f										3.4																					329					1		1		6.50			G2 INLET	'FR1' 245+20.98/7.00' Lt	12	f
	12	g																	3.0																								S	5.0	24" RCP	'FR1' 245+14.03/7.00' Lt TO 'FR1' 245+20.98/7.00' Lt	12	g
	12	h										3.4																					329					1		1		6.50			G2 INLET	'FR1' 245+14.03/7.00' Lt	12	h
	12	j																	38.8																								S	5.0	24" RCP	'FR1' 245+14.03/7.00' Lt TO 'FR1' 245+21.70/33.00' Rt	12	j
	12	k										1.2																					329					1		1		4.20			G1 INLET	'FR1' 245+21.70/33.00' Rt	12	k
	12	m																	82.7																								S	10.8	24" RCP	'FR1' 246+21.54/4.00' Lt TO 'FR1' 247+08.95/4.00' Lt	12	m
	12	n										2.8																					329					1		1		5.00			G2 INLET	'FR1' 247+08.95/4.00' Lt	12	n
	13	a										2.4																					329					1		1		4.00			G2 INLET	'FR1' 248+14.61/33.00' Rt	13	a
	13	b																50.2																									S	11.7	18" RCP	'FR1' 248+14.61/33.00' Rt TO 'FR1' 248+75.63/39.96' Rt	13	b
	13	c										3.0																					329					1		1		5.50			G2 INLET	'FR1' 248+75.63/39.96' Rt	13	c
	13	d																						86.4																	1		S	12.4	18" CSPDD	'FR1' 248+75.63/39.96' Rt TO 'FR1' 248+45.44/120.32' Rt	13	d
	13	e				1																																X				2.93			REMOVE INLET	'FR1' 248+47.33/25.04' Rt	13	e
	13	f							95																																			11.2	REMOVE 12" CSP	'FR1' 248+47.33/25.04' Rt TO 'FR1' 248+45.44/120.32' Rt	13	f
	14	a									56			225	56800	246	170											53	52			56													CIP DBL BOX CULV	'FR1' 244+89.94/139.52 Rt	14	a
	15	a																																1											FLAP GATE	'FR' 73+05.00/70.47' Lt	15	a
	15	b																		38.9																							S	8.6	30" RCP	'FR' 73+05.00/70.47' Lt TO 'FR' 73+61.04/59.03' Lt	15	b
	15	c										4.8																					864				1						10.80			Junc STR	'FR' 73+61.04/59.03' Lt	15	c
	15	d																		199.5																							S	7.6	30" RCP	'FR' 73+61.04/59.03' Lt TO 'FR' 75+80.40/55.57' Lt	15	d
	15	e										4.2																					864				1						7.10			TYPE A4 CLEANOUT	'FR' 75+80.40/55.57' Lt	15	e
D-5	15	f																		187.7																							S	5.0	30" RCP	'FR' 75+80.40/55.57' Lt TO 'FR' 77+84.43/55.79' Lt	15	f
	15	g										3.5																					864				1						5.75			TYPE A4 CLEANOUT	'FR' 77+84.43/55.79' Lt	15	g
	15	h																	5.5																						1		S	2.3	24" RCP	'FR' 77+84.43/55.79' Lt TO 'FR' 77+92.34/57.12' Lt	15	h
D-4	15	j																	30.3																								S	3.8	24" RCP	'FR' 73+60.50/93.00' Lt TO 'FR' 73+61.04/59.03' Lt	15	j
	15	k										1.6																					329					1		1		4.50			GO INLET	'FR' 73+60.50/93.00' Lt	15	k
	15	m																	3.9																								S	4.4	24" RCP	'FR' 75+80.73/61.45' Lt TO 'FR' 75+80.40/55.57' Lt	15	m
D-5	15	n										8.3																					435			1						5.10			TYPE B INLET	'FR' 75+80.73/61.45' Lt	15	n
	15	p																	5.7																								S	2.8	24" RCP	'FR' 77+84.23/62.70' Lt TO 'FR' 77+84.43/55.79' Lt	15	p
SUBTOTAL DQ-3			1			1	1		95		56	49.8		225	56800	246	170	50.2	496.2	426.1		255.7	6	86.4	11.8	2	1	53	52		32.0	251.8	7387	2														

NOTE:
1. (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
2. "X" LABLED IN GRATE COLUMNS INDICATES SALVAGEABLE GRATE FROM A REMOVED OR ABANDONED INLET.

1 **REPLACED PER ADDENDUM No. 1 DATED NOVEMBER 4, 2016**

DRAINAGE QUANTITIES DQ-3

LAST REVISION 11-01-16 | DATE PLOTTED => 01-NOV-2016 | TIME PLOTTED => 09:41

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®

CONSULTANT FUNCTIONAL SUPERVISOR: CHRIS THOMAS

CALCULATED-DESIGNED BY: RYAN NEVES | CHECKED BY: PAMELA DALCIN-WALLING | REVISED BY | DATE REVISED

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 11000000064id003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2763 | PROJECT NUMBER & PHASE 11000000641

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	163	4.1/4.9	187	737

REGISTERED CIVIL ENGINEER 08-30-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER PAMELA DALCIN-WALLING No. C52187 Exp. 12/31/16 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DOKKEN ENGINEERING
5675 RUFFIN Rd
SUITE 250
SAN DIEGO, CA 92123

CITY OF SAN DIEGO
525 B STREET
SUITE 750
SAN DIEGO, CA 92101

DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No. (⬡)	DRAINAGE UNIT No. (◯)	ABANDON CULVERT (EA)	ABANDON INLET (EA)	ABANDON INLET (EA)	REMOVE INLET (EA)	REMOVE INLET (EA)	REMOVE MANHOLE (EA)	REMOVE CULVERT (LF)	REMOVE CULVERT (LF)	REMOVE CONCRETE (CY)	STRUCTURAL CONCRETE, DRAINAGE INLET (CY)	MINOR CONCRETE (BACKFILL) (CY)	STRUCTURAL CONCRETE (BOX CULVERT) (CY)	BAR REINFORCING STEEL (BOX CULVERT) (LB)	STRUCTURE EXCAVATION (CULVERT) (CY)	STRUCTURE BACKFILL (CULVERT) (CY)	18" RCP (LF)	24" RCP (LF)	30" RCP (LF)	36" RCP (LF)	48" JACKED RCP (LF)	18" CSP (0.064" THICK) (LF)	18" CSP DOWNDRAIN (0.064" THICK) (LF)	SAND BACKFILL (CY)	24" CONCRETE FES (EA)	48" CONCRETE FES (EA)	DRILL AND BOND DOWEL (LF)	CABLE RAILING (LF)	CONCRETE (CHANNEL LINING) (CY)	ROCK SLOPE PROTECTION (No. 3, METHOD B) (CY)	ROCK SLOPE PROTECTION FABRIC (CLASS 8) (SQYD)	MISCELLANEOUS IRON AND STEEL (LB)	FLAP GATE (EA)	ADJUST MANHOLE TO GRADE (EA)	24" MH FRAME AND COVER (EA)	36" MH FRAME AND COVER (EA)	GRATE 24-9 (EA)	GRATE 24-12 (EA)	GRATE 24-12X (EA)	GRATE CHAIN (EA)	CONCRETE COLLAR/CONCRETE LUG (EA)	HEIGHT OF INLET / MANHOLE (FT)	PIPE JOINT TYPE	MAXIMUM HEIGHT COVER (FT)	DESCRIPTION	STATION / OFFSET	DRAINAGE SYSTEM No. (⬡)	DRAINAGE UNIT No. (◯)
					(N)		(N)	(N)		(N)		1																							(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)				
	15	q										5.2																					435			1							4.50			TYPE B INLET	'FR' 77+84.23/62.70' L†	15	q
	15	r	1																						3.9																			6.1	ABANDON 18" RCP	'FR' 75+80.40/55.5' L† TO 'FR' 76+09.37/1.65' R†	15	r
	15	s				1																																	X				3.70			REMOVE INLET	'FR' 76+09.37/1.65' R†	15	s
	15	t							263																																			4.1	REMOVE 24" RCP	'FR' 75+80.40/55.5' L† TO 'FR' 72+96.45/54.56 L†	15	t
	15	u					1																																				6.28			REMOVE INLET	'FR' 75+80.40/55.5' L†	15	u
	15	v							187																																			6.2	REMOVE 24" RCP	'FR' 75+80.40/55.5' L† TO 'FR' 77+87.06/56.90' L†	15	v
	15	w					1																																				4.47			REMOVE INLET	'FS' 77+87.06/56.90' L†	15	w
	18	a																	3.0																							1		S	2.4	24" RCP	'FR' 77+97.70/57.53' L† TO 'FR' 78+03.11/57.41' L†	18	a
	18	b										3.1																					864				1						4.80			TYPE A4 CLEANOUT	'FR' 78+03.11/57.41' L†	18	b
	18	c																	3.0																							1		S	2.6	24" RCP	'FR' 78+03.11/57.41' L† TO 'FR' 78+08.45/58.24 L†	18	c
	18	d																	51.7																									S	3.6	24" RCP	'FN' 79+72.39/36.00' L† TO 'FR' 78+03.11/57.41 L†	18	d
	18	e										5.7																					435			1							4.20			TYPE B INLET	'FN' 79+72.39/36.00' L†	18	e
	19	a																3.0																								1		S	2.3	18" RCP	'FN' 79+45.00/45.60' R† TO 'FN' 79+49.54/47.47' R†	19	a
	19	b										3.0																					864				1						4.40			TYPE A4 CLEANOUT	'FN' 79+49.54/47.47' R†	19	b
	19	c																27.8																										S	2.2	18" RCP	'FN' 79+49.54/47.47' R† TO 79+85.00/49.00' R†	19	c
	19	d										2.8																					864				1						4.10			TYPE A4 CLEANOUT	'FN' 79+85.00/49.00' R†	19	d
	19	e																26.0																										S	2.1	18" RCP	'FN' 79+85.00/49.00' R† TO 'FN' 80+15.00/49.00' R†	19	e
	19	f										2.8																					864				1						4.20			TYPE A4 CLEANOUT	'FN' 80+15.00/49.00' R†	19	f
D-5	19	g																2.0																										S	2.5	18" RCP	'FN' 80+15.00/49.00' R† TO 'FN' 80+15.00/56.00' R†	19	g
	19	h										7.0																					435			1							3.90			TYPE B INLET	'FN' 80+15.00/56.00' R†	19	h
	19	j																2.4																										S	2.5	18" RCP	'FN' 79+85.00/49.00' R† TO 'FN' 79+85.00/56.00' R†	19	j
	19	k										8.6																					435			1							3.75			TYPE B INLET	'FN' 79+85.00/56.00' R†	19	k
	19	m																16.8																								1		S	2.5	18" RCP	'FN' 79+85.00/56.00' R† TO 'FN' 79+93.54/74.43' R†	19	m
	19	n																62.4																										S	3.2	18" RCP	'FR' 79+49.54/47.47' R† TO 'FR' 80+06.00/66.67' L†	19	n
	19	p										3.0																					864				1						4.60			TYPE A4 CLEANOUT	'FR' 79+77.38/66.67' L†	19	p
	19	q																24.7																										S	3.2	18" RCP	'FR' 79+77.38/66.67' L† TO 'FR' 80+06.00/66.67' L†	19	q
	19	r										3.1																					864				1						4.90			TYPE A4 CLEANOUT	'FR' 80+06.00/66.67' L†	19	r
	19	s																3.8																										S	3.2	18" RCP	'FR' 79+77.38/72.00' L† TO 'FR' 79+77.38/66.67' L†	19	s
	19	t										7.3																					435			1							4.25			TYPE B INLET	'FR' 79+77.38/72.00' L†	19	t
	19	u																4.4																										S	3.5	18" RCP	'FR' 80+06.00/72.00' L† TO 'FR' 80+06.00/66.67' L†	19	u
	19	v										7.6																					435			1							4.60			TYPE B INLET	'FR' 80+06.00/72.00' L†	19	v
	19	w					1																																				4.31			REMOVE INLET	'FN' 79+59.74/54.32' R†	19	w
	20	a																3.0																								1		S	9.4	18" RCP	'FR' 75+30.00/90.35' R† TO 'FR' 75+34.53/89.75' R†	20	a
	20	b										5.4																					864				1						9.70			TYPE A4 CLEANOUT	'FR' 75+34.53/89.75' R†	20	b
	20	c																13.3																										S	8.8	18" RCP	'FR' 75+34.53/89.75' R† TO 'FR' 75+50.00/88.00' R†	20	c
	20	d										5.4																					435			1							9.00			TYPE A INLET	'FR' 75+50.00/88.00' R†	20	d
	20	e																3.0																								1		S	8.8	18" RCP	'FR' 75+50.00/88.00' R† TO 'FR' 75+54.51/87.80' R†	20	e
	20	f						1																																			12.49			REMOVE MANHOLE	'FR' 75+40.01/87.86' R†	20	f
	21	a																3.0																								1		S	7.8	18" RCP	'FS' 77+40.66/36.52' L† TO 'FS' 77+38.68/32.08' L†	21	a
	21	b										5.0																					864				1						8.90			TYPE A4 CLEANOUT	'FS' 77+38.68/32.08' L†	21	b
	21	c																3.0																								1		S	7.7	18" RCP	'FS' 77+38.68/32.08' L† TO 'FS' 77+38.99/27.27' L†	21	c
	21	d																21.9																										S	4.1	18" RCP	'FS' 77+12.40/28.23' L† TO 'FS' 77+38.68/32.08' L†	21	d
	21	e										4.8																					435			1							5.00			TYPE B INLET	'FS' 77+12.40/28.23' L†	21	e
	21	f					1																																				9.34			REMOVE INLET	'FS' 77+38.58/31.39' L†	21	f
SUBTOTAL DQ-4			1			1	4	1		450		79.8						220.5	57.7						3.9								10392																

NOTE:
1. (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
2. "X" LABLED IN GRATE COLUMNS INDICATES SALVAGEABLE GRATE FROM A REMOVED OR ABANDONED INLET.

1 REPLACED PER ADDENDUM No. 1 DATED NOVEMBER 4, 2016

DRAINAGE QUANTITIES
DQ-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
CONSULTANT FUNCTIONAL SUPERVISOR: CHRIS THOMAS
CALCULATED-DESIGNED BY: RYAN NEVES
CHECKED BY: PAMELA DALCIN-WALLING
REVISED BY
DATE REVISED

LAST REVISION 11-01-16
DATE PLOTTED => 01-NOV-2016
TIME PLOTTED => 09:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	163	4.1/4.9	188	737

REGISTERED CIVIL ENGINEER 08-30-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER PAMELA DALCIN-WALLING No. C52187 Exp. 12/31/16 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DOKKEN ENGINEERING
5675 RUFFIN Rd
SUITE 250
SAN DIEGO, CA 92123

CITY OF SAN DIEGO
525 B STREET
SUITE 750
SAN DIEGO, CA 92101

DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No. (◇)	DRAINAGE UNIT No. (○)	ABANDON CULVERT (EA)	ABANDON INLET (EA)	ABANDON INLET (EA)	REMOVE INLET (EA)	REMOVE INLET (EA)	REMOVE MANHOLE (EA)	REMOVE CULVERT (LF)	REMOVE CULVERT (LF)	REMOVE CONCRETE (CY)	STRUCTURAL CONCRETE, DRAINAGE INLET (CY)	MINOR CONCRETE (BACKFILL) (CY)	STRUCTURAL CONCRETE (BOX CULVERT) (CY)	BAR REINFORCING STEEL (BOX CULVERT) (LB)	STRUCTURE EXCAVATION (CULVERT) (CY)	STRUCTURE BACKFILL (CULVERT) (CY)	18" RCP (LF)	24" RCP (LF)	30" RCP (LF)	36" RCP (LF)	48" JACKED RCP (LF)	18" CSP (0.064" THICK) (LF)	18" CSP DOWNDRAIN (0.064" THICK) (LF)	SAND BACKFILL (CY)	24" CONCRETE FES (EA)	48" CONCRETE FES (EA)	DRILL AND BOND DOWEL (LF)	CABLE RAILING (LF)	CONCRETE (CHANNEL LINING) (CY)	ROCK SLOPE PROTECTION (No. 3, METHOD B) (CY)	ROCK SLOPE PROTECTION FABRIC (CLASS 8) (SQYD)	MISCELLANEOUS IRON AND STEEL (LB)	FLAP GATE (EA)	ADJUST MANHOLE TO GRADE (EA)	24" MH FRAME AND COVER (EA)	36" MH FRAME AND COVER (EA)	GRATE 24-9 (EA)	GRATE 24-12 (EA)	GRATE 24-12X (EA)	GRATE CHAIN (EA)	CONCRETE COLLAR/CONCRETE LUG (EA)	HEIGHT OF INLET / MANHOLE (FT)	PIPE JOINT TYPE	MAXIMUM HEIGHT COVER (FT)	DESCRIPTION	STATION / OFFSET	DRAINAGE SYSTEM No. (◇)	DRAINAGE UNIT No. (○)
					(N)		(N)	(N)		(N)		1																							(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)		(N)				
D-6	22	a																3.1																							1		S	3.4	18" RCP	'FS' 77+58.30/37.10' R+ TO 'FS' 77+59.37/42.55' R+	22	a
	22	b										3.2																				864				1						5.00			TYPE A4 CLEANOUT	'FS' 77+59.37/42.55' R+	22	b
	22	c																11.6																									S	2.9	18" RCP	'FS' 77+59.37/42.55' R+ TO 'FS' 77+59.45/55.00' R+	22	c
	22	d										5.5																				435			1							4.00			TYPE B INLET	'FS' 77+59.45/55.00' R+	22	d
	22	e					1																																		4.47			REMOVE INLET	'FS' 77+61.83/50.73' R+	22	e
	23	a							72																																		7.74	REMOVE 18" RCP	'FR' 78+81.64/59.48' L+ TO 'FR' 79+14.44/8.39' R+	23	a
	23	b				1																																X				4.01			REMOVE INLET	'FR' 79+14.44/8.39' R+	23	b
	24	a																					7.5																		1		S	3.91	18" CSP	'SR163' 250+55.20/85.05' L+ TO 'SR163' 250+62.90/83.10' L+	24	a
	24	b										3.2																				595				1	1		2			4.00			INLET COMBO BOX	'SR163' 250+62.92/81.60' L+	24	b
	24	c																2.5																									S	2.5	18" RCP	'SR163' 250+62.90/80.10' L+ TO 'SR163' 250+68.60/80.10' L+	24	c
	24	d										1.2																				329					1		1			4.20			G1 INLET	'SR163' 250+68.60/80.10' L+	24	d
	24	e																																1											ADJ MH TO GRADE	'SR163' 250+49.42/85.12' L+	24	e
	24	f								45																																		2.5	REMOVE 18" CSP	'SR163' 250+54.64/85.04' L+ TO 'SR163' 251+01.54/83.86' L+	24	f
	24	g					1																															X				3.05			REMOVE INLET	'SR163' 251+01.54/83.86' L+	24	g
	24	h								16																																		3.4	REMOVE 12" CSP	'SR163' 251+01.54/83.86' L+ TO 'SR163' 251+18.22/83.38' L+	24	h
	24	j					1																															X				4.00			REMOVE INLET	'SR163' 251+18.22/83.38' L+	24	j
	24	-																												6.3															CONCRETE CHANNEL	'SR163' 249+01.90/84.20' L+ TO 'SR163' 250+43.75/84.20' L+	24	-
	24	-																												45.9															CONCRETE CHANNEL	'SR163' 250+65.00/84.10' L+ TO 'SR163' 260+99.20/83.70' L+	24	-
D4	26	a				1																																				2.00			REMOVE INLET	'SR163' 241+99.66/128.47' R+	26	a
	26	b	1																						4.0																		3.3	ABANDON 18" CSP	'SR163' 241+99.66/128.47' R+ TO 'SR163' 241+84.91/187.95' R+	26	b
	26	c		1																																						4.96			ABANDON INLET	'SR163' 241+84.91/187.95' R+	26	c
	26	d	1																						1.8																		3.3	ABANDON 18" RCP	'SR163' 241+84.91/104.14' R+ TO 'SR163' 241+76.95/214.23' R+	26	d
SUBTOTAL DQ-5			2	1		2	3		72	61		13.1						17.2					7.5		5.8					52.2			2,223		1												
SUBTOTAL DQ-4			1			1	4	1		450		79.8						220.5	57.7						3.9								10,392														
SUBTOTAL DQ-3			1			1	1		95		56	49.8		225	56,800	246	170	50.2	496.2	426.1		255.7	6.0	86.4	11.8	2	1	53	52		32.0	251.8	7,387	2													
SUBTOTAL DQ-2			2	2		1	1	1	130	12		38.9	28.7					234.2	651.3	48.9		256.4			8.1		1				6.9	20.5	6,449														
SUBTOTAL DQ-1					1	2	4		41	29		47.1						384.5	453.3		15.0												7,362														
TOTAL			6	3		7			338		56*	228.7	28.7	225	56,800	246	170	906.6	1658.5	475	15.0	512.1	13.5	86.4	29.6	2	2	53	52*	52.2	38.9	272.3*	33,813	2	1													

1

NOTES:
1. (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
2. "X" LABLED IN GRATE COLUMNS INDICATES SALVAGEABLE GRATE FROM A REMOVED OR ABANDONED INLET.
3. SEE "Q" SHEETS FOR ADDITIONAL QUANTITIES.

1 REPLACED PER ADDENDUM No. 1 DATED NOVEMBER 4, 2016

DRAINAGE QUANTITIES
DQ-5

REVISED BY | DATE REVISED

RYAN NEVES | PAMELA DALCIN-WALLING

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR | CHRIS THOMAS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 11-01-16 | DATE PLOTTED => 01-NOV-2016 | TIME PLOTTED => 16:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	163	4.1/4.9	368	737

REGISTERED CIVIL ENGINEER 08-30-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARY ELIZABETH NORTHEIMER No. C75418 Exp. 12/31/17 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DOKKEN ENGINEERING
5675 RUFFIN Rd
SUITE 250
SAN DIEGO, CA 92123

CITY OF SAN DIEGO
525 B STREET
SUITE 750
SAN DIEGO, CA 92101

CLASS 2 AGGREGATE BASE

SHEET NUMBER	STRUCTURAL SECTION NUMBER	LINE	R†/L†	STATION	SQFT (N)	CY
L-6, L-7	2	"CW", "SR-163"	L†	248+87.51 "CW" TO 265+50.00 "SR-163"	9,789.80	308.2
L-2	3	"FR-4"	-	236+70.00 TO 240+24.13	11,523.00	426.8
L-2	3	"FR-5", "CW"	-	238+00.00 "FR-5"TO 241+41.24 "CW"	19,541.88	723.8
L-2	3	"FR-6"	-	249+01.58 TO 250+07.07	3,587.59	132.9
L-4	3	"FR-2"	-	247+04.93 TO 251+00.00	24,888.79	921.9
L-4, L-6	3	"FR-1"	-	245+12.60 TO 257+00.00	25,685.36	951.4
L-7	3	"SR-163"	L†	265+15.78 TO 265+50.00	110.54	4.1
L-7	3	"CE"	R†	262+14.67 TO 263+00.00	267.86	10.0
L-2	4	"FR-5"	L†	236+71.29 TO 237+87.42	900.42	33.4
L-2	4	"FR-6"	L†	249+22.10 TO 250+07.07	972.18	36.1
L-4	4	"FR-2"	R†	246+90.00 TO 247+80.40	1,136.18	42.1
L-4	4	"FR-2"	R†	251+44.86 TO 252+59.56	1,106.34	41.0
L-3	4	"CE"	R†	233+40.00 TO 234+25.00	972.18	36.1
L-4	4	"CE"	R†	241+15.00 TO 242+00.00	972.18	36.1
L-6	4	"CE"	R†	249+23.62 TO 250+07.28	973.91	36.1
L-7	4	"SR-163"	L†	264+00.00 TO 264+82.91	955.75	35.4
L-2	5	"FR-5"	-	236+49.67 TO 238+00.00	10,400.92	385.3
L-2	5	"FR-2"	-	251+00.00 TO 252+67.06	12,810.24	474.5
L-3, L-4	7	"CE", "FR-2"	R†	236+90.00 "CE" TO 247+04.93 "FR-2"	17,573.23	878.7
L-6, L-7	7	"CE"	R†	251+23.65 TO 262+14.67	14,399.27	720.0
L-2	8	"CW"	L†	239+00.00 TO 239+66.04	656.72	23.2
L-2, L-4	8	"SR-163"	MEDIAN	241+75.00 TO 247+92.00	11,138.75	392.0
L-3, L-4	8	"CE"	R†	233+00.00 TO 244+00.00	8,995.00	316.5
L-4, L-6	8	"CE"	R†	247+01.24 TO 251+23.03	4,275.58	150.5
L-6, L-7	8	"CE"	R†	257+00.00 TO 263+00.00	4,830.56	170.0
L-1, L-2	9	"FR"	-	52+15.00 TO 63+61.97	94,638.29	7,010.3
L-4, L-5	9	"FR"	-	67+50.89 TO 85+00.00	149,587.96	11,080.6
L-5	9	"FR"	-	79+00.00 TO 82+00.00	4,454.01	330.0
L-2	10	"U"	L†	67+16.90 TO 68+78.75	1,562.56	72.4
L-2	10	"U"	R†	67+16.90 TO 69+45.17	7,026.98	325.4
L-5, L-8	11	"FS"	-	73+40.00 TO 77+12.40	23,385.17	1,342.5
L-5, L-8	11	"FN"	-	79+82.35 TO 86+96.75	53,485.99	3,070.5
L-1	12	"FR"	R†	55+18.26 TO 56+28.86	1443.39	26.8
L-5	12	"FR"	L†	75+99.44 TO 76+72.92	1400.16	26.0
L-5	12	"FR"	L†	77+11.60 TO 77+65.85	516.782	9.6
L-5	12	"FR"	R†	79+69.52 TO 79+94.00	326.47	6.1
L-8	12	"FS"	L†	75+41.99 TO 75+63.26	477.03	8.9
L-5, L-8	12	"FS"	R†	76+75.00 TO 77+07.41	93.42	1.8
L-5	12	"FN"	L†	79+86.01 TO 80+40.07	1,562.07	29.0
L-7	12	"FN"	R†	81+86.39 TO 82+36.97	55.00	1.1
L-8	12	"FN"	L†	82+06.33 TO 82+33.67	756.71	14.1
L-8	12	"FN"	L†	86+53.00 TO 86+79.65	487.19	9.1
L-8	12	"FN"	L†	86+94.23 TO 87+09.27	532.57	9.9
L-4	14	"FR-2"	L†	245+23.88 TO 247+04.93	1,834.94	91.8
L-6	14	"FR-1"	L†	251+14.45 TO 253+33.96	2871.03	143.6
				TOTAL	534,961.92	30,895.6

(N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

CLASS 4 AGGREGATE SUBBASE

SHEET NUMBER	STRUCTURAL SECTION NUMBER	LINE	R†/L†	STATION	SQFT (N)	CY
L-6, L-7	1	"SR-163"	L†	251+35.00 TO 265+15.78	18,711.58	519.8
L-4	6	"BCAR"	-	10+00.00 TO 10+93.46	1,066.80	24.9
L-5, L-8	6	"FN"	R†	80+12.50 TO 80+87.50	999.98	23.4
L-8	6	"FN"	L†	82+87.50 TO 83+62.50	999.98	23.4
L-8	6	"FN"	L†	86+94.23 TO 87+44.00	196.63	4.6
L-8	6	"FN", "MU"	R†	90+83.01 "MU" TO 87+66.91 "FN"	181.64	4.3
L-6	13	"SR-163"	L†	249+28.35 to 250+35.00	2992.13	83.2
				TOTAL	25,148.73	683.6

JOINTED PLAIN CONCRETE PAVEMENT

SHEET NUMBER	STRUCTURAL SECTION NUMBER	LINE	R†/L†	STATION	SQFT (N)	CY
L-6, L-7	1	"SR-163"	L†	251+35.00 TO 265+15.78	18,711.58	589.1
L-2	5	"FR-5"	-	236+49.67 TO 238+00.00	10,400.92	315.3
L-2	5	"FR-2"	-	251+00.00 TO 252+67.06	12,810.24	382.3
L-4	6	"BCAR"	-	10+00.00 TO 10+93.46	1,066.80	33.6
L-5, L-8	6	"FN"	R†	80+12.50 TO 80+87.50	999.98	31.5
L-8	6	"FN"	L†	82+87.50 TO 83+62.50	999.98	31.5
L-8	6	"FN"	L†	86+94.23 TO 87+44.00	196.63	6.2
L-8	6	"FN", "MU"	R†	90+83.01 "MU" TO 87+66.91 "FN"	181.64	5.8
L-3, L-4	7	"CE", "FR-2"	R†	236+90.00 "CE" TO 247+04.93	17,856.98	562.2
L-6, L-7	7	"CE"	R†	251+23.03 TO 262+14.67	14,399.27	453.4
				TOTAL	77,624.01	2,410.9

CONCRETE (RAPID SETTING)

SHEET NUMBER	STRUCTURAL SECTION NUMBER	LINE	R†/L†	STATION	SQFT (N)	CF
L-6	13	"SR-163"	L†	249+28.35 to 250+35.00	2992.13	2,543.4
L-4	14	"FR-2"	L†	245+23.88 TO 247+04.93	1834.94	1,560.6
L-6	14	"FR-1"	L†	251+14.45 TO 253+33.96	2871.03	2,440.8
				TOTAL	7,698.10	6,544.8

1

GEOSYNTHETIC PAVEMENT INTERLAYER (PAVING FABRIC)

SHEET NUMBER	LINE	R†/L†	STATION	SQYD
L-1, L-2	"FR"	L†	52+15.00 TO 58+96.89	3,609.8
L-1, L-2	"FR"	R†	52+15.00 TO 58+96.89	3,268.3
L-2	"FR"	L†	61+15.89 TO 63+62.05	1,300.5
L-2	"FR"	R†	61+15.89 TO 63+62.05	1,026.8
L-2	"U"	-	67+16.90 TO 69+45.17	1,481.3
L-2	"FR-4"	-	236+70.00	58.6
L-4	"FR"	L†	67+51.15 TO 68+25.00	216.0
L-4	"FR"	R†	67+51.15 TO 68+25.00	482.7
L-5	"FR"	-	74+00.00 TO 85+00.00	11,542.1
L-8	"FS"	-	73+35.00 TO 74+00.00	687.2
L-8	"FN"	-	86+48.12 TO 86+94.23	559.8
			TOTAL	24,233.3

1 **REPLACED PER ADDENDUM No. 1 DATED NOVEMBER 4, 2016**

SUMMARY OF QUANTITIES

Q-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: CHRIS THOMAS
CALCULATED-DESIGNED BY: JUSTIN TALAGO
CHECKED BY: MARY ELIZABETH NORTHEIMER
REVISED BY / DATE REVISED

LAST REVISION 11-01-16 | DATE PLOTTED => 01-NOV-2016 | TIME PLOTTED => 09:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	163	4.1/4.9	371	737

REGISTERED CIVIL ENGINEER 08-30-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER MARY ELIZABETH NORTHEIMER No. C75418 Exp. 12/31/17 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DOKKEN ENGINEERING
5675 RUFFIN Rd
SUITE 250
SAN DIEGO, CA 92123

CITY OF SAN DIEGO
525 B STREET
SUITE 750
SAN DIEGO, CA 92101

MINOR Conc (MISCELLANEOUS CONSTRUCTION) CONTINUED

SHEET NUMBER	LINE	R+/L+	STATION	LF (N)	SQFT (N)	CY	REMARKS
L-1	"FR"	R+	55+61.33 TO 55+88.66		94.68	2.1	CROSS GUTTER
L-5	"FR"	L+	76+11.86 TO 76+61.83		305.87	7.4	DRIVEWAY A
L-5	"FR"	L+	77+21.18 TO 77+64.17		259.82	6.3	DRIVEWAY A
L-5	"FR"	R+	79+63.01 TO 80+01.00		262.99	6.4	DRIVEWAY A
L-8	"FS"	L+	73+61.18 TO 73+94.96		675.37	16.3	DRIVEWAY B (COLORED CONCRETE)
L-8	"FS"	R+	73+88.92 TO 74+12.74		111.59	2.7	-
L-8	"FS"	L+	75+18.65 TO 75+97.25		456.41	11.0	DRIVEWAY C
L-5, L-8	"FS"	R+	76+68.00 TO 77+14.41		262.98	6.4	DRIVEWAY A
L-5	"FN"	L+	79+79.89 TO 80+29.90		331.25	8.0	DRIVEWAY A
L-8	"FN"	L+	81+85.00 TO 82+55.00		359.33	8.7	DRIVEWAY C
L-8	"FN"	R+	81+65.00 TO 82+59.03		998.39	21.6	CROSS GUTTER
L-8	"FN"	L+	86+40.00 TO 87+18.01		590.39	14.3	DRIVEWAY A
			DRIVEWAY SUBTOTAL		4,709.06	111.2	
			MINOR Conc (MISCELLANEOUS CONSTRUCTION) TOTAL	9,868.11	48,023.66	1,137.2*	

*FOR ADDITIONAL QUANTITIES SEE LANDSCAPE QUANTITIES SHEET

MINOR Conc (MINOR STRUCTURE)

SHEET NUMBER	LINE	R+/L+	STATION	LF (N)	SQFT (N)	CY	REMARKS
L-1	"FR"	R+	56+42.29 TO 56+74.68	34.51		2.8	RETAINING CURB
L-5	"FR"	L+	75+68.62 TO 75+91.40	20.50		1.7	RETAINING CURB
L-5	"FR"	L+	75+73.86 TO 75+99.80	23.54		1.9	RETAINING CURB
L-6	"FR"	R+	76+71.57 TO 77+04.80	37.83		3.1	RETAINING CURB
L-2, C-46	"FR", "FR-4"	-	58+98.26 "FR" TO 240+27.84 "FR-4"		48.70	5.4	SEATWALL (COLORED CONCRETE)
L-2, C-47	"FR-5", "FR"	-	236+70.15 "FR-5" TO 61+14.76 "FR"		63.92	7.1	SEATWALL (COLORED CONCRETE)
L-2, C-48	"U", "FR"	-	67+16.44 "U" TO 61+13.22 "FR"		69.99	7.8	SEATWALL (COLORED CONCRETE)
L-4, C-49	"FR", "FR-2"	-	70+35.14 "FR" TO 252+61.49 "FR-2"		60.99	6.8	SEATWALL (COLORED CONCRETE)
L-5, C-52	"FR"	L+	75+61		9.48	2.6	STAIRS
L-1, C-52	"FR"	R+	56+78		237.97	5.9	PEDESTRIAN RAMP
L-5, C-53	"FR"	L+	75+95		306.76	7.6	PEDESTRIAN RAMP
L-5, C-55	"FR"	R+	77+12		575.71	14.3	PEDESTRIAN RAMP
L-2	"FR-6"	R+	247+86.75 TO 247+96.08		54.44	2.0	ANCHOR BLOCK
L-6	"FR-1"	R+	250+92.45 TO 251+02.76		49.78	1.8	ANCHOR BLOCK Mod
			TOTAL	116.38	1,477.74	70.9	

1

Conc BARRIER

SHEET NUMBER	LINE	R+/L+	STATION	TYPE 26B Mod (LF)	TYPE 60 (LF)	TYPE 60C (LF)	TYPE 60D Mod (LF)	TYPE 60G (LF)	TYPE 60GE (LF)
L-2	"FR-4"	R+	237+50.00 TO 240+21.70	0.0	272.6	0.0	0.0	0.0	0.0
L-4	"SR-163"	-	241+75.00 TO 242+20.00	0.0	45.0	0.0	0.0	0.0	0.0
L-4	"SR-163"	-	242+20.00 TO 242+55.00	0.0	0.0	0.0	0.0	35.0	0.0
L-4	"SR-163"	-	242+55.00 TO 245+65.00	0.0	0.0	0.0	0.0	0.0	310.2
L-4	"SR-163"	-	245+65.00 TO 246+00.00	0.0	0.0	0.0	0.0	35.0	0.0
L-4	"SR-163"	-	246+00.00 TO 247+92.00	0.0	192.0	0.0	0.0	0.0	0.0
L-4	"CE", "FR-2"	R+	243+97.00 "CE" TO 246+19.68 "FR-2"	0.0	0.0	0.0	220.3	0.0	0.0
L-4	"FR"	L+	72+95.26 TO 73+42.19	43.8	0.0	0.0	0.0	0.0	0.0
L-4	"FR-1"	L+	245+12.60 TO 247+42.69	0.0	0.0	224.1	0.0	0.0	0.0
L-4, L-6	"FR-1"	L+	247+42.69 TO 250+00.00	0.0	259.9	0.0	0.0	0.0	0.0
L-6, L-7	"CW", "SR-163"	L+	248+87.51 "CW" TO 263+00.00 "SR-163"	0.0	1,364.5	0.0	0.0	0.0	0.0
			TOTAL	43.8	2,134.0	224.1	220.3	70.0	310.2

(N) NOT A SEPARATE PAY ITEM FOR INFORMATION ONLY

1 REPLACED PER ADDENDUM No. 1 DATED NOVEMBER 4, 2016

MINOR Conc (EXPOSED AGGREGATE CONCRETE)

SHEET NUMBER	LINE	STATION	SQFT	DESCRIPTION
L-2	"FR-5"	236+49.73 TO 238+17.10	1,426.44	INTERSECTION
L-2	"FR-5"	238+96.93 TO 239+64.44	1,299.01	GORE
L-2	"FR", "FR-4"	58+94.57 "FR" TO 240+24.13 "FR-4"	1,192.17	PEDESTRIAN NODE
L-2	"FR-5", "FR"	236+70.34 "FR-5" TO 61+15.89 "FR"	1,521.66	PEDESTRIAN NODE
L-2	"U", "FR"	67+16.90 "U" TO 61+13.79 "FR"	1,669.05	PEDESTRIAN NODE
L-2	"FR"	62+13 TO 62+63	320.00	UTILITY VEHICLE PULL-OUT
L-2	"FR"	68+05 TO 68+57	320.76	UTILITY VEHICLE PULL-OUT
L-3	"CE"	236+11.64 TO 239+86.47	5,602.73	OFF-SHOULDER AREA
L-4	"FR", "FR-2"	70+33.41 "FR" TO 252+59.56 "FR-2"	1,344.56	PEDESTRIAN NODE
L-4	"FR-1", "FR"	245+22.20 "FR-1" TO 72+55.43 "FR"	1,451.19	PEDESTRIAN NODE
L-4	"CE", "FR-2"	244+00 "CE" TO 246+25 "FR-2"	1,291.66	EAST GROUND ANCHOR WALL
L-4	"FR-2"	247+04.33 TO 248+26.67	2,497.26	GORE
L-4	"FR-2"	249+47.43 TO 252+67.06	2,540.26	INTERSECTION
L-6	"FR-1"	250+20.88 TO 251+14.45	1,905.94	GORE
		TOTAL	24,382.67	

ROCK BLANKET

SHEET NUMBER	LINE	STATION	SQFT	REMARKS
L-1	"FR"	52+19.00 TO 56+50.00	1,313.09	-
L-2	"FR-6"	246+55.58 TO 247+86.7	1,857.14	AREA 'A'
L-4	"FR-2"	252+28.72	2,939.11	AREA 'C'
L-4	"FR"	72+23.11 TO 73+00.00	1,629.79	-
L-5, L-8	"FS"	74+08.48 TO 77+48.00	1,394.07	-
L-8	"FN"	82+65.00 TO 86+43.00	1,527.05	-
L-5, L-8	"FN"	79+55.55 TO 81+87.00	938.64	-
L-4	"CE", "FR"	241+57.00 "CE" TO 71+38.08 "FR"	20,130.01	AREA 'B'
L-2	"FR"	60+72.72 TO 60+94.39	41.00	Ped NODE
L-2	"FR"	60+70.00 TO 60+89.40	41.38	Ped NODE
L-4	"FR"	70+63.69 TO 70+82.69	49.13	Ped NODE
		TOTAL	31,860.40	

SUMMARY OF QUANTITIES

Q-6

REVISED BY | DATE REVISED
JUSTIN TALAGO | MARY ELIZABETH NORTHEIMER
CALCULATED-DESIGNED BY | CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR: CHRIS THOMAS
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 11-01-16 | DATE PLOTTED => 01-NOV-2016 | TIME PLOTTED => 09:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	163	4.1/4.9	613a	737

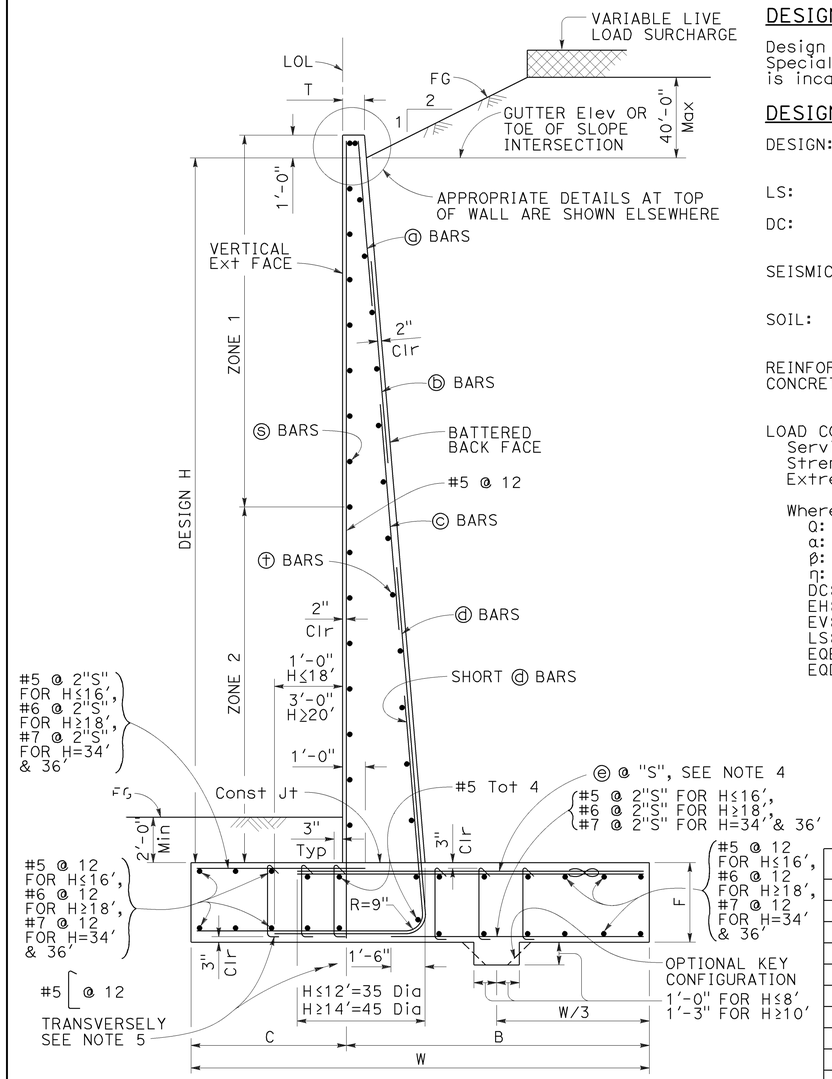
REGISTERED CIVIL ENGINEER

April 20, 2012
PLANS APPROVAL DATE

Gary Wang
No. C58298
Exp. 6-30-12
CIVIL
STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

1



TYPICAL SECTION

DESIGN CONDITIONS:

Design H may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in the table.

DESIGN NOTES:

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments

LS: Varied surcharge on level ground surface

DC: Stem Architectural Treatment of thickness up to 6" of concrete (75 psf) considered

SEISMIC: $k_h = 0.2$
$k_v = 0.0$

SOIL: $\phi = 34°$
$\gamma = 120$ pcf

REINFORCED CONCRETE: $f'c = 3{,}600$ psi
$fy = 60{,}000$ psi

LOAD COMBINATIONS AND LIMIT STATES:

Service I	$Q = 1.00DC+1.00EV+1.00EH+1.00LS$
Strength I	$Q = \alpha DC+\phi EV+\eta EH+1.75LS$
Extreme I	$Q = 1.00DC+1.00EV+1.00EH+1.00EQD+1.00EQE$

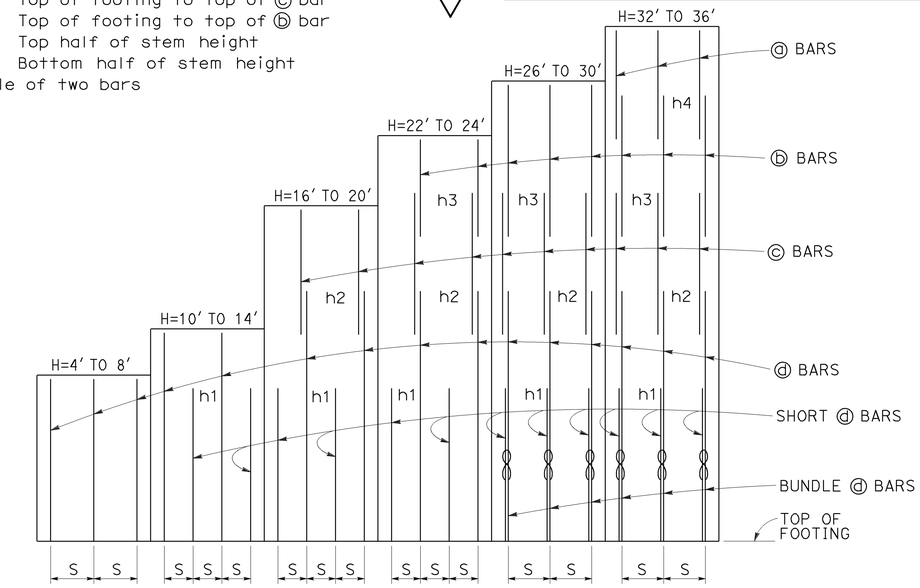
Where:

Q:	Force Effects
α:	1.25 or 0.90, Whichever Controls Design
ϕ:	1.35 or 1.00, Whichever Controls Design
η:	1.50 or 0.90, Whichever Controls Design
DC:	Dead Load of Structure Components
EH:	Horizontal Earth Fill Pressure
EV:	Vertical Earth Pressure from Earth Fill Weight
LS:	Live Load Surcharge
EQE:	Seismic Earth Pressure
EQD:	Soil and Structural and Nonstructural Components Inertia

SYMBOLS:

TO ACCOMPANY PLANS DATED 08-29-16

Ser - service limit state I
Str - strength limit state I
Ext - extreme event limit state I
B′ - effective footing width (ft)
q'_o - net bearing stress (ksf), OG assumed to be FG at toe
q_o - gross uniform bearing stress (ksf)
h1 = Top of footing to top of short ⓓ bar
h2 = Top of footing to top of ⓓ bar
h3 = Top of footing to top of ⓒ bar
h4 = Top of footing to top of ⓑ bar
Zone 1 = Top half of stem height
Zone 2 = Bottom half of stem height
∞ - Bundle of two bars



ELEVATION

TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA

DESIGN H	4′	6′	8′	10′	12′	14′	16′	18′	20′	22′	24′	26′	28′	30′	32′	34′	36′
W	6′-0"	7′-6"	9′-6"	11′-0"	12′-6"	15′-6"	17′-3"	19′-6"	21′-9"	23′-6"	26′-0"	28′-1"	30′-3"	31′-6"	33′-0"	34′-8"	35′-11"
C	2′-0"	2′-6"	3′-3"	3′-6"	4′-3"	5′-0"	5′-3"	5′-9"	6′-9"	7′-3"	8′-3"	8′-9"	9′-0"	9′-6"	10′-0"	10′-10"	11′-3"
B	4′-0"	5′-0"	6′-3"	7′-6"	8′-3"	10′-6"	12′-0"	13′-9"	15′-0"	16′-3"	17′-9"	19′-4"	21′-3"	22′-0"	23′-0"	23′-10"	24′-8"
F	1′-6"	1′-6"	2′-0"	2′-3"	2′-6"	2′-8"	2′-10"	3′-0"	3′-4"	3′-6"	3′-6"	3′-7"	3′-7"	3′-9"	3′-9"	4′-0"	4′-4"
T	11½"	11½"	11½"	11½"	11½"	11½"	11½"	11½"	11½"	11½"	11½"	11½"	1′-2"	1′-5"	1′-10"	2′-3"	2′-9"
BATTER	½: 12	½: 12	½: 12	½: 12	½: 12	⅝: 12	⅝: 12	¾: 12	⅞: 12	1 : 12	1⅛: 12	1⅛: 12	1⅛: 12	1⅛: 12	1⅛: 12	1⅛: 12	1⅛: 12
SPACING "S"	16"	12"	10"	7"	7"	7"	7"	7"	7"	6"	6"	10"	8"	7"	7"	7"	7"
ⓐ BARS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#5	#5	#5
ⓑ BARS	-	-	-	-	-	-	-	-	-	#5	#5	#5	#5	#5	#7	#7	#7
ⓒ BARS	-	-	-	-	-	-	#6	#6	#6	#7	#8	#8	#8	#8	#9	#9	#9
ⓓ BARS	#5	#5	#6	#6	#7	#8	#9	#10	#10	#10	#11	#11	#11	#11	#11	#11	#11
ⓔ BARS	#5	#5	#6	#6	#7	#8	#9	#10	#10	#10	#11	#11	#11	#11	#11	#11	#11
h1	-	-	-	5′-3"	6′-4"	7′-6"	8′-9"	9′-9"	11′-0"	11′-3"	11′-6"	10′-3"	11′-9"	12′-3"	12′-6"	13′-3"	13′-8"
h2	-	-	-	-	-	-	12′-8"	15′-6"	17′-0"	16′-6"	17′-3"	18′-0"	17′-6"	17′-4"	14′-10"	15′-9"	16′-4"
h3	-	-	-	-	-	-	-	-	-	18′-9"	21′-3"	21′-3"	22′-4"	22′-8"	18′-0"	18′-6"	19′-6"
h4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26′-3"	27′-4"	28′-6"
No. of Toe Stirrups	0	0	0	0	0	0	0	0	0	0	0	5	5	6	7	8	9
No. of Heel Stirrups	0	0	0	0	0	0	0	0	4	6	7	8	10	10	11	11	11
ZONE 1 ⓢ BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 12	#6 @ 10	#6 @ 10
ZONE 2 ⓢ BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 12	#7 @ 12	#7 @ 12	#7 @ 12	#7 @ 12	#7 @ 10	#7 @ 10
ZONE 1 ⓣ BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#5 @ 12	#5 @ 12	#5 @ 12
ZONE 2 ⓣ BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 12	#6 @ 12
Ser: B′, q'_o	4.0, 0.9	5.5, 1.0	9.3, 1.0	10.9, 1.3	12.3, 1.5	14.8, 1.9	16.6, 2.1	18.7, 2.4	20.6, 2.7	22.3, 3.0	24.2, 3.3	26.1, 3.5	28.2, 3.9	29.6, 4.0	31.1, 4.2	32.7, 4.4	34.1, 4.6
Str: B′, q_o	2.2, 2.2	3.5, 2.2	5.1, 2.3	6.3, 2.6	7.6, 2.7	12.9, 3.1	14.3, 3.6	16.5, 3.9	19.4, 4.5	20.7, 4.8	22.5, 5.2	24.3, 5.6	26.2, 6.0	27.5, 6.3	28.8, 6.6	30.3, 6.9	31.8, 7.2
Ext: B′, q_o	2.3, 3.4	2.7, 4.4	3.6, 5.0	3.8, 6.5	4.5, 7.0	7.0, 6.1	7.6, 6.9	9.3, 7.0	11.0, 7.1	11.8, 7.6	14.1, 7.4	15.6, 7.7	17.1, 8.0	17.2, 8.7	18.1, 9.0	19.0, 9.4	19.4, 10.0

NOTES:

1. For details not shown and drainage notes see RSP B3-5
2. For wall stem joint details see B0-3 3-3 and B0-3 3-4
3. At ⓓ and short ⓓ bars:
   H ≤ 6′, no splices are allowed within 1′-8" above the top of footing.
   H > 6′, no splices are allowed within H/4 above the top of footing.
4. Bundle ⓔ bars for H ≥ 26′.
5. Hook stirrups around & space with alternating transverse reinforcement at 2 x "S".

1 **ADDED PER ADDENDUM No. 1 DATED NOVEMBER 4, 2016**

RSP B3-1B DATED APRIL 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

RETAINING WALL TYPE 1 (CASE 2)

NO SCALE

REVISED STANDARD PLAN RSP B3-1B

2010 REVISED STANDARD PLAN RSP B3-1B

3-30-12