APPENDIX 7C

Storm Drain Calculations

CH2MHILL
Lockwood Greene

EDISON
MISSION ENERGY

An *EDISON INTERNATIONAL* Company

WALNUT SIMPLE CYCLE

STORM DRAIN CALCULATIONS

Lockwood Greene

Project number: 050-025482.00

CH2MHILL
Lockwood Greene

Preliminary
(to be verified in final design)

Edison Mission Energy, Walnut, CA.

Storm drainage, Rational Method

Design Criteria:

Rainfall Intensity:	25 yr, 60 min Storm Event
Tc = 60 min	
i = 60 in	(Based on Figure 41, Isopluvial of 25 yr 24-hr precipitation for southern half of California, from NOAA Atlas 2, Volume XI)

$Q = CiA$

Units:

Q = CFS

C = see table 3. (Recommended Runoff Coefficient)

i = 6 in/hr

A= see drawing. CSK – 1 Drainage Areas

Pipe:

A.D.S. N12 Corrugated HDPE Pipe with smooth interior.

Manning Coefficient:

N = .012 (From Table 4)

EDISON MISSION ENERGY, - ROMOLAND, CA.
STORM DRAINAGE RUNOFF (POST DEVELOPMENT)

Preliminary
(to be verified in final design)

Computed by JGY
Checked by DEM
Date 09/20/05

DRAINAGE AREA	TYPE OF SURFACE	AREA	AREA (ACRES)	COEFFICIENT ©	I (25yr) (in/hr)	Q (25yr) (cfs)	Q'(25yr) (cfs) INLET TOTAL	BRANCH TOTAL	Q CUM (cfs)	PIPE SIZE, SLOPE, & CAPACITY AT THE INLET
A1	ASPHALT	8,204.99	0.19	0.80	6.00	0.90				
	CONCRETE	16,686.18	0.38	0.90	6.00	2.07				
	EQUIPMENT	5,950.86	0.14	1.00	6.00	0.82				
	GRAVEL/GRASS	65,833.35	1.51	0.20	6.00	1.81	T2= 5.61			15" HDPE @ 0.75% Q =6.06 cfs
A2	ASPHALT	1,882.59	0.04	0.80	6.00	0.21				
	CONCRETE	2,507.79	0.06	0.90	6.00	0.31				
	EQUIPMENT	0.00	0.00	1.00	6.00	0.00				
	GRAVEL/GRASS	13,416.52	0.31	0.20	6.00	0.37	T4= 0.89			12" HDPE @ 0.5% Q = 2.73 cfs
A3	ASPHALT	6,081.63	0.14	0.80	6.00	0.67				
	CONCRETE	2,620.42	0.06	0.90	6.00	0.32				
	EQUIPMENT	7,829.43	0.18	1.00	6.00	1.08				
	GRAVEL/GRASS	24,027.64	0.55	0.20	6.00	0.66	T5= 2.74			12" HDPE @ 0.75% Q = 3.34 cfs
A4	ASPHALT	6,081.63	0.14	0.80	6.00	0.67				
	CONCRETE	2,620.42	0.06	0.90	6.00	0.32				
	EQUIPMENT	7,829.43	0.18	1.00	6.00	1.08				
	GRAVEL/GRASS	24,027.64	0.55	0.20	6.00	0.66	T7= 2.74			12" HDPE @ 0.75% Q =3.34 cfs
								T3= 6.36		15" HDPE @ 1.0% Q = 7.00 cfs
									T1= 11.96	18" HDPE @ 1.25% Q =12.72 cfs
A5	ASPHALT	0.00	0.00	0.80	6.00	0.00				
	CONCRETE	4,692.21	0.11	0.90	6.00	0.58				
	EQUIPMENT	615.75	0.01	1.00	6.00	0.08				
	GRAVEL/GRASS	13,285.72	0.30	0.20	6.00	0.37	T8= 1.03			12" HDPE @ 0.5% Q = 2.73 cfs
A6	ASPHALT	6,081.63	0.14	0.80	6.00	0.67				
	CONCRETE	2,620.42	0.06	0.90	6.00	0.32				
	EQUIPMENT	7,829.43	0.18	1.00	6.00	1.08				
	GRAVEL/GRASS	24,027.64	0.55	0.20	6.00	0.66	T10= 2.74			15" HDPE @ 0.5% Q = 4.95 cfs
								T11= 3.77		15" HDPE @ 0.5% Q = 4.95 cfs
A7	ASPHALT	0.00	0.00	0.80	6.00	0.00				
	CONCRETE	3,000.00	0.07	0.90	6.00	0.37				
	EQUIPMENT	4,817.21	0.11	1.00	6.00	0.66				
	GRAVEL/GRASS	16,134.87	0.37	0.20	6.00	0.44	T12= 1.48			12" HDPE @ 0.5% Q = 2.73 cfs
A8	ASPHALT	6,081.63	0.14	0.80	6.00	0.67				
	CONCRETE	2,620.42	0.06	0.90	6.00	0.32				
	EQUIPMENT	7,829.43	0.18	1.00	6.00	1.08				
	GRAVEL/GRASS	24,027.64	0.55	0.20	6.00	0.66	T13= 2.74			15" HDPE @ 0.5% Q = 4.95 cfs
								T14= 7.98		18" HDPE @ 0.75% Q = 9.86 cfs
A9	ASPHALT	17,339.95	0.40	0.80	6.00	1.91				
	CONCRETE	1,863.65	0.04	0.90	6.00	0.23				
	EQUIPMENT	8,285.89	0.19	1.00	6.00	1.14				
	GRAVEL/GRASS	70,418.82	1.62	0.20	6.00	1.94	T16= 5.22			15" HDPE @ 0.75% Q = 6.06 cfs
								T16= 13.21		21" HDPE @ .75% Q = 14.87 cfs
					6.00	0.00				
A10	ASPHALT	0.00	0.00	0.80	6.00	0.00				
	CONCRETE	0.00	0.00	0.90	6.00	0.00				
	EQUIPMENT	0.00	0.00	1.00	6.00	0.00				
	GRAVEL/GRASS	98,461.69	2.26	0.20	6.00	2.71	T18 2.71			12" HDPE @ 0.5% Q = 2.73 cfs
									T=19 15.92	21" HDPE @ 1.0% Q = 17.17 cfs
TOTAL			11.84							