APPENDIX 4.7

Drainage Concept, Sikand, July 2010

DRAINAGE CONCEPT

FOR

VIA PRINCESSA EAST
Between Golden Valley Road & Sheldon Avenue

IN THE CITY OF SANTA CLARITA
LOS ANGELES COUNTY

Prepared For:

City of Santa Clarita
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Prepared By:

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W.O.: 5109-020-00
Date: 07-07-2010

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Design Frequency (50-yr, burned)
TC & MODRAT Calculations
Hydrology Map

Section 5 **DPV & BULKING CALCULATIONS**

DPV & Bulking for Proposed Condition
DPV & Bulking for Existing Condition

Appendix **REFERENCE:**

Approved Storm Drain Plans for P.D. 2095 (Sheets 1 to 8 of 8), by B&E Engineers, dated 03-03-93

Approved Storm Drain Plans for M.T.D. 1614 (Sheets 8 of 11), by William Rose & Assoc., Inc., dated 08-24-00

SECTION 1

Purpose of the Study

This study has been prepared to analyze and compare the hydrologic condition of the project site's pre-development and post-development stages; and, to provide the criteria for the proposed storm drain system.

Project Description

The project is a full street improvement of the 116-feet wide portion of the Via Princessa East, approximately 4500 feet long. It starts at about 500 feet northeast of Golden Valley Road intersection and ends 200 feet before Sheldon Avenue, in the City of Santa Clarita (see Section 2, Vicinity Map). South of where it starts is the Golden Valley High School; and, north of where it ends is Tract 49549. Besides these two developments, the surrounding vicinity of the project site is undeveloped.

EXISTING CONDITION: The project site at this stage is undeveloped, consisting of ridges and canyons. It is well covered with vegetation, with scattered small trees and dense brush. The existing side slopes are steep and approximately average at least 25 percent, while the canyon channels average about 10 percent. The drainage pattern flows from southeast to northwest towards existing drainage systems on Golden Valley Road and Centre Pointe Parkway, about 3500 feet northwest of the site. The flow ultimately goes to the Santa Clara River.

PROPOSED CONDITION: The project at this stage is a full street improvement of that said portion, with an additional street widening of approximately 700 feet of length located at about 500 feet where the site ends, just past Sheldon Avenue. It comprises curb and gutters, medians, pavements, striping, catch basins and storm drain culverts crossing the street. On the street widening portion, a catch basin with lateral is proposed to connect to an existing pipe per P.D. 2095. The drainage flow follows the existing pattern.

Hydrologic Criteria & Methodology

This report follows the hydrologic criteria and methodology set forth by Los Angeles County Department of Public Works, as explained in its "Hydrology Manual" and "Sedimentation Manual".

The following are the criteria used in the calculations:

- Design Storm Frequency :
  50-yr for undeveloped areas,
  25-yr for developed areas.
- DPA Zone = 8
- Basin Name = Santa Clara
- Soil Type Number = 097
- Peak Bulking Factor = 1.360 (for area ≤ 64 ac)
- Debris Production = 54.6875 cy/ac (for area ≤ 64 ac)

- Isohyets :
  7.0" (50-yr, 24-hour)
  6.1" (25-yr, 24-hour)
- % Imperviousness:
  1% for undeveloped / natural areas,
  91% for paved streets / developed areas

Time of Concentration (TC) and design Peak Flow (Q) for each subarea are calculated using the TC Calculator. Burning of flows, flood routing and confluence Qs are calculated using F0601M program, also know as the Modified Rational Method program (MODRAT) (See Sections 3 & 4, TC and MORA Calculations).

Debris Production Volumes are calculated using the DPR Chart for undeveloped areas under single DPA Zone; and bulking of the flows are obtained using the Peak Bulk Factors Chart for undeveloped areas under single DPA Zone (See Section 2 for Charts; Section 5 for Calculations).

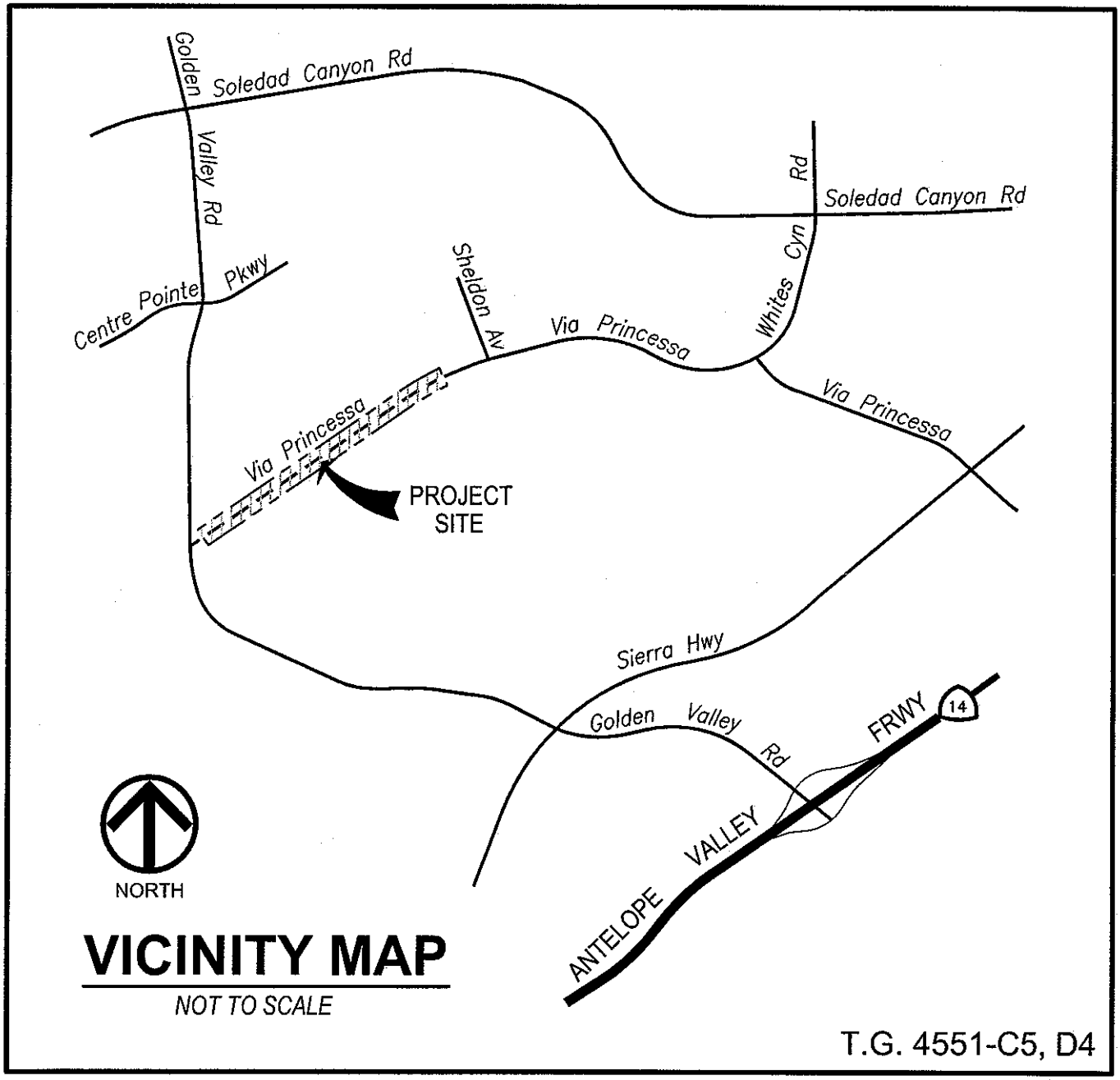
Summary

From the comparisons as shown on the table below, the post-development condition discharges do not exceed their pre-development values, especially for the outlets that flow into the natural canyons; thus, an additional mitigation is not required. In addition, the project site is not located on flood hazard Zone A, as show on the Flood Insurance Rate Map (FIRM) (See Section 2 for Map).

Table: Summary of Discharges

			Design Frequency (50- & 25-yr)					
Area Outlet	**Description**	**Area (ac)**	**ΣQb (cfs)**	**ΣQb+d (cfs)**	**ΣQd (cfs)**	**ΣQbb (cfs)**	**ΣQbb+d (cfs)**	**ΣDPV (cy)**
A	Post-Dev't	51.4		128.2			167.3	2384
	Pre-Dev't	51.1	123.0			167.3		2795
B	Post-Dev't	26.0		68.4			89.2	1203
	Pre-Dev't	25.6	65.6			89.2		1400
C	Post-Dev't	10.9		32.1			42.9	558
	Pre-Dev't	11.1	31.9			43.4		607
D	Post-Dev't	9.6		28.4			34.8	328
	Pre-Dev't	8.5	25.6			34.8		465
node 50A	Post-Dev't	0.9			3.0			0
	Pre-Dev't	0.7	2.4			3.3		38
node 51B	Post-Dev't	3.2	10.8			14.3		159
	Pre-Dev't	5.3	16.0			21.8		290
node 52C	Post-Dev't	5.0	16.8			22.4		252
	Pre-Dev't	6.7	20.2			27.5		366

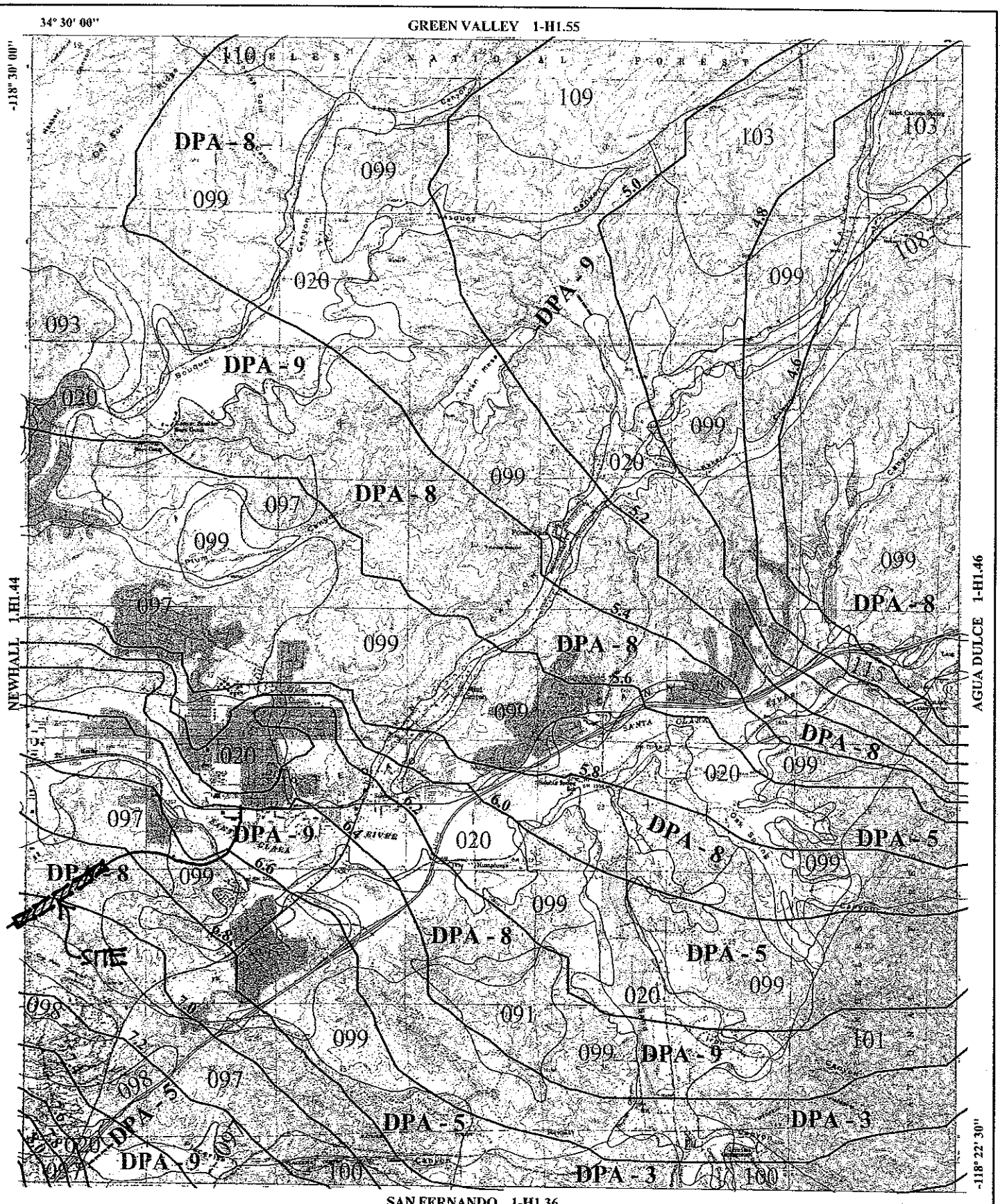
SECTION 2



VICINITY MAP

NOT TO SCALE

T.G. 4551-C5, D4



016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

N W E S

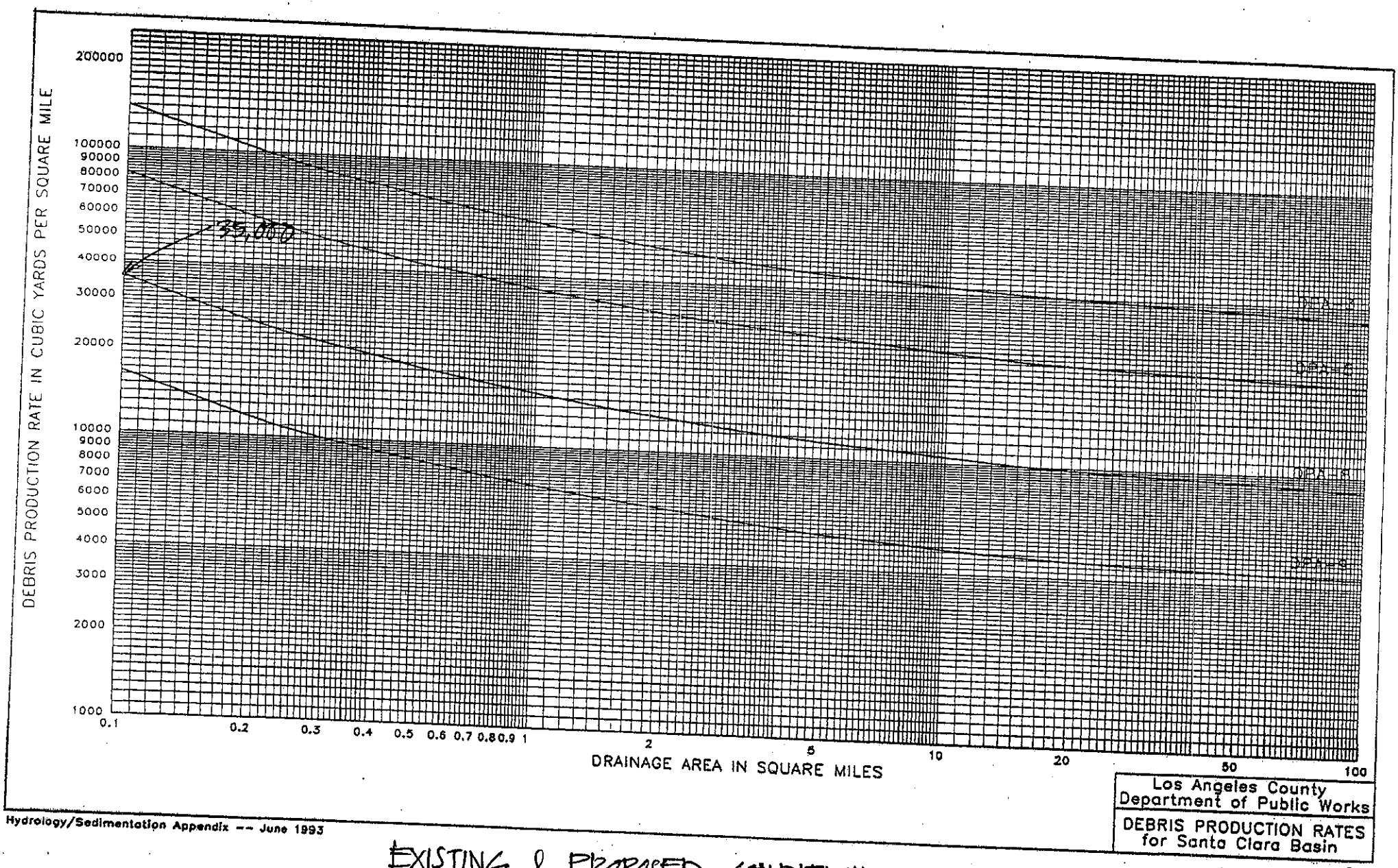
1 0 1 2 Miles

25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

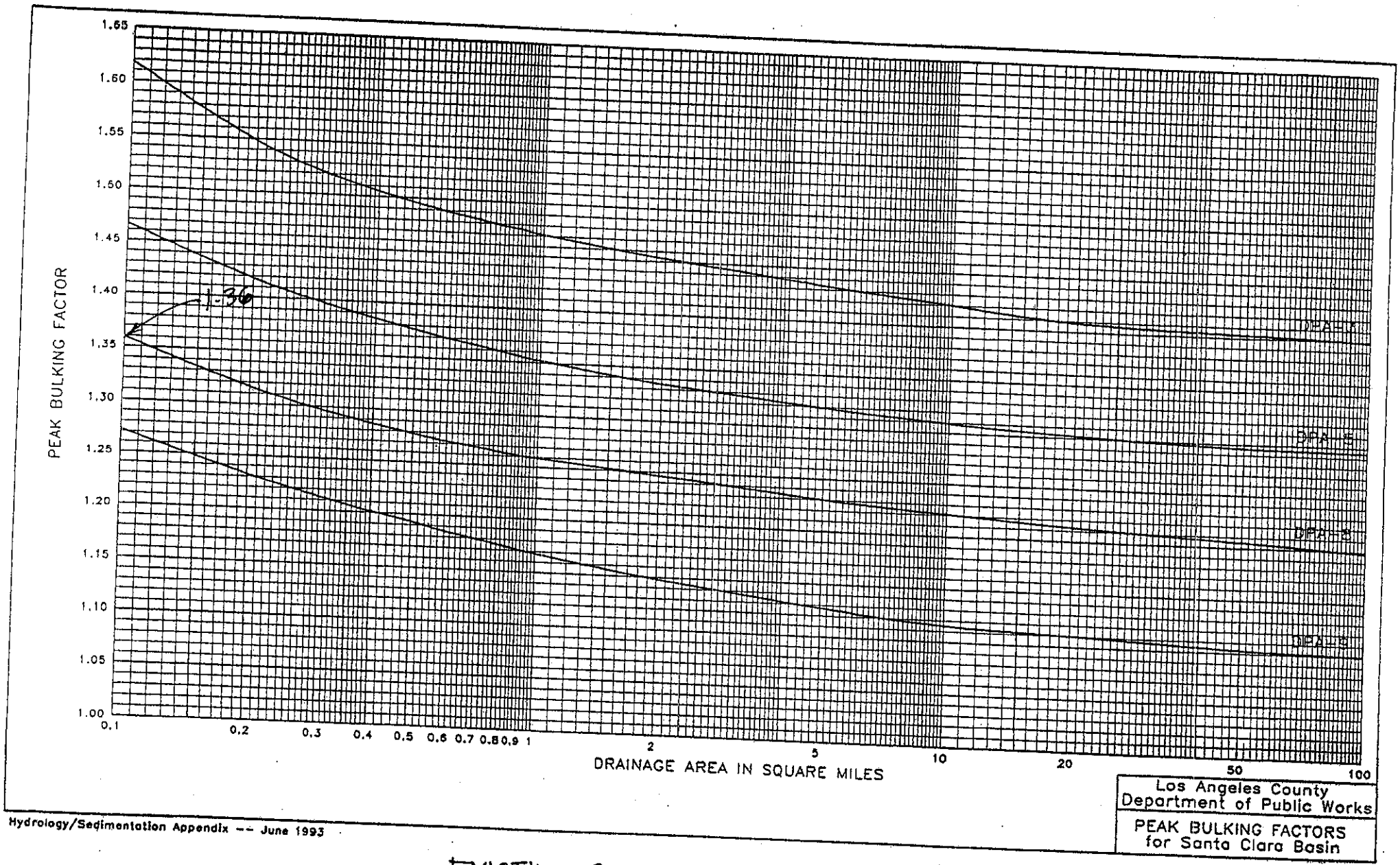
MINT CANYON
50-YEAR 24-HOUR ISOHYET

1-H1.45

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works



EXISTING & PROPOSED CONDITIONS



Los Angeles County Department of Public Works

PEAK BULKING FACTORS for Santa Clara Basin

P-5

Hydrology/Sedimentation Appendix -- June 1993

EXISTING & PROPOSED CONDITIONS

d insurance is available in this community, contact your
ional Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

JOINS PANEL 0820

1970000 FT

SITE

1965000 FT

Los Angeles Aqueduct Tunnel

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

PANEL 0840F

FLOOD INSURANCE RATE MAP

LOS ANGELES COUNTY, CALIFORNIA

AND INCORPORATED AREAS

PANEL 840 OF 2350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LOS ANGELES COUNTY	065043	0840	F
SANTA CLARITA, CITY OF	060729	0840	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06037C0840F

EFFECTIVE DATE
SEPTEMBER 26, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

APPENDIX D

Proportion Impervious Data

Proportion Impervious Data

Code	Land Use Description	% Impervious
1111	High-Density Single Family Residential	42
1112	Low-Density Single Family Residential	21
1121	Mixed Multi-Family Residential	74
1122	Duplexes, Triplexes and 2-or 3-Unit Condominiums and Townhouses	55
1123	Low-Rise Apartments, Condominiums, and Townhouses	86
1124	Medium-Rise Apartments and Condominiums	86
1125	High-Rise Apartments and Condominiums	90
1131	Trailer Parks and Mobile Home Courts, High-Density	91
1132	Mobile Home Courts and Subdivisions, Low-Density	42
1140	Mixed Residential	59
1151	Rural Residential, High-Density	15
1152	Rural Residential, Low-Density	10
1211	Low- and Medium-Rise Major Office Use	91
1212	High-Rise Major Office Use	91
1213	Skyscrapers	91
1221	Regional Shopping Center	95
1222	Retail Centers (Non-Strip With Contiguous Interconnected Off-Street	96
1223	Modern Strip Development	96
1224	Older Strip Development	97
1231	Commercial Storage	90
1232	Commercial Recreation	90
1233	Hotels and Motels	96
1234	Attended Pay Public Parking Facilities	91
1241	Government Offices	91
1242	Police and Sheriff Stations	91
1243	Fire Stations	91
1244	Major Medical Health Care Facilities	74
1245	Religious Facilities	82
1246	Other Public Facilities	91
1247	Non-Attended Public Parking Facilities	91
1251	Correctional Facilities	91
1252	Special Care Facilities	74
1253	Other Special Use Facilities	86
1261	Pre-Schools/Day Care Centers	68
1262	Elementary Schools	82
1263	Junior or Intermediate High Schools	82
1264	Senior High Schools	82
1265	Colleges and Universities	47
1266	Trade Schools and Professional Training Facilities	91
1271	Base (Built-up Area)	65
1271.01	Base High-Density Single Family Residential	42
1271.02	Base Duplexes, Triplexes and 2-or 3-Unit Condominiums and T	55

Code	Land Use Description	% Impervious
1271.03	Base Government Offices	91
1271.04	Base Fire Stations	91
1271.05	Base Non-Attended Public Parking Facilities	91
1271.06	Base Air Field	45
1271.07	Base Petroleum Refining and Processing	91
1271.08	Base Mineral Extraction - Oil and Gas	10
1271.09	Base Harbor Facilities	91
1271.10	Base Navigation Aids	47
1271.11	Base Developed Local Parks and Recreation	10
1271.12	Base Vacant Undifferentiated	1
1272	Vacant Area	2
1273	Air Field	45
1274	Former Base (Built-up Area)	65
1275	Former Base Vacant Area	2
1276	Former Base Air Field	91
1311	Manufacturing, Assembly, and Industrial Services	91
1312	Motion Picture and Television Studio Lots	82
1313	Packing Houses and Grain Elevators	96
1314	Research and Development	91
1321	Manufacturing	91
1322	Petroleum Refining and Processing	91
1323	Open Storage	66
1324	Major Metal Processing	91
1325	Chemical Processing	91
1331	Mineral Extraction - Other Than Oil and Gas	10
1332	Mineral Extraction - Oil and Gas	10
1340	Wholesaling and Warehousing	91
1411	Airports	91
1411.01	Airstrip	10
1412	Railroads	15
1412.01	Railroads-Attended Pay Public Parking Facilities	91
1412.02	Railroads-Non-Attended Public Parking Facilities	91
1412.03	Railroads-Manufacturing, Assembly, and Industrial Services	91
1412.04	Railroads-Petroleum Refining and Processing	91
1412.05	Railroads-Open Storage	66
1412.06	Railroads-Truck Terminals	91
1413	Freeways and Major Roads	91 ← USE
1414	Park-and-Ride Lots	91
1415	Bus Terminals and Yards	91
1416	Truck Terminals	91
1417	Harbor Facilities	91
1418	Navigation Aids	47
1420	Communication Facilities	82
1420.01	Communication Facilities-Antenna	2

Code	Land Use Description	% Impervious
1431	Electrical Power Facilities	47
1431.01	Electrical Power Facilities-Powerlines (Urban)	2
1431.02	Electrical Power Facilities-Powerlines (Rural)	1
1432	Solid Waste Disposal Facilities	15
1433	Liquid Waste Disposal Facilities	96
1434	Water Storage Facilities	91
1435	Natural Gas and Petroleum Facilities	91
1435.01	Natural Gas and Petroleum Facilities-Manufacturing, Assembly, and In	91
1435.02	Natural Gas and Petroleum Facilities-Petroleum Refining and Processing	91
1435.03	Natural Gas and Petroleum Facilities-Mineral Extraction – Oil and Gas	10
1435.04	Natural Gas and Petroleum Facilities-Vacant Undifferentiated	1
1436	Water Transfer Facilities	96
1437	Improved Flood Waterways and Structures	100
1440	Maintenance Yards	91
1450	Mixed Transportation	90
1460	Mixed Transportation and Utility	91
1460.01	Mixed Utility and Transportation-Improved Flood Waterways and Structures	100
1460.02	Mixed Utility and Transportation-Railroads	15
1460.03	Mixed Utility and Transportation-Freeways and Major Roads	91
1500	Mixed Commercial and Industrial	91
1600	Mixed Urban	89
1700	Under Construction (Use appropriate value)	91
1810	Golf Courses	3
1821	Developed Local Parks and Recreation	10
1822	Undeveloped Local Parks and Recreation	2
1831	Developed Regional Parks and Recreation	2
1832	Undeveloped Regional Parks and Recreation	1 ← USE
1840	Cemeteries	10
1850	Wildlife Preserves and Sanctuaries	2
1850.01	Wildlife-Commercial Recreation	90
1850.02	Wildlife-Other Special Use Facilities	86
1850.03	Wildlife-Developed Local Parks and Recreation	10
1860	Specimen Gardens and Arboreta	15
1870	Beach Parks	10
1880	Other Open Space and Recreation	10
2110	Irrigated Cropland and Improved Pasture Land	2
2120	Non-Irrigated Cropland and Improved Pasture Land	2
2200	Orchards and Vineyards	2
2300	Nurseries	15
2400	Dairy, Intensive Livestock, and Associated Facilities	42
2500	Poultry Operations	62
2600	Other Agriculture	42
2700	Horse Ranches	42

Code	Land Use Description	% Impervious
3100	Vacant Undifferentiated	1
3200	Abandoned Orchards and Vineyards	2
3300	Vacant With Limited Improvements (Use appropriate value)	42
3400	Beaches (Vacant)	1
4100	Water, Undifferentiated	100
4200	Harbor Water Facilities	100
4300	Marina Water Facilities	100
4400	Water Within a Military Installation	100

SECTION 3

TC Calculator Results

Via Princessa East, Santa Clarita

Proposed Condition, Design Frequency (50- & 25-yr)

Area A

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flowrate (cfs)
1	1A	8.1	0.01	50	97	784	0.244	7	5	4.18	0.77	0.77	26.07
1	2A	9.2	0.01	50	97	1153	0.131	7	8	3.35	0.75	0.75	23.12
1	3A	18.6	0.01	50	97	2220	0.115	7	12	2.77	0.72	0.72	37.1
1	4A	4.6	0.01	50	97	812	0.206	7	6	3.83	0.76	0.76	13.39
1	6B	2.5	0.01	50	97	410	0.378	7	5	4.18	0.77	0.77	8.05
1	7B	1.4	0.91	25	97	976	0.009	6.1	11	2.51	0.71	0.88	3.09
1	8B	1.1	0.91	25	97	949	0.009	6.1	11	2.51	0.71	0.88	2.43
1	10B	5.9	0.01	50	97	848	0.099	7	7	3.57	0.76	0.76	16.01

Area B

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flowrate (cfs)
1	20A	7.6	0.01	50	97	1144	0.114	7	8	3.35	0.75	0.75	19.1
1	21A	4.5	0.01	50	97	802	0.143	7	6	3.83	0.76	0.76	13.1
1	22A	7	0.01	50	97	888	0.138	7	6	3.83	0.76	0.76	20.38
1	23A	1.4	0.91	25	97	898	0.014	6.1	10	2.63	0.71	0.88	3.24
1	24A	1.1	0.91	25	97	924	0.014	6.1	10	2.63	0.71	0.88	2.55
1	26A	4.4	0.01	50	97	683	0.139	7	5	4.18	0.77	0.77	14.16

Area C

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flowrate (cfs)
1	30A	4.3	0.01	50	97	667	0.225	7	5	4.18	0.77	0.77	13.84
1	32A	6.6	0.01	50	97	796	0.146	7	6	3.83	0.76	0.76	19.21

Area D

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flowrate (cfs)
1	40A	5.2	0.01	50	97	661	0.147	7	5	4.18	0.77	0.77	16.74
1	41A	1.3	0.91	25	97	930	0.042	6.1	8	2.92	0.73	0.88	3.34
1	42A	1.1	0.91	25	97	921	0.042	6.1	8	2.92	0.73	0.88	2.83
1	44A	2	0.01	50	97	341	0.205	7	5	4.18	0.77	0.77	6.44

Area E: Various areas

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flowrate (cfs)
1	50A	0.9	0.91	25	97	364	0.054	6.1	5	3.64	0.76	0.89	2.92
1	51B	3.2	0.01	50	97	426	0.234	7	5	4.18	0.77	0.77	10.3
1	52C	5	0.01	50	97	652	0.199	7	5	4.18	0.77	0.77	16.09
1	53D	2	0.91	25	97	1140	0.009	6.1	12	2.41	0.7	0.88	4.24
1	54F	2.2	0.91	25	97	1140	0.009	6.1	12	2.41	0.7	0.88	4.67

Program Package Serial Number: 2083
06/22/10 FILE: A INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild_MORA\scr_soilx_34.dat

Via Princessa East, Area A, Prop. 50-& 25-yr Design, BURNED

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
1	1A	8.1	27.29	8.1	27.29	2	586.	.07800	.00	.00	0.	297	5	A35	.01
1	2A	9.2	23.79	17.3	48.45	0	0.	.00000	.00	.00	0.	297	8	A35	.01
1	3A	18.6	38.91	35.9	87.36	0	0.	.00000	.00	.00	0.	297	12	A35	.01
1	4A	4.6	13.89	40.5	101.26	4	476.	.08000	2.50	.00	0.	297	6	A35	.01
1	5A	.0	.00	40.5	100.11	2	354.	.05600	.00	.00	0.	297	99	A35	.00
1	6B	2.5	8.42	2.5	8.42	4	36.	.05000	2.00	.00	0.	297	5	A35	.01
1	7B	1.4	3.14	3.9	11.44	4	90.	.05000	2.00	.00	0.	97	11	A31	.91
1	8B	1.1	2.47	5.0	13.66	4	141.	.22000	2.00	.00	0.	97	11	A31	.91
1	9B	.0	.00	5.0	13.50	2	349.	.12000	.00	.00	0.	297	99	A35	.00
1	10B	5.9	16.35	10.9	29.51	0	0.	.00000	.00	.00	0.	297	7	A35	.01
1	11AB	10.9	29.51	51.4	128.21	0	0.	.00000	.00	.00	0.	97	0	A35	.00

Program Package Serial Number: 2083
06/22/10 FILE: A INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 2
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Area A, Prop. 50-& 25-yr Design, BURNED
HYDROGRAPH AT 1 11A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	1.59	200	1.67	300	1.75	400	1.85
500	1.97	600	2.12	700	2.41	800	2.69	900	3.08
1000	4.59	1050	7.66	1100	12.28	1110	16.11	1120	20.35
1130	24.65	1131	25.28	1132	25.95	1133	26.70	1134	27.48
1135	28.33	1136	29.28	1137	30.36	1138	31.54	1139	32.81
1140	34.08	1141	35.52	1142	37.17	1143	39.00	1144	40.80
1145	42.91	1146	45.49	1147	48.58	1148	51.76	1149	57.74
1150	67.31	1151	80.78	1152	95.89	1153	111.44	1154	123.08
1155	128.21	1156	124.52	1157	115.82	1158	103.88	1159	90.37
1160	77.37	1161	66.87	1162	57.27	1163	48.72	1164	41.49
1165	35.06	1166	29.51	1167	25.21	1168	22.42	1169	20.46
1170	19.02	1171	17.76	1172	16.73	1173	15.78	1174	15.02
1175	14.26	1176	13.61	1177	13.00	1178	12.45	1179	11.89
1180	11.48	1181	11.04	1182	10.61	1183	10.27	1184	9.92
1185	9.58	1186	9.26	1187	8.94	1188	8.62	1189	8.35
1190	8.06	1191	7.82	1192	7.62	1193	7.40	1194	7.20
1195	6.97	1196	6.76	1197	6.54	1198	6.38	1199	6.16
1200	6.03	1201	5.88	1202	5.71	1203	5.56	1204	5.39
1205	5.19	1206	5.07	1207	4.93	1208	4.81	1209	4.69
1210	4.58	1211	4.45	1212	4.35	1213	4.21	1214	4.11
1215	4.01	1216	3.91	1217	3.80	1218	3.73	1219	3.63
1220	3.53	1221	3.46	1222	3.40	1223	3.37	1224	3.34
1225	3.32	1226	3.29	1227	3.26	1228	3.23	1229	3.21
1230	3.19	1231	3.17	1232	3.16	1233	3.14	1234	3.12
1235	3.10	1236	3.08	1237	3.05	1238	3.04	1239	3.02
1240	3.00	1241	2.98	1242	2.97	1243	2.94	1244	2.93
1245	2.91	1246	2.90	1247	2.89	1248	2.87	1249	2.85
1250	2.85	1251	2.83	1252	2.81	1253	2.80	1254	2.79
1255	2.77	1256	2.76	1257	2.74	1258	2.73	1259	2.71
1260	2.70	1261	2.68	1262	2.67	1263	2.66	1264	2.66
1265	2.65	1266	2.65	1267	2.64	1268	2.63	1269	2.61
1270	2.60	1271	2.58	1272	2.56	1273	2.54	1274	2.52
1275	2.51	1276	2.50	1277	2.50	1278	2.48	1279	2.48
1280	2.47	1281	2.47	1282	2.45	1283	2.44	1284	2.43
1285	2.43	1286	2.42	1287	2.41	1288	2.40	1289	2.40
1290	2.39	1291	2.37	1292	2.34	1293	2.34	1294	2.33
1295	2.30	1296	2.27	1297	2.24	1298	2.23	1299	2.22
1300	2.21	1310	2.12	1320	2.07	1330	2.03	1340	1.97
1350	1.92	1360	1.86	1370	1.82	1380	1.79	1390	1.73
1400	1.70	1420	1.67	1440	1.60	1460	1.43	1500	1.43

TOTAL VOLUME THIS HYDROGRAPH = 9.16(Ac.Ft)

Program Package Serial Number: 2083
06/22/10 FILE: B INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild_MORA\scr_soilx_34.dat

Via Princessa East, Area B, Prop. 50-& 25-yr Design, BURNED

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
1	20A	7.6	19.66	7.6	19.66	0	0.	.00000	.00	.00	0.	297	8	A35	.01
1	21A	4.5	13.59	12.1	33.25	2	449.	.08900	.00	.00	0.	297	6	A35	.01
1	22A	7.0	21.14	19.1	53.40	4	84.	.05000	2.00	.00	0.	297	6	A35	.01
1	23A	1.4	3.30	20.5	56.36	4	129.	.05000	2.25	.00	0.	97	10	A31	.91
1	24A	1.1	2.59	21.6	58.43	4	211.	.15000	2.00	.00	0.	97	10	A31	.91
1	25A	.0	.00	21.6	58.04	2	353.	.09000	.00	.00	0.	297	99	A35	.00
1	26A	4.4	14.83	26.0	68.39	0	0.	.00000	.00	.00	0.	297	5	A35	.01

Program Package Serial Number: 2083

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Area B, Prop. 50-& 25-yr Design, BURNED
HYDROGRAPH AT 1 26A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.95	200	.99	300	1.04	400	1.11
500	1.18	600	1.27	700	1.38	800	1.53	900	1.76
1000	2.53	1050	4.09	1100	6.43	1110	8.47	1120	10.64
1130	12.80	1131	13.14	1132	13.48	1133	13.89	1134	14.33
1135	14.83	1136	15.34	1137	15.94	1138	16.60	1139	17.26
1140	17.98	1141	18.80	1142	19.65	1143	20.54	1144	21.50
1145	22.76	1146	24.12	1147	25.76	1148	27.52	1149	31.54
1150	37.03	1151	44.64	1152	53.52	1153	62.70	1154	67.28
1155	68.39	1156	65.13	1157	58.59	1158	50.39	1159	42.86
1160	35.35	1161	28.84	1162	23.73	1163	19.59	1164	16.41
1165	14.10	1166	12.60	1167	11.47	1168	10.62	1169	9.86
1170	9.28	1171	8.72	1172	8.30	1173	7.83	1174	7.51
1175	7.17	1176	6.86	1177	6.54	1178	6.32	1179	6.07
1180	5.84	1181	5.66	1182	5.45	1183	5.29	1184	5.10
1185	4.94	1186	4.77	1187	4.64	1188	4.47	1189	4.34
1190	4.22	1191	4.08	1192	3.99	1193	3.87	1194	3.78
1195	3.66	1196	3.57	1197	3.45	1198	3.40	1199	3.27
1200	3.20	1201	3.14	1202	3.04	1203	2.94	1204	2.88
1205	2.81	1206	2.74	1207	2.67	1208	2.62	1209	2.53
1210	2.49	1211	2.41	1212	2.39	1213	2.30	1214	2.26
1215	2.22	1216	2.17	1217	2.11	1218	2.06	1219	2.03
1220	1.98	1221	1.96	1222	1.94	1223	1.92	1224	1.89
1225	1.88	1226	1.86	1227	1.85	1228	1.83	1229	1.83
1230	1.82	1231	1.80	1232	1.79	1233	1.79	1234	1.77
1235	1.76	1236	1.75	1237	1.73	1238	1.72	1239	1.71
1240	1.70	1241	1.68	1242	1.68	1243	1.66	1244	1.67
1245	1.65	1246	1.64	1247	1.64	1248	1.64	1249	1.62
1250	1.62	1251	1.62	1252	1.60	1253	1.59	1254	1.59
1255	1.58	1256	1.57	1257	1.56	1258	1.55	1259	1.54
1260	1.53	1261	1.53	1262	1.52	1263	1.52	1264	1.51
1265	1.51	1266	1.50	1267	1.50	1268	1.49	1269	1.49
1270	1.47	1271	1.46	1272	1.46	1273	1.44	1274	1.43
1275	1.43	1276	1.43	1277	1.42	1278	1.41	1279	1.41
1280	1.41	1281	1.40	1282	1.39	1283	1.40	1284	1.39
1285	1.38	1286	1.37	1287	1.37	1288	1.37	1289	1.36
1290	1.35	1291	1.36	1292	1.35	1293	1.34	1294	1.34
1295	1.33	1296	1.33	1297	1.32	1298	1.32	1299	1.32
1300	1.31	1310	1.26	1320	1.23	1330	1.21	1340	1.17
1350	1.14	1360	1.11	1370	1.08	1380	1.06	1390	1.03
1400	1.01	1420	1.00	1440	.95	1460	.83	1500	.83

TOTAL VOLUME THIS HYDROGRAPH = 4.98(Ac.Ft)

Program Package Serial Number: 2083
06/22/10 FILE: C INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild_MORA\scr_soilx_34.dat

Via Princessa East, Area C, Exist. 50-yr Design, BURNED

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
1	30A	4.3	14.49	4.3	14.49	4	177.	.08500	2.00	.00	0.	297	5	A35	.01
1	31A	.0	.00	4.3	14.02	2	717.	.11000	.00	.00	0.	297	99	A35	.00
1	32A	6.6	19.94	10.9	32.08	0	0.	.00000	.00	.00	0.	297	6	A35	.01

Program Package Serial Number: 2083
06/22/10 FILE: C INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 2
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Area C, Exist. 50-yr Design, BURNED
HYDROGRAPH AT 1 32A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.31	200	.32	300	.34	400	.36
500	.38	600	.41	700	.45	800	.50	900	.57
1000	.88	1050	1.55	1100	2.52	1110	3.48	1120	4.29
1130	5.29	1131	5.44	1132	5.59	1133	5.80	1134	6.02
1135	6.27	1136	6.59	1137	6.86	1138	7.20	1139	7.42
1140	7.71	1141	8.16	1142	8.56	1143	8.93	1144	9.27
1145	10.03	1146	10.80	1147	11.48	1148	12.20	1149	15.11
1150	18.41	1151	21.94	1152	26.00	1153	30.21	1154	32.08
1155	30.33	1156	26.68	1157	22.12	1158	17.22	1159	12.21
1160	9.63	1161	7.83	1162	6.69	1163	5.87	1164	5.25
1165	4.77	1166	4.36	1167	4.03	1168	3.79	1169	3.53
1170	3.33	1171	3.14	1172	3.02	1173	2.85	1174	2.69
1175	2.63	1176	2.48	1177	2.39	1178	2.25	1179	2.21
1180	2.12	1181	2.03	1182	1.95	1183	1.92	1184	1.85
1185	1.77	1186	1.70	1187	1.63	1188	1.60	1189	1.52
1190	1.50	1191	1.43	1192	1.41	1193	1.35	1194	1.33
1195	1.27	1196	1.20	1197	1.18	1198	1.16	1199	1.15
1200	1.08	1201	1.07	1202	1.02	1203	1.01	1204	.95
1205	.93	1206	.91	1207	.85	1208	.88	1209	.83
1210	.82	1211	.77	1212	.76	1213	.75	1214	.69
1215	.73	1216	.67	1217	.66	1218	.64	1219	.64
1220	.63	1221	.63	1222	.62	1223	.62	1224	.60
1225	.60	1226	.60	1227	.59	1228	.58	1229	.58
1230	.59	1231	.57	1232	.57	1233	.57	1234	.56
1235	.56	1236	.56	1237	.56	1238	.55	1239	.54
1240	.55	1241	.54	1242	.54	1243	.54	1244	.53
1245	.53	1246	.52	1247	.53	1248	.52	1249	.52
1250	.52	1251	.51	1252	.51	1253	.50	1254	.51
1255	.51	1256	.50	1257	.50	1258	.50	1259	.49
1260	.48	1261	.49	1262	.49	1263	.49	1264	.49
1265	.49	1266	.49	1267	.48	1268	.48	1269	.48
1270	.46	1271	.46	1272	.46	1273	.46	1274	.46
1275	.45	1276	.46	1277	.46	1278	.45	1279	.45
1280	.45	1281	.45	1282	.44	1283	.44	1284	.45
1285	.45	1286	.44	1287	.44	1288	.45	1289	.43
1290	.43	1291	.43	1292	.43	1293	.43	1294	.42
1295	.43	1296	.43	1297	.42	1298	.43	1299	.42
1300	.43	1310	.40	1320	.40	1330	.39	1340	.38
1350	.37	1360	.35	1370	.35	1380	.34	1390	.33
1400	.33	1420	.32	1440	.31	1460	.12	1500	.12

TOTAL VOLUME THIS HYDROGRAPH = 1.81(Ac.Ft)

Program Package Serial Number: 2083
06/22/10 FILE: D INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild_MORA\scr_soilx_34.dat

Via Princessa East, Area D, Prop. 50-& 25-yr Design, BURNED

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
1	40A	5.2	17.52	5.2	17.52	4	27.	.03000	2.00	.00	0.	297	5	A35	.01
1	41A	1.3	3.37	6.5	20.73	4	90.	.03000	2.00	.00	0.	97	8	A31	.91
1	42A	1.1	2.85	7.6	23.16	4	15.	.03000	2.00	.00	0.	97	8	A31	.91
1	43A	.0	.00	7.6	23.08	2	322.	.09300	.00	.00	0.	297	99	A35	.00
1	44A	2.0	6.74	9.6	28.40	0	0.	.00000	.00	.00	0.	297	5	A35	.01

Program Package Serial Number: 2083
06/22/10 FILE: D INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 2
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Area D, Prop. 50-& 25-yr Design, BURNED
HYDROGRAPH AT 1 44A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.48	200	.50	300	.53	400	.56
500	.59	600	.64	700	.70	800	.77	900	.89
1000	1.20	1050	1.80	1100	2.66	1110	3.51	1120	4.27
1130	5.10	1131	5.24	1132	5.39	1133	5.56	1134	5.77
1135	6.01	1136	6.24	1137	6.49	1138	6.75	1139	7.00
1140	7.26	1141	7.58	1142	7.94	1143	8.30	1144	8.65
1145	9.19	1146	9.82	1147	10.54	1148	11.24	1149	13.17
1150	16.18	1151	19.95	1152	23.77	1153	27.54	1154	28.40
1155	26.50	1156	22.98	1157	19.05	1158	14.79	1159	11.47
1160	9.12	1161	7.54	1162	6.38	1163	5.53	1164	5.00
1165	4.57	1166	4.25	1167	3.96	1168	3.75	1169	3.53
1170	3.37	1171	3.20	1172	3.08	1173	2.93	1174	2.84
1175	2.72	1176	2.63	1177	2.53	1178	2.45	1179	2.36
1180	2.28	1181	2.22	1182	2.15	1183	2.11	1184	2.06
1185	2.00	1186	1.93	1187	1.87	1188	1.80	1189	1.77
1190	1.74	1191	1.70	1192	1.67	1193	1.62	1194	1.59
1195	1.54	1196	1.50	1197	1.46	1198	1.44	1199	1.40
1200	1.39	1201	1.37	1202	1.33	1203	1.30	1204	1.26
1205	1.22	1206	1.21	1207	1.20	1208	1.19	1209	1.17
1210	1.15	1211	1.10	1212	1.10	1213	1.06	1214	1.05
1215	1.03	1216	1.01	1217	1.00	1218	.99	1219	.98
1220	.97	1221	.96	1222	.95	1223	.95	1224	.94
1225	.94	1226	.93	1227	.92	1228	.91	1229	.91
1230	.91	1231	.90	1232	.90	1233	.90	1234	.88
1235	.88	1236	.87	1237	.86	1238	.86	1239	.85
1240	.84	1241	.83	1242	.83	1243	.83	1244	.83
1245	.82	1246	.82	1247	.82	1248	.82	1249	.81
1250	.82	1251	.81	1252	.80	1253	.80	1254	.80
1255	.79	1256	.78	1257	.78	1258	.77	1259	.76
1260	.76	1261	.76	1262	.76	1263	.76	1264	.76
1265	.76	1266	.75	1267	.75	1268	.74	1269	.74
1270	.73	1271	.73	1272	.72	1273	.71	1274	.71
1275	.72	1276	.72	1277	.72	1278	.71	1279	.71
1280	.71	1281	.70	1282	.69	1283	.69	1284	.69
1285	.69	1286	.69	1287	.69	1288	.69	1289	.68
1290	.68	1291	.68	1292	.68	1293	.67	1294	.67
1295	.66	1296	.66	1297	.66	1298	.66	1299	.66
1300	.66	1310	.63	1320	.63	1330	.60	1340	.59
1350	.57	1360	.56	1370	.54	1380	.54	1390	.52
1400	.51	1420	.50	1440	.48	1460	.42	1500	.42

TOTAL VOLUME THIS HYDROGRAPH = 2.20(Ac.Ft)

Program Package Serial Number: 2083
06/22/10 FILE: E INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild_MORA\scr_soilx_34.dat

Via Princessa East, Prop. 50-& 25-yr Design, BURNED

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
1	50A	.9	2.96	.9	2.96	0	0.	.00000	.00	.00	0.	97	5	A31	.91
1	51B	3.2	10.78	3.2	10.78	0	0.	.00000	.00	.00	0.	297	5	A35	.01
1	52C	5.0	16.85	5.0	16.85	0	0.	.00000	.00	.00	0.	297	5	A35	.01
1	53D	2.0	4.31	2.0	4.31	0	0.	.00000	.00	.00	0.	97	12	A31	.91
1	54E	2.2	4.74	2.2	4.74	0	0.	.00000	.00	.00	0.	97	12	A31	.91

Program Package Serial Number: 2083
06/22/10 FILE: E INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 2
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Prop. 25-yr Design
HYDROGRAPH AT 1 50A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.10	200	.11	300	.11	400	.12
500	.13	600	.14	700	.15	800	.17	900	.19
1000	.23	1050	.29	1100	.38	1110	.47	1120	.53
1130	.62	1131	.64	1132	.64	1133	.67	1134	.70
1135	.73	1136	.74	1137	.78	1138	.80	1139	.80
1140	.83	1141	.88	1142	.91	1143	.95	1144	.98
1145	1.06	1146	1.12	1147	1.18	1148	1.23	1149	1.62
1150	1.96	1151	2.28	1152	2.62	1153	2.96	1154	2.62
1155	2.22	1156	1.82	1157	1.37	1158	.91	1159	.79
1160	.71	1161	.64	1162	.59	1163	.57	1164	.53
1165	.50	1166	.48	1167	.46	1168	.44	1169	.43
1170	.41	1171	.40	1172	.39	1173	.38	1174	.37
1175	.37	1176	.35	1177	.35	1178	.34	1179	.34
1180	.33	1181	.32	1182	.31	1183	.31	1184	.30
1185	.29	1186	.30	1187	.29	1188	.28	1189	.28
1190	.28	1191	.27	1192	.27	1193	.26	1194	.26
1195	.26	1196	.25	1197	.25	1198	.25	1199	.24
1200	.24	1201	.24	1202	.23	1203	.23	1204	.24
1205	.23	1206	.23	1207	.23	1208	.23	1209	.21
1210	.21	1211	.21	1212	.21	1213	.21	1214	.21
1215	.21	1216	.21	1217	.21	1218	.21	1219	.21
1220	.21	1221	.20	1222	.21	1223	.20	1224	.21
1225	.20	1226	.20	1227	.20	1228	.20	1229	.19
1230	.20	1231	.20	1232	.19	1233	.19	1234	.19
1235	.18	1236	.18	1237	.18	1238	.18	1239	.18
1240	.18	1241	.18	1242	.18	1243	.18	1244	.18
1245	.18	1246	.18	1247	.18	1248	.18	1249	.18
1250	.17	1251	.17	1252	.17	1253	.17	1254	.16
1255	.17	1256	.17	1257	.16	1258	.16	1259	.17
1260	.16	1261	.16	1262	.17	1263	.16	1264	.16
1265	.16	1266	.16	1267	.15	1268	.16	1269	.15
1270	.16	1271	.15	1272	.16	1273	.15	1274	.16
1275	.15	1276	.15	1277	.15	1278	.15	1279	.14
1280	.15	1281	.15	1282	.14	1283	.15	1284	.15
1285	.14	1286	.15	1287	.15	1288	.14	1289	.14
1290	.15	1291	.14	1292	.14	1293	.14	1294	.14
1295	.14	1296	.14	1297	.14	1298	.14	1299	.14
1300	.13	1310	.14	1320	.13	1330	.13	1340	.13
1350	.13	1360	.12	1370	.12	1380	.12	1390	.11
1400	.11	1420	.11	1440	.10	1460	.00	1500	.00

TOTAL VOLUME THIS HYDROGRAPH = .37(Ac.Ft)

D

Program Package Serial Number: 2083

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Prop. 50-yr Design, BURNED
HYDROGRAPH AT 1 51B STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.09	200	.09	300	.10	400	.11
500	.11	600	.12	700	.13	800	.15	900	.17
1000	.26	1050	.46	1100	.75	1110	1.08	1120	1.28
1130	1.60	1131	1.66	1132	1.72	1133	1.81	1134	1.90
1135	1.99	1136	2.05	1137	2.15	1138	2.25	1139	2.31
1140	2.41	1141	2.57	1142	2.69	1143	2.79	1144	2.92
1145	3.24	1146	3.47	1147	3.71	1148	3.94	1149	5.45
1150	6.78	1151	8.08	1152	9.43	1153	10.78	1154	9.46
1155	7.88	1156	6.19	1157	4.44	1158	2.69	1159	2.18
1160	1.89	1161	1.68	1162	1.53	1163	1.37	1164	1.28
1165	1.16	1166	1.11	1167	1.02	1168	.99	1169	.91
1170	.88	1171	.82	1172	.82	1173	.73	1174	.73
1175	.71	1176	.68	1177	.62	1178	.62	1179	.59
1180	.56	1181	.56	1182	.53	1183	.53	1184	.51
1185	.48	1186	.45	1187	.45	1188	.42	1189	.42
1190	.42	1191	.39	1192	.39	1193	.36	1194	.36
1195	.34	1196	.34	1197	.31	1198	.34	1199	.31
1200	.31	1201	.31	1202	.28	1203	.25	1204	.25
1205	.25	1206	.25	1207	.25	1208	.25	1209	.22
1210	.22	1211	.19	1212	.22	1213	.19	1214	.19
1215	.19	1216	.19	1217	.18	1218	.18	1219	.18
1220	.17	1221	.18	1222	.18	1223	.18	1224	.17
1225	.17	1226	.17	1227	.17	1228	.17	1229	.17
1230	.17	1231	.17	1232	.17	1233	.17	1234	.16
1235	.16	1236	.17	1237	.16	1238	.16	1239	.16
1240	.16	1241	.15	1242	.16	1243	.15	1244	.16
1245	.15	1246	.15	1247	.15	1248	.15	1249	.14
1250	.15	1251	.15	1252	.14	1253	.14	1254	.15
1255	.14	1256	.14	1257	.14	1258	.14	1259	.14
1260	.14	1261	.14	1262	.14	1263	.14	1264	.14
1265	.14	1266	.14	1267	.14	1268	.14	1269	.14
1270	.13	1271	.13	1272	.13	1273	.13	1274	.13
1275	.14	1276	.14	1277	.14	1278	.13	1279	.13
1280	.13	1281	.13	1282	.12	1283	.13	1284	.13
1285	.13	1286	.12	1287	.13	1288	.13	1289	.12
1290	.12	1291	.13	1292	.12	1293	.12	1294	.12
1295	.12	1296	.12	1297	.12	1298	.12	1299	.12
1300	.12	1310	.12	1320	.12	1330	.11	1340	.11
1350	.11	1360	.10	1370	.10	1380	.10	1390	.10
1400	.10	1420	.09	1440	.09	1460	.00	1500	.00

TOTAL VOLUME THIS HYDROGRAPH = .53(Ac.Ft)

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Prop. 50-yr Design, BURNED
HYDROGRAPH AT 1 52C STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.14	200	.15	300	.15	400	.16
500	.17	600	.19	700	.21	800	.23	900	.26
1000	.41	1050	.72	1100	1.17	1110	1.68	1120	2.01
1130	2.50	1131	2.59	1132	2.68	1133	2.82	1134	2.96
1135	3.11	1136	3.21	1137	3.36	1138	3.51	1139	3.61
1140	3.76	1141	4.01	1142	4.21	1143	4.36	1144	4.56
1145	5.06	1146	5.43	1147	5.79	1148	6.16	1149	8.51
1150	10.59	1151	12.63	1152	14.73	1153	16.85	1154	14.79
1155	12.31	1156	9.68	1157	6.94	1158	4.21	1159	3.41
1160	2.96	1161	2.62	1162	2.39	1163	2.15	1164	2.01
1165	1.82	1166	1.73	1167	1.60	1168	1.55	1169	1.42
1170	1.37	1171	1.28	1172	1.28	1173	1.15	1174	1.15
1175	1.10	1176	1.06	1177	.97	1178	.97	1179	.92
1180	.88	1181	.88	1182	.83	1183	.83	1184	.79
1185	.75	1186	.70	1187	.70	1188	.66	1189	.66
1190	.66	1191	.61	1192	.61	1193	.57	1194	.57
1195	.52	1196	.52	1197	.48	1198	.52	1199	.48
1200	.48	1201	.48	1202	.44	1203	.39	1204	.39
1205	.39	1206	.39	1207	.39	1208	.39	1209	.35
1210	.35	1211	.30	1212	.35	1213	.30	1214	.30
1215	.30	1216	.30	1217	.28	1218	.28	1219	.28
1220	.27	1221	.28	1222	.28	1223	.28	1224	.27
1225	.27	1226	.26	1227	.26	1228	.26	1229	.27
1230	.27	1231	.26	1232	.26	1233	.26	1234	.25
1235	.25	1236	.26	1237	.25	1238	.25	1239	.25
1240	.25	1241	.24	1242	.25	1243	.24	1244	.25
1245	.24	1246	.24	1247	.24	1248	.24	1249	.23
1250	.24	1251	.24	1252	.23	1253	.23	1254	.24
1255	.23	1256	.23	1257	.23	1258	.23	1259	.22
1260	.22	1261	.23	1262	.23	1263	.23	1264	.23
1265	.23	1266	.22	1267	.22	1268	.22	1269	.22
1270	.20	1271	.20	1272	.20	1273	.20	1274	.20
1275	.22	1276	.22	1277	.22	1278	.20	1279	.20
1280	.20	1281	.20	1282	.19	1283	.20	1284	.20
1285	.20	1286	.19	1287	.20	1288	.20	1289	.19
1290	.19	1291	.20	1292	.19	1293	.19	1294	.19
1295	.19	1296	.19	1297	.19	1298	.19	1299	.19
1300	.19	1310	.18	1320	.18	1330	.18	1340	.17
1350	.17	1360	.16	1370	.16	1380	.16	1390	.15
1400	.15	1420	.15	1440	.14	1460	.00	1500	.00

TOTAL VOLUME THIS HYDROGRAPH = .83(Ac.Ft)

Program Package Serial Number: 2083

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:

Outlet Hydrograph, Prop. 25-yr Design

HYDROGRAPH AT 1 53D STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.23	200	.24	300	.25	400	.27
500	.29	600	.31	700	.33	800	.37	900	.43
1000	.52	1050	.65	1100	.84	1110	1.02	1120	1.16
1130	1.35	1131	1.38	1132	1.40	1133	1.43	1134	1.46
1135	1.48	1136	1.50	1137	1.55	1138	1.59	1139	1.63
1140	1.68	1141	1.74	1142	1.81	1143	1.87	1144	1.94
1145	2.03	1146	2.13	1147	2.23	1148	2.33	1149	2.72
1150	3.11	1151	3.50	1152	3.88	1153	4.25	1154	4.31
1155	4.30	1156	4.28	1157	4.18	1158	4.05	1159	3.94
1160	3.81	1161	3.36	1162	2.91	1163	2.46	1164	2.00
1165	1.54	1166	1.39	1167	1.28	1168	1.19	1169	1.13
1170	1.08	1171	1.03	1172	.99	1173	.95	1174	.92
1175	.89	1176	.86	1177	.85	1178	.82	1179	.80
1180	.79	1181	.76	1182	.75	1183	.73	1184	.71
1185	.70	1186	.70	1187	.68	1188	.67	1189	.65
1190	.64	1191	.64	1192	.63	1193	.62	1194	.61
1195	.60	1196	.59	1197	.59	1198	.57	1199	.57
1200	.57	1201	.56	1202	.55	1203	.54	1204	.54
1205	.54	1206	.53	1207	.52	1208	.52	1209	.51
1210	.51	1211	.51	1212	.50	1213	.50	1214	.49
1215	.49	1216	.48	1217	.47	1218	.47	1219	.46
1220	.46	1221	.46	1222	.46	1223	.46	1224	.46
1225	.45	1226	.45	1227	.45	1228	.44	1229	.44
1230	.44	1231	.44	1232	.43	1233	.43	1234	.42
1235	.42	1236	.41	1237	.41	1238	.41	1239	.41
1240	.41	1241	.41	1242	.40	1243	.40	1244	.40
1245	.40	1246	.40	1247	.40	1248	.40	1249	.40
1250	.39	1251	.39	1252	.39	1253	.39	1254	.38
1255	.38	1256	.38	1257	.37	1258	.37	1259	.37
1260	.36	1261	.36	1262	.37	1263	.36	1264	.36
1265	.36	1266	.36	1267	.36	1268	.36	1269	.36
1270	.36	1271	.35	1272	.36	1273	.35	1274	.35
1275	.35	1276	.34	1277	.35	1278	.34	1279	.34
1280	.34	1281	.34	1282	.33	1283	.34	1284	.33
1285	.33	1286	.33	1287	.33	1288	.33	1289	.32
1290	.33	1291	.33	1292	.32	1293	.32	1294	.32
1295	.32	1296	.32	1297	.32	1298	.31	1299	.31
1300	.31	1310	.31	1320	.30	1330	.29	1340	.28
1350	.28	1360	.27	1370	.26	1380	.26	1390	.25
1400	.25	1420	.24	1440	.23	1460	.00	1500	.00

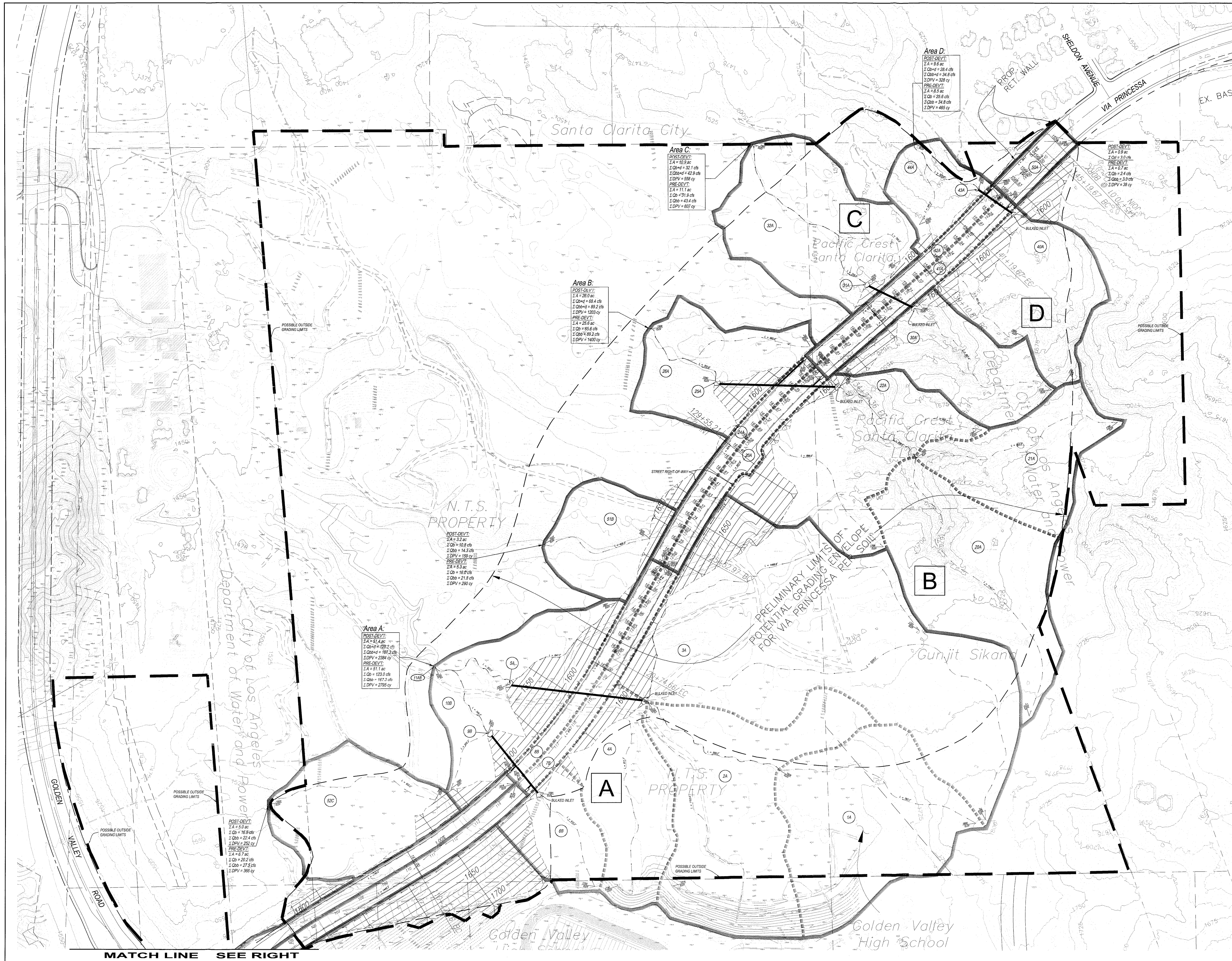
TOTAL VOLUME THIS HYDROGRAPH = .82(Ac.Ft)

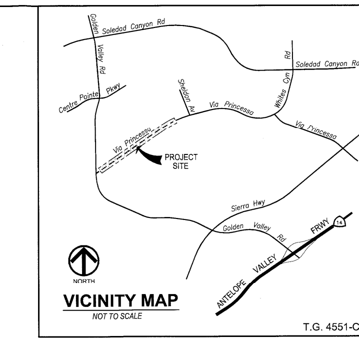
Program Package Serial Number: 2083
06/22/10 FILE: E INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 6
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Prop. 25-yr Design
HYDROGRAPH AT 1 54E STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.25	200	.27	300	.28	400	.30
500	.31	600	.34	700	.37	800	.41	900	.47
1000	.57	1050	.71	1100	.92	1110	1.12	1120	1.28
1130	1.49	1131	1.52	1132	1.54	1133	1.57	1134	1.60
1135	1.63	1136	1.65	1137	1.70	1138	1.74	1139	1.79
1140	1.84	1141	1.92	1142	1.99	1143	2.06	1144	2.13
1145	2.24	1146	2.35	1147	2.45	1148	2.56	1149	2.99
1150	3.43	1151	3.85	1152	4.27	1153	4.68	1154	4.74
1155	4.73	1156	4.71	1157	4.60	1158	4.46	1159	4.33
1160	4.19	1161	3.70	1162	3.20	1163	2.71	1164	2.20
1165	1.69	1166	1.52	1167	1.41	1168	1.31	1169	1.24
1170	1.18	1171	1.14	1172	1.09	1173	1.05	1174	1.01
1175	.98	1176	.95	1177	.93	1178	.90	1179	.88
1180	.86	1181	.83	1182	.83	1183	.81	1184	.79
1185	.77	1186	.77	1187	.75	1188	.74	1189	.72
1190	.71	1191	.70	1192	.69	1193	.68	1194	.67
1195	.66	1196	.65	1197	.65	1198	.63	1199	.62
1200	.62	1201	.61	1202	.60	1203	.59	1204	.59
1205	.59	1206	.58	1207	.57	1208	.57	1209	.56
1210	.56	1211	.56	1212	.55	1213	.55	1214	.54
1215	.54	1216	.53	1217	.52	1218	.52	1219	.51
1220	.51	1221	.51	1222	.51	1223	.50	1224	.50
1225	.49	1226	.49	1227	.49	1228	.48	1229	.48
1230	.48	1231	.48	1232	.47	1233	.47	1234	.46
1235	.46	1236	.46	1237	.46	1238	.46	1239	.45
1240	.45	1241	.45	1242	.44	1243	.44	1244	.44
1245	.44	1246	.44	1247	.44	1248	.44	1249	.44
1250	.43	1251	.43	1252	.43	1253	.43	1254	.42
1255	.42	1256	.42	1257	.41	1258	.41	1259	.41
1260	.40	1261	.40	1262	.41	1263	.40	1264	.40
1265	.39	1266	.40	1267	.39	1268	.39	1269	.39
1270	.39	1271	.38	1272	.39	1273	.38	1274	.38
1275	.38	1276	.37	1277	.38	1278	.37	1279	.37
1280	.37	1281	.37	1282	.36	1283	.37	1284	.36
1285	.36	1286	.36	1287	.36	1288	.36	1289	.36
1290	.36	1291	.36	1292	.36	1293	.36	1294	.36
1295	.36	1296	.36	1297	.36	1298	.35	1299	.35
1300	.35	1310	.34	1320	.33	1330	.32	1340	.31
1350	.31	1360	.30	1370	.29	1380	.28	1390	.28
1400	.27	1420	.26	1440	.25	1460	.00	1500	.00

TOTAL VOLUME THIS HYDROGRAPH = .90(Ac.Ft)





VICINITY MAP

NOT TO SCALE

T.G. 4551-C5, D4

LEGEND

MAIN DRAINAGE BOUNDARY	
SUB-AREA BOUNDARY	
FLOW LINE	
EXISTING STORM DRAIN	
PROPOSED STORM DRAIN	
STREET RIGHT-OF-WAY	
PRE-DEVELOPMENT RIDGE LINE	
1A & 13AB	LOCATION NAMES
A	TOTAL AREA IN ACRES, Ac
Au	UNDEVELOPED AREA IN ACRES, Ac
Qb	DESIGN 50-YR BURNED FLOW, IN CUBIC FEET PER SECOND, cfs
Qbb	DESIGN 50-YR BURNED & BULKED FLOW, IN CUBIC FEET PER SECOND, cfs
Qd	DESIGN 25-YR FLOW IN CUBIC FEET PER SECOND, cfs
Qb+d	DESIGN MIXED 50- & 25-YR BURNED FLOW, IN CUBIC FEET PER SECOND, cfs
Qbb+d	DESIGN MIXED 50- & 25-YR BURNED & BULKED FLOW, IN CUBIC FEET PER SECOND, cfs
DPV	DEBRIS PRODUCTION VOLUME IN CUBIC YARDS, cy
Σ	TOTAL

SUBAREA SUMMARY:

Node Number	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	Qd (cfs)	Qb (cfs)	Qbb (cfs)	Subarea DPV (cy)
1A	8.1	8.1		27.3	37.1	443
2A	9.2	9.2		23.8	32.4	503
3A	18.6	16.8		38.9	51.5	919
4A	4.6	4.0		13.9	18.3	219
6B	2.5	1.9		8.4	10.7	104
7B	1.4	0.0	3.1			
8B	1.1	0.0	2.5			
10B	5.9	3.6		16.4	20.0	197
20A	7.6	7.6		19.7	26.8	416
21A	4.5	4.5		13.6	18.5	246
22A	7.0	6.1		21.1	27.7	334
23A	1.4	0.0	3.3			
24A	1.1	0.0	2.6			
26A	4.4	3.8		14.8	19.4	208
30A	4.3	3.8		14.5	19.1	208
32A	6.6	6.4		19.9	26.8	350
40A	5.2	4.3		17.5	22.7	235
41A	1.3	0.0	3.4			
42A	1.1	0.0	2.8			
44A	2.0	1.7		6.7	8.8	93
50A	0.9	0.0	3.0			
51B	3.2	2.9		10.8	14.3	159
52C	5.0	4.6		16.8	22.4	252
53D	2.0	0.0	4.3			
54E	2.2	0.0	4.7			

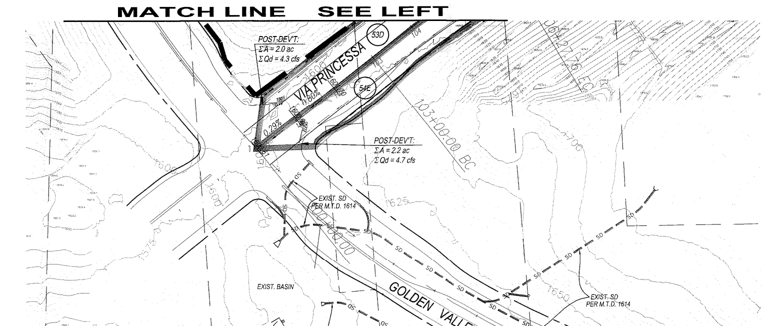
JUNCTION & OUTLET SUMMARY:

Junction Number	ΣQb (cfs)	ΣQb+d (cfs)	A (ac)	Au (ac)	ΣQbb (cfs)	ΣQbb+d (cfs)	DPV (cy)
2A	48.4		17.3	17.3	65.8		946
4A		101.3	40.5	34.1		132.0	1,865
7B		11.4	3.9	1.9		13.4	104
8B		13.7	5.0	1.9		15.6	104
11AB/ Outlet		128.2	51.4	43.6		167.3	2,384
21A	33.2		12.1	12.1	45.2		662
22A		53.4	19.1	18.2		71.7	995
23A		56.4	20.5	18.2		74.4	995
24A		58.4	21.6	18.2		76.1	995
26A / Outlet		68.4	26.0	22.0		89.2	1,203
32A / Outlet		32.1	10.9	10.2		42.9	558
41A		20.7	6.5	4.3		25.6	235
42A		23.2	7.6	4.3		27.9	235
44A / Outlet		28.4	9.6	6.0		34.8	328

HYDROLOGY CRITERIA

- DESIGN STORM FREQUENCY:
  - 50-YR FOR UNDEVELOPED AREAS
  - 25-YR FOR DEVELOPED AREAS.
- DPA ZONE = 8
- BASIN NAME = SANTA CLARA
- SOIL TYPE NUMBER = 097
- PEAK BULKING FACTOR = 1.360 (FOR AREAS 64 Ac. OR UNDER)
- DEBRIS PRODUCTION RATE = 54.6875 Cy / Ac (FOR AREAS 64 Ac. OR UNDER)
- ISOHYETS:
  - 7.0" (50-YR, 24-HOUR)
  - 6.1" (25-YR, 24-HOUR)
- % IMPERVIOUSNESS:
  - 1% FOR UNDEVELOPED / NATURAL AREAS
  - 91% FOR PAVED STREETS / DEVELOPED AREAS

MATCH LINE SEE LEFT



PROPOSED CONDITION

DRAINAGE CONCEPT

FOR VIA PRINCESSA EAST

(BETWEEN GOLDEN VALLEY ROAD & SHELDON AVENUE)

IN THE CITY OF SANTA CLARITA

NORTH	PREPARED FOR: CITY OF SANTA CLARITA, 23920 VALENCIA BLVD., SANTA CLARITA, CA 91355, PHONE: (661)286-4174; www.santa-clarita.com	PREPARED BY: SIKAND Engineering | Planning | Surveying, 15230 Burbank Blvd. #100, Van Nuys, CA 91411, Phone : (818) 787- 8550, Fax : (818) 901-7451, www.sikand.com, E-mail: info@sikand.com	REGISTERED PROFESSIONAL ENGINEER CRAIG YOUNG No.32363 Exp. 12-31-10 CIVIL STATE OF CALIFORNIA	SHEET 1 OF 1 SHEETS
SCALE: 1"=100'	DATE: 07-07-2010	W.O. NO.: 5109-020-00		

X:\sikand\5109-020\00\Engineering\Hydrology\Dwg\Hydro_PR.dwg, SHT-01_100 SCALE
Plotted: 07/13/10 08:25:42 by Eumir

SECTION 4

TC Calculator Results

Via Princessa East, Santa Clarita

Existing Condition, Design Frequency (50- & 25-yr)

Area A

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flowrate (cfs)
1	1A	8.1	0.01	50	97	784	0.244	7	5	4.18	0.77	0.77	26.07
1	2A	9.2	0.01	50	97	1153	0.131	7	8	3.35	0.75	0.75	23.12
1	3A	12.4	0.01	50	97	2220	0.115	7	12	2.77	0.72	0.72	24.73
1	4A	6.8	0.01	50	97	1175	0.115	7	8	3.35	0.75	0.75	17.09
1	5A	8.5	0.01	50	97	1608	0.141	7	9	3.17	0.74	0.74	19.94
1	6A	6.1	0.01	50	97	1069	0.231	7	7	3.57	0.76	0.76	16.55

Area B

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flowrate (cfs)
1	20A	7.6	0.01	50	97	1144	0.114	7	8	3.35	0.75	0.75	19.1
1	21A	4.5	0.01	50	97	802	0.143	7	6	3.83	0.76	0.76	13.1
1	22A	5.2	0.01	50	97	1200	0.139	7	8	3.35	0.75	0.75	13.07
1	23A	4	0.01	50	97	933	0.18	7	6	3.83	0.76	0.76	11.64
1	24A	4.3	0.01	50	97	1027	0.148	7	7	3.57	0.76	0.76	11.67

Area C

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flowrate (cfs)
1	30A	4.7	0.01	50	97	869	0.19	7	6	3.83	0.76	0.76	13.68
1	31A	6.4	0.01	50	97	837	0.148	7	6	3.83	0.76	0.76	18.63

Area D

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flowrate (cfs)
1	40A	4.5	0.01	50	97	834	0.182	7	6	3.83	0.76	0.76	13.1
1	41A	2.2	0.01	50	97	710	0.172	7	5	4.18	0.77	0.77	7.08
1	42A	1.8	0.01	50	97	341	0.205	7	5	4.18	0.77	0.77	5.79

Area E: Various areas

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flowrate (cfs)
1	50A	0.7	0.01	50	97	346	0.246	7	5	4.18	0.77	0.77	2.25
1	51B	5.3	0.01	50	97	936	0.169	7	6	3.83	0.76	0.76	15.43
1	52C	6.7	0.01	50	97	927	0.226	7	6	3.83	0.76	0.76	19.5

Program Package Serial Number: 2083
06/22/10 FILE: A INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild_MORA\scr_soilx_34.dat

Via Princessa East, Area A, Exist. 50-yr Design, BURNED

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
1	1A	8.1	27.29	8.1	27.29	2	586.	.07800	.00	.00	0.	297	5	A35	.01
1	2A	9.2	23.79	17.3	48.45	2	333.	.05700	.00	.00	0.	297	8	A35	.01
1	3A	12.4	25.94	29.7	73.82	0	0.	.00000	.00	.00	0.	297	12	A35	.01
1	4A	6.8	17.59	36.5	91.08	2	720.	.05700	.00	.00	0.	297	8	A35	.01
1	5A	8.5	20.76	45.0	108.76	0	0.	.00000	.00	.00	0.	297	9	A35	.01
1	6A	6.1	16.91	51.1	123.05	0	0.	.00000	.00	.00	0.	297	7	A35	.01

Program Package Serial Number: 2083
06/22/10 FILE: A INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 2
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Area A, Exist. 50-yr Design, BURNED
HYDROGRAPH AT 1 6A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	1.44	200	1.50	300	1.58	400	1.67
500	1.78	600	1.92	700	2.09	800	2.32	900	2.66
1000	4.10	1050	7.11	1100	11.67	1110	15.44	1120	19.48
1130	23.98	1131	24.51	1132	25.06	1133	25.75	1134	26.47
1135	27.21	1136	28.08	1137	29.12	1138	30.28	1139	31.50
1140	32.76	1141	34.29	1142	35.86	1143	37.52	1144	39.21
1145	41.46	1146	43.92	1147	46.63	1148	49.52	1149	56.24
1150	64.61	1151	75.51	1152	88.41	1153	103.06	1154	113.91
1155	121.60	1156	123.05	1157	120.13	1158	111.05	1159	98.55
1160	84.72	1161	72.01	1162	59.47	1163	49.53	1164	41.63
1165	35.35	1166	30.19	1167	26.04	1168	23.26	1169	21.04
1170	19.41	1171	17.97	1172	16.91	1173	15.82	1174	14.99
1175	14.21	1176	13.55	1177	12.85	1178	12.31	1179	11.72
1180	11.29	1181	10.83	1182	10.40	1183	10.07	1184	9.67
1185	9.32	1186	8.99	1187	8.67	1188	8.36	1189	8.10
1190	7.81	1191	7.54	1192	7.31	1193	7.05	1194	6.87
1195	6.64	1196	6.42	1197	6.20	1198	6.09	1199	5.87
1200	5.74	1201	5.54	1202	5.34	1203	5.18	1204	5.05
1205	4.89	1206	4.78	1207	4.56	1208	4.47	1209	4.32
1210	4.22	1211	4.08	1212	3.99	1213	3.83	1214	3.72
1215	3.65	1216	3.57	1217	3.43	1218	3.36	1219	3.26
1220	3.18	1221	3.12	1222	3.06	1223	3.01	1224	2.95
1225	2.92	1226	2.89	1227	2.86	1228	2.83	1229	2.81
1230	2.78	1231	2.76	1232	2.75	1233	2.74	1234	2.71
1235	2.69	1236	2.68	1237	2.65	1238	2.65	1239	2.62
1240	2.62	1241	2.60	1242	2.58	1243	2.56	1244	2.56
1245	2.53	1246	2.52	1247	2.51	1248	2.50	1249	2.47
1250	2.48	1251	2.45	1252	2.44	1253	2.42	1254	2.42
1255	2.41	1256	2.39	1257	2.38	1258	2.37	1259	2.35
1260	2.34	1261	2.34	1262	2.33	1263	2.31	1264	2.31
1265	2.30	1266	2.30	1267	2.29	1268	2.28	1269	2.27
1270	2.24	1271	2.23	1272	2.23	1273	2.21	1274	2.20
1275	2.19	1276	2.18	1277	2.18	1278	2.15	1279	2.15
1280	2.15	1281	2.14	1282	2.12	1283	2.11	1284	2.11
1285	2.12	1286	2.09	1287	2.10	1288	2.09	1289	2.07
1290	2.07	1291	2.07	1292	2.04	1293	2.05	1294	2.03
1295	2.03	1296	2.04	1297	2.01	1298	2.02	1299	2.00
1300	2.00	1310	1.92	1320	1.87	1330	1.84	1340	1.78
1350	1.73	1360	1.67	1370	1.65	1380	1.61	1390	1.56
1400	1.54	1420	1.51	1440	1.44	1460	1.03	1500	1.03

TOTAL VOLUME THIS HYDROGRAPH = 8.56(Ac.Ft)

Program Package Serial Number: 2083
06/22/10 FILE: B INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild_MORA\scr_soilx_34.dat

Via Princessa East, Area B, Exist. 50-yr Design, BURNED

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
1	20A	7.6	19.66	7.6	19.66	0	0.	.00000	.00	.00	0.	297	8	A35	.01
1	21A	4.5	13.59	12.1	33.25	2	969.	.08800	.00	.00	0.	297	6	A35	.01
1	22A	5.2	13.45	17.3	44.63	0	0.	.00000	.00	.00	0.	297	8	A35	.01
1	23A	4.0	12.08	21.3	54.84	2	353.	.09100	.00	.00	0.	297	6	A35	.01
1	24A	4.3	11.92	25.6	65.60	0	0.	.00000	.00	.00	0.	297	7	A35	.01

Program Package Serial Number: 2083

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:

Outlet Hydrograph, Area B, Exist. 50-yr Design, BURNED

HYDROGRAPH AT 1 24A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.72	200	.75	300	.79	400	.84
500	.89	600	.96	700	1.05	800	1.16	900	1.33
1000	2.05	1050	3.57	1100	5.85	1110	7.81	1120	9.86
1130	12.09	1131	12.40	1132	12.70	1133	13.05	1134	13.44
1135	13.87	1136	14.37	1137	14.97	1138	15.60	1139	16.24
1140	16.87	1141	17.65	1142	18.51	1143	19.38	1144	20.23
1145	21.38	1146	22.79	1147	24.32	1148	25.84	1149	29.44
1150	34.69	1151	41.21	1152	48.56	1153	56.66	1154	62.59
1155	65.60	1156	64.26	1157	59.97	1158	53.38	1159	45.36
1160	37.13	1161	30.55	1162	25.04	1163	20.81	1164	17.60
1165	15.11	1166	13.29	1167	11.86	1168	10.83	1169	9.93
1170	9.22	1171	8.59	1172	8.10	1173	7.61	1174	7.23
1175	6.86	1176	6.56	1177	6.24	1178	5.96	1179	5.68
1180	5.49	1181	5.28	1182	5.05	1183	4.89	1184	4.72
1185	4.56	1186	4.39	1187	4.23	1188	4.07	1189	3.95
1190	3.81	1191	3.68	1192	3.57	1193	3.45	1194	3.36
1195	3.26	1196	3.14	1197	3.02	1198	2.96	1199	2.87
1200	2.81	1201	2.71	1202	2.61	1203	2.54	1204	2.47
1205	2.38	1206	2.33	1207	2.24	1208	2.17	1209	2.12
1210	2.07	1211	2.00	1212	1.95	1213	1.88	1214	1.83
1215	1.78	1216	1.74	1217	1.69	1218	1.64	1219	1.60
1220	1.56	1221	1.54	1222	1.51	1223	1.50	1224	1.47
1225	1.45	1226	1.44	1227	1.43	1228	1.41	1229	1.40
1230	1.39	1231	1.38	1232	1.37	1233	1.36	1234	1.35
1235	1.34	1236	1.33	1237	1.32	1238	1.32	1239	1.31
1240	1.30	1241	1.30	1242	1.29	1243	1.27	1244	1.28
1245	1.26	1246	1.26	1247	1.25	1248	1.25	1249	1.23
1250	1.23	1251	1.22	1252	1.22	1253	1.21	1254	1.20
1255	1.20	1256	1.20	1257	1.19	1258	1.18	1259	1.17
1260	1.17	1261	1.16	1262	1.16	1263	1.16	1264	1.15
1265	1.15	1266	1.15	1267	1.15	1268	1.14	1269	1.13
1270	1.12	1271	1.11	1272	1.10	1273	1.10	1274	1.09
1275	1.09	1276	1.08	1277	1.09	1278	1.08	1279	1.08
1280	1.07	1281	1.07	1282	1.06	1283	1.06	1284	1.05
1285	1.06	1286	1.05	1287	1.04	1288	1.04	1289	1.04
1290	1.03	1291	1.03	1292	1.02	1293	1.03	1294	1.02
1295	1.01	1296	1.01	1297	1.01	1298	1.00	1299	1.00
1300	1.00	1310	.95	1320	.94	1330	.92	1340	.89
1350	.86	1360	.84	1370	.83	1380	.81	1390	.78
1400	.77	1420	.76	1440	.72	1460	.60	1500	.60

TOTAL VOLUME THIS HYDROGRAPH = 4.29(Ac.Ft)

Program Package Serial Number: 2083
06/22/10 FILE: C INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild_MORA\scr_soilx_34.dat

Via Princessa East, Area C, Exist. 50-yr Design, BURNED

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
1	30A	4.7	14.20	4.7	14.20	2	717.	.11000	.00	.00	0.	297	6	A35	.01
1	31A	6.4	19.33	11.1	31.88	0	0.	.00000	.00	.00	0.	297	6	A35	.01

Program Package Serial Number: 2083
06/22/10 FILE: C INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 2
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Area C, Exist. 50-yr Design, BURNED
HYDROGRAPH AT 1 31A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.31	200	.33	300	.34	400	.36
500	.39	600	.42	700	.45	800	.51	900	.58
1000	.90	1050	1.58	1100	2.57	1110	3.56	1120	4.37
1130	5.40	1131	5.55	1132	5.70	1133	5.91	1134	6.13
1135	6.38	1136	6.68	1137	6.96	1138	7.30	1139	7.54
1140	7.83	1141	8.27	1142	8.67	1143	9.06	1144	9.41
1145	10.16	1146	10.93	1147	11.63	1148	12.37	1149	15.20
1150	18.54	1151	22.16	1152	26.15	1153	30.17	1154	31.88
1155	30.32	1156	27.09	1157	22.79	1158	18.07	1159	13.22
1160	10.51	1161	8.40	1162	7.06	1163	6.12	1164	5.44
1165	4.92	1166	4.49	1167	4.15	1168	3.89	1169	3.62
1170	3.41	1171	3.22	1172	3.08	1173	2.91	1174	2.75
1175	2.69	1176	2.53	1177	2.44	1178	2.30	1179	2.25
1180	2.16	1181	2.07	1182	1.99	1183	1.96	1184	1.88
1185	1.81	1186	1.74	1187	1.66	1188	1.63	1189	1.55
1190	1.53	1191	1.46	1192	1.44	1193	1.38	1194	1.36
1195	1.29	1196	1.23	1197	1.21	1198	1.19	1199	1.17
1200	1.11	1201	1.10	1202	1.04	1203	1.02	1204	.96
1205	.95	1206	.93	1207	.87	1208	.90	1209	.84
1210	.84	1211	.78	1212	.77	1213	.76	1214	.70
1215	.74	1216	.68	1217	.67	1218	.66	1219	.65
1220	.64	1221	.63	1222	.63	1223	.63	1224	.61
1225	.61	1226	.61	1227	.59	1228	.59	1229	.59
1230	.60	1231	.58	1232	.58	1233	.58	1234	.57
1235	.57	1236	.57	1237	.57	1238	.56	1239	.55
1240	.56	1241	.55	1242	.55	1243	.55	1244	.54
1245	.54	1246	.53	1247	.54	1248	.53	1249	.53
1250	.53	1251	.52	1252	.52	1253	.51	1254	.52
1255	.52	1256	.51	1257	.51	1258	.51	1259	.50
1260	.49	1261	.50	1262	.50	1263	.50	1264	.50
1265	.50	1266	.50	1267	.49	1268	.49	1269	.49
1270	.47	1271	.47	1272	.47	1273	.47	1274	.46
1275	.46	1276	.47	1277	.47	1278	.46	1279	.46
1280	.46	1281	.46	1282	.45	1283	.45	1284	.46
1285	.46	1286	.44	1287	.44	1288	.46	1289	.44
1290	.44	1291	.44	1292	.44	1293	.44	1294	.43
1295	.44	1296	.44	1297	.42	1298	.44	1299	.42
1300	.44	1310	.41	1320	.41	1330	.40	1340	.38
1350	.37	1360	.36	1370	.36	1380	.35	1390	.34
1400	.33	1420	.33	1440	.31	1460	.13	1500	.13

TOTAL VOLUME THIS HYDROGRAPH = 1.85(Ac.Ft)

Program Package Serial Number: 2083
06/22/10 FILE: D INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 1
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild_MORA\scr_soilx_34.dat

Via Princessa East, Area D, Exist. 50-yr Design, BURNED

LOCATION		SUBAREA AREA(AC)	SUBAREA Q(CFS)	TOTAL AREA(AC)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM DAY 4 RAIN ZONE	PCT IMPV
1	40A	4.5	13.59	4.5	13.59	0	0.	.00000	.00	.00	0.	297	6	A35	.01
1	41A	2.2	7.41	6.7	21.01	2	346.	.09600	.00	.00	0.	297	5	A35	.01
1	42A	1.8	6.07	8.5	25.60	0	0.	.00000	.00	.00	0.	297	5	A35	.01

Program Package Serial Number: 2083
06/22/10 FILE: D INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 2
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Area D, Exist. 50-yr Design, BURNED
HYDROGRAPH AT 1 42A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.24	200	.25	300	.26	400	.28
500	.30	600	.32	700	.35	800	.39	900	.44
1000	.69	1050	1.21	1100	1.97	1110	2.73	1120	3.38
1130	4.13	1131	4.26	1132	4.39	1133	4.55	1134	4.75
1135	4.96	1136	5.17	1137	5.41	1138	5.66	1139	5.88
1140	6.10	1141	6.38	1142	6.72	1143	7.06	1144	7.37
1145	7.85	1146	8.46	1147	9.14	1148	9.75	1149	11.60
1150	14.54	1151	18.06	1152	21.48	1153	24.83	1154	25.60
1155	23.84	1156	20.32	1157	16.33	1158	12.32	1159	9.17
1160	6.86	1161	5.51	1162	4.77	1163	4.25	1164	3.87
1165	3.53	1166	3.27	1167	3.03	1168	2.85	1169	2.67
1170	2.53	1171	2.39	1172	2.29	1173	2.16	1174	2.08
1175	1.98	1176	1.91	1177	1.82	1178	1.75	1179	1.67
1180	1.61	1181	1.56	1182	1.51	1183	1.47	1184	1.42
1185	1.37	1186	1.31	1187	1.26	1188	1.20	1189	1.17
1190	1.15	1191	1.11	1192	1.09	1193	1.04	1194	1.02
1195	.98	1196	.95	1197	.90	1198	.89	1199	.86
1200	.85	1201	.84	1202	.80	1203	.76	1204	.73
1205	.70	1206	.68	1207	.68	1208	.66	1209	.64
1210	.63	1211	.60	1212	.59	1213	.56	1214	.55
1215	.53	1216	.52	1217	.51	1218	.50	1219	.49
1220	.48	1221	.48	1222	.48	1223	.48	1224	.47
1225	.47	1226	.46	1227	.46	1228	.45	1229	.45
1230	.45	1231	.45	1232	.45	1233	.45	1234	.44
1235	.44	1236	.43	1237	.43	1238	.43	1239	.43
1240	.42	1241	.42	1242	.42	1243	.41	1244	.42
1245	.41	1246	.41	1247	.41	1248	.41	1249	.40
1250	.40	1251	.40	1252	.40	1253	.39	1254	.39
1255	.39	1256	.39	1257	.39	1258	.39	1259	.38
1260	.38	1261	.38	1262	.38	1263	.38	1264	.38
1265	.38	1266	.38	1267	.38	1268	.37	1269	.37
1270	.36	1271	.36	1272	.35	1273	.35	1274	.35
1275	.35	1276	.35	1277	.36	1278	.36	1279	.36
1280	.35	1281	.35	1282	.35	1283	.35	1284	.34
1285	.34	1286	.34	1287	.34	1288	.34	1289	.34
1290	.34	1291	.34	1292	.34	1293	.34	1294	.33
1295	.33	1296	.33	1297	.33	1298	.33	1299	.33
1300	.33	1310	.31	1320	.31	1330	.30	1340	.29
1350	.28	1360	.28	1370	.27	1380	.27	1390	.26
1400	.25	1420	.25	1440	.24	1460	.19	1500	.19

TOTAL VOLUME THIS HYDROGRAPH = 1.42(Ac.Ft)

Program Package Serial Number: 2083
06/22/10 FILE: E INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE: C:\civild_MORA\scr_soilx_34.dat

Via Princessa East, Exist. 50-yr Design, BURNED

LOCATION		SUBAREA AREA(Ac)	SUBAREA Q(CFS)	TOTAL AREA(Ac)	TOTAL Q(CFS)	CONV TYPE	CONV LNGTH(Ft)	CONV SLOPE	CONV SIZE(Ft)	CONV Z	CONTROL Q(CFS)	SOIL NAME	TC	STORM RAIN ZONE	DAY 4 PCT IMPV
1	50A	.7	2.36	.7	2.36	0	0.	.00000	.00	.00	0.	297	5	A35	.01
1	51B	5.3	16.01	5.3	16.01	0	0.	.00000	.00	.00	0.	297	6	A35	.01
1	52C	6.7	20.24	6.7	20.24	0	0.	.00000	.00	.00	0.	297	6	A35	.01

Program Package Serial Number: 2083
06/22/10 FILE: E INPUT DATA: English Units RAINFALL SOIL FILE: English (In) OUTPUT DATA: English Units PAGE 2
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT PROG F0601M

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Exist. 50-yr Design, BURNED
HYDROGRAPH AT 1 50A STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.02	200	.02	300	.02	400	.02
500	.02	600	.03	700	.03	800	.03	900	.04
1000	.06	1050	.10	1100	.16	1110	.24	1120	.28
1130	.35	1131	.36	1132	.38	1133	.40	1134	.42
1135	.44	1136	.45	1137	.47	1138	.49	1139	.51
1140	.53	1141	.56	1142	.59	1143	.61	1144	.64
1145	.71	1146	.76	1147	.81	1148	.86	1149	1.19
1150	1.48	1151	1.77	1152	2.06	1153	2.36	1154	2.07
1155	1.72	1156	1.35	1157	.97	1158	.59	1159	.48
1160	.41	1161	.37	1162	.33	1163	.30	1164	.28
1165	.25	1166	.24	1167	.22	1168	.22	1169	.20
1170	.19	1171	.18	1172	.18	1173	.16	1174	.16
1175	.15	1176	.15	1177	.14	1178	.14	1179	.13
1180	.12	1181	.12	1182	.12	1183	.12	1184	.11
1185	.10	1186	.10	1187	.10	1188	.09	1189	.09
1190	.09	1191	.09	1192	.09	1193	.08	1194	.08
1195	.07	1196	.07	1197	.07	1198	.07	1199	.07
1200	.07	1201	.07	1202	.06	1203	.05	1204	.05
1205	.05	1206	.05	1207	.05	1208	.05	1209	.05
1210	.05	1211	.04	1212	.05	1213	.04	1214	.04
1215	.04	1216	.04	1217	.04	1218	.04	1219	.04
1220	.04	1221	.04	1222	.04	1223	.04	1224	.04
1225	.04	1226	.04	1227	.04	1228	.04	1229	.04
1230	.04	1231	.04	1232	.04	1233	.04	1234	.03
1235	.03	1236	.04	1237	.03	1238	.03	1239	.03
1240	.03	1241	.03	1242	.03	1243	.03	1244	.03
1245	.03	1246	.03	1247	.03	1248	.03	1249	.03
1250	.03	1251	.03	1252	.03	1253	.03	1254	.03
1255	.03	1256	.03	1257	.03	1258	.03	1259	.03
1260	.03	1261	.03	1262	.03	1263	.03	1264	.03
1265	.03	1266	.03	1267	.03	1268	.03	1269	.03
1270	.03	1271	.03	1272	.03	1273	.03	1274	.03
1275	.03	1276	.03	1277	.03	1278	.03	1279	.03
1280	.03	1281	.03	1282	.03	1283	.03	1284	.03
1285	.03	1286	.03	1287	.03	1288	.03	1289	.03
1290	.03	1291	.03	1292	.03	1293	.03	1294	.03
1295	.03	1296	.03	1297	.03	1298	.03	1299	.03
1300	.03	1310	.03	1320	.03	1330	.02	1340	.02
1350	.02	1360	.02	1370	.02	1380	.02	1390	.02
1400	.02	1420	.02	1440	.02	1460	.00	1500	.00

TOTAL VOLUME THIS HYDROGRAPH = .12(Ac.Ft)

Program Package Serial Number: 2083

Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Exist. 50-yr Design, BURNED
HYDROGRAPH AT 1 518 STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.15	200	.16	300	.16	400	.17
500	.19	600	.20	700	.22	800	.24	900	.28
1000	.43	1050	.77	1100	1.24	1110	1.79	1120	2.13
1130	2.65	1131	2.73	1132	2.81	1133	2.94	1134	3.06
1135	3.19	1136	3.36	1137	3.49	1138	3.67	1139	3.76
1140	3.89	1141	4.15	1142	4.37	1143	4.55	1144	4.68
1145	5.17	1146	5.63	1147	5.95	1148	6.27	1149	8.35
1150	10.50	1151	12.30	1152	14.15	1153	16.01	1154	16.01
1155	13.86	1156	11.49	1157	9.09	1158	6.64	1159	4.15
1160	3.45	1161	2.97	1162	2.67	1163	2.42	1164	2.21
1165	2.04	1166	1.88	1167	1.76	1168	1.68	1169	1.56
1170	1.49	1171	1.41	1172	1.37	1173	1.29	1174	1.21
1175	1.21	1176	1.13	1177	1.09	1178	1.01	1179	1.01
1180	.97	1181	.93	1182	.89	1183	.89	1184	.85
1185	.81	1186	.78	1187	.74	1188	.74	1189	.70
1190	.70	1191	.66	1192	.66	1193	.62	1194	.62
1195	.58	1196	.54	1197	.54	1198	.54	1199	.54
1200	.50	1201	.50	1202	.46	1203	.46	1204	.42
1205	.42	1206	.42	1207	.38	1208	.42	1209	.38
1210	.38	1211	.34	1212	.34	1213	.34	1214	.31
1215	.34	1216	.31	1217	.31	1218	.30	1219	.30
1220	.30	1221	.30	1222	.30	1223	.30	1224	.29
1225	.29	1226	.29	1227	.28	1228	.28	1229	.28
1230	.29	1231	.28	1232	.28	1233	.28	1234	.27
1235	.27	1236	.27	1237	.27	1238	.27	1239	.26
1240	.27	1241	.26	1242	.26	1243	.26	1244	.26
1245	.26	1246	.25	1247	.26	1248	.25	1249	.25
1250	.25	1251	.25	1252	.25	1253	.24	1254	.25
1255	.25	1256	.24	1257	.24	1258	.24	1259	.24
1260	.23	1261	.24	1262	.24	1263	.24	1264	.24
1265	.24	1266	.24	1267	.23	1268	.23	1269	.23
1270	.22	1271	.22	1272	.22	1273	.22	1274	.22
1275	.22	1276	.23	1277	.23	1278	.22	1279	.22
1280	.22	1281	.22	1282	.21	1283	.21	1284	.22
1285	.22	1286	.21	1287	.21	1288	.22	1289	.21
1290	.21	1291	.21	1292	.21	1293	.21	1294	.20
1295	.21	1296	.21	1297	.20	1298	.21	1299	.20
1300	.21	1310	.19	1320	.19	1330	.19	1340	.18
1350	.18	1360	.17	1370	.17	1380	.16	1390	.16
1400	.16	1420	.16	1440	.15	1460	.00	1500	.00

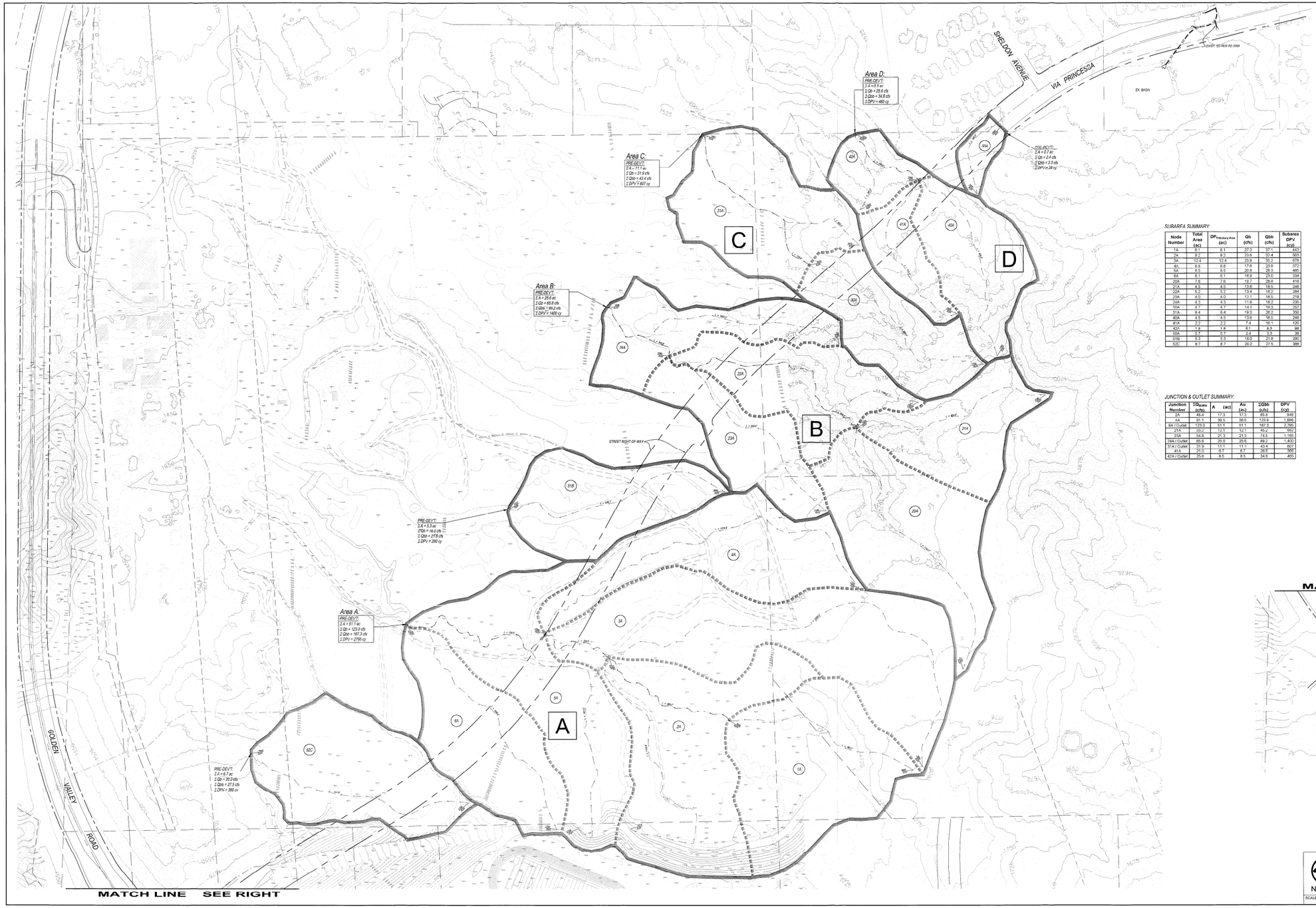
TOTAL VOLUME THIS HYDROGRAPH = .88(Ac.Ft)

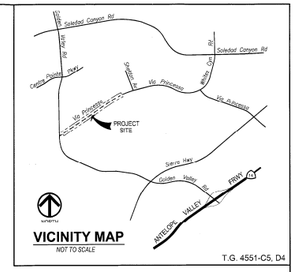
Program Package Serial Number: 2083

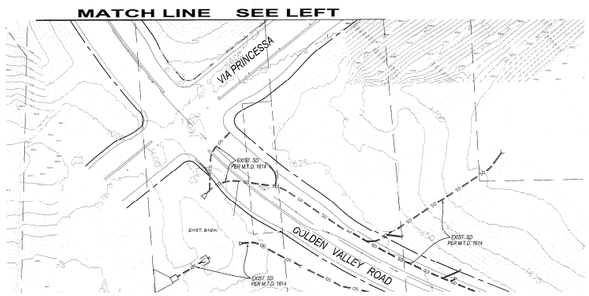
Version 11, MODIFIED RATIONAL METHOD HYDROLOGY - STORM YEAR = 50 SOIL DATA FILE:
Outlet Hydrograph, Exist. 50-yr Design, BURNED
HYDROGRAPH AT 1 52C STORM DAY 4 REDUCTION FACTOR = 1.000

TIME	Q	TIME	Q	TIME	Q	TIME	Q	TIME	Q
0	.00	100	.19	200	.20	300	.21	400	.22
500	.23	600	.25	700	.27	800	.31	900	.35
1000	.55	1050	.97	1100	1.57	1110	2.26	1120	2.69
1130	3.36	1131	3.46	1132	3.56	1133	3.71	1134	3.87
1135	4.03	1136	4.25	1137	4.41	1138	4.64	1139	4.75
1140	4.92	1141	5.25	1142	5.53	1143	5.75	1144	5.92
1145	6.54	1146	7.11	1147	7.52	1148	7.93	1149	10.55
1150	13.27	1151	15.54	1152	17.88	1153	20.24	1154	20.24
1155	17.52	1156	14.53	1157	11.49	1158	8.39	1159	5.25
1160	4.36	1161	3.75	1162	3.38	1163	3.06	1164	2.79
1165	2.58	1166	2.38	1167	2.23	1168	2.13	1169	1.98
1170	1.88	1171	1.78	1172	1.73	1173	1.63	1174	1.53
1175	1.53	1176	1.43	1177	1.38	1178	1.28	1179	1.28
1180	1.23	1181	1.18	1182	1.13	1183	1.13	1184	1.08
1185	1.03	1186	.98	1187	.93	1188	.93	1189	.88
1190	.88	1191	.83	1192	.83	1193	.78	1194	.78
1195	.73	1196	.68	1197	.68	1198	.68	1199	.68
1200	.63	1201	.63	1202	.58	1203	.58	1204	.53
1205	.53	1206	.53	1207	.49	1208	.53	1209	.49
1210	.49	1211	.44	1212	.44	1213	.44	1214	.39
1215	.44	1216	.39	1217	.39	1218	.37	1219	.37
1220	.37	1221	.37	1222	.37	1223	.37	1224	.36
1225	.36	1226	.36	1227	.35	1228	.35	1229	.35
1230	.36	1231	.35	1232	.35	1233	.35	1234	.34
1235	.34	1236	.34	1237	.34	1238	.34	1239	.33
1240	.34	1241	.33	1242	.33	1243	.33	1244	.33
1245	.33	1246	.31	1247	.33	1248	.31	1249	.31
1250	.31	1251	.31	1252	.31	1253	.30	1254	.31
1255	.31	1256	.30	1257	.30	1258	.30	1259	.30
1260	.29	1261	.30	1262	.30	1263	.30	1264	.30
1265	.30	1266	.30	1267	.29	1268	.29	1269	.29
1270	.28	1271	.28	1272	.28	1273	.28	1274	.28
1275	.28	1276	.29	1277	.29	1278	.28	1279	.28
1280	.28	1281	.28	1282	.26	1283	.26	1284	.28
1285	.28	1286	.26	1287	.26	1288	.28	1289	.26
1290	.26	1291	.26	1292	.26	1293	.26	1294	.25
1295	.26	1296	.26	1297	.25	1298	.26	1299	.25
1300	.26	1310	.24	1320	.24	1330	.24	1340	.23
1350	.22	1360	.22	1370	.22	1380	.21	1390	.20
1400	.20	1420	.20	1440	.19	1460	.00	1500	.00

TOTAL VOLUME THIS HYDROGRAPH = 1.11(Ac.Ft)







SUBAREA SUMMARY:

Node Number	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	Qb (cfs)	Qbb (cfs)	Subarea DPV (cy)
1A	8.1	8.1	27.3	37.1	543
2A	9.2	9.2	23.8	32.4	503
3A	12.4	12.4	25.9	35.2	678
4A	6.8	6.8	17.6	23.9	372
5A	8.5	8.5	20.8	28.3	465
6A	6.1	6.1	16.9	23.0	334
20A	7.6	7.6	19.7	26.8	416
21A	4.5	4.5	13.8	18.8	246
22A	5.2	5.2	13.4	18.2	284
23A	4.0	4.0	12.1	16.5	218
24A	4.3	4.3	11.9	16.2	235
10A	4.7	4.7	14.2	19.3	257
31A	6.4	6.4	18.3	24.9	350
40A	4.5	4.5	13.6	18.5	246
41A	2.2	2.2	7.4	10.1	120
42A	1.8	1.8	6.1	8.3	98
50A	0.7	0.7	2.4	3.3	38
51B	5.3	5.3	16.0	21.8	290
52C	8.7	8.7	20.2	27.5	366

JUNCTION & OUTLET SUMMARY:

Junction Numbers	ΣQ_{Bypass} (cfs)	A (ac)	Au (ac)	ΣQbb (cfs)	DPV (cy)
2A	49.4	17.3	17.3	65.8	949
4A	91.1	38.5	38.5	123.9	1,866
6A / Outlet	123.0	51.1	51.1	167.3	2,795
21A	33.2	12.1	12.1	45.2	652
23A	54.8	21.3	21.3	74.5	1,145
20A / Outlet	68.6	25.6	25.6	89.2	1,400
31A / Outlet	31.9	11.1	11.1	43.4	607
41A	21.7	8.7	8.7	29.8	365
42A / Outlet	25.6	8.5	8.5	34.8	465

LEGEND

- MAIN DRAINAGE BOUNDARY
- SUB-AREA BOUNDARY
- FLOW LINE
- EXISTING STORM DRAIN
- STREET RIGHT-OF-WAY
- PRE-DEVELOPMENT RIDGE LINE

(1A) & (1348) ... LOCATION NAMES
A ... TOTAL AREA IN ACRES, Ac
Au ... UNDEVELOPED AREA IN ACRES, Ac
Qb ... DESIGN 50-YR BURNED FLOW, IN CUBIC FEET PER SECOND, cfs
Qbb ... DESIGN 50-YR BURNED & BULKED FLOW, IN CUBIC FEET PER SECOND, cfs
DPV ... DEBRIS PRODUCTION VOLUME IN CUBIC YARDS, cy
Σ ... TOTAL

HYDROLOGY CRITERIA

- DESIGN STORM FREQUENCY: 50-YR FOR UNDEVELOPED AREAS
- DPA ZONE = 8
- BASIN NAME = SANTA CLARA
- SOIL TYPE NUMBER = 097
- PEAK BULKING FACTOR = 1.350 (FOR AREAS 64 Ac. OR UNDER)
- DEBRIS PRODUCTION RATE = 54.6875 Cy / Ac (FOR AREAS 64 Ac. OR UNDER)
- ISOHYETS: 7.0" (50-YR, 24-HOUR)
- % IMPERVIOUSNESS: 1% FOR UNDEVELOPED / NATURAL AREAS

EXISTING CONDITION

DRAINAGE CONCEPT

FOR VIA PRINCESSA EAST

(BETWEEN GOLDEN VALLEY ROAD & SHELDON AVENUE)

IN THE CITY OF SANTA CLARITA

NORTH
SCALE: 1"=100'

PREPARED FOR:
CITY OF SANTA CLARITA
23920 VALENCIA BLVD., SANTA CLARITA, CA 91355
PHONE: (661)286-4174; www.santa-clarita.com

DATE: 07-07-2010 W.O. NO.: 5109-020-00

PREPARED BY:
SIKAND Engineering | Planning | Surveying
15250 Burbank Blvd. #100, Van Nuys, CA 91411
Phone: (818) 787- 8550 Fax: (818) 901-7451
www.sikand.com E-mail: info@sikand.com

REGISTERED PROFESSIONAL ENGINEER CRAIG TOTH No. 72363 Exp. 12-31-10 CIVIL STATE OF CALIFORNIA

SHEET 1 OF 1 SHEETS

SECTION 5

DPV & Bulking Calculations (Junction & Outlet)

Via Princessa East, Santa Clarita

Proposed Condition, Design Frequency (50- & 25-yr)

Area A

Junction Number	ΣQ_{BURN} (cfs)	ΣA (ac)	ΣA (mi^2)	Au (ac)	Au (mi^2)	Ad (ac)	Ad (mi^2)	$BF1_A$	$BF1_{Au}$	ΣQbb (cfs)	DP Rate (cy/mi^2)	DPV (cy)
2A	48.4	17.3	0.027	17.3	0.027	0.0	0.000	1.360	1.360	65.8	35,000	946
4A	101.3	40.5	0.063	34.1	0.053	6.4	0.010	1.360	1.360	132.0	35,000	1,865
7B	11.4	3.9	0.006	1.9	0.003	2.0	0.003	1.360	1.360	13.4	35,000	104
8B	13.7	5.0	0.008	1.9	0.003	3.1	0.005	1.360	1.360	15.6	35,000	104
11AB/ Outlet	128.2	51.4	0.080	43.6	0.068	7.8	0.012	1.360	1.360	167.3	35,000	2,384

Area B

Junction Number	ΣQ_{BURN} (cfs)	ΣA (ac)	ΣA (mi^2)	Au (ac)	Au (mi^2)	Ad (ac)	Ad (mi^2)	$BF1_A$	$BF1_{Au}$	ΣQbb (cfs)	DP Rate (cy/mi^2)	DPV (cy)
21A	33.2	12.1	0.019	12.1	0.019	0.0	0.000	1.360	1.360	45.2	35,000	662
22A	53.4	19.1	0.030	18.2	0.028	0.9	0.001	1.360	1.360	71.7	35,000	995
23A	56.4	20.5	0.032	18.2	0.028	2.3	0.004	1.360	1.360	74.4	35,000	995
24A	58.4	21.6	0.034	18.2	0.028	3.4	0.005	1.360	1.360	76.1	35,000	995
26A / Outlet	68.4	26.0	0.041	22.0	0.034	4.0	0.006	1.360	1.360	89.2	35,000	1,203

Area C

Junction Number	ΣQ_{BURN} (cfs)	ΣA (ac)	ΣA (mi^2)	Au (ac)	Au (mi^2)	Ad (ac)	Ad (mi^2)	$BF1_A$	$BF1_{Au}$	ΣQbb (cfs)	DP Rate (cy/mi^2)	DPV (cy)
32A / Outlet	32.1	10.9	0.017	10.2	0.016	0.7	0.001	1.360	1.360	42.9	35,000	558

Area D

Junction Number	ΣQ_{BURN} (cfs)	ΣA (ac)	ΣA (mi^2)	Au (ac)	Au (mi^2)	Ad (ac)	Ad (mi^2)	$BF1_A$	$BF1_{Au}$	ΣQbb (cfs)	DP Rate (cy/mi^2)	DPV (cy)
41A	20.7	6.5	0.010	4.3	0.007	2.2	0.003	1.360	1.360	25.6	35,000	235
42A	23.2	7.6	0.012	4.3	0.007	3.3	0.005	1.360	1.360	27.9	35,000	235
44A / Outlet	28.4	9.6	0.015	6.0	0.009	3.6	0.006	1.360	1.360	34.8	35,000	328

Legend:

ΣQ_{BURN}	---	Burned Flow Rate, cfs
A	---	Total Area, ac
Au	---	Undeveloped Area, ac
Ad	---	Developed Area, ac
$BF1_A$	---	Bulking Factor for A (See Chart P-5)
$BF1_{Au}$	---	Bulking Factor for Au (See Chart P-5)
Qbb	---	Burned & Bulked Flow Rate, cfs (for DPA Zone 5)
		$Qbb = BF1_A \times [QaxAu/A][Au/A)] + BF1_{Au} \times [QaxAu/A)][Ad/A] + [QaxAd/A]$
DP Rate	---	Debris Production Rate for Au, cy/mi^2 (See Chart P-2)
DPV	---	Debris Production Volume, cy
		DPV = Au x DP Rate

DPV & Bulking Calculation (Subarea)

Via Princessa East, Santa Clarita
Existing Condition, Design Frequency (50-yr)

Area A

Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
1A	8	8.1	8.1	0.013	1.360	27.3	37.1	35,000	443
2A	8	9.2	9.2	0.014	1.360	23.8	32.4	35,000	503
3A	8	12.4	12.4	0.019	1.360	25.9	35.2	35,000	678
4A	8	6.8	6.8	0.011	1.360	17.6	23.9	35,000	372
5A	8	8.5	8.5	0.013	1.360	20.8	28.3	35,000	465
6A	8	6.1	6.1	0.010	1.360	16.9	23.0	35,000	334

Area B

Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
20A	8	7.6	7.6	0.012	1.360	19.7	26.8	35,000	416
21A	8	4.5	4.5	0.007	1.360	13.6	18.5	35,000	246
22A	8	5.2	5.2	0.008	1.360	13.4	18.2	35,000	284
23A	8	4.0	4.0	0.006	1.360	12.1	16.5	35,000	219
24A	8	4.3	4.3	0.007	1.360	11.9	16.2	35,000	235

Area C

Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
30A	8	4.7	4.7	0.007	1.360	14.2	19.3	35,000	257
31A	8	6.4	6.4	0.010	1.360	19.3	26.2	35,000	350

Area D

Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
40A	8	4.5	4.5	0.007	1.360	13.6	18.5	35,000	246
41A	8	2.2	2.2	0.003	1.360	7.4	10.1	35,000	120
42A	8	1.8	1.8	0.003	1.360	6.1	8.3	35,000	98

Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
50A	8	0.7	0.7	0.001	1.360	2.4	3.3	35,000	38
51B	8	5.3	5.3	0.008	1.360	16.0	21.8	35,000	290
52C	8	6.7	6.7	0.010	1.360	20.2	27.5	35,000	366

DPV & Bulking Calculations (Junction & Outlet)

Via Princessa East, Santa Clarita
Existing Condition, Design Frequency (50-yr)

Area A

Junction Number	ΣQ_{BURN} (cfs)	ΣA (ac)	ΣA (mi^2)	Au (ac)	Au (mi^2)	Ad (ac)	Ad (mi^2)	$BF1_A$	$BF1_{Au}$	ΣQbb (cfs)	DP Rate (cy/mi^2)	DPV (cy)
2A	48.4	17.3	0.027	17.3	0.027	0.0	0.000	1.360	1.360	65.8	35,000	946
4A	91.1	36.5	0.057	36.5	0.057	0.0	0.000	1.360	1.360	123.9	35,000	1,996
6A / Outlet	123.0	51.1	0.080	51.1	0.080	0.0	0.000	1.360	1.360	167.3	35,000	2,795

Area B

Junction Number	ΣQ_{BURN} (cfs)	ΣA (ac)	ΣA (mi^2)	Au (ac)	Au (mi^2)	Ad (ac)	Ad (mi^2)	$BF1_A$	$BF1_{Au}$	ΣQbb (cfs)	DP Rate (cy/mi^2)	DPV (cy)
21A	33.2	12.1	0.019	12.1	0.019	0.0	0.000	1.360	1.360	45.2	35,000	662
23A	54.8	21.3	0.033	21.3	0.033	0.0	0.000	1.360	1.360	74.5	35,000	1,165
24A / Outlet	65.6	25.6	0.040	25.6	0.040	0.0	0.000	1.360	1.360	89.2	35,000	1,400

Area C

Junction Number	ΣQ_{BURN} (cfs)	ΣA (ac)	ΣA (mi^2)	Au (ac)	Au (mi^2)	Ad (ac)	Ad (mi^2)	$BF1_A$	$BF1_{Au}$	ΣQbb (cfs)	DP Rate (cy/mi^2)	DPV (cy)
31A / Outlet	31.9	11.1	0.017	11.1	0.017	0.0	0.000	1.360	1.360	43.4	35,000	607

Area D

Junction Number	ΣQ_{BURN} (cfs)	ΣA (ac)	ΣA (mi^2)	Au (ac)	Au (mi^2)	Ad (ac)	Ad (mi^2)	$BF1_A$	$BF1_{Au}$	ΣQbb (cfs)	DP Rate (cy/mi^2)	DPV (cy)
41A	21.0	6.7	0.010	6.7	0.010	0.0	0.000	1.360	1.360	28.6	35,000	366
42A / Outlet	25.6	8.5	0.013	8.5	0.013	0.0	0.000	1.360	1.360	34.8	35,000	465

Legend:

ΣQ_{BURN}	---	Burned Flow Rate, cfs
A	---	Total Area, ac
Au	---	Undeveloped Area, ac
Ad	---	Developed Area, ac
$BF1_A$	---	Bulking Factor for **A** (See Chart P-5)
$BF1_{Au}$	---	Bulking Factor for **Au** (See Chart P-5)
Qbb	---	Burned & Bulked Flow Rate, cfs (for DPA Zone 5)
		Qbb = $BF1_A$ x [QaxAu/A][Au/A)] + $BF1_{Au}$ x [QaxAu/A)][Ad/A] + [QaxAd/A]
DP Rate	---	Debris Production Rate for **Au**, cy/mi^2 (See Chart P-2)
DPV	---	Debris Production Volume, cy
		DPV = Au x DP Rate

DPV & Bulking Calculation (Subarea)

Via Princessa East, Santa Clarita

Proposed Condition, Design Frequency (50- & 25-yr)

Area A

Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
1A	8	8.1	8.1	0.013	1.360	27.3	37.1	35,000	443
2A	8	9.2	9.2	0.014	1.360	23.8	32.4	35,000	503
3A	8	18.6	16.8	0.026	1.360	38.9	51.5	35,000	919
4A	8	4.6	4.0	0.006	1.360	13.9	18.3	35,000	219
6B	8	2.5	1.9	0.003	1.360	8.4	10.7	35,000	104
10B	8	5.9	3.6	0.006	1.360	16.4	20.0	35,000	197

Area B

Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
20A	8	7.6	7.6	0.012	1.360	19.7	26.8	35,000	416
21A	8	4.5	4.5	0.007	1.360	13.6	18.5	35,000	246
22A	8	7.0	6.1	0.010	1.360	21.1	27.7	35,000	334
26A	8	4.4	3.8	0.006	1.360	14.8	19.4	35,000	208

Area C

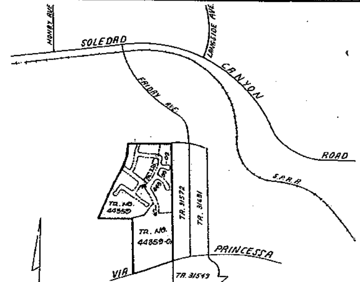
Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
30A	8	4.3	3.8	0.006	1.360	14.5	19.1	35,000	208
32A	8	6.6	6.4	0.010	1.360	19.9	26.8	35,000	350

Area D

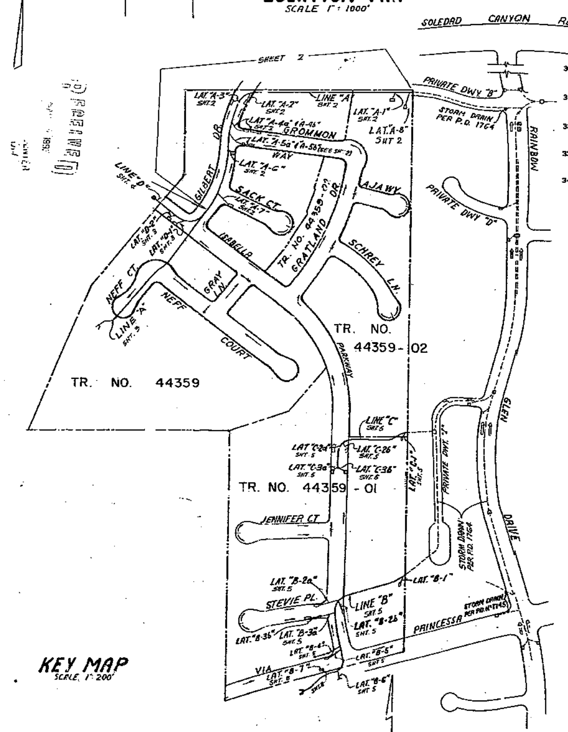
Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
40A	8	5.2	4.3	0.007	1.360	17.5	22.7	35,000	235
44A	8	2.0	1.7	0.003	1.360	6.7	8.8	35,000	93

Node Number	DPA Zone	Total Area (ac)	$DP_{Tributary\ Area}$ (ac)	$DP_{Tributary\ Area}$ (mi^2)	Bulking Rate	Qb (cfs)	Qbb (cfs)	DP Rate (cy/mi^2)	Subarea DPV (cy)
51B	8	3.2	2.9	0.005	1.360	10.8	14.3	35,000	159
52C	8	5.0	4.6	0.007	1.360	16.8	22.4	35,000	252

APENDIX



LOCATION MAP
SCALE 1" : 1000'



KEY MAP
SCALE 1" : 200'

NO.	REVISION	REVISED BY	APPROVED BY	DATE

LIST OF STANDARD DRAWINGS

AMERICAN PUBLIC WORKS ASSOCIATION

CURB OPENING CATCH BASIN — 300-0
CURB OPENING CATCH BASIN WITH GRATING — 301-0
CATCH BASIN REINFORCEMENT — 309-0
CATCH BASIN FACE PLATE ASSEMBLY & PROTECTION BAR — 310-0
CATCH BASIN FRAME & GRATING — 311-0
CATCH BASIN MANHOLE FRAME & COVER — 312-0
LOCAL DEPRESSIONS AT CATCH BASINS — 313-0
24" MANHOLE FRAME & COVER — 630-1
STEEL STEP — 635-0
CURB AND GUTTER BARRIER — 104-0
CHAIN LINK FENCE AND GATES — 600-0
36" MANHOLE FRAME & COVER — 633-0

LOS ANGELES COUNTY ENGINEER

PIPE BEDDING — D-54
CONCRETE PIPE ANCHOR — D-72
PUBLIC SAFETY — S-2

LOS ANGELES COUNTY ROAD DEPARTMENT

GUIDE MARKER — 84-01

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

MANHOLE No. 2 — 2-D184
MANHOLE No. 4 — 2-D113
JUNCTION STRUCTURE No. 2 — 2-D112
CONCRETE COLLAR — 2-D393
TRASH RACK — 2-DTR11-12
MANHOLE Nº 1 — 2-D102
CONCRETE RINGS AND PIPE FOR SPECIAL MANHOLE SHAFT — 2-D428

30. WHERE THE UTILITIES ARE INDICATED ON THE DRAWINGS TO BE SUPPORTED, SAID SUPPORTS SHALL BE IN ACCORDANCE WITH STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION NO. 224, UNLESS OTHERWISE INDICATED.

31. ALL OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS PIPES OR SIMILAR STRUCTURES SHALL BE SEALED WITH 8 INCHES OF BRICK AND MORTAR OR 6 INCHES OF CONCRETE, UNLESS OTHERWISE SHOWN.

32. MANHOLES NO. 1, 2, 3 AND 4, SHALL USE THE STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION NO. 630 FOR THE "FRAME AND COVER" AND NO. 635 FOR THE "STANDARD DROP STEP".

33. THE STORM DRAIN WILL NOT BE ACCEPTED FOR MAINTENANCE UNTIL THE STREETS HAVE BEEN PAVED, MANHOLES BROUGHT TO GRADE AND THE SYSTEM CLEANED TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS.

34. THE LATEST REVISED STANDARD PLAN OR DRAWING SHALL BE USED UNLESS OTHERWISE SPECIFICALLY NOTED.

BENCH MARK: CL 927

L ℓ SCREW NE COR. CONC. BASE SPRR SEMAPHORE P44G6 32 FT. S %L SOLEDAD CYN. RD. ℓ 830 FT. E HONBY AVE. STMPD (RDBM)

ELEV. 1306.223 NEWHALL 1983.

STORM DRAIN PLANS IN TRACT No. 44359, 44359-01, 44359-02 P.D. No. 2095

GENERAL NOTES:

1. A PERMIT SHALL BE OBTAINED AND ALL FEES AND DEPOSITS FOR CONSTRUCTION INSPECTION SHALL BE PAID TO THE DEPARTMENT OF PUBLIC WORKS AT THE PERMIT COUNTER, 900 SO. FREMONT AVENUE, 8TH FLOOR, PRIOR TO STARTING WORK UNDER THIS CONTRACT. ALSO ALL OTHER REQUIRED PERMITS, SUCH AS ROAD EXCAVATION PERMITS, MUST BE OBTAINED PRIOR TO STARTING WORK.

2. WHEN WORK IS WITHIN A CONTRACT CITY, THE CONTRACTOR MUST CONTACT THE DIRECTOR OF PUBLIC WORKS OF THAT CITY TO DETERMINE THE LOCATION TO PAY THE INSPECTION DEPOSIT. THIS NOTE APPLIES TO ALL SHEETS.

3. THE CONTRACTOR SHALL CONTACT THE DISTRICT OFFICE LISTED ON THE "APPLICATION FOR STORM DRAIN CONSTRUCTION INSPECTION FORM 1" TO ARRANGE FOR AN ACCEPTABLE CONSTRUCTION START DATE.

4. APPROVAL OF THIS PLAN BY THE COUNTY OF LOS ANGELES DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OF THE LOCATION, OR THE EXISTENCE OR NON-EXISTENCE OF ANY UNDERGROUND UTILITY, PIPE OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THIS NOTE APPLIES TO ALL SHEETS.

5. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, (1991)" INCLUDING SUPPLEMENTS AND SHALL BE PROSECUTED ONLY IN THE PRESENCE OF THE DIRECTOR OF PUBLIC WORKS.

6. THE CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION 7-10.4.1 OF THE STANDARD SPECIFICAIONS FOR PUBLIC WORKS CONSTRUCTION IN REGARD TO SAFETY ORDERS.

7. ELEVATIONS ARE IN FEET ABOVE U.S.C. AND G.S. MEAN SEA LEVEL DATUM OF 1929, UNLESS OTHERWISE INDICATED.

8. NO CONCRETE SHALL BE PLACED UNTIL THE FORMS AND REINFORCING STEEL HAVE BEEN PLACED, INSPECTED AND APPROVED.

9. ALL STRUCTURAL CONCRETE SHALL BE PORTLAND CEMENT CONCRETE WITH AN ULTIMATE 28 DAY COMPRESSIVE STRENGTH OF 3250 P.S.I. UNLESS OTHERWISE NOTED.

10. TRAVERSE REINFORCEMENT AND TRANSVERSE JOINTS SHALL BE PLACED AT RIGHT ANGLES (OR RADIAL) TO THE CONDUIT CENTER LINE EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS.

11. ALL STEEL ADJACENT TO FACE CONCRETE SHALL HAVE 2 1/2 INCH CLEARANCE UNLESS OTHERWISE INDICATED.

12. REINFORCEMENT SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE STEEL PER A.S.T.M. A-615-GRADE 60.

13. ALL BAR BENDS AND HOOKS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "MANUAL OF STANDARD PRACTICE".

14. DIMENSIONS FROM FACE OF CONCRETE TO STEEL ARE TO CENTER LINE OF STEEL UNLESS OTHERWISE NOTED.

15. ALL STEEL THAT IS TO BE CONTINUOUS SHALL HAVE A MINIMUM LAP OF 30 BAR DIAMETERS OR 18" WHICHEVER IS GREATER.

16. ALL CONSTRUCTION JOINTS IN THE FOOTING OR SLABS AND WALLS SHALL BE IN THE SAME PLANE. NO STAGGERING OF JOINTS WILL BE PERMITTED.

17. ALL EXPOSED EDGES SHALL BE FINISHED WITH A 3/4" CHAMFER.

18. UNLESS OTHERWISE SHOWN, CONCRETE DIMENSIONS SHALL BE MEASURED VERTICALLY OR HORIZONTALLY AND PARALLEL OR AT RIGHT ANGLES (OR RADIAL) TO THE CENTER LINE OF CONSTRUCTION.

19. CONCRETE BACKFILL IS REQUIRED WHEN THE PIPE HAS LESS THAN ONE FOOT OF COVER. THE CONCRETE BACKFILL SHALL CONSIST OF 1:3:5 MIX, PORTLAND CEMENT CONCRETE POURED FROM WALL TO WALL OF TRENCH AND FROM BOTTOM OF TRENCH TO A MINIMUM OF 4 INCHES OVER THE TOP OF THE PIPE.

GENERAL NOTES (Cont'd)

20. ALL PIPES SHALL BE PLACED IN A TRENCH IN NATURAL GROUND AND/OR COMPACTED FILL. THE GROUND LEVEL BEFORE THE TRENCHING SHALL BE 3 FEET ABOVE THE TOP OF THE PIPE ELEVATION, OR AT FINISH SURFACE ELEVATION, WHICHEVER IS LESS.

21. ALL BACKFILL AND FILLS OUTSIDE OF STREET RIGHT-OF-WAY SHALL BE COMPACTED 90% MAXIMUM DENSITY AS DETERMINED BY A.S.T.M. SOIL COMPACTION TEST D 1557-78 METHOD "D" UNLESS OTHERWISE SPECIFIED. THIS SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER. THIS CERTIFICATION SHALL BE SUBMITTED TO THE DIRECTOR OF PUBLIC WORKS PRIOR TO ACCEPTANCE OF THE WORK BY THE COUNTY.

22. ALL BACKFILL AND FILLS WITHIN STREET RIGHT-OF-WAY SHALL BE COMPACTED IN ACCORDANCE WITH CITY REQUIREMENTS UNLESS OTHERWISE NOTED AND INSPECTED BY THE CITY. THE SOIL COMPACTION SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER.

23. PIPE BEDDING SHALL BE: IN ACCORDANCE WITH LOS ANGELES COUNTY ENGINEER CASE AD BEDDING PER STANDARD D-54 UNLESS OTHERWISE NOTED. THE BEDDING MATERIAL PLACED FROM THE BOTTOM OF THE PIPE TO 1 FOOT OVER THE TOP OF THE PIPE SHALL BE SAND, CRUSHED AGGREGATE, OR NATIVE FREE-DRAINING GRANULAR MATERIAL AND SHALL HAVE A SAND EQUIAVALENT OF 20 OR GREATER.

24. PIPE SHALL BE EMBEDDED 5 INCHES INTO ALL STRUCTURES INCLUDING INLET AND OUTLET HEADWALLS, UNLESS OTHERWISE NOTED.

25. "UNLESS OTHERWISE SPECIFIED IN THE PROFILE ON THESE PLANS, THE PIPE SHALL BE MANUFACTURED WITH A MINIMUM CONCRETE COVER OVER THE STEEL IN THE INVERT OF 0.75 INCHES FOR R.C.P. UP TO 96 INCHES IN DIAMETER AND 1.25 INCHES FOR PIPE GREATER THAN 96 INCHES IN DIAMETER."

26. ALL CATCH BASINS WITHIN THE DEDICATED STREET RIGHT-OF-WAY SHALL BE CONSTRUCTED PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION.

27. THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTAL DRAINAGE PLAN DESIGNED BY A CIVIL ENGINEER AND SHALL PROVIDE TO THE SATISFACTION OF THE CITY ENGINEER, A SYSTEM FOR CONTRIBUTARY DRAINAGE TO BE OPERABLE AT ALL TIMES UNTIL THIS STORM DRAIN SYSTEM IS ACCEPTED.

28. ALL REFERENCES SHOWN ON THIS PLAN TO THE COUNTY ENGINEER, ROAD DEPARTMENT, OR FLOOD CONTROL DISTRICT SHALL APPLY TO THE APPROPRIATE ELEMENTS OF THE DEPARTMENT OF PUBLIC WORKS.

29. EXISTING UTILITIES SHALL BE MAINTAINED IN PLACE BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.

HYDRAULIC ELEMENTS CHART FREQUENCY = 50&25 YRS.

STATION	PIPE REACH STATION	PIPE REACH STATION	Q (cfs)	PIPE SIZE	FRICTION SLOPE	VEL. (fps)	Dn (ft)	Dc (ft)
LINE "B"	10+35.23	10+45.56	44.0	36"	0.25901	30.68*	0.72	2.16
	10+45.56	11+69.73	40.0	36"	0.32457	35.49*	0.63	2.06
	11+69.73	13+48.44	40.0	36"	0.04697	17.87	0.77	2.06
	13+48.44	13+88.07	33.8	36"	0.06456	19.00	0.83	1.89
	13+88.07	14+48.08	21.2	36"	0.07610	17.52	0.66	1.48
	14+48.08	15+28.46	21.2	36"	0.05661	15.80	0.71	1.48
	15+28.46	15+75.62	21.1	36"	0.04395	14.42	0.74	1.48
	15+75.62	16+56.38	17.1	36"	0.05727	14.78	0.66	1.32
	16+56.38	18+42.00	17.0	36"	0.18307	22.28*	0.49	1.32
LAT. B-1	0+00.00	0+25.04	4.0	18"	0.15136	14.70	0.32	0.77
LAT. B-2b	0+02.01	0+40.10	1.8	18"	0.16829	12.21	0.21	0.51
LAT. B-2a	0+02.33	0+47.21	8.5	18"	0.1375	17.64	0.48	1.13
LAT. B-3a	0+03.00	0+45.82	8.4	18"	0.0639	13.33	0.58	1.12
LAT. B-3b	0+49.32	0+75.32	6.0	18"	0.0234	8.43	0.63	0.95
LAT. B-4	0+03.00	0+79.00	0.03	18"	0.09152	3.93	0.06	0.006
LAT. B-5	0+03.00	0+45.69	0.1	18"	0.14598	4.78	0.06	0.12
LAT. B-7	0+02.88	0+16.31	0.1	18"	0.15512	4.88	0.05	0.12
LAT. B-6	0+04.60	0+52.00	4.0	36"	0.05346	9.35	0.33	0.62
LINE "C"	2+32.87	2+43.20	36.0	36"	0.22622	25.60*	0.80	1.95
	2+43.20	3+46.58	30.0	36"	0.33233	32.47*	0.55	1.77
	3+46.58	5+03.17	30.0	36"	0.05093	16.70	1.41	1.77
	5+16.17	5+92.73	18.5	24"	0.00984	8.00	1.37	1.55
LAT. C-1	0+00.00	0+09.90	6.0	18"	0.3202	21.57*	0.32	0.95
LAT. C-2b	0+03.00	0+22.38	5.8	18"	0.0478	10.83	0.51	0.93
LAT. C-2a	0+05.20	0+23.49	5.8	18"	0.0460	10.68	0.52	0.93
LAT. C-3b	0+02.24	0+32.38	9.2	18"	0.0353	10.97	0.72	1.17
LAT. C-3a	0+02.47	0+23.49	9.2	18"	0.0315	10.52	0.74	1.17

HYDRAULIC ELEMENTS CHART FREQUENCY = 50&25 YRS.

STATION	PIPE REACH STATION	PIPE REACH STATION	Q (cfs)	PIPE SIZE	FRICTION SLOPE	VEL. (fps)	Dn (ft)	Dc (ft)
LINE "A"	5+49.17	5+65.17	79.0	42"	0.08214	25.68*	1.16	2.78
	5+65.17	6+20.00	79.0	42"	0.02987	25.42*	1.07	2.78
	6+20.00	11+60.00	75.0	36"	0.03478	18.96	1.87	2.72
	11+60.00	11+84.00	74.7	36"	0.04167	18.98	1.78	2.72
	11+84.00	12+28.88	70.6	36"	0.05462	21.45*	1.45	2.67
	12+28.88	13+25.00	70.6	36"	0.05149	21.56*	1.37	2.67
	13+25.00	13+64.00	52.7	36"	0.05489	19.35	1.14	2.36
	13+64.00	14+06.00	47.7	36"	0.05051	19.10	1.08	2.25
	14+06.00	14+81.59	42.8	36"	0.04434	17.69	1.01	2.13
	14+81.59	15+90.00	42.8	36"	0.00314	11.73	1.24	2.13
	15+90.00	17+07.47	39.1	36"	0.00302	9.54	1.65	2.04
	17+07.47	18+40.00	4.0	24"	0.25447	17.02	0.25	0.70
	18+40.00	21+29.00	4.0	24"	0.08696	11.76	0.31	0.70
	21+29.00	22+03.22	4.0	24"	0.05020	9.62	0.38	0.70
	22+03.22	23+38.50	4.0	24"	0.04956	9.62	0.38	0.70
LAT "A-1"	0+03.00	0+11.50	4.0	18"	0.1478	14.57	0.32	0.77
LAT "A-2"	0+00.00	0+17.00	0.30	18"	0.1918	7.34	0.09	0.20
LAT "A-3"	0+00.00	0+30.00	4.10	18"	0.1007	12.81	0.36	0.78
LAT "A-4a"	0+00.00	0+51.38	17.9	24"	0.1187	20.14*	0.65	1.52
"A-4b"	0+65.38	1+07.38	10.0	18"	0.0338	11.02	0.77	1.22
LAT "A-5a"	0+00.00	0+53.13	5.0	24"	0.08639	12.45	0.37	0.79
LAT "A-5b"	0+56.63	0+88.13	5.0	18"	0.0169	6.97	0.64	0.86
LAT "A-6"	0+00.00	0+15.00	4.9	18"	0.2473	18.55	0.31	0.85
LAT "A-7"	0+00.00	0+45.00	3.7	18"	0.2284	16.61	0.28	0.79
LAT "A-8"	0+00.00	0+42.00	0.3	18"	0.0321	5.69	0.10	0.20
LINE "D"	0+00.00	0+60.31	35.1	36"	0.02548	12.85	1.18	1.93
	0+60.31	0+95.01	23.0	36"	0.02301	11.80	0.91	1.54
	0+95.01	2+12.61	17.2	36"	0.02815	11.48	0.78	1.33
LAT "D-1"	0+04.79	0+26.11	12.1	18"	0.49751	30.90*	0.41	1.32
LAT "D-2"	0+04.54	0+20.39	12.0	18"	0.47817	30.39*	0.41	1.31

* ADDITIONAL CONCRETE COVER REQUIRED, SEE NOTE 25 ABOVE.

NOTE: P.D. Nº 2095 IS NOT ELEGIBLE FOR TRANSFER UNTIL P.D. Nº 1764 IS TRANSFERRED.

RIPRAP NOTES

1. ROCKS FOR GROUTED RIPRAP SHALL BE GOOD QUALITY BROKEN CONCRETE AND/OR RIVER RUN ROCK. THE SMALLEST DIMENSIONS SHALL EXCEED 3 INCHES AND THE LARGEST DIMENSION SHALL NOT EXCEED 18 INCHES. THE LARGEST DIMENSION SHALL NOT EXCEED 4 TIMES THE SMALLEST DIMENSION.
2. THERE SHALL BE A GROUT BED OF AT LEAST 2 INCHES BENEATH THE FIRST LAYER OF ROCK. ALL THE VOIDS BETWEEN THE ROCKS SHALL BE FILLED WITH GROUT. MAXIMUM SPACING BETWEEN ROCKS SHALL BE 2 INCHES.
3. SURFACE ROCKS SHALL BE IMBEDDED FROM 1/2 TO 2/3 OF THEIR MAXIMUM DIMENSION.

NOTE: CONCRETE MAY BE SUBSTITUTED FOR THE GROUT.

PRIVATE ENGINEERS NOTICE TO CONTRACTORS

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THIS MAP.

THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THIS DRAWING.

REGISTERED CIVIL ENGINEER No. 37088 — 12/20/91 DATE

(10) APPROXIMATE DEPTH OF OVEREXCAVATION

— — — APPROXIMATE LIMITS OF OVEREXCAVATION OF UNSUITABLE SOILS (TO BE ACCOMPLISHED DURING MASS GRADING)

43-F 380.1

PLANS PREPARED BY:
B & E ENGINEERS
825 COLORADO BLVD., LOS ANGELES CA. 90041 PH. (213) 254-5134
SIGNATURE: Nicholas C. Renn R.C.E. NO. 37088 EXP. 6/30/96

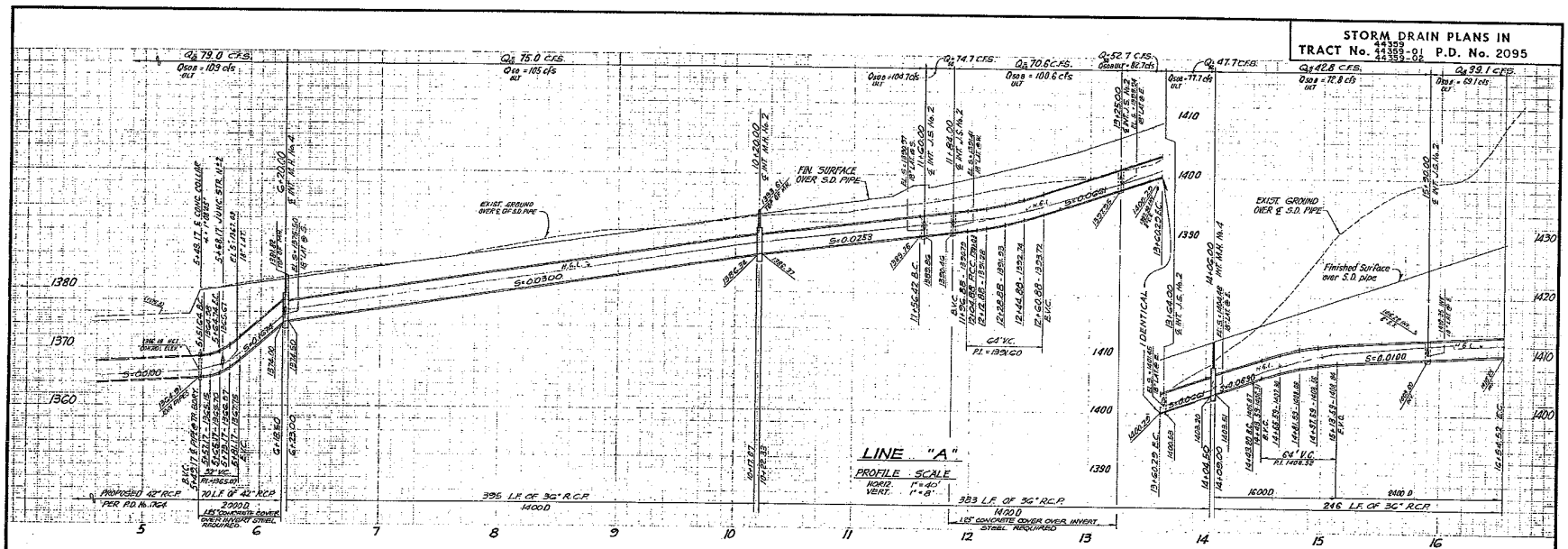
CITY OF SANTA CLARITA, CALIFORNIA
APPROVED FOR CONSTRUCTION — ANTHONY J. RISICH, CITY ENGINEER — 3-3-93 DATE

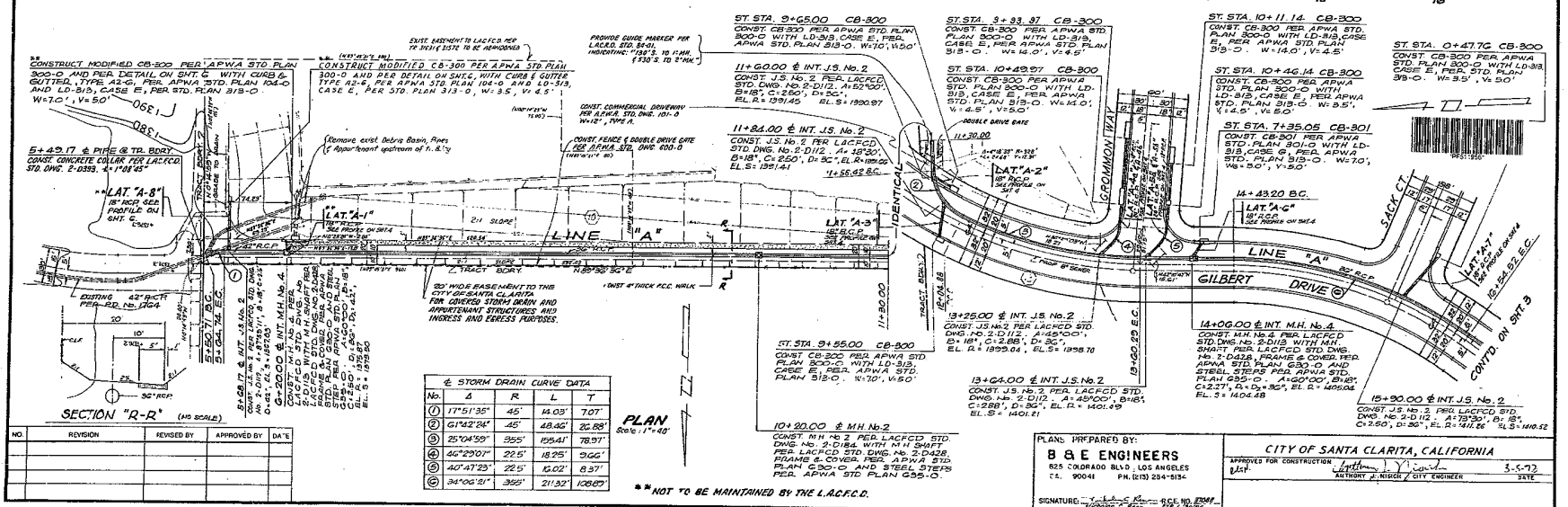
FILE COPY

PF51955

SHT 1 OF 8 SHTS

STORM DRAIN PLANS IN TRACT No. 44359 44359-01 44359-02 P.D. No. 2095





℄ STORM DRAIN CURVE DATA				
No.	Δ	R	L	T
①	17°51'35"	45'	14.03'	7.07'
②	61°42'24"	45'	48.46'	26.88'
③	25°04'59"	355'	155.41'	78.97'
④	46°29'07"	22.5'	18.25'	9.66'
⑤	40°47'23"	22.5'	16.02'	8.37'
⑥	34°06'21"	355'	211.32'	108.89'

PLAN Scale: 1"=40'

** NOT TO BE MAINTAINED BY THE L.A.C.F.C.D.

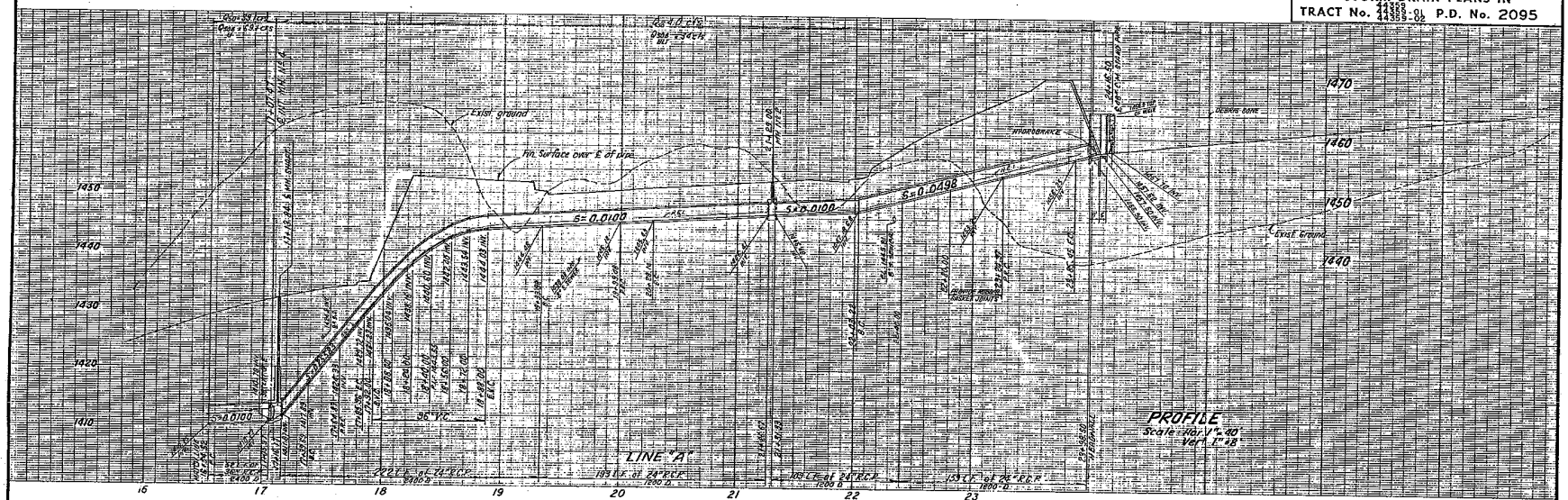
NO.	REVISION	REVISED BY	APPROVED BY	DATE

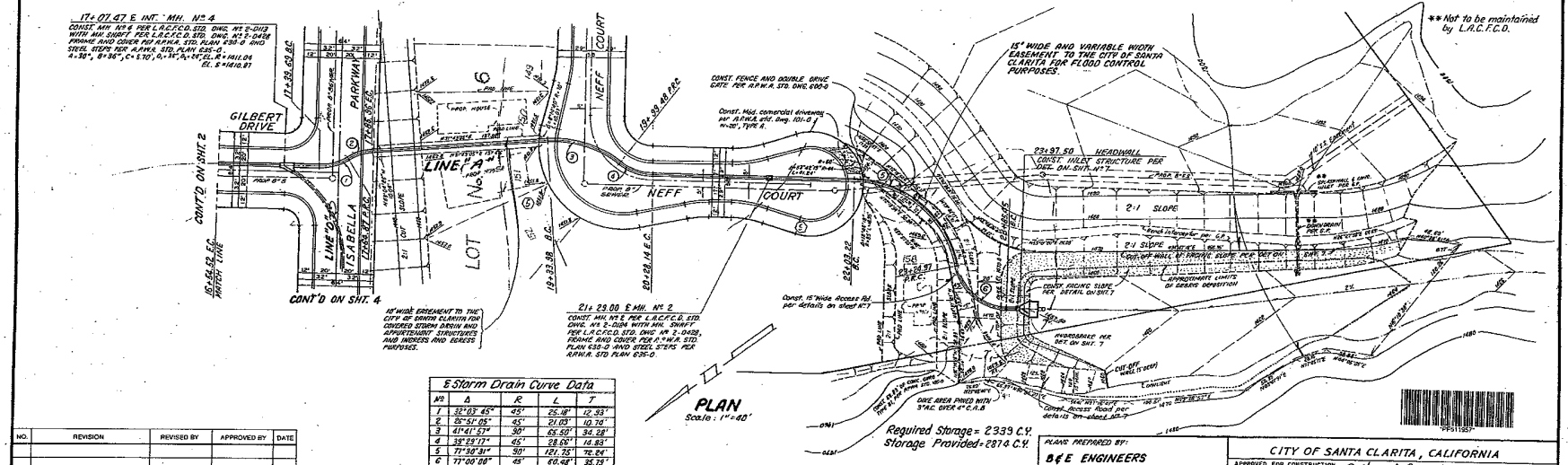
PLANS PREPARED BY:
B & E ENGINEERS
625 COLORADO BLVD., LOS ANGELES CA. 90041 PH. (213) 254-5134
SIGNATURE: [illegible] R.C.E. NO. 27868 EXP. 6/30/73

CITY OF SANTA CLARITA, CALIFORNIA
APPROVED FOR CONSTRUCTION: [illegible] 3-5-72
ANTHONY J. NISICH / CITY ENGINEER — DATE

SHT 2 OF 8 SHTS

STORM DRAIN PLANS IN
TRACT No. 44350
44355
44355-01 P.D. No. 2095





E Storm Drain Curve Data				
No	Δ	R	L	T
1	32°03'45"	45'	25.18'	12.93'
2	25°51'05"	45'	21.03'	10.74'
3	41°41'57"	90'	65.50'	34.28'
4	35°29'17"	45'	28.66'	14.93'
5	71°30'31"	90'	121.75'	72.24'
6	71°00'08"	45'	60.48'	35.19'

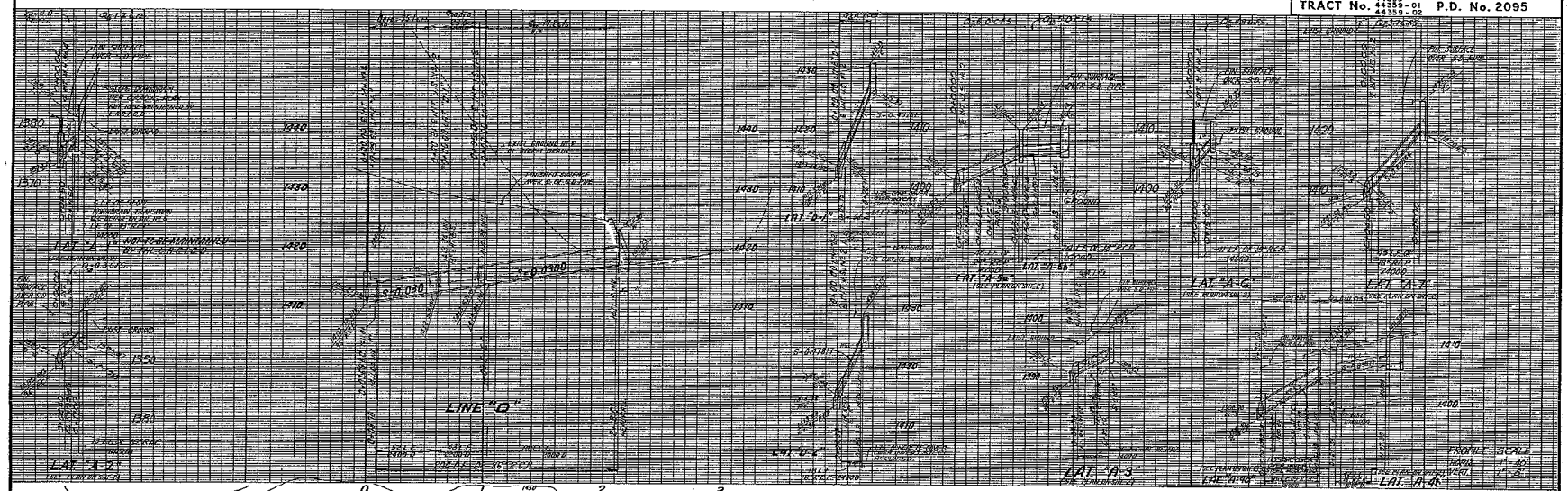
NO.	REVISION	REVISED BY	APPROVED BY	DATE

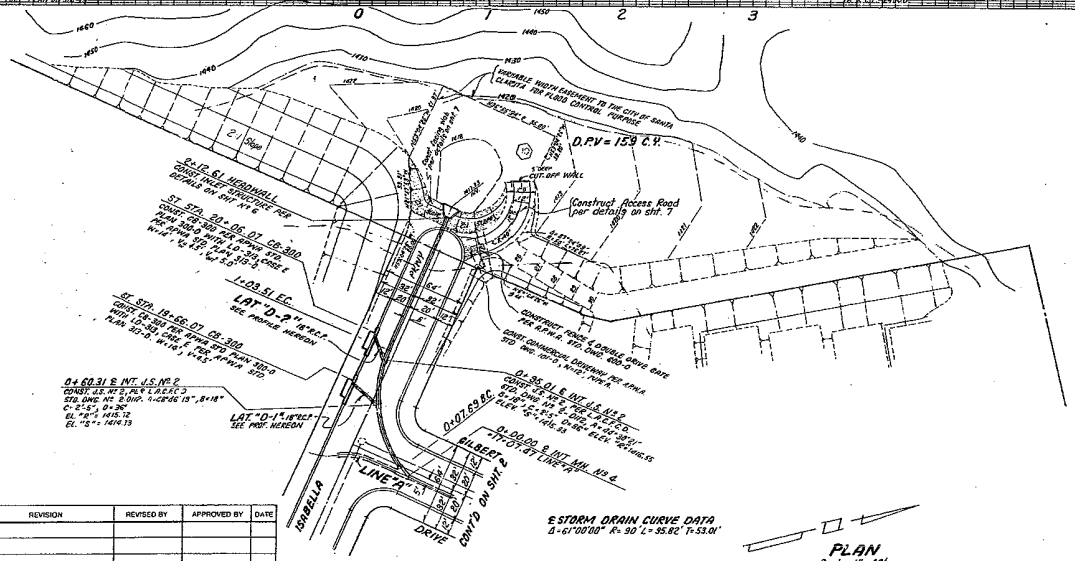
PLANS PREPARED BY:
B & E ENGINEERS
825 COLORADO BLVD. LOS ANGELES CA., 90041
PHONE (213) 254-5134
SIGNATURE: Richard E. Bolin
R.C.E. NO. 27085
EXP. 6-30-94

CITY OF SANTA CLARITA, CALIFORNIA
APPROVED FOR CONSTRUCTION Anthony J. Mancini 3-3-93
ANTHONY J. MANCINI, CITY ENGINEER — DATE

SHT 3 OF 8 SHTS

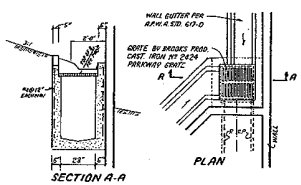
STORM DRAIN PLANS IN
TRACT No. 44359 44359-01 44359-02 P.D. No. 2095





℄ STORM DRAIN CURVE DATA
Δ=61°00'00" R=90' L=95.82' T=53.01'

PLAN
Scale: 1"=40'



CATCH BASIN DETAIL LAT. "B-4"
(NOT TO BE MAINTAINED BY L.A.C.F.C.D.)
SCALE: 1"=3'

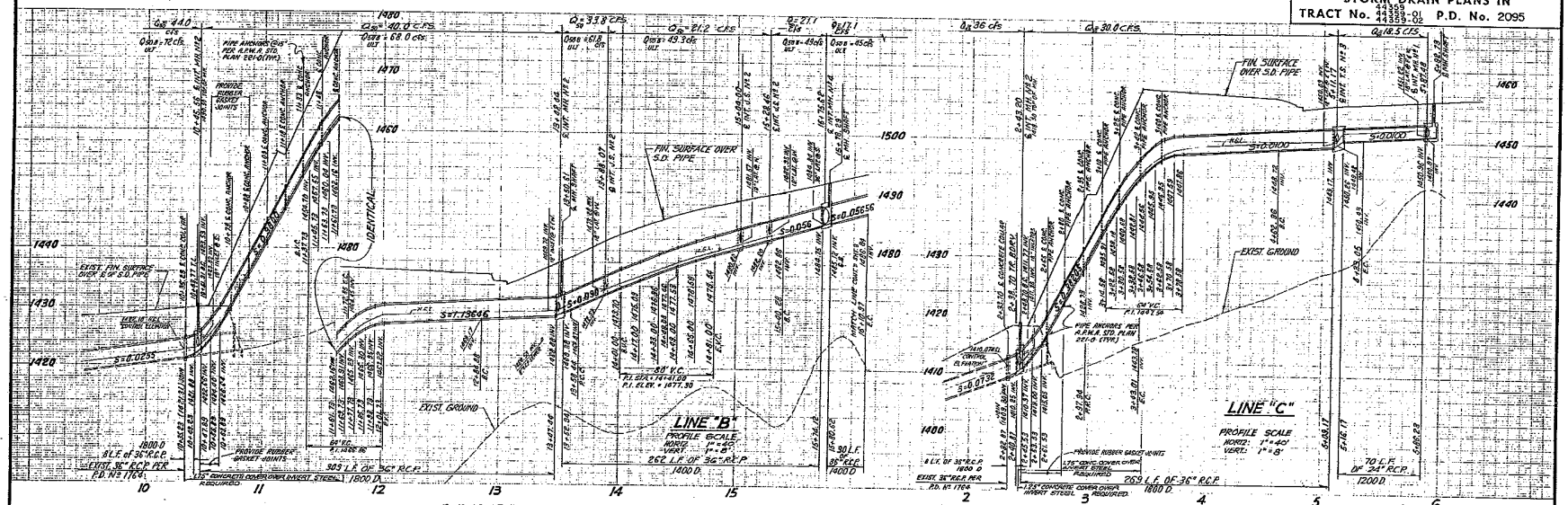
NO.	REVISION	REVISED BY	APPROVED BY	DATE

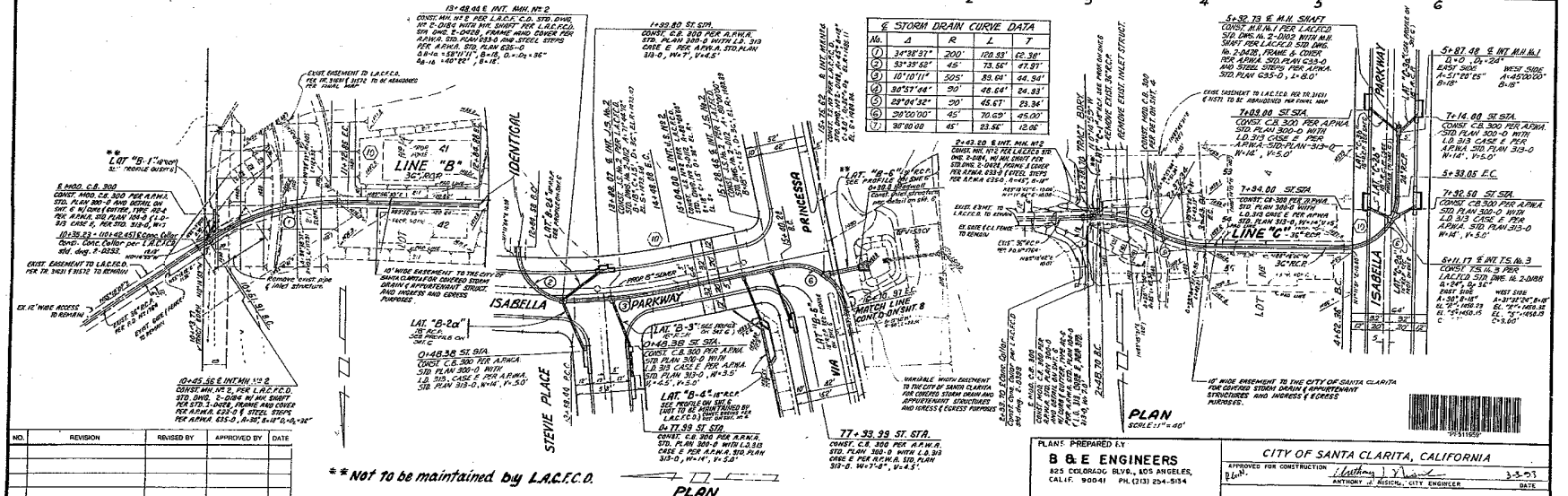
PLANS PREPARED BY:
B & E ENGINEERS
625 COLORADO BLVD., LOS ANGELES, CALIF. 90041 PH. (213) 254-5134
SIGNATURE: Nicholas C. Roos RCE NO. 21068 Exp. 6/30/13

CITY OF SANTA CLARITA, CALIFORNIA
APPROVED FOR CONSTRUCTION Anthony J. Disch 3-3-13
ANTHONY J. DISCH, CITY ENGINEER DATE

SHT 4 OF 8 SHTS

STORM DRAIN PLANS IN
TRACT No. 44356-01, 44356-02, 44356-03 P.D. No. 2095





℄ STORM DRAIN CURVE DATA				
No.	Δ	R	L	T
1	34°58'37"	200'	120.93'	62.36'
2	93°39'52"	45'	73.56'	47.97'
3	10°10'11"	505'	89.69'	44.94'
4	90°59'44"	90'	46.64'	24.93'
5	29°04'52"	20'	45.67'	23.36'
6	30°00'00"	45'	70.69'	45.00'
7	30°00'00"	45'	23.56'	12.06'

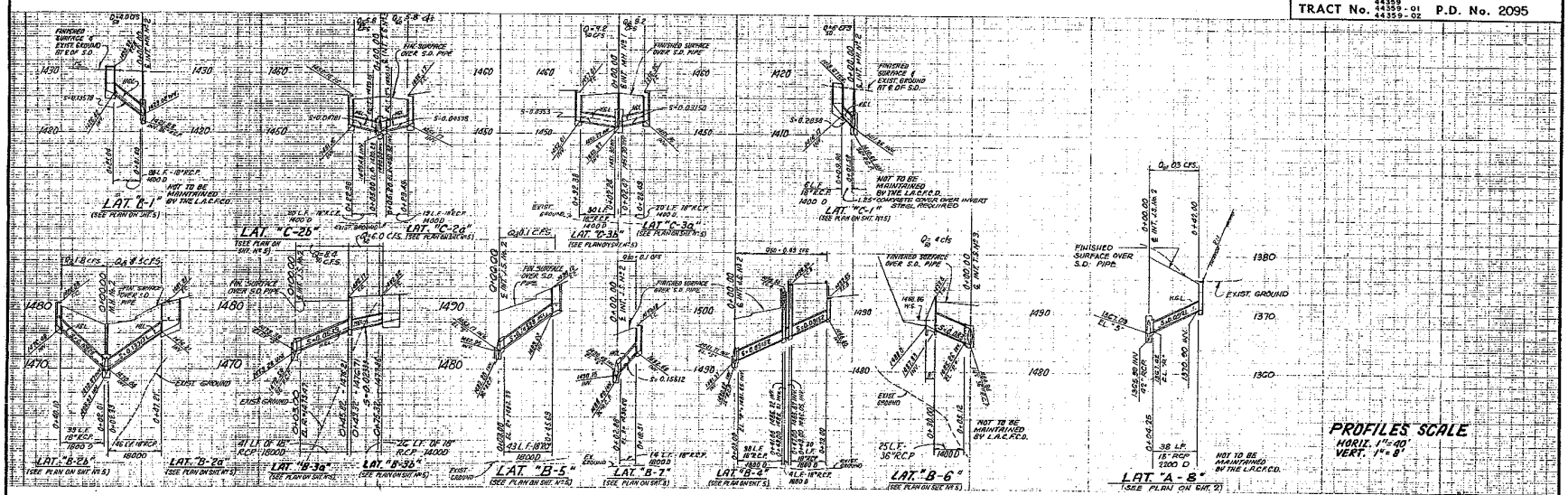
NO.	REVISION	REVISED BY	APPROVED BY	DATE

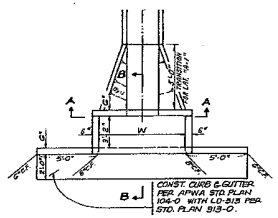
PLANS PREPARED BY
B & E ENGINEERS
825 COLORADO BLVD., 105 ANGELES, CALIF. 90041 PH. (213) 254-5134
SIGNATURE: RICHARD E. BOYD — R.C.E. NO. 20686 EXP. 6/30/96

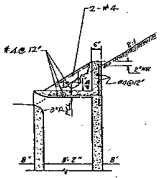
CITY OF SANTA CLARITA, CALIFORNIA
APPROVED FOR CONSTRUCTION — 3-3-93
ANTHONY J. MISICH, CITY ENGINEER — DATE

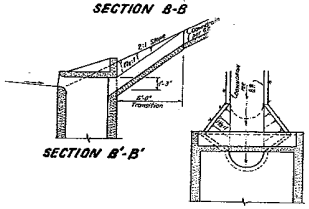
SHT 5 OF 8 SHTS

STORM DRAIN PLANS IN
TRACT No. 44359 44359-01 44359-02 P.D. No. 2095







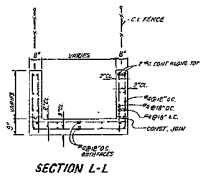


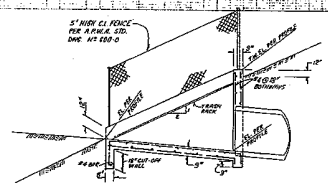
LINE A-1 DETAILS

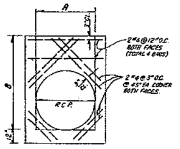
MODIFIED CB-300 DETAILS

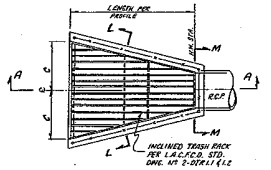
NOT TO SCALE

NOTE: NOT TO BE MAINTAINED BY THE L.A.C.F.C.D.
FOR NOTES AND OTHER RELATED DETAILS, SEE APWA STD. PLAN 300-0.









LINE "D" & "B-6"
INLET STRUCTURE DETAILS
NOT TO SCALE

	A	B	C
LINE "D"	36"	5'-11½"	4'
LAT. "B-6"	36"	4'-8"	4'

NO.	REVISION	REVISED BY	APPROVED BY	DATE

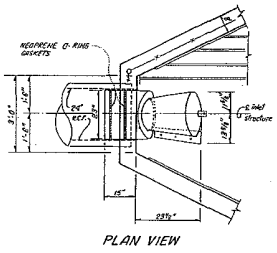
LINE	D1	D2	d1	h1	h2	W1 or SLOPE W1 & RISE	W2 or SLOPE W2 & RISE
A, B, C	36"	36"	4"	7"	4"	2	2

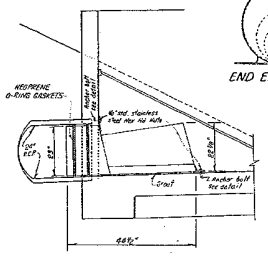
PLANS PREPARED BY:
B & E ENGINEERS
825 COLORADO BLVD., LOS ANGELES, CALIF. 90041 PH (213) 254-5154
SIGNATURE: [signature] R.C.E. NO. 27468 EXP. 6/30/96

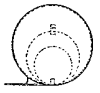
CITY OF SANTA CLARITA, CALIFORNIA
APPROVED FOR CONSTRUCTION [signature] 3-3-93
ANTHONY J. VISICH, CITY ENGINEER DATE

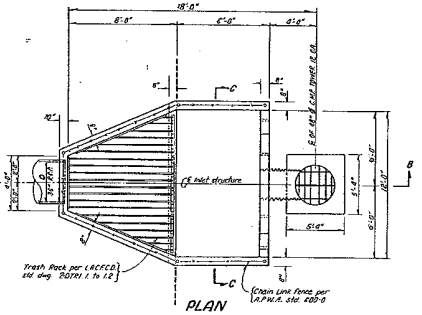
SHT 6 OF 8 SHTS

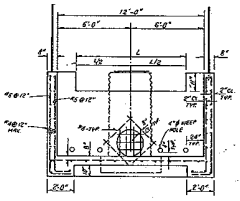
STORM DRAIN PLANS IN
TRACT No. 44359
44359 - 01 P.D. No. 2095
44359 - 02





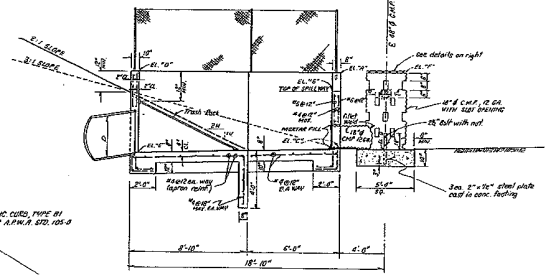


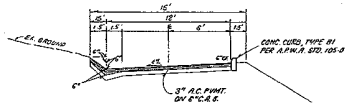


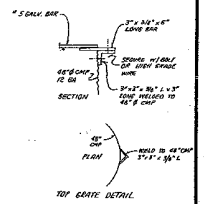


LINE "A" INLET
CONICAL HYDROBRAKE DETAIL
(HYDROBRAKE SUPPLIED BY HYDRO BRAKE SYSTEMS)
(SLOTTED INTAKE CONICAL HYDRO-BRAKE 22E-121-193)

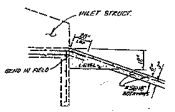
LOCATION	D	SPILLWAY L	SPILLWAY H	EL. "A"	EL. "B"	EL. "C"	EL. "D"	EL. "E"	EL. "F"	EL. "G"
LINE A	24"	4'-0"	12"	1463.00	1464.00	1457.50	1465.00	1466.50	1465.00	1467.10
LINE B	36"	5'-3⅝"	12"	1520.28	1519.20	1515.00	1520.20	1514.40	1520.20	1515.23

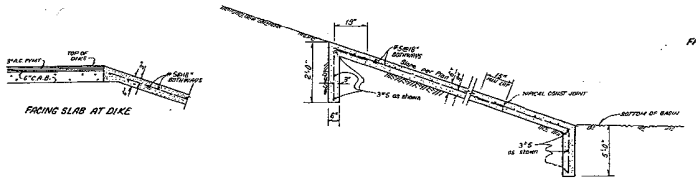






INLET STRUCTURE DETAILS
NOT TO SCALE





FACING SLAB DETAILS
N.T.S.

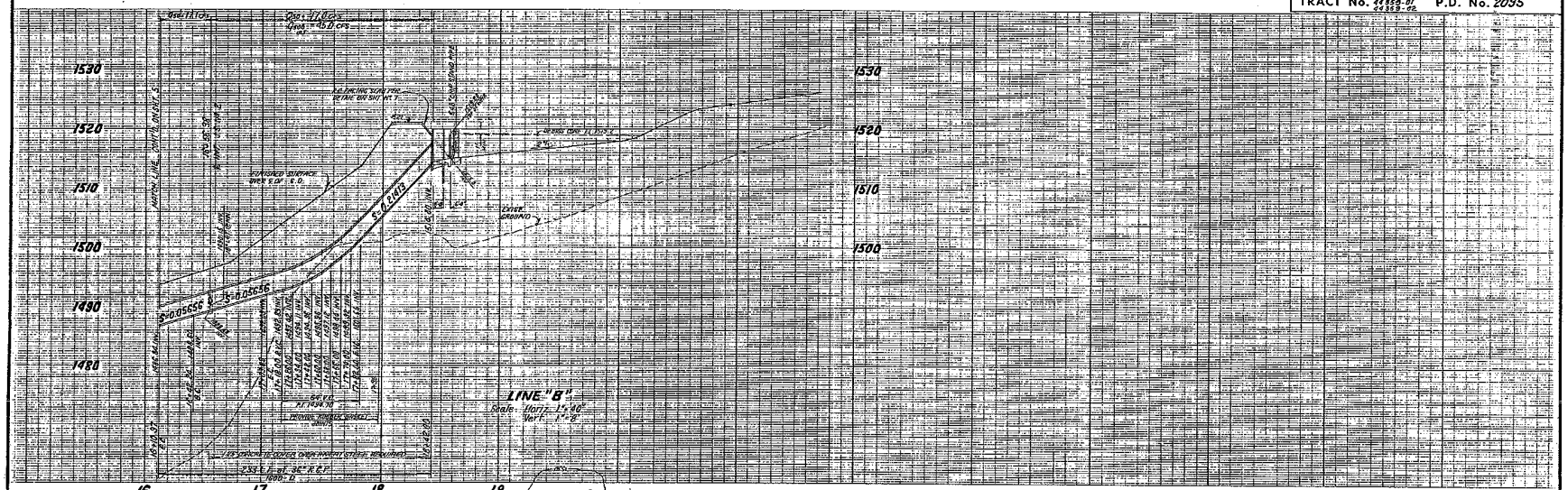
NO.	REVISION	REVISED BY	APPROVED BY	DATE

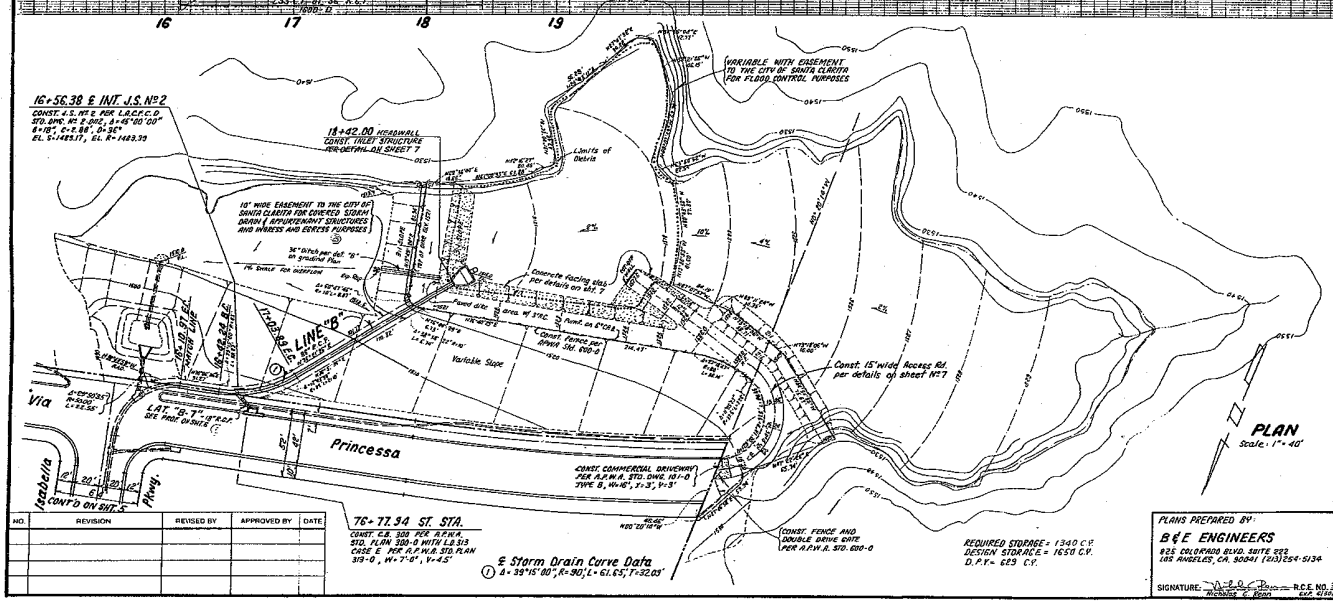
PLANS PREPARED BY:
B&E ENGINEERS
875 COLORADO BLVD. LOS ANGELES CA. 90041
PHONE (213) 259-3396
SIGNATURE: [signature] R.C.E. NO. 37059 EXP. 6/30/96

CITY OF SANTA CLARITA, CALIFORNIA
APPROVED FOR CONSTRUCTION [signature] 2-8-95
ANTHONY E. WISCH, CITY ENGINEER — DATE

SHT 7 OF 8 SHTS

STORM DRAIN PLANS IN
TRACT No. 44959 44959-01 44959-02 P.D. No. 2035





NO.	REVISION	REVISED BY	APPROVED BY	DATE

76+77.94 ST. STA.
CONST. L.B. 329 PER A.P.W.A. STD. PLAN 320-0 WITH L.B. 313
CASE E PER A.P.W.B. STD. PLAN 315-0, H= 7'-0", V=45°

℄ Storm Drain Curve Data
① Δ=39°15'00", R=90', L=61.65', T=32.03'

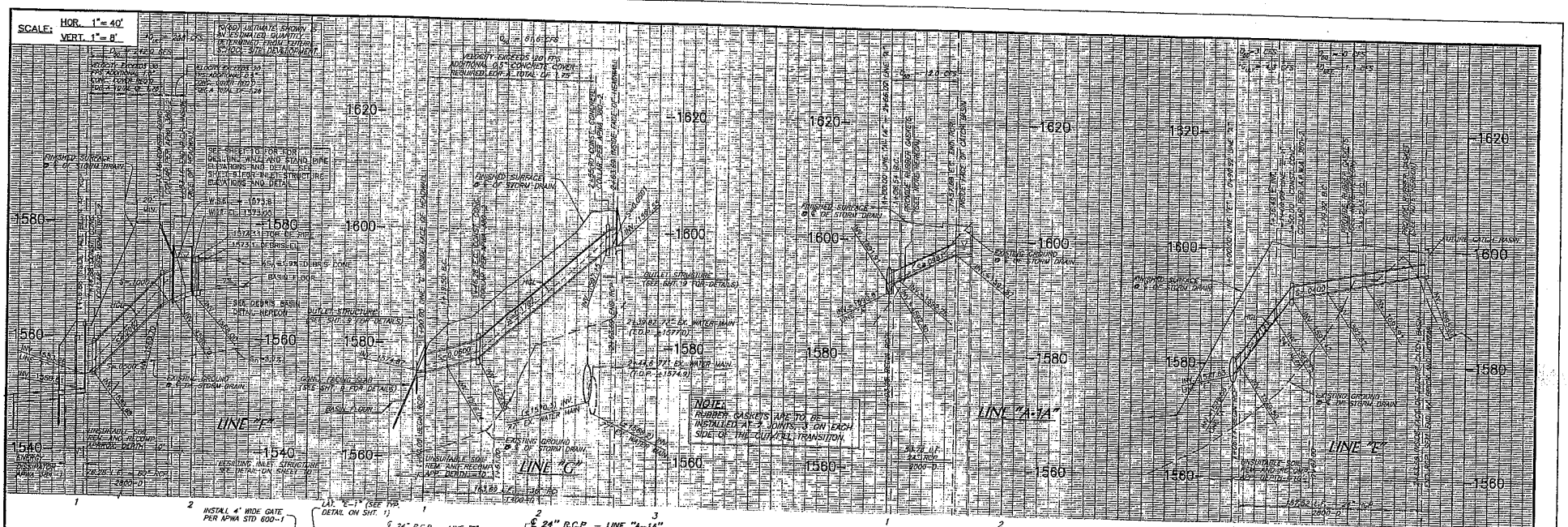
REQUIRED STORAGE = 1340 C.Y.
DESIGN STORAGE = 1650 C.Y.
D.F.Y. = 629 C.Y.

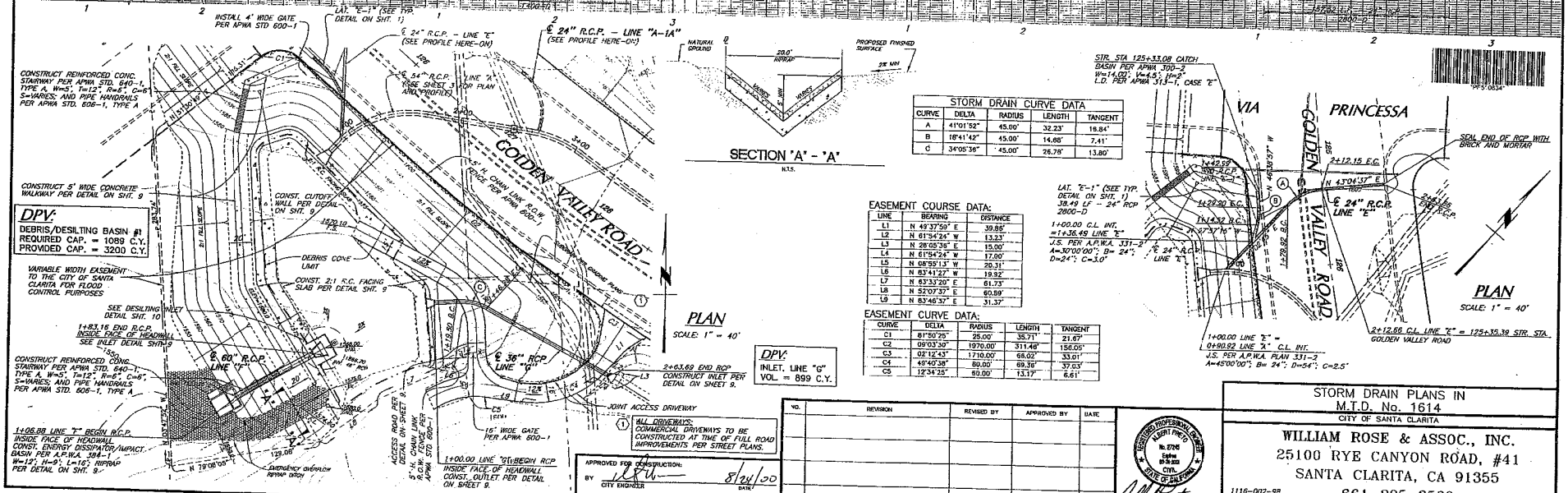
PLANS PREPARED BY:
B℄E ENGINEERS
825 COLORADO BLVD. SUITE 203
LOS ANGELES, CA. 90041 (323) 254-5134
SIGNATURE: Nicholas C. Bean R.C.E. NO. 37088 EXP. 6/30/04

CITY OF SANTA CLARITA, CALIFORNIA
APPROVED FOR CONSTRUCTION: Anthony J. Ariel 6-3-03
ANTHONY J. ARIEL, CITY ENGINEER — DATE

PFS11962

SHT 8 OF 8 SHTS





STORM DRAIN CURVE DATA

CURVE	DELTA	RADIUS	LENGTH	TANGENT
A	41°01'52"	45.00'	32.23'	16.84'
B	18°41'42"	45.00'	14.68'	7.41'
C	34°05'36"	45.00'	26.78'	13.80'

EASEMENT COURSE DATA:

LINE	BEARING	DISTANCE
L1	N 49°37'59" E	39.66'
L2	N 61°54'24" W	13.23'
L3	N 28°05'36" E	15.00'
L4	N 61°54'24" W	17.00'
L5	N 08°55'13" W	20.31'
L6	N 63°41'27" W	19.92'
L7	N 63°37'20" E	61.73'
L8	N 52°07'37" E	60.89'
L9	N 63°46'37" E	31.37'

EASEMENT CURVE DATA:

CURVE	DELTA	RADIUS	LENGTH	TANGENT
C1	81°50'25"	25.00'	35.71'	21.67'
C2	09°03'30"	1970.00'	311.46'	156.05'
C3	02°12'43"	1710.00'	66.02'	33.01'
C4	49°40'38"	80.00'	69.36'	37.03'
C5	12°34'25"	80.00'	17.17'	6.61'

NO.	REVISION	REVISED BY	APPROVED BY	DATE

REGISTERED PROFESSIONAL ENGINEER — ALBERT FRITZ — No. 27715 — Expires 03-31-2001 — CIVIL — STATE OF CALIFORNIA
PROJECT ENGINEER — DATE 8-24-00

STORM DRAIN PLANS IN
M.T.D. No. 1614
CITY OF SANTA CLARITA

WILLIAM ROSE & ASSOC., INC.
25100 RYE CANYON ROAD, #41
SANTA CLARITA, CA 91355
661-295-3590

1116-002-98
8-17-00
DWG

SHEET 8 OF 11