Master Drainage Study For Motion Picture And Television Fund

Woodland Hills Campus

In the City of

Los Angeles

Prepared for:

Motion Picture And Television Fund 23388 Mulholland Drive Woodland Hills, CA, 91364

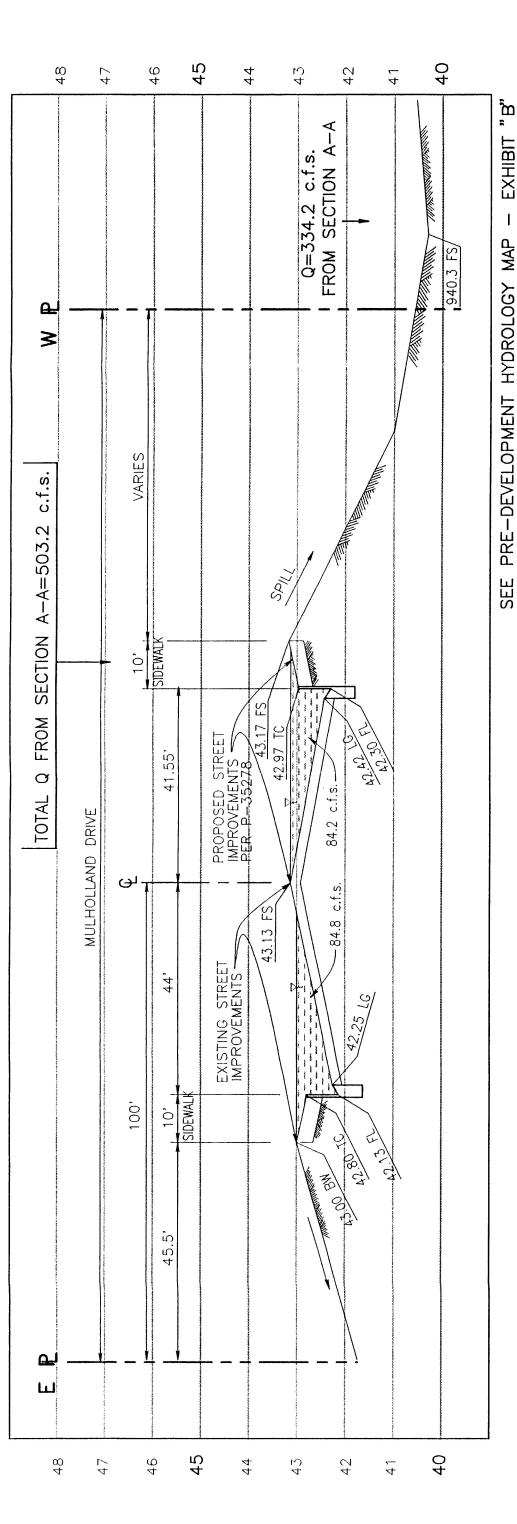
Prepared By:

Pace Engineering, Inc. 9310 Topanga Canyon Blvd., Suite 220A Chatsworth, CA, 91311

Eldon C. Schierman R.C.E. 26383 Exp. 3/31/04

October 27, 2000

Pace W.O. #2778



DRY CANYON CREEK SECTION B-B SCALES: HORIZ:1" = 20'VERT:1" = 2' 790' NORTH OF

IMPROVEMENTS P-35278 MULHOLLAND DRIVE PER PLAN STREET POST

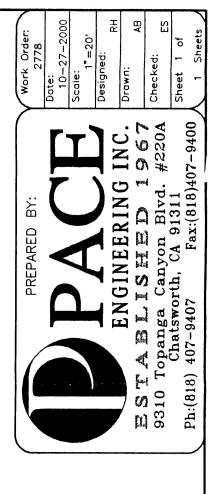


TABLE | PRE-DEVELOPMENT- SUMMARY

	LINE "A" - EXIST. 3	6" R.C.I	P. UNDER MU	JLHOLLAND DRIVE
SUB- AREA	LOCATION	PIPE DIA.	ΣQ ₅₀ (c.f.s.)	REMARKS
1-A & 4-B	ON-SITE UNDEVELOPED	15"	6.5	UNDEVELOPED AREA TO STARK VILLA DRAIN
(PART OF 1-A & 4-B) 3A, 4A	DRIVE TO STARK VILLA	18"	15.5	STARK VILLA DRAIN IN DRIVE
1-A TO 7-A	EX. 24" R.C.P. OUTLET	24"	16.3	OUTLET OF EXIST. STARK VILLA DRAIN TO DITCH
1-A, 2-A, 3-A, 8 4-A	DITCH W/O MULHOLLAND DRIVE S/O SPEILBERG DRIVE	36"	56.6	INLET TO EX. 36" R.C.P. TO SPEILBERG DRIVE
5-A	EX. 36" R.C.P. AT SPEILBERG DRIVE	36"	73.2	JUNCTION WITH EX. 18" C.M.P. FROM CAMPUS
6-A & 7-A	EX. 36" R.C.P. AT SPEILBERG DRIVE	36"	80.3	JUNCTION WITH DRIVE DRAIN & C.B. IN MULHOLLAND DRIVE - AND OUTLETS TO DRY CANYON CHANNEL
72	LINE "B" -	EXIST.	CALTRANS 3	
SUB- AREA	LOCATION	PIPE DIA.	ΣQ ₅₀ (c.f.s.)	REMARKS
3-B & 4-B	IN MULHOLLAND DRIVE	EX. 39"	18.7	EX. CATCH BASINS IN MULHO9LLAND DRIVE 400' S/0 CALABHASAS ROAD
1-B & 2-B	IN MULHOLLAND DRIVE 120' S/O CALABASAS ROAD	EX. 39"	59.0	JUNCTION WITH SITE DRAINS FROM NORTHEAST CORNER OF CAMPUS
5-B & 6-B	IN AVENUE SAN LUIS 260' E/O MULHOLLAND DRIVE	EX. 39"	60.3	JUNCTION WITH CALTRANS DRAIN
7-B	IN AVENUE SAN LUIS 630' E/O MULHOLLAND DRIVE	EX. 39"	63.6	JUNCTION WITH CALTRANS DRAIN - AND OUTLETS TO DRY CANYON CHANNEL

TABLE II POST DEVELOPMENT - SUMMARY

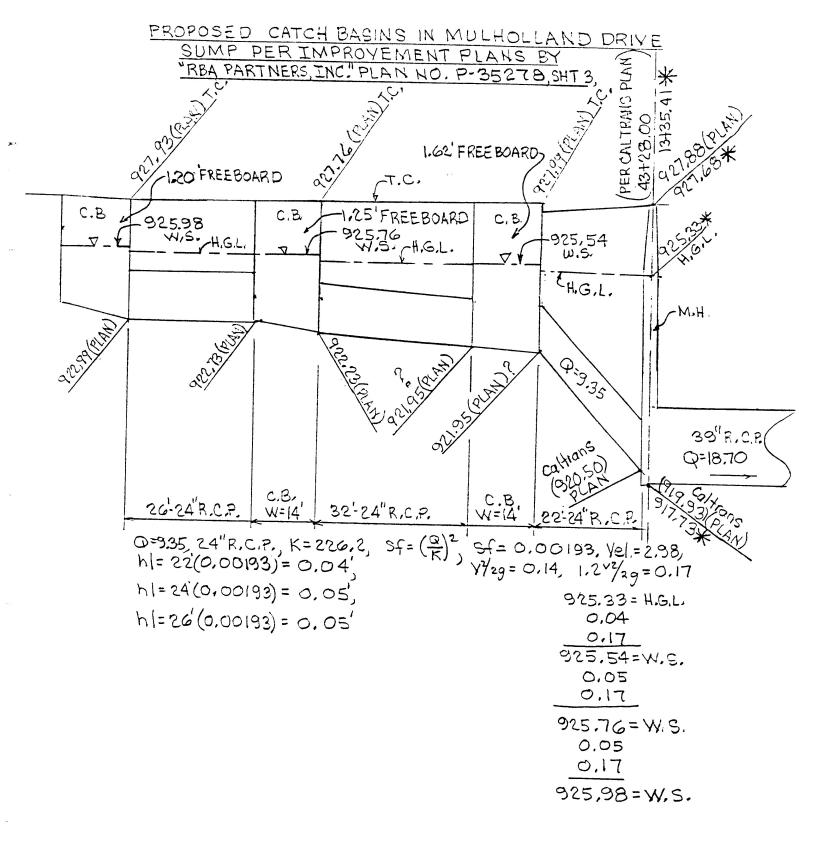
SUB- AREA	LOCATION	PIPE DIA.	ΣQ ₅₀ (c.f.s.)	REMARKS
1-A	ON-SITE FUTURE DRIVE	15"	7.7	FUTURE ON-SITE DRAIN
1-A1	IN DRIVE @ STARK VILLA	18"	11.1	FUTURE ON-SITE DRAIN
2-A	ON-SITE DRAIN JUNCTION	30"	30.8	FUTURE ON-SITE DRAIN
3-A1 4-A	ON-SITE DRAIN JUNCTION	30"	35.0	FUTURE ON-SITE DRAIN
3-A1 4-A	ON-SITE AT JUNCTION DRIVE	30"	42.5	FUTURE ON-SITE DRAIN
5-A & (X-A STARK VILLA)	JUNCTION WITH STARK VILLA DRAIN	36"	63.5	FUTURE ON-SITE DRAIN JUNCTION WITH EX. STARK VILLA DRAIN
6-A/2 & 7-A	JUNCTION WITH EX. C.M.P. & DRIVE	EX. 36"	74.4	SPLITTER STRUCTURE AT EX. C.M.P. TO DIRECT 11.8 C.F.S. TO LINE "B"
8-A	LATERAL FROM EX, C.B.	EX. 36"	80.3	TOTAL Q ₅₀ IN EX. 36" R.C.P. ACROSS MULHOLLAND DRIV AND OUTLETS TO DRY CANYON CHANNEL
	LINE "B" EXISTING	CALTRA	ANS 39" R	.C.P.
SUB- AREA	LOCATION	PIPE DIA.	ΣQ ₅₀ (c.f.s.)	REMARKS
3-B & 4-B	IN MULHOLLAND DRIVE	EX. 39" R.C.P.	18.7	EX. CATCH BASINS IN MULHOLLAND DRIVE 400' S/O CALABASAS ROAD
6-A/2	IN MULHOLLAND DRIVE	EX. 39" R.C.P.	29.3	24" R.C.P. FROM SPLITTER STRUCTURE AT SPEILBERG DRIVE
1-B & 2-B	MULHOLLAND DRIVE 120' S/O CALABASAS ROAD	EX. 39" R.C.P.	69.7	JUNCTION WITH SITE DRAINS FROM NORTHEAST CORNER OF CAMPUS
5-B & 6-B	AVENUE SAN LUIS 260' E/O MULHOLLAND DRIVE	EX. 39" R.C.P.	70.9	JUNCTION WITH CALTRANS DRAIN
7-B	AVENUE SAN LUIS 630' E/O MULHOLLAND DRIVE	EX. 39" R.C.P.	74.0	JUNCTION WITH CALTRANS DRAIN AND OUTLETS TO DRY CANYON CHANNEL

TABLE III

	ANALYSIS TO DE CAPACITY OI	TERMI EXIST	NE THE ING 39"	MAXIMUM R.C.P.
SUB- AREA	LOCATION	PIPE DIA.	ΣQ ₅₀ (c.f.s.)	REMARKS
3-B & 4-B	IN MULHOLLAND DRIVE	EX. 39" R.C.P.	18.7	EX. CATCH BASINS IN MULHOLLAND DRIVE 400' S/O CALABASAS ROAD
6-A/2	IN MULHOLLAND DRIVE	EX. 39" R.C.P.	46.7	INCREASED Q FROM SPLITTER STRUCTURE TO DETERMINE MAXIMUM CAPACITY OF 39" R.C.P.
1-B & 2-B	MULHOLLAND DRIVE 120' S/O CALABASAS ROAD	EX. 39" R.C.P.	87.1	JUNCTION WITH SITE DRAINS FROM NORTHEAST CORNER OF CAMPUS
5-B & 6-B	AVENUE SAN LUIS 260' E/O MULHOLLAND DRIVE	EX. 39" R.C.P.	88.3	JUNCTION WITH CALTRANS DRAIN
7-B	AVENUE SAN LUIS 630' E/O MULHOLLAND DRIVE	EX. 39" R.C.P.	91.4	JUNCTION WITH CALTRANS DRAIN AND OUTLETS TO DRY CANYON CHANNEL

APPENDIX A

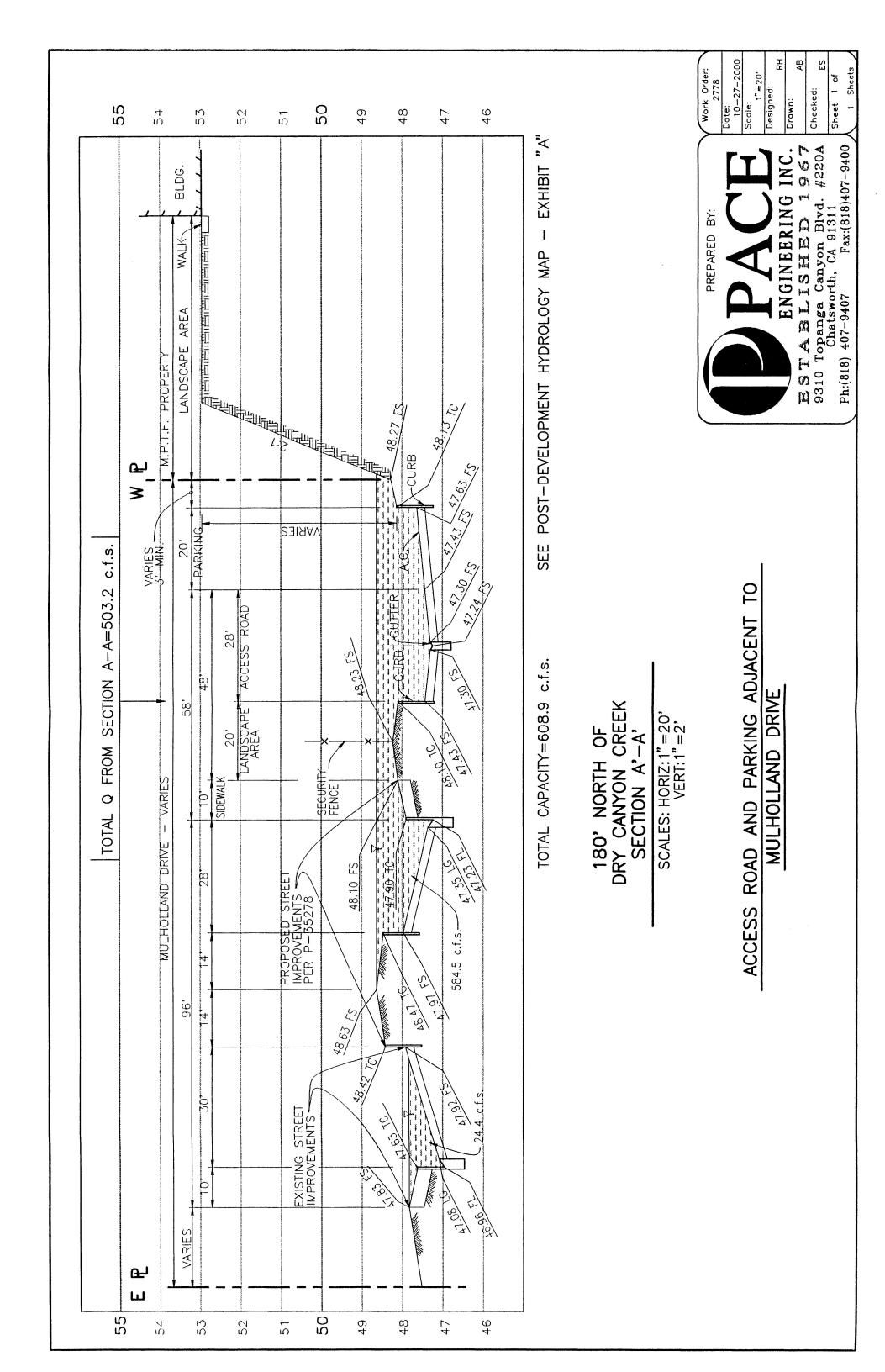
Proposed Catch Basins in Mulholland Drive Sump

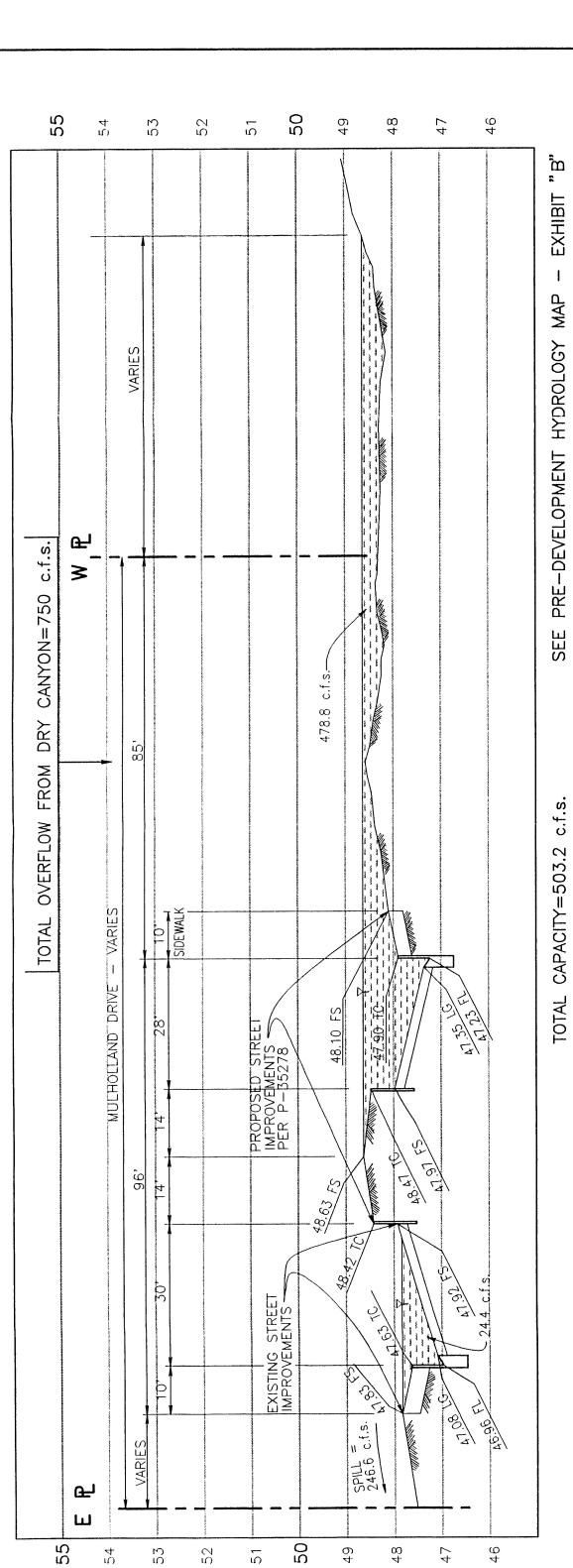


^{*} STATION, FLOW LINE ELEVATION AND HYDRAULIC GRADELINE PER PACE SURVEY AND "W.S.P.G.W." PROGRAM RUN.

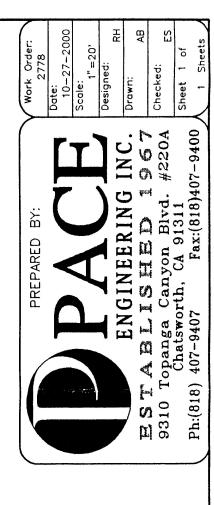
APPENDIX B

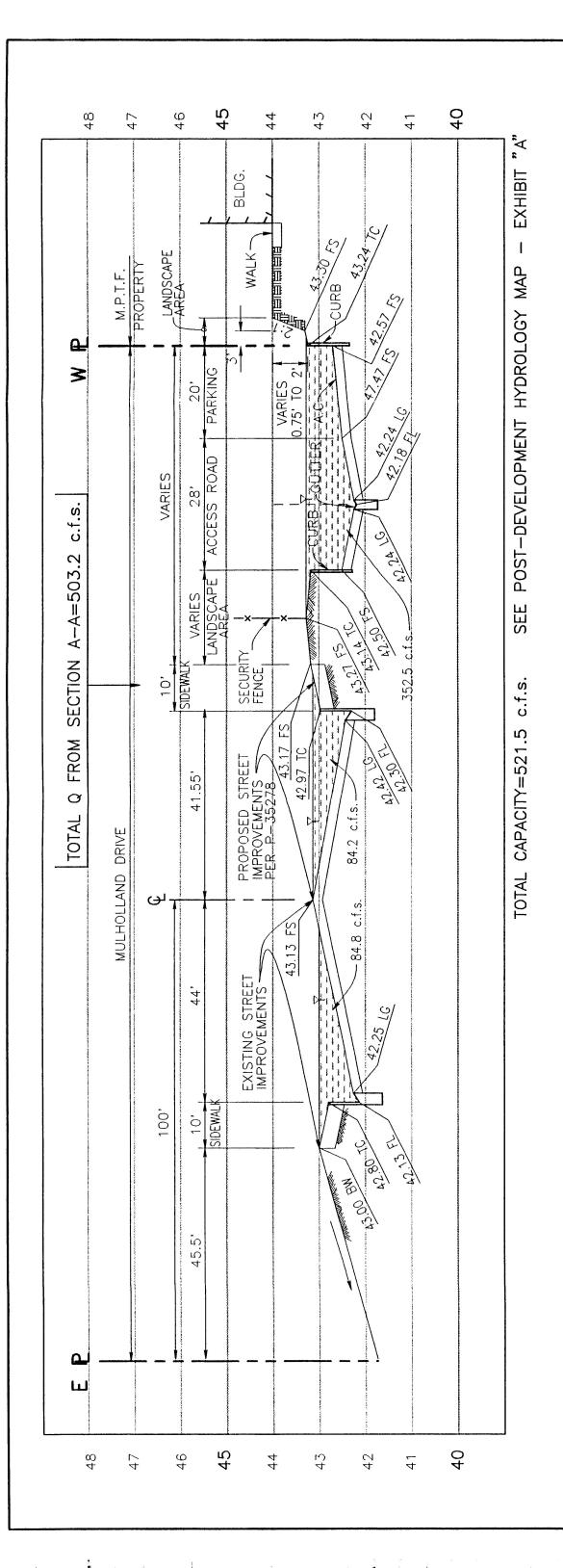
Mulholland Cross Sections





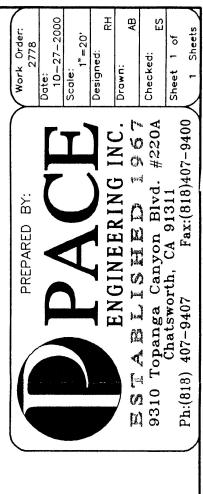
180' NORTH OF DRY CANYON CREEK SECTION A-A SCALES: HORIZ:1"=20'VERT:1"=2' MULHOLLAND DRIVE POST STREET IMPROVEMENTS PER PLAN P-35278





790' NORTH OF DRY CANYON CREEK SECTION B'-B'

SCALES: HORIZ:1"=20' VERT:1"=2' ACCESS ROAD AND PARKING ADJACENT TO MULHOLLAND DRIVE



APPENDIX C

Hydraulic Capacity of Mulholland Drive

HYDRAULIC CAPACITY OF MULHOLLAND DRIVE
AFTER STREET WIDENING IMPROVEMENTS
PLANS"ZA 86-0653, MULHOLLAND DRIVE
(NLY/S) CALABASAS ROAD TO VALMAR ROAD!"
PLAN NO. P-35278.

SECTION A-A 180' NORTH OF DRY CANYON CREEK

Northbound Roadway To Elex, 47.83, st. 5=0,00789, $5^{1/2}=0.0888$, A=7.39°, W.P.=35.78, $\Gamma=0.207$, $\Gamma^{2/3}=0.350$, $Q=\frac{1.486}{.014}$ (0.0388)(0.350)(7.39)=24.4c.fis. To Elex, 47.83.

Southbound Roadway & overflow Area To Elev. 48.63, St. S=0.00745, S1/2=0.0863, A=1535, W.P.=194, T=0.789, $1^{2/3}$ =0.854, $Q=\frac{1.486}{.035}$ (0.854)(0.0863)(153) = 478,8cf.s.

SECTION B-B TOTAL CAPACITY = 503, 2 c.f.s.

HYDRAULIC CAPACITY OF MULHOLLAND DRIVE

ACCESS ROAD AND PARKING ADJACENT TO MULHOLLAND DRIVE

Horthbound Roadway To Elev. 43.00, St. 9=0.0108, 5/2-0.1039, A=16.05°, Wir.= 48.50, r=0.331, r=0.479,

Q=\frac{1.436}{.014'}(0.1039)(0.479)(16.05)=\frac{84.8c.f.s}{.5}. To Elev.43.00.

South bound Roadway, To Elev. 43.13, S+S=0.0108, $S^{1/2}=0.1039$, A=16.217, W.P.=50.21, r=0.323, $t^{1/3}=0.471$, $Q=\frac{1.486}{.014}(0.1039)(0.471)(16.21)=84.2 c.f.s$. To Elev. 43.13,

28' Access Road & Parking. To Elev. 43.27, St. 9=0.0108, 8/2=0.1039, A=41.40", W.P.=61', r=0.679, r=0.772,

P=\frac{1486}{.014} (0.1039)(0.772)(41.4) = \frac{352.5c.f.s.}{.015} To Elev. 43.27,

SECTION A-A TOTAL = 521.5c.f.s.

SECTION A'A'

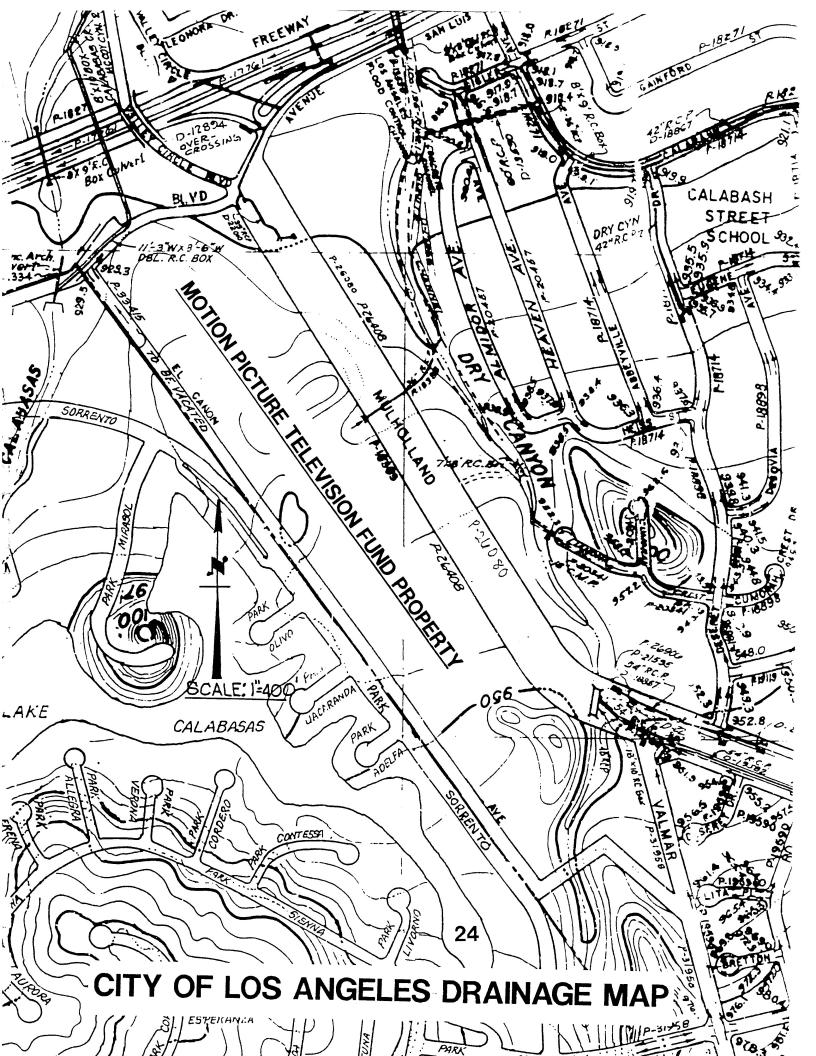
Northbound Roadway To Eley, 47.83, st. s=0.00788, $s^{1/2}$ =0.0888, $A=7.39^{\circ}$, WIP,=35.78, r=0.207, $r^{2/3}=0.350$, $Q=\frac{1.486}{.014}(0.0888)(0.350)(7.39)=24.4 cif.s. To Eley, 47.83$

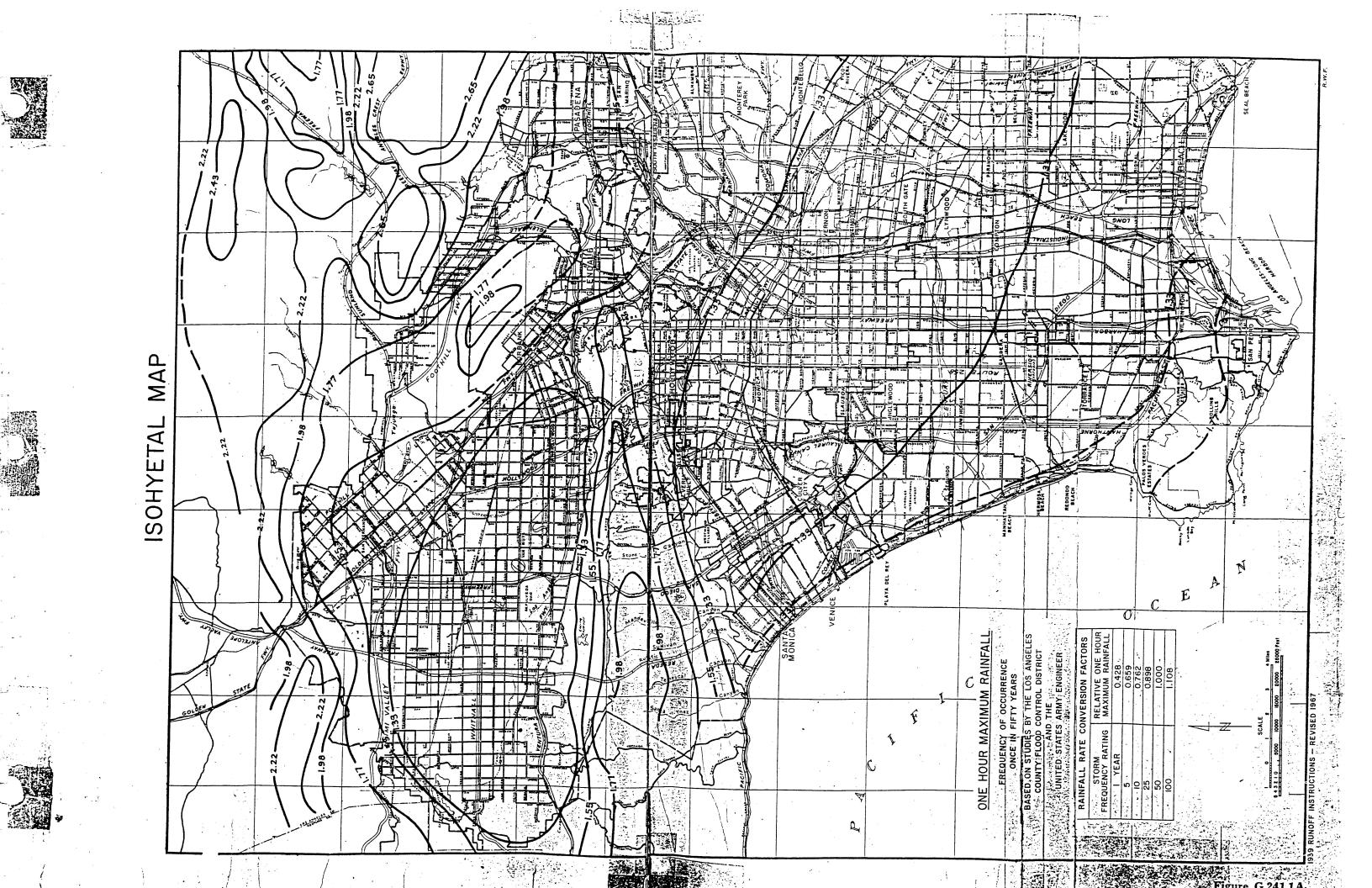
southbound Roadway, 28' Access Road & Parking, To Elev. 48.63 St, S.= 0.00745, S/2=0.0863, A=103.83, XV.P.=126.35', r=0,822, r=3=0.878,

9=1,486 (0.0863 (0.878) (103.83) = 584.5 c.f.s. To Elev. 48.63 SECTION B-B TOTAL = 608.9 c.f.s.

APPENDIX D

City of Los Angeles Drainage Map





APPENDIX F

Runoff Table

DEVELOPMENT CLASSIFICATIONS

ZONING CLASSIFICATION	TYPE OF DEVELOPMENT	I _d
	Park (lawn areas only)	15
	*Undeveloped Hillside or Mountainous Areas	35
A1, A2, RA	Agricultural and One-Family Dwelling	35.
REII, REI5, RE20, RE 40	One-Family Dwelling — Level AreaHillside Area	35 50
R1 RDI.5, RD2	One-Family Dwelling — Large Hillside Lot	50 ··
RS, RI,RE9	One-Family Dwelling — Level Area Hillside Area	40 70,
R2, RW1, RW2 RD3, RD4, RD5, RD6	Multiple Dwelling	
R3	Multiple Dwelling	
R4, R5, P, PB, CR CI, C2, C4, C5, CM MRI, MR2, MI, M2, M3	Multiple Dwelling — Parking, All Commercial, and Manufacturing	100
	Playgrounds, Schools	100
^RPD	$3/4$ of land area with l_d per development above; $1/4$ of land area with l_d for park.	

 I_{d} is the percentage of imperviousness of a sub-area.

^{*}To be used in computing runoff prior to development regardless of zoning classification.

 $^{^\}Delta$ Residential Planned Development — Investigate development (in field or from plans) before allocating value of I_d

BASE PEAK RUNOFF RATE TABLE

(cfs per acre) tc .0 .1 .2 .3 .4 .5 .6 .7 8. .9 1 2 BPRR = 3.40, to be used for 6.87 BPRR = 3 all values up to 5.0 min. $(t_c)^{.437}$ 4 3.40 3.37 3.35 3.32 3.29 3.26 3.24 3.21 3.18 3.16 6 3.13 3.07 3.11 3.09 -3.05° 2.86 3.03、 3.01 2.99 2.97 7 2.95 2.93 2.91 2.90 2.88 -2.85 2.83 2.81. 2.79 2.78 -8 2.76 2.75. 2.73. 2.72. 2.69 2.57 2.70 2.68 2.67 2.66 9 2.63 2.64 2.62 -2.59 2.60 2.58 2.55. 2.54 2:53 2.512 10 2.50 2.49, 2.48 2.47 . 2.46. 2.45 . 2.45 2.44 2.43 2.42 11 2.41 2.40 -2.39 2.38 2.37 2.36 2.36 2.35 2.34 12 2.32 2.30 2.23 2.33 2.31 2.30 2.22 2.29 2.28 2.27 2.26-2.26 2,25 -13 2.23 ⁻ 2.16 2.24 2.21 2.21 2.20 14 2.19 2.18 2.18 2.17 2.16 2.15 2.14 2.14 2.13 2.12. 15 2.10 2.10 2.11 2.11 2.09 2.08 2.09 2.08 2.07 2.07 2.06 2.06 16 2.05 2.04 2.04 2.03 2.03 2.02 2.01 2.01 2.00. 17 1.99 1.99 2.00 1.98 1.98 1.97 1.97 1.96 1.96 18 1.95 1.95 1.94 1.94 1.93 1.93 1.93 1.92 1.92 1.92 1.91 19 1.90 1.91 1.90 1.89 1.89 1.88 1.88 1.87 1.87 1.86 20 1.85 1.85 1.86 1.84 1.84 1.84 1.83 1.83 1.83 1.82 1.82 21 1.82 1.81 1.81 1.80 1.80 1.80 1.79 1.79 1.79 22 1.78 1.78 1.77 1.78 1.77 1.77 1.76 1.76 1.76 23 1.75 1.75 1.75 1.74 1.74 1.73 1.73 1.72 1.72 24 1.72 1.71 1.71 1.71 1.70 1.70 1.70 1.70 1.69 1.69 1.69 25 1.68 1.68 1.68 1.67 1.67 1.67 1.67 1.66 1.66 1.66 1.65 26 1:65 1.65 1.65 1.64 1.64 1.64 27 1.64 1.63 1.63 1.63 1.63 1.62 1.62 1.62 1.62 1.61 1.61 28 1.61 1.61 1.60 1.60 1.60 1.60 1.59 1.59 1.59 1.59 1.58 1.58 29 1.58 1.58 1.57 1.57 1.57 1.57 1.56 1.56 1.56 1.56 1.55 1.53 30 1.55 1.55 1.55 1.54 1.54 1.54 1.54 1.54 1.53 31 1.53 1.53 1.53 1.52 1.52 1.52 1.52 1.52 32 1.51 1.51 1.51 1.51 1.51 1.50 1.50 1.50 1.50 1.50 1.49 33 1.49 1.49 1.49 1.49 1.48 1.48 1.48 1.48 1.48 1.47 34 1.47 1.47 1.47 1.47 1.46 1.46 1.46 1.46 1.46 1.45 35 1.45 1.45 1.45 1.45 1.44 1.44 1.44 1.44 1.44 1.44 1.43 36 1.43 1.43 1.43 1.43 1.42 1.42 1.42 1.42 1.42 37 1.42 1.42 1.41 1.41 1.41 1.41 1.41 1.41 1.40 1.40 38 1.40 1.40 1.40 1.40 1.40 1.39 1.39 1.39 1.39 1.39 39 1.39 1.39 1.38 1.38 1.38 1.38 1.38 1.38 1.37 1.37 40 1.37 1.37 1.37 1.37 1.37 1.36 1.36 1.36 1.36 1.36 1.36 41 1.36 1.35 1.35 1.35 1.35 1.35 1.35 1.34 1.33 42 1.34 1.34 1.34 1.34 1.34 * 1.34 1.32 1.33 1.33 1.33 43 1.33 1.33 1.33 1.32 1.32 1.32 1.32 1.32 1.31 1.31 44 1.31 1.31 1.31 1.31 1.31 1.30 1.30 1.30 45 1.30 1.30 1.30 1.30 1.30 1.30 1.29 1.29 1.29 1.29 1.29 46 1.29 1.29 1.29 1.29 1.29 1.28 1.28 1.28 47 1.28 1.28 1.28 1.28 1.28 1.28 1.28 1.27 1.27 1.27 1.27 48 1.27 1.27 1.27 1.27 1.27 1.26 1.26 1.26 1.26 1.26 49 1.26 1.26 1.25 1.25 1.25 1.25 1.25 1.25 1.24 1.24 1.23 50 1.24 1.24 1.24 1.24 1.24 1.24 1.23 1.23 1.23 1.23 51 1.23 1.23 1.23 1.22 1.23 1.23 1.22 1.21 1.22 1.22 1.22 52 1.22 1.22 1.22 1.22 1.22 1.21 1.21 53 1.21 1.21 1.21 1.21 1.21 1.21 1.21. 1.20 1.20 1.20 54 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.19 1.19 1.19 55 1.19 1.19 1.19 1.19 1.19 1.19 1.19 1.18 1.18 1.18 1.18 1.18 56 1.18 1.18 1.18 1.18 1.18 1.18 1.18 57 1.18 1.18 1.18 1.18 1.17 1.17 1.17 1.17 1.17 1.17 1.17 58 1.17 1.17 1.17 1.17 1.17 1.17 1.17 1.16 1.16 1.16 59 1.16 1.16 1.16 1.16 1.16 1.16: 1.16 1.15 1.15 1.15 1.15 1.15

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TABLE OF RUNOFF FACTORS - FRO

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R M	Classification		Year	-	frequen	ency		Year	1	frequency	ncy		Year	.	frequenc	ency		Yea	r	eau	quenc	- >
DRA		Cius s.	_	2	0	25	50	_	5	0	25	50	_	2	0	25	50		5	0	5.	50
IN DE	R4, R5, P, PB, CR, C, CM, M,	001	0.56		0.8610011	^	, C	, c			1	C								1	,	′ (
SIGN	Schools, Playgnds.))	•	· .		- - -		0 .), O.	<u>-</u> •	-	1.32	 	 	0.83	1.28 1.	 	1.74	46
DIV	R3 (Level)	1-02	0.50 0.77		0.89	1.04	1.16	0.59	0.90	1.04	1.2,3	1.37	0.68	1.04	1.20	1.42	1.58 0.	7.7	1.18	36	1.60	1.78
1510	RS,RI,RE9	70-2	0.48	0.48 0.75 0.87 1.0	0.87	10	1.15,0	0.56	0.88	1.02	1.2.1	1.350	0.65	1.02	8 :	1.40	1.56 0.	0.73	1.15	n	- 60	.76
ON -	(Hillside)	70-3	0.42	0.65	0.76 0.9	2	1.030	0.490	0.77	0.91	1.09		0.56	0.00	1.06	1.27	1.430			_	, K	62
- 19	R2,	1-09	0.46	0.46 0.73 0.85 1.0	3.85	0	= :	0.55 0	0.87	10.1	1.18		10		+	. ~) -+		- 0	2 10	72
73	RD3 to 6,	60-2	0.41	0.68 0.79 0.9).79 _c	<u>ي</u>	1.07	0.49 0	0.81	0.96	4 :-	1.28 0	0.580	0.96		ro.		ď) (:		0 9
J.	RWI, RW2	6.0-3	0.37	0.57 0.67 0.8).67 _C	. 2	0.93	0.42 0	0.680	0.82 0			0.49	0.81						5	J K) L
L.B	RI, RDI.5, RD2,	0	0.40	0.67	0.79 0.9	2	1.06 0	0.490	0.820			+	0	1	1.13	-	. 0	9	5	4=) k	2 6
	REII to 40	50-2	0	0.51	0.61 0.7	8	0.90	0.380	0.620	0.780	0.98	1.13	0.430	0.77				0.490	_	<u>-</u>	, a	. L
	(Hillside)	0	0.28	0.44	0.51 0	0.60	0.66	.33 0	0.51	59	0.700	0.80		58		2		\ \ \ \		-	8	9
	RS.RI.RF9	40-1	0.41 0.66	3.66	0.76 0.91		1.02 0	0.500	0.79	0.92	1.09	1.22 0	0.59 0	0.93	1.09	1.28 1.	1.43 0.	0.68	0.8	1 25 1 4		69
	(Level)	40-2	0.29		0.65 0.8	.80 0.	6.	0.35 0	0.680	0.81	0.98 1.	1.120	0.470	0.82	0.97		100	0.56 0.	96			52
—— F		40-3	0.24	0.37 0	0.430	0.55 0	0.64 0.	0.28 0	.44 0.	54	0,70	0.82	0.32 0.	0.54 0	0.68 0	0.86	1.00 0.	0.36 0			N	1.18
IGU	AI, AZ, RA,	35-1	0.34 0.60 0.72 0.8).60 C	.72 0.	7	0.98 0.	0.43 0.	0.74 0	0.88 1.	1.06 1.	0 61.1	0.54 0	0.89	1.05 1.2	9	1.41	0.63	1.04	121	K	62
	RElito40(Level),	5-2	0.20 0.33	33 0	0.47 0.6	9	0.79 0.2	3	0.49 0.	0.660	0.87	1.0.1	0.27 0.	0.660	0.85 1.	8					9	1.43
G	Undevel. Hillside	5.	0.19	0.30 0.35 0.4	.350	-	0.46 0.2	Q.	0.35 0.	0.40 0.4	7	0.57 0.	0.26 0.	0.400	0.460	0.60 0.	0.74 0.2	6	0.45 0.	0.54 0.	0.76 0.	0.92
24	Park(lawn only)		0.29	0.530	0.64 0.77		0.87 0.	0.37 0.	0.67 0.	0.79 0.	0.96 1.0	1.08 0.	0.47 0.	0.81	0.96	1.16	1.30 0.	0.57 0.	0.96	3 1.3	9	1.52
2.2	RPD	12	0.11 0.21 0.32	0 12.0	.32 0.	0.48 0.	0.60 0.	0.12 0.	0.34 0.	0.48 0.	0.67 0.	0.81 0.	0.14 0.	0.49 0.	0.66 0.	0.88 1.03	3 0.19		0.64 0.83	3 1.08	8 1.2	2
) (•	12-3	0.10 0.16	.160	0.18 0.2	2	0.24 0.	0.11 0.	0.18 0.	0.21 0.	0.25 0.	0.30 0.	0.13 0.	0.21 0	0.240.	0.32 0.	0.43 0.15		0.24 0.3	0.29	0.440	92.0
										1	1	1	1	-	1	-	+			•	;	3

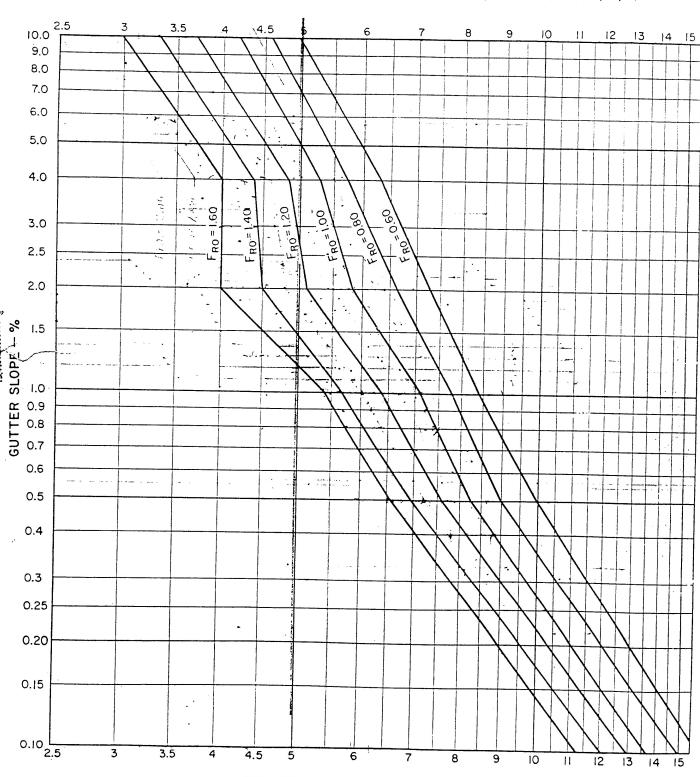
Soil Classifications — Figure G241.2 Isohyetal Map — Figure G241.1A

*Refer to Figure 6241.3 prior to application F_{RO} Valves - Figure G242.2 F to K



INITIAL OR INLET TIME CHART

FOR SOIL TYPE AND CLASSIFICATION 100; 70-1, 2, 3; 60-1, 2, 3

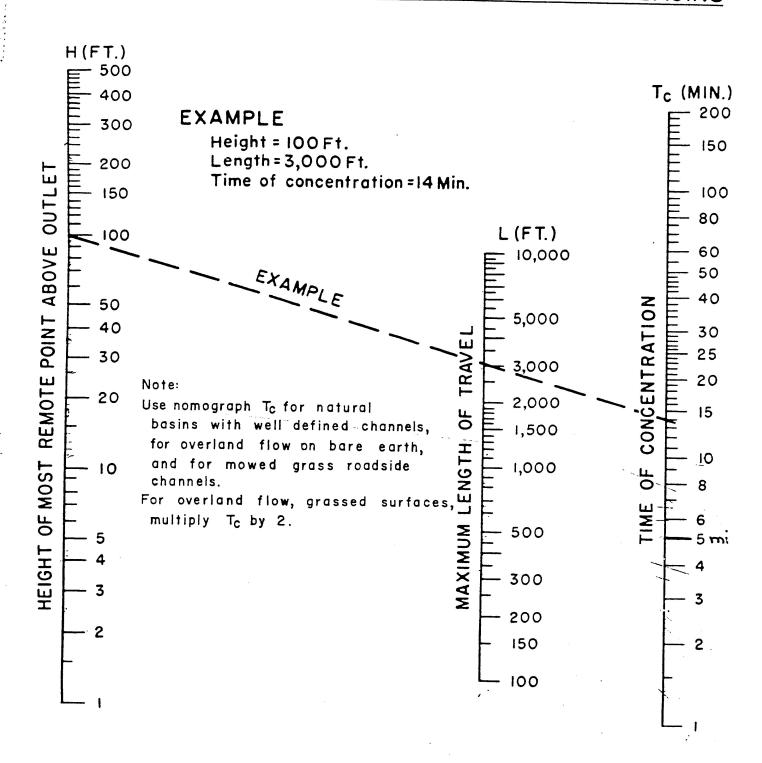




TIME OF CONCENTRATION - MINUTES FOR GUTTER LENGTH = 700'

Figure G 242.2A

TIME OF CONCENTRATION FOR SMALL DRAINAGE BASINS



Based on study by P.Z. Kirpich, Civil Engineering, Vol. 10, No. 6, June 1940, p. 332

Rev. 1973

Figure G 261

APPENDIX G

Summary of Hydrological Sub-Areas and Acreages

Conversion Table
Pre-Development - Line "A"
and Tabling Sheets

SUMMARY OF HYDROLOGICAL SUB-AREAS ACREAGES CONVERSION TABLE PRE-DEVELOPMENT

LINE "A"

EXIST. 36" R.C.P. UNDER MULHOLLAND DRIVE AT SPEILBERG DRIVE

Area No.	Dev	ACRES	ΣΑ	F CLASS F 100%	Ae	ISO.	ΣAe @
1-A	35-1	4.8	4.80	0.754	2.00	100	Point
	100	1.29	6.09		3.62	1.33	3.62
*2-A	70-1	2.41	8.50	1.000	1.29	1.33	7.06
3-A	35-1	9.40	17.90	0.892	2.15	1.5	
4-A	70-1	2.7		0.754	7.09	1.33	14.15
5-A	70-1	6.0	20.60	0.892	2.41	1.33	16.56
6-A	100		26.60	0.892	5.35	1.33	21.91
7-A		0.5	27.10	1.000	0.50	1.33	22.41
/-A	100	1.8	28.90	1.000	1.80	1.33	24.21
*2-A		OM STARK	VILLA				
1A	100	0.93	0.93	1.000	0.93	1.33	0.00
2A	70-1	0.80	1.73	0.892	0.71	1.33	0.93
3A	70-1	0.10	1.83	0.892	0.09	1.33	1.64
4A	70-1	0.66	2.49	0.892	0.59		1.73
4B	70-1	0.85	3.34	0.892	0.76	1.33	2.32
6A	100	0.12	3.46			1.33	3.08
7A	100	0.12		1.000	0.12	1.33	3.20
	100	0.24	3.70	1.000	0.24	1.33	3.44
						i	
				i			

Classifications

100, 50 yr., Fro = 1.30, 70-1, 50 yr Fro = 1.16, 35-1, 50 yr.Fro = 0.98,

Area Conversion Factors

1.30/1.30 = 1.00, 1.16/1.30 = 0.892,0.98/1.30 = 0.754,

	SUX	- ISE	£			Engineering		-	,,	Friction	_	שליהור	¥ ~	۲-		Location —	
	Drainage	Map Runori		Surface F	Flow			Andr	F BPRR	Stope	961/2 Size	Area	eng (f1.)	<u>5</u> 8	orgin	FOR 120	. vemorxs
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Appendix H

Summary of Hydrological Sub-Areas and Acreages

Conversion Table
Pre-Development - Line "B"
Existing Caltrans Storm Drain System
In Calabasas and
Tabling Sheets

SUMMARY OF HYDROLOGICAL SUB-AREAS ACREAGES CONVERSION TABLE FOR POST DEVELOPMENT

LINE "B" - EXIST CALTRANS 39" R.C.P.

Area No.	Dev	ACRES	ΣΑ	F CLASS F 100%	Ae	ISO.	ΣAe @ Point
1-B	100	1.7	1.7	1.00	1.7	1.33	1.7
2-B	70-1	11.4	13.1	0.892	10.17	1.33	11.87
3-B	100	3.6	16.7	1.00	3.6	1.33	3.60
4-B	100	2.3	19.0	1.00	2.3	1.33	5.90
(6-A)/2	70-1	3.0	22.0	0.892	2.68	1.33	8.58
5-B	100	0.4	22.4	1.00	0.4	1.33	20.85
6-B	35-1	0.5	22.9	0.754	0.38	1.33	21.23
7-B	100	2.1	25.0	1.00	2.1	1.33	23.33

EXISTING CALTRANS STORM DRAIN SYSTEM IN CALABASAS ROAD

Area	Dev	ACRES	ΣΑ	F CLASS	A -		Σ A e @
No.		AOREO	2A	F 100%	Ae	ISO.	Point
1-C	100	0.7	0.7	1.00	0.7	1.33	0.7

Classifications

100, 50 yr., Fro = 130,

70-1, 50 yr., Fro = 1.16

35-1, 50 yr., Fro = 0.98,

Area Conversion Factors

1.30/1.30 = 1.00

1.16/1.30 = 0.892

.098/1.30 = 0.754

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Appendix I

Summary of Hydrological Sub-Areas and Acreages

Conversion Table
Post-Development - Line "A"
and Tabling Sheets

SUMMARY OF HYDROLOGICAL SUB-AREA ACREAGES CONVERSION TABLE POST DEVELOPMENT

LINE "A"

EXIST. 36" R.C.P. UNDER MULHOLLAND DRIVE AT SPEILBERG DRIVE

Area No.	Dev	ACRES	ΣΑ	F CLASS	Ae	ISO.	ΣAe @
1-A	70-1	2.2	2.0	F 100%			Point
1-A ₁	70-1	1.1	2.2	0.892	1.96	1.33	1.96
1-1-1			3.3	0.892	0.98	1.33	2.94
2-A	70-1	5.0	8.3	0.892	4.46	1.33	8.53
	35-1	1.5	9.8	0.754	1.13	1.00	0.55
3-A	70-1	1.5	11.3	0.892	1.34	1.33	9.87
3-A ₁	70-1	1.1	12.4	0.892	0.98	1.33	10.85
4-A	100	1.4	13.8	1.00	1.4	1.33	12.25
X-A	100	1.29	15.09	1.00	1.29		
	70-1	2.41	17.5	0.892	2.15	1.33	15.69
5-A	70-1	2.7	20.2	0.892	2.41	1.33	18.10
(6-A)/2	70-1	3.0	28.2	0.892	2.68	1.33	20.78
7-A	100	0.9	24.1	1.00	0.9	1.33	21.68
8-A	100	1.8	25.9	1.00	1.8	1.33	23.48
				:			
X-A	DRAIN FR	OM STARK	(VILLA	:		i	
1A	100	0.93	0.93	1.00	0.93	1.33	0.93
2A	70-1	0.80	1.73	0.892	0.71	1.33	1.64
3A	70-1	0.10	1.83	0.892	0.09	1.33	1.73
4A	70-1	0.66	2.49	0.892	0.59	1.33	2.32
4B	70-1	0.85	3.34	0.892	0.76	1.33	3.08
6A	100	0.12	3.46	1.00	0.12	1.33	3.20
7A	100	0.24	3.70	1.00	0.24	1.33	3.44
		!					0 . 11

Classifications

100, 50 yr., Fro = 1.30 70-1, 50 yr Fro = 1.16 35-1, 50 yr.Fro = 0.98,

Area Conversion Factors

1.30/1.30 = 1.00 1.16/1.30 = 0.892, 0.98/1.30 = 0.754

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7					***************************************				**************************************)		ING C)) - No A spiritual record and a spiritual record						* , •	Æ	Flow	000
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9	=		# tu		_		2) =	2	R V U		=						general na kora				1.33	1	o P	Par 196
ō							***************************************	,) }		CIONIN	3							***************************************					RFR	•	-
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12	Ŋ		11						<i>-</i>		=		ı) P Z		_	=				£.				= ~	RFR	1	Frequency
13 14	1 2,62		243		2.94		3.07		3.40		3,40				2.43	-		-	72		2,		4 2.1		303		F. BPRR	
	Ò		1	==	0	-	1		0.0		1		5			-	2.44.0	-	7 , 6	-13-40	62.0		1	-		1	T. T. House, September 1	00
5	76				19/1				20		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			<u> </u>			0030	_	037		0176				0176	<u> </u>	Slope	1 601
6					7 6				63					2			(825)		1166		(825)				27		12/5/2	
17	12 D 35				S. O.				04				7 ()	Ø0 > 1			= '		記 (2) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4		Erst 36				あ 法		Size	DKIE
18	,				1,90	014			1.25				')			830		8.30		(8.30) 4.98				180	(F. 72)	Area	EXICA
61					9.1				9,4								6.2		β 'υ'		14,0				7,7	(ft/sec)	<u>*</u>	LTRANS
20					29				725] [1		72		823		326		}		1080		ngth (fl.)	DRAIN
2	9/1	-	10,81	0.	<u> </u>		6.3	- -	50	2000	5,0		-	<u></u>	(O)	0		7.1	9.11	0,4			<u>0</u> 0	2.3	6.5	X.E	፞ ጿ.፳	ZCA
22) इनेवर २०		134फ, क		13431.00		13+02.00								0 410,00		0482,00		7+10.00		10435/99		10:35,99			Station	Storm Drain	DRIE EXICALTRANS DRAIN IN CALABASAS XOAD
	w.			-	Sa	MDLHOLLAND	3911	=	Split	Mulh	日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日	35.25			게	=	. 1	=		AVE :	Area	MULH	i	PVT,	Sector It			10 XO:
23	t:		Traction will		3. A	1	R.C.P.	4	Speilloug Pr.	Mulhollond 1	OFF RAMPEELB On Rama	ASAS K			Dry Conver	1	la Hal	-	10	7.18	lateral from 7-A	MULHOLLAND	At 39"RSIP	PVT, STORM DRAIN	,,	DRIVE WAY	Location	
			2 0::			DK			}	÷	DE END	185			10h			=	7.	SIU	Som.	Da.	次 Sus	Z			ጸ	Polic: 4-
	F02-9, 1	*	74 3.02 74 3.02		tc=6.0(700)。 tc=10.7	54.5,-	(Seo L		Area Area Area Area Area		Sn		1				ישיפותו		tue h		900 LI				Per fig. 6742.272 tc=5.6 (255)72 tc=6.5	L=935'	20	0-00
24	11.8718	71-31-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	1/2 of 6-4	ŀ	(700) (5+.5,=,0098. [=2222	C. 46		5-A. SPIT D. Ac=1.34,		ic ú	1	UIII,				1 From	•	Ventura From		11ac 2				TOWN TO THE PARTY OF THE PARTY	5' St.S=0129	Remarks	Rev. 10-20-00
	اند	(a.3)(n.8)	Live Live			2222, 21	8		34, I8	117) 	<i>}</i> 15	<u>~</u>	M			17		150		e				,	0/29	и	20-00

Appendix J

Summary of Hydrological Sub-Areas and Acreages

Conversion Table
Post-Development - Line "B"
and Tabling Sheets

APPENDIX K

Line "A"
Existing 36" R.C.P. Under
Mulholland Drive at
Speilberg Drive Pre-Development
and
"W.S.P.G.W." Hydraulic Printouts

Tl	EXISTING 36" R.C.P. UNDE	R MILHOLLAND DETTE	
T2	AT SPEILBERG DRIVE-PRE-D	EVELOPMENT	0
T3	LINE "A" -W.O. 2778	D V D D O I PI D IV I	
SO	742.000 921.250 1		
R	1028.000 929.390 1	926.100	
JX	1032.000 929.420 1 2	012	.000 .000 0
R	1072.000 929.500 1	.013 7.100 930.140 .013	-90.0 .000
JX	1074.000 929.600 1 2	010 26 600	.000 -90.000 1
R	1222.000 930.750 1	.013 16.600 931.200 .013	74.3 .000
SH	1222.000 930.750 1		.000 .000 0
CD	1 4 1 .000 3.000	930.750	
CD	2 4 1 .000 1.500	.000 .000	
CD	2.500	.000 .000 .000	
Q	56.600 .0	.000 .000 .000	

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FILE: 2778EX.WSW

W S P G W - CIVILDESIGN Version 12.4
For: Pace Engineering, Inc., Chatsworth, California - S/N 747
WATER SURFACE PROFILE LISTING
EXISTING 36" R.C.P. UNDER MULHOLLAND DRIVE
AT SPEILBERG DRIVE-PRE-DEVELOPMENT

Date: 4-19-2000 Time: 2:16:47

****	****	*****	LINE "A" -W.O	-W.O. 277	78									
Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	vel Vel Head	******** Energy Grd.El.	super Elev	critical	**************************************	******** Height/ Dia -FT	Base Wt	* * *	******* No Wth
L/Elem ******	Ch Slope	* * * * * *	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	! * * * *	SF Ave	HF ****	- SE Dpth ******	Froude N	<u> </u>	- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	д.		Frs/Pip Type Ch
742.000	921.250	4.850	0 926.100	80.30	11.36	2.00	928.10	00.	2.77	00.	3.000	****	* 00 * .	* C * * * *
62.242	.0285	_			1	.0145	06.	4.85	- 00.	- 1.87			200.	
804.242	923.022	3.981	927.002	80.30	11.36	2.00	929.01	- 00.	2.77	00.	3.000	000.	00.	1 .0
HYDRAULIC JUMP	JUMP	-			<u>-</u>	1	1	1	1	1	1	· ·		
804.242	923.022	1.919	924.941	80.30	16.81	4.39	929.33	- 00	2.77	, c	- 000	_ 0		,
69.870	.0285	-		1	1		1.80	- 1 92	1-020		000.5	000.	00.	0
874.112	925.010	1.958	926.969	80.30	16.43	4.19	931.16	00.	2.77	•	. 013	00.	00.	PIPE
61.544	.0285		-		-		1.46	1.96	1-1	- 187	- 210		00.	٠ .
935.656	926.762	2.043	928.805	80.30	15.66	3.81	932.61	00.	2.77	- CB. C	- 000	00.	00.	PIPE.
34.520	.0285	-	1		· ·	- - -	- 6	1		-	000.5	- -	00.	1 .0
970.176	927.744	2.133	929.878	90.30	14 94	1120.	•	2.04	2.04	1.87	.013	00.	00.	PIPE
22.451		1	-	-	•	- - -	933.34	00.	2.77	2.72	3.000	000.	00.	1.0
992.628	182 826	1,500		-		.0188	. 42	2.13	1.87	1.87	.013	00.	- 00.	PIPE
15 412		. -	930.615	80.30	14.24	3.15	933.76	00.	2.77	2.62	3.000	000.	00.	1 .0
	- 0283					.0169	.26	2.23	1.71	1.87	.013	- 00.	00.	- PIPE
1008.040	928.822	2.339	931.161	80.30	13.58	2.86	934.02	- 00.	2.77	2.49	3.000	000.	- 00.	1 .0
10.573	.0285			-	-	.0152	.16	2.34	1.55	1.87	-	- 00.	- - 00.	- PIPE
1018.613	929.123	2.460	931.583	80.30	12.95	2.60	934.18	00.	2.77	2.31	3.000	000.	- 00·	1.0
6.704	.0285		-	-	_	.0139	60.	2.46	1.39	1.87	.013	- -	- -00.	PIPE

FILE: 2778EX.WSW
For: Pace Engineering, Inc., Chatsworth, California - S/N 747
WATER SURFACE PROFILE LISTING
EXISTING 36" R.C.P. UNDER MULHOLLAND DRIVE
AT SPEILBERG DRIVE-PRE-DEVELOPMENT
LINE "A" -W.O. 2778

2

PAGE

Date: 4-19-2000 Time: 2:16:47

********	Prs/Pip Type Ch	* * * * * *	1 .0	PIPE	1 . 0		P1 PE	1 .0	- PIPE			т т п	1.0	- I PE	1.0	
* * * *	ZL ZR -	* * * * *	00	00.	- 00		- 00.	00.	00.	- 00		~ — 00.	00.	00.	- 00.	_
* * * * Bas	or 1.D. - X-Fall	* (000.	00.	000.	- 00		000.	00.	000.	- - 00		000.	- 00.	000.	1
******* Height/		* 0	000.5	.013	3.000			3.000	.013	3.000			3.000	.013	3.000	·
**************************************	N Norm Dp	* 20	1	1.87	1.59	ı	6	00	3.00	00.	1		00	2.36	00.	1
********* Critical Denth	Froude	2.77	1	1.22	2.77	1.00	0,2,0	- 07.3	00.	2.70	- 00.	- 64		00.	2.44	1
******* Super Elev	SE Dpth	00.		2.60	00.	2.77	- 00		3.63	00.	4.61	- 00	-	5.68	00.	-
Energy Grd.El.	######################################	934.28	ı	.03	934.31	. 05	934.71	1	.48	935.77	.02	936.28		1.07	937.34	
Vel Head	SF Ave	2.37	- 0	.0129	2.15	.0123	1.67	1	.0120	1.67	9600.	1.00	-	.0072	1.00	-
Vel (FPS)	* * * * * * * * * * * * * * * * * * * *	12.34	,		11.77	-	10.36	· ·		10.36	_	8.01	' ,		8.01	-
Q (CFS)	****	80.30	1		80.30		73.20	1		73.20		56.60	•	**	56.60	-
Water Elev	****	931.912	1		932.163	_	933.047	,		934.107		935.280	1	***************************************	936.346	•
Depth (FT)		2.599	-		2.773	_	3.627	1		4.607	- <u>-</u>	5.680	1		5.596 - -	
Invert Elev	L/Elem Ch Slope	929.314	.0285		96	.0075	929.420	. 00050	- 0	- -	.0500	929.600	- -		930.750	
Station	L/Elem	1025.317	2.683	000 9001		JUNCT STR	1032.000	40.000	1000 5501		JUNCT STR	1074.000	148.000	- 000	- -	

APPENDIX L

Line "A"
Existing 36" R.C.P. Under
Mulholland Drive at
Speilberg Drive Post-Development
and
"W.S.P.G.W." Hydraulic Printouts

T1 T2 T3	EXISTING 36" R.C.P UNDER SPEILBERG DRIVE- REMODEL 90 DEG. ANGLE POINT-POST	HIDSTDEAM END TO TELE	IINATE		0
SO	742.000 921.250 1	======================================	926.100		
R	1028.000 929.390 1	.013	220.100		
JX	1032.000 929.420 1 2	.013 5.900		.000	.000 0
R	1057.000 929.620 1	.013	930.140	90.0	.000
JX	1059.000 929.640 1 2	.013 10.900		31.831	.000 1
R	1103.000 929.830 1	.013	931.500	30.0	2.546
R	1209.000 930.750 1	.013		56.023	.000 0
SH	1209.000 930.750 1	.013		.000	.000 0
CD	1 4 1 .000 3.000	000	930.750		
CD	2 4 1 .000 1.500	.000.000	0 .00		
CD	7 4 7	.000 .000	0 .00		
Q	000 1.500	.000 .000 .000	0 .00		
	63.500 .0				

PIPE

0.

000 00.

3.000

2.49 1.87

2.77

00.

934.02

2.86

80.30

931.161

2.339

928.822

1008.040

.0285

2.34

. 16

2.60 0152

12.95

80.30

931.583

2.460

929.123

1018.613 10.573

.0285

6.704

.013

1.71

2.23

PIPE

00. 00.

> 00. 000

PIPE

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0

00. 00.

3.000

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1.39

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Ξ.
E

WATER SURFACE PROFILE LISTING SPEILBERG DRIVE- REMODEL UPSTREAM END TO ELIMINATE EXISTING 36" R.C.P UNDER MULHOLLAND DRIVE AT

Time: 2:21:11

Date: 4-19-2000

PAGE

Prs/Pip 0. 0. No wth 0. 0. PIPE PIPE PIPE PIPE 00. 00. 00. 00. 00. 00. 00. ZL00. 00. 00 00. 00. Super |Critical|Flow Top|Height/|Base Wt| 00. 000. or I.D. X-Fall 000 ı 00. 000. 000 00. 00. 000 1 00. 000 Dia.-FT 3.000 3.000 3.000 3.000 3.000 .013 .013 .013 SE Dpth|Froude N|Norm Dp Width 00. 00. 2.88 1.87 1.87 2.86 2.80 1.87 1.87 2.72 1.87 2.62 00. Depth 2.30 2.21 2.77 2.77 2.77 2.04 1.87 2.77 2.77 2.77 4.85 Elev 1.92 00. 1.962.04 00. 00. 2.13 00. 00. 00. 00. 90 DEG. ANGLE POINT-POST DEVELOPMENT. W.O.2778 Energy | Grd.El. .90 1.80 929.01 929.33 931.16 1.46. 73 932.61 933.76 ΗF 2.00 Head SF Ave 4.39 2.00 0145 .0258 4.19 3.46 3.81 0188 3.15 0169 Vel 0211 11.36 15.66 16.81 16.43 (FPS) Vel 14.94 14.24 80.30 80.30 80.30 80.30 80.30 80.30 80.30 (CFS) ****** 926.100 927.002 924.941 926.969 928.805 929.878 930.615 Elev ***** 4.850 3.981 1.919 1.958 2.043 2.133 2.232 (FT)****** 921.250 923.022 923.022 Slope 925.010 .0285 926.762 927.744 .0285 928.383 Invert .0285 .0285 .0285 .0285 Elev JUMP ***** 742.000 62.242 804.242 HIDRAULIC 804.242 Station 69.870 874.112 970.176 935.656 61.544 34.520 992.628 L/Elem 22.451 15.413

FILE: 2778EXA.WSW

- CIVILDESIGN Version 12.4 P G W ഗ

For: Pace Engineering, Inc., Chatsworth, California - S/N 747 WATER SURFACE PROFILE LISTING

Date: 4-19-2000 Time: 2:21:11				
SPETTERED DRIVE AT	ON THE STATE OF TH	**************************************	0//2)	Depth Water Depth Water

* * * * * * *	No Wth Prs/Pip	Trans.	*****	9.	PIPE	0.	- PIPE	0.	- 0 1 0 0	C.	Ĺi.	o.		9.	ក	0.	
* :		É	-					-	_	_	- PIPE	-	- PIPE		- PIPE		_
* * *	2L	1 23	*	00.	. 00	00.	.00	00.		00.	00.	.00	00.	00.	00.	00.	
* * * * * * * * * * * * * * * * * * *	or I.	 X-Fall	* * * * * *	000.	00.	000.	00.	000.	. - 00.	000.	-1	000.		000.	- 00.	000.	_
********	DiaFT	- "N"	* * * * * *	3.000	.013	3.000	.013	3.000	.013	3.000	.013	3.000	- - .013	3.000	.013	3.000	-
**************************************	Width	Norm Dp	***	2.04	1.87	1.59		00.	3.00	- 00.		- 00.	3.00	00.	2.52	00.	-
******** Critical	Depth	Froude	* * * * * * * * * * * * * * * * * * * *	2.77	1.22	2.77	1.00	2.71	00.	2.71	00.	2.56		2.56	00.	2.56	
Super	Elev -	SE Dpth	K K K	00.	2.60	.00	2.92	00.	00.	00.	00.	00.	00.	00.	5.00	00.	
Energy	Gra.El.	HF ****		934.28	.03	934.31	. 05	934.66	.31	935.26	.02	935.49	.40	936.09	96.	937.05	
Vel	- near	SF Ave		2.37	.0129	2.15	.0125	1.72	.0124	1.72	.0108	1.25	.0091	1.25	.0091	1.25	
Vel (FPS)	,	* * * * * *		- 12.34				10.53		10.53		8.98		8.98		8.98	
Q (CFS)	,	****	0	05.00	- 00			74.40		74.40		63.50	- 0	- -		63.50	
Water Elev	1	* * * * * * *	931.912		932.163		- 200	- - - -		933.538		934.238	1 2 4 8 4 8 9 4		- 100		
Depth (FT)	1	* * * * * *	2.599	1	2.773	1	3 516		-	3.918	- 00	966.1	5.004		7 045	-	
Elev	ch Slope	* * * * * * *	929.314	.0285	929.390	-	929.420	1- 0800.	1009 606	-1- 0100	929.640		929.830	- -	930.750	1	
Station	L/Elem	* * * * * * * * *	1025.317	2.683	1028.000	JUNICT STR	1032.000	25.000	1057.000	JUNCT STR	1059.000	44.000	1103.000	106.000	1209.000	()	

APPENDIX M

Line "B"
Existing 39" R.C.P.
Caltrans Drain Pre-Development
and
"W.S.P.G.W." Hydraulic Printouts

T1	EXISTING CALT	RANS DRAIN IN	AVE SAN L	מאג פווו		
T2	MOLHOLLAND DR	IVE S/O 101 FR	WY DED E	Y C D DIAMO		0
T3	W.O. 2778-PRE	-DEVLOPMENT CO	NDITIONS -	LINE "B"-2778PRE		
SO	40.000 906.000	1			. WSW	
R	82.220 906.150	1 .013		910.683		
JX	82.220 906.160	1 2 .013	3.300	006 700	.000	.000 0
R	325.000 907.000	1 .013	3.300	906.790	90.0	.000
R	412.880 907.270	1 .013			.000	.000 1
R	550.000 907.700	1 .013			.000	.000 0
R	710.000 909.000	1 .013			15.465	.000 0
JX	710.000 909.010	1 2 .013	1.300		-18.046	.000 1
R	748.880 909.680	1 .013	1.300	909.640	55.5	.000
R	933.880 912.940	1 .013			.000	.000 0
R	1022.500 914.500	1 .013			.000	.000 0
R	1035.990 914.750	1 .013			-56.417	.000 0
JХ	1035.990 914.760	1 2 .013	40.300		.000	.000 0
R	1050.990 915.000	1 .013	40.300	915.380	65.0	.000
JX	1050.990 915.010	1 2 .013	.001		.000	.000 1
R	1137.870 915.760	1 .013	.001	. 915.730	70.0	.000
R	1184.990 916.180	1 .013			.000	.000 0
R	1201.730 916.330	1 .013			29.998	.000 0
R	1248.850 916.740	1 .013			.000	.000 0
R	1266.910 916.900	1 .013			29.998	.000 0
R	1335.410 919.920	1 .013			.000	.000 1
JX	1335.410 919.930	1 2 2.013	9.350	0.050.050	.000	.000 0
SH	1335.410 919.930	1	3.350	9.350 920.560	920.560 47.0-6	5.0 .000
CD	1 4 1 .000		000 .000	919.930		
CD	2 4 1 .000			.000 .00		
CD	3 4 1 .000			.000 .00		
Q		.0	000 .000	.000 .00		
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FILE:

PAGE 1	Time: 1:38:21	
	Date:10-20-2000 Time: 1:38:21	
For: Pace Engineering, Inc., Charsworth California, 200	WATER SURFACE PROFILE LISTING CALTRANS DRAIN IN AVE SAN LUIS AND	MULHULLAND DRIVE S/O 101 FRWY. PER EX S D DIAME
BPRE.WSW		

Prs/Pip PIPE PIPE PIPE PIPE PIPE 00. 00. 00. 00. 00. Super |Critical|Flow Top|Height/|Base Wt| Dia.-FT or I.D. .000 000 000 00. 000. 00. 000 000 00. 000 00. 000 000 00. 3.250 3.250 3.250 .013 .013 3.250 .013 .013 .013 ****** SE Dpth Froude N Norm Dp 00. Width 00. 00. 3.25 00. 3.25 HOLLAND DRIVE S/O 101 FRWY. PER EX. S.D. PLANS W.O. 2778-PRE-DEVLOPMENT CONDITIONS-LINE "B"-2778PRE.WSW 00. 00. Depth 00. 00. 00. 2.48 2.48 2.48 2.48 2.48 2.45 4.68 4.96 00. 5.45 00. 00. 4.78 00. 00. 00. 00. 5.69 Energy Grd.El. .25 911.60 00. 1.29 .47 911.85 913.74 .73 .85 00. 913.27 911.94 914.54 915.54 .91 SF Ave Head .0059 .91 .82 0056 0053 .82 .82 0053 .0053 .82 . 79 0053 .82 0052 0051 7.27 - |-7.67 Vel (FPS) 7.27 7.27 7.11 7.27 7.27 ****** 63.60 63.60 60.30 60.30 60.30 60.30 60.30 59.00 Q (CFS) 59.00 ***** 910.683 911.118 910.933 912.454 912.923 913.722 914.690 914.759 914.957 4.958 4.783 5.454 5.653 5.690 6.022 5.749 5.277 (FT) 906.000 906.150 906.160 Ch Slope 907.000 907.270 .0036 .0035 .0031 907.700 909.000 909.010 909.680 .0031 .0081 .0000 .0172 Elev .0000 40.000 82.220 82.220 Station 42.220 JUNCT STR 325.000 242.780 412.880 87.880 137.120 550.000 L/Elem 710.000 160.000 JUNCT STR 710.000 38.880 748.880 158.608

FILE: 2778PRE.WSW

For: Pace Engineering, Inc., Chatsworth, California - S/N 747

WATER SURFACE PROFILE LISTING

EXISTING CALTRANS DRAIN IN AVE SAN LUIS AND

MULHOLLAND DRIVE S/O 101 FRWY. PER EX. S.D. PLANS

W.O. 2778-PRE-DEVLOPMENT CONDITIONS-LINE "B"-2778PRE.WSW

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****** No Wth	Type Ch	0.		c		°.	Ĕ	0.	ស្ន	0.		o. 1		C.		c 1	•	0.	ω
* 0 K	<u> </u>			_		-	- PIPE		- PIPE	_ r	- PTPE				- - PTDE	-	PIPE		- PIPE
* .	ZR .	00.	,	C	2	00.	.00	00.	00.	00.	00.	00.	00.	00		00	00.	00.	- 00.
******* Base Wt) X *		-	000	- 0	000.	- 00.	000.	- - -	000.	1-00.	000.	- 00.	000.	- 00	000.	- 00.	000.	- 00.
******* Height/ DiaFT	* * * * * * * * * * * * * * * * * * *	3.250	1	3.250		3.250	- - - -	3.250		3.250		3.250		3.250		3.250		3.250	. 013
Flow Top	Norm Dp	00.	1	3.24	1.70	3.23	1.70	3.22	1.70	3.19		3.16	- 1.70	3.12	1.67	3.08	1.67	3.01	1.67
Critical Depth	Froude N	2.45	1	2.45	1.89	2.45	1.84	2.45	1.73	2.45	1.60	2.45	1.49	2.45	1.37	2.45	1.30	2.45	1.20
******* Super Elev	SE Dpth	00.	<u> </u>	- 00.		.18	1.97	.16	2.01	. 15	2.07	.13	2.14	00.	- -	_ 00·	2.15	00.	2.24
******* Energy Grd.El.	- HF ******	916.55	1	916.79	.40	917.19	- 49	917.67	.33	918.00	.18	918.18	- 11.	918.29	- 04	918.34	- 40.	918.38	. 02
vel Head	SF Ave	97.	-	2.54	.0151	2.45	.0140	2.27	.0125	2.06	- - 1110.	1.87	- -	1.70	-1-	1.60	- - .0081	1.45	.0072
vel Vel (FPS)	· * * * * * * * * * * * * * * * * * * *	7.11		12.80	1	12.56	-	12.09	_	11.52	1	10.99	1	10.48	<u>.</u>	10.14	<u>, </u>	9.67	<u>.</u>
Q (CFS)	****	59.00		59.00		59.00		59.00		59.00	-	59.00	1	59.00	- -	59.00	<u> </u>	59.00	
Water	* * * * * * * * * * * * * * * * * * * *	915.766		914.243	<u> </u>	914.734		915.404	-	915.936	_	916.308		916.588		916.737	<u> </u> _	916.922	_
Depth (FT)	* * * * * * * * * * * * * * * * * * *	3.291		1.768	-	1.794	-	1.852	-	1.926		2.005		2.088	_	2.147		2.241	-
Invert	Ch Slope	912.475	JUMP	912.475	.0176	912.940	.0176	913.553	.0176	914.010	.0176	914.304	.0176	914.500	.0185	914.590	.0185	914.682	.0185
Station	L/Elem *******	907.488	HYDRAULIC JUMP	907.488	26.392	933.880	34.822	968.702	25.969	994.672	16.671	1011.343	11.157	1022.500	4.844	1027.344	4.969	1032.313	2.780

- CIVILDESIGN Vers	atsworth, Ca
∑ U	Inc., Ch
A S M	Pace Engineering,
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FILE: 2778PRE.WSW

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- K	Depth	**************************************	**********	****** Vp]	******	****	*	****	****		****	* * * *	****
1	<u> </u>	Elev	(CFS)	(FPS)	Head -	Energy Grd.El.	Super	Critical Depth	Flow Top Width	Height/ DiaFT	Base Wt or I.D.	7Z	No Wth Prs/Pip
***	*	* * * * * * *	* * * * * * * *	* * * * *	SF Ave	HF ******	SE Dpth	Froude N	Norm Dp	1 * * X = *	X-Fall *****	ZR *	Type Ch
914.733 2.341 91		917.075	59.00	9.22	1.32	918.40	00.	2.45	2.92	3.250	000.	00.	1.0
_		-		_	.0064	.00.	2.34	1.10	1.67	.013	- 00.	_ 	PIPE
914.750 2.451 91		917.201	59.00	8.79	1.20	918.40	00.	2.45	2.80	3.250	000.	00.	1.0
_		-		_	.0033	00.	2.45	1.00		.013	00.	- 00.	PIPE
914.760 3.562 918.	918	3.322	18.70	2.25	80.	918.40	00.	1.35	00.	3.250	000.	- 00.	٥.
_				•	.0005	.00.	3.56	00.	. 93	- .013 .013	00.	 00.	- PIPE PIPE
915.010 3.324 918 - -	918	918.334	18.70	2.25	80.	918.41	00.	1.35	- 00.	3.250	000.	- 00.	0. 1
_				-	.0005	00.	3.32	- 00.	1.09	.013	00.	- 00:	- PIPE
915.088 3.250 918	918	918.338	18.70	2.25	80.	918.42	- 00.	1.35	00.	3.250	000.	00.	1 .0
_				-	,0000.	.02	3.25	00.	1.09	.013	. 00.	- 00.	- PIPE
2.949 918	918	918.347	18.70	2.36	- 60.	918.43		1.35	1.89	3.250	000.	_ 00.	1.0
			·	-	,0000.	.01	2.95	.20	1.09	.013		00.	- PIPE
2.774 918	918	918.347	18.70	2.48	.10	918.44		1.35	2.30	3.250	000.	- 00.	1.0
_				-	.0005	.01	2.77	.24	1.09	.013		00.	- PIPE
2.629 918	916	918.346 - -	18.70	2.60	111.	918.45	- - 00.	1.35	2.55	3.250	- 000.	- 00.	1 .0
					. 0005	00.	2.63	.27	1.09	.013		. 00.	- PIPE

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FILE: 2778PRE.WSW

	3 SAN LUIS AND Date: 10-20-2000 Time: 1:38:21	NY. PER EX. S.D. PLANS	**************************************
WATER SURFACE PROFILE LISTING	EXISTING CALTRANS DRAIN IN AVE SAN LUIS AND	W.O. 2778-DBF-DEVI COMMENT CONSTRUCTION PLANS	**************************************

	***	*****	**********	*******	******	*****	7474 + + + + + + + + + + + + + + + + + +	/ / 7 O	BPKE.WSW					
Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super	******* Critical Denth	********* Flow Top	Heig	* W	*	****** No Wth
L/Elem	Ch Slope	1	1	1	1	1		-	י	Midth -	D1aFT	or I.D.	$Z\Gamma$	Prs/Pip
* * * * * *		****	* * * * * * * * *	****	****	SF Ave	HF *******	SE Dpth	Froude N	Norm Dp	: N: *	X-Fall	ZR	Type Ch
1137.870	915.760	2.585	918.345	18.70	2.64	11.	918.45	10	ם כ ר	(k k k k k	* * *	* * * * * *
13.297	6800.	1	<u>.</u>	1	'	- 000	-		- CC - T	- - -	3.250	000.	00.	1.0
1151.167	915.879	2 464	- 676			9000.	.01	2.59	.28	1.08	.013	00.	00.	PIPE
11.886			- 718.342	18.70	2.77	.12	918.46	.01	1.35	2.78	3.250	000.	_ 00·	1.0
1163 053						9000.	.01	2.47	.31	1.08	.013	· 00.	_ 	- PIPE
	<u>-</u>	2.353	918.338	18.70	2.91	.13	918.47	.01	1.35	2.91	3.250	000.	- 00.	1.0
	6800.		-		-	,0000.	.01	2.36	.34	1.08	.013			1010
11/3.817	916.080	2.252	918.332	18.70	3.05	.14	918.48	. 01	1.35	3.00	3.250	000.	000	
7.10.6	6800.	_	-		-	8000.	.01	2.26	- 85	80 L	· · · · · · · · · · · · · · · · · · ·	' ;		•
1183.634	916.168	2.158	918.326	18.70	3.20	16	918 48			-	- 013	00.	~ _	PIPE
1.356	6800.	- 1	;	'	-	-		- -	1.35	3.07	3.250	000	. 00.	1 .0
1184.990	916.180	7 145		1		6000.	00.	2.17	.41	1.08	.013	00.	00.	- PIPE
8.809			- -	- -	3.22	.16	918.49	- 00.	1.35	3.08	3.250	000.	- 00.	1.0
1193.799	916.259	- 630	- 1			6000.	.01	2.15	.41	1.08	.013	00.	- 00·	- PIPE
7.931	- - 0600		- -	18.70	3.38	.18	918.49	- 00.	1.35	3.13	3.250	000.	- 00.	1.0
1201.730	025 319	- 6	_	-		.0010	. 01	2.06	.45	1.08	.013	- 00.	- 00·	- PIPE
6.679	- -	- -	918.308	18.70	3.54	.19	918.50	.01	1.35	3.17	3.250	000.	- 00:	1.0
1200 4001						.0012	.01	1.99	.48	1.09	- -	- 00.	00·	- Ed T G
	- -	1.901	918.289	18.70	3.71	.21	918.50	. 02	1.35	3.20	3.250	1 000.		
HIDKAULIC JUMP	JUMP	1	-	=	-	1	-	1	-	-	-	-	?	· ·

FILE: 2778PRE.WSW

For: Pace Engineering, Inc., Chatsworth, California - S/N 747

WATER SURFACE PROFILE LISTING

WATER SURFA

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	No wen Prs/Pip	Type Ch	* * * * * *	1 .0	- PIPE	1 .0	- PIPE	0.	- PIPE	0.	- PIPE	0.	- PIPE	0.	- PIPE	0.	- PIPE	0.	3 c	0.	E E
* * * *	ZL F	ZR T	* * * *	. 00.	- - 00.	 00:	- 00.	- °°	- [4 00.	- 00.	- [4 00.	- 00.	- .00	.00	- .00	.000	- .00	.000	- - 00 PIPE	.00	- 0 PIPE
* * - +3			* * *	000.	- 00.	- 000	<u>-</u> 00:	. 000.	- - 00:		- -	_	- -		<u>.</u> .		1		<u> </u>		- -
* 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0	or	X-Fall	* * * *		<u>.</u>	°.		0.		.000	,	.000	0.	.000	00.	.000	.00.	000.	00.	.000	00.
*******	DiaFT		* * * * * *	3.250	.013	3.250	.013	3.250	.013	3.250	.013	3.250	 .013	3.250	.013	3.250	.013	3.250	.013	3.250	.013
Flow Top	Width .	Norm Dp	k k k	2.93	1.09	2.91	1.09	2.88	1- 60.1	2.85	1.09	2.82	1.09	2.82	1.09	2.79	1.09	2.75	.72	2.77	.72
********Critical	Depth	Froude N		1.35	2.08	1.35	2.17	1.35	2.32	1.35	2.47	1.35	2.64	1.35	2.66	1.35	2.84	1.35	3.04	1.35	2.92
******* Super	Elev	SE Dpth		60.	1.02	. 10	1.00	.11.	86.	.12	96.	- 00.	.82	- 00.	.81	- 00.	.79	00.	.76	00.	.78
Energy	Grd.El.	HF *******	918 75	7-	.15	918.89	.22	919.12	.23	919.35	. 24	919.59	.03	919.61	.26	919.87	.27	920.14	.41	920.55	. 43
Ve1	nead .	SF Ave	1.44	-	.0171	1.52	.0191	1.68	.0218	1.84	.0250	2.03	.0269	2.05	.0290	2.25	.0332	2.48	.0341	2.35	.0307
Vel (FDC)		****	9.62	1		9.90		10.39		10.89		11.43		11.49		12.05		12.64		12.29	
Q (CFS)	1	*****	18.70	•		18.70		18.70		18.70		18.70 - -		18.70	_	18.70		18.70 - -	-	- -	
Water Elev	1	* * * * * * * *	917.313	1		- 717.368		917.440	- 6	- -		- -		- -		- -	-	- -	- 200	- -	
Depth (FT)	1	* * * * * * *	. 925	1	- 400		- 1	6/8.	- 846			970.	2	- -	788		152		1	-	
Invert Elev	ch Slope	****	916.388	.0087	916.463	_	916 565		916.656		916 740	-1-	916.749		916.827		916.900	- -	917.430	- -	
Station		* * * * * * *	1208.409	8.611	1217.020	11.715	1228.735	10.522	1239.257	9.593	1248.850	1.019	1249.869	8.836	1258.705	8.205	1266.910	12.026	1278.936	13.920	

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For: Pace Engineering, Inc., Chatsworth, California - S/N 747
WATER SURFACE PROFILE LISTING
MULHOLLAND DRIVE S/O 101 FRWY. PER EX. S.D. PLANS

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778	Vel Energy Super Critical Flow Top Height Base Wt Head Grd.El. Elev Death Wist.	HF OF DATE EVEN ALL MIGEN DIA - FT C	*****	11.72 2.13 920.98 .00 1.35 2.80 3.250 .000 .00 1 .0	.0268 .26 .80 2.74 .72 .013	000.	- -			2.90 3.250 3.20 SIPE			- - -	.0157 .06 .92 2.10 .72 .013 .00 .00 PIPE	9.24 1.32 921.65 .00 1.35 2.96 3.250 .000 .00 1 .0	- - -		- -	0210.	8.40 1.09 921.72 .00 1.35 3.02 3.250 .000 .00 1 .0 - -	.0105 .02 1.02 1.72 .72 -1	8.01 1.00 921.74 .00 1.35 3.04 3.250 .000 .00 1 .0	
78PRE.WSW	Critical Denth	- Peptil	*****	1.35	<u>.</u> .	1.35	2.56	1.35	- 2.40	1.35		7.75	1.35	2.10	1.35	1.97	1 35	-	1.84	1.35	1.72	1.35	
	* () *	1	-	00.	. 80	00.	. 83	00.	- 86	- 00.	- 0	. —	00.	. 92	00.	.95	- 00.	-	66.	00.	1.02	00.	
TIONS-LIN	Energy Grd.El.	· 日田	*****	920.98	.26	921.24	.17	921.41		921.52	- 80	2	921.60	90.	921.65	.04	921.69	- 5	. 03	921.72 - -	.02	921.74	(
	Vel Head	- SF Ave	****	2.13	.0268	1.94	.0235	1.76	.0205	1.60	- -	,	1.46	.0157	1.32	.0138	1.20	00.50	- 0750.	1.09	.0105	1.00	_
DEVLOPME ******	Vel (FPS)	ī	*	11.72	-	11.17	_	10.65	<u>.</u>	. 1	-	d			9.24	-	8.81	-	9			8.01	-
2778-PRE-	Q (CFS)	1	* * * * * * *	18.70		18.70		18.70		18.70	1	_ 07 8L		•	18.70	-	18.70	1	07 81			18.70	-
.O.W ********	Water Elev	1	* * * * * * * * * * * * * * * * * * * *	918.847		919.299	-	919.644		919.918	<u>-</u> -	920.142	-		920.330		920.490	1	920.628	-		920.747	
*****	Depth (FT)	1 1	k k k k	. 803 	-	. 831		859.		889.		.920	1		. 952		. 985		1.020	1	-	1.056	
*	Invert Elev	Ch Slope		918.044	.0441	918.469	.0441	4.	.0441	919.029	.0441	919.222		- 6	- -	T # # O .	919.505	.0441	919.608	- -		- -	.0441
*****	Station	L/Elem	730 666	1- 0.26.24		1302.491	951./	1309.647	5.542	1315.189	4.397	1319.586	3.537	1323 123	2.875		1325.999	2.339	1328.338	- - 1.897	1330 235		1.526

W S P G W - CIVILDESIGN Version 12.4
For: Pace Engineering, Inc., Chatsworth, California - S/N 747
WATER SURFACE PROFILE LISTING
EXISTING CALTRANS DRAIN IN AVE SAN LUIS AND
MULHOLLAND DRIVE S/O 101 FRWY. PER EX. S.D. PLANS

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****	******	*****	1-8772 . O. W.		DEVLOPME	ENT CONDI	DITIONS-LINE	. PLANS 3 "B"-277	BPRE.WSW					
Station	Invert Elev	Depth (FT)	Water Elev	(CFS)	v****** Vel (FPS)	******* Vel Head	**************************************	Super	*********Critical	* [14		**************************************	* * * *	******* No Wth
L/Elem	Ch Slope	1	1	1	- -	ı		2	nadan -	width -	DiaFT	or I.D.	$Z\Gamma$	Prs/Pip
* * * * * * *		****	* * * * * * * * *	****	*****	SF Ave	HF *******	SE Dpth	Froude N			X-Fall	ZR	Type Ch
1331.760	919.759	1.093		18.70	7.63	- 06.	921.76		ı.		k k k k	* * * * * *	* * * *	* * * * * *
1.207	.0441	1 t	-	•	1		 			3.07	3.250	000.	00.	1 .0
1332.967	919,812					.0081	.01	1.09	1.51	.72	.013	00.	00.	- PIPE
- - 832			- 920.944	18.70	7.28	. 82	921.77	00.	1.35	3.10	3.250	000.	00.	1.0
1333.899	- 619 919					.007	.01	1.13	1.41	.72	.013	00.	- 00.	- PIPE
		-	921.025	18.70	6.94	.75	921.77	00.	1.35	3.12	3.250	000.	_ 00·	1.0
				_	-	,0062	- 00.	1.17	1.32	- 27.		- - -	- 00	- 91070
1334.585	919.884	1.214	921.098	18.70	6.62	- 89 .	921.78	00.	1.35	3.14	3.250	_	2	
.468	.0441		_	1	:	00	-	<u>'</u>	-		-			0.
1335.053	919.904	1.258	621 169			_		17:1	1.23	.72	.013	00.	00.	PIPE
- 1-			_	- -	6.31	. 62	921.78	00.	1.35	3.17	3.250	000.	- 00.	1.0
1335 322	7.00.00	-	_			.0048	00.	1.26	1.15	.72	.013		- 00	- PIPE
-1-	- - -	1.303	921.219 - -	18.70	6.01	.56	921.78	- 00.	1.35	3.19	3.250	000.	- 00.	1.0
017 3551				_	-	.0042	00.	1.30	1.07	.]-	- -	- -	- 00	- PIPE
JUNCT STR	- -	1.352	921.272	18.70	5.73	.51	921.78		1.35	3.20	3.250	000.		1 .0
				WARNING	1	Junction Ana	Analysis - La	1.35 1. Large Lateral	1.00 ral Flow(s)	· - (s)	.013	- 00.	- 00.	- PIPE
1335.410	919.930	- -	919.939	- 00.	.45	- 00.	919.94	- 00.	.01	.35	3.250	000.	- 00.	.0
						•	_	_	<u>-</u>	1	1	i		

APPENDIX N

Line "B"
Existing 39" R.C.P.
Caltrans Drain in
Mulholland Drive and
Avenue San Luis
Per Storm Drain Plans Post-Development
and
"W.S.P.G.W." Hydraulic Printouts

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FILE: 2778.WSW
For: Pace Engineering, Inc., Chatsworth, California - S/N 747
WATER SURFACE PROFILE LISTING
EXISTING CALTRANS DRAIN IN AVE SAN LUIS AND
MULHOLLAND DRIVE S/O 101 FRWY. PER EX. S.D. PLANS
W.O. 2778-POST-DEVLOPMENT CONDITIONS-LINE "B"-2778.WSW

Date:10-18-2000 Time: 1:11:21

PAGE

****** No Wth Drs/Din	Type Ch	0.	- FIPE	0) 1 1 1	0.	- PIPE	0.	PIPE	0	- PTPE	0	- 4010	1	•	PIPE		PIPE	0.	- PIPE
** ***	١ .	 00.		_	_	_	- 00 ·	— °°	- [4 00.	_	- 00.		_	_	-	. 00.	-	OO PI	00 1	- 00
**************************************	1 *	000.	-	- 000·	-1	000.		000.		- 000.	- -				<u>.</u>			00:	. 000.	
.******* Height/ DiaFT	* * *	3.250		3.250		3.250	-	3.250	- - -013	3.250	- - - - .013	3.250	- -	3.250		1 250) 	.013	3.250	.013
********* Flow Top Width	- Norm Dp ******	00.	- 3.25	00·		00.	3.25	00.	3.25	00.	3.25	00.	2.54	- 00	-	00	-	1.90	00.	1.88
critical Depth	I <u>⊑</u> . ∗	2.72	00.	2.72	. 00.	2.67	00.	2.67	- 00.	2.67	- 00.	2.67	- - -	2.67	- 0	2.65	- ;	00.	2.65	00.
Super	SE Dpth	·	4.68	00.	4.87	- 00.	5.06	00.	6.07	00.	00.	00.	- 00.	- 00.		- 00.	· ·	7.23	00.	6.84
Energy Grd.El.	- HF *******	911.92	.34	912.26	00.	912.36	1.79	914.21	. 65	914.85	1.01	915.96	1.18	917.30	- 00	917.33	1 00	87.	917.61	1.32
Vel Head	SF Ave	1.24	0800.	1.24	1	1.13	.0074	1.13	.0074	1.13	.0074	1.13	. 0074	1.13	- -	1.10	- -	1,00.	1.10	.0071
Vel (FPS)	- * * * * * * * * * * * * * * * * * * *	8.92	1	8.92	1	8.55	-	8.55		8.55	<u>. </u>	8.55	1	8.55	.	8.40	!		8.40	_
Q (CFS)	***	74.00	<u> </u>	74.00	 1	70.90	-	70.90		70.90	_	70.90		70.90	-	69.70	<u>.</u>		69.70	-
Water Elev	* * * * * * * * * * * * * * * * * * *	910.683	_	911.022	 !	911.225	-	913.072	-	913.720		914.825	_	916.163	•	916.238	.		916.515	
Depth (FT)	***	4.683		4.872		5.065	_	6.072		6.450		7.125	_	7.163		7.228	<u> </u>		6.835	
Invert Elev	Ch Slope *******	906.000	.0036	906.150	0000.	906.160	.0035	907.000	.0031	907.270	.0031	907.706	.0081	000.606	0000.	909.010	.0172	_ 000	- -	.0176
Station	L/Elem ******	40.000	42.220	82.220	JUNCT STR	82.220	242.780	325.000	87.880	412.880	137.120	550.000	160.000	710.000	JUNCT STR	710.000	38.880	748 880		185.000

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Existing Invest both Matery Experiments Park National Park			FC	For: Pace Engineerir	ğ,	Inc., Cl	Chatsworth,	hatsworth, California	n 12.4 nia - S/N	N 747				PA	PAGE 2
Pickett Papph Water CFS (FPS) Head Grd EL Flow Critical Flow Top Head Grd EL Flow Grd El	***	+ + + + *		EXISTING MULHOLL:		MAIEK VAIN IN ? 3/0 101 F DEVLOPME	SURFACE NVE SAN I RWY. PER	PROFILE L LUIS AND REX. S.D.	ISTING PLANS	:		Date:10-	18-2000		1:11:21
Charles Charle	Station	Invert	Depth (FT)	water Water Elev		.***** Vel		Energy	*	o.wsw ***********************************		********	**************************************	* * *	****
912.940 912.94	./Elem	Ch Slope	1	1	- (613)	(FPS) -	Head -	Grd.El.		Depth		DiaFT	μi		No wth Prs/Pip
914.750 915.940 917.941 917.940 918.940 917.940 918.940 917.940 918.940 917.940 918.94	***		****		*	****	SF Ave	*	SE Dpth	Froude N		Z	X-Fall	ZR	Type Ch
14.500	933.880		4.894			8.40	1.10	918.93	00.	2.65		* 0	* (* (* (* (* (* (* (* (* (* (* (* (* (*	* *	* * * * *
914.750 4.139 918.639 69.70 8.40 1.10 919.73 1.00 2.65 1.00 3.250 1.00	88.620				1	1	1.000.	. 63	- -	,	-	-)- -	00.	0
10.0185 1.	022.500		4.139		7	8.40	1.10	57, 919	_		1.68	.013	00.	00.	PIPE
914.756 3.985 918.735 69.70 8.40 1.10 919.83 .00 2.65 .013 .00 .00 PIPE .0000 .0	13.490	_	1	<u> </u>	1	1	-	,	? 		00.	3.250	000.	00.	1 .0
1.0000	035.990	_			_		.0071	.10	4.14	00.	1.85	.013	00.	00.	PIPE
914.766 4.958 919.718	CT STR		-		69.70 - - -	8.40	1.10	919.83	00.	2.65	00.	3.250	000.	- 00.	1.0
- 0160	75 990					•	.0042	00.	3.98	00.	1	.013	- 00.	- 00.	- PIDE
00000 00000 00000 00000 00000 00000 0000	י ה היים ה		4.958	919.718	m	3.53	.19	919.91	- 00.	1.71	- 00.	3.250	- 000		
915.010	CT STR	.0000		-	-	-	.0013	- 0.	4.96	- - -	- 81. 1		· ;		
	50.990	915.010	756 4	-			.0013	00.	4.75	000.	2	.013	000.	00.	PIPE PIPE
915.760 4.096 919.856 29.30 3.53 .19 920.05 .00 1.71 .00 3.250 .000 .00 1.8	- 86.880	- - 9800.	05/:# -	- - - -	29.30	3.53	.19	919.94	- 00	1.71	00.	3.250	000.	_ 00·	1.0
- - - - - - - - - -	37.870	915 750					.0013	.11.	4.74	00.	1.39	-	0.		PIPE
916.180 3.758 919.938 29.30 3.53 .19 920.13 .00 1.71 .00 3.250 .000 .00 PIPE 0090	47.120	-1- 6800				. 2	.19			1.71	- 00.	3.250	000.	_	٥.
	94.990	081 319					.0013			- 00.	1.38	- -	- -	_	PE
916.330 3.629 919.959 29.30 3.53 .19 920.15 .00 1.71 .00 3.250 .000 .00 1.00 .00 .00 .00 .00 .00 .00			3.758			3.53	19.	920.13	00.	1.71	00.	3.250	000.	_	1 1
	1 730	- 600				-	.0013	.02	٠.	00.	1.38	- -	-1-	_	
- - -			3.629		29.30	3.53	19.	920.15	00.	1.71	00.	3.250	1000.	_	
	071.	/800.			-	-	.0013	- 90.	- -			-	- 0	_	

FILE: 2778.WSW

W S P G W - CIVILDESIGN Version 12.4

For: Pace Engineering, Inc., Chatsworth, California - S/N 747
WATER SURFACE PROFILE LISTING
EXISTING CALTRANS DRAIN IN AVE SAN LUIS AND
MULHOLLAND DRIVE S/O 101 FRWY. PER EX. S.D. PLANS
W.O. 2778-POST-DEVLOPMENT CONDITIONS-LINE "B"-2778.WSW

Date:10-18-2000 Time: 1:11:21

***	*************	*****	*******	*****	******	*******	TTONS-LINE	3 "B"-277	8.WSW					
Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super	Critical Depth	Flow Top Width	******* Height/ Dia_FT	Base Wt	* * *	******* No Wth
L/Elem ******	Ch Slope *******	* * * * * * *	****	****	* * * * * * * * * * * * * * * * * * *	SF Ave	- HF ******	SE Dpth	Froude N	Norm Dp		1 [4]	ZR	Type Ch
1248.850	916.740	3.300	920.040	29.30	3.53	.19	920.23	 00.	1.71	00.	3.250		* C	* (* * * * * *
7.133	6800.	_		-	ī ī	.0012	- 10.	3.30	- 00	- 86		-	20.	0.
1255.983	916.803	3.250	920.053	29.30	3.53	19.	920.25	00.	1.71	00.	3.250	00.	0 0	PIPE
10.927	6800.		-			.0012	- - - -	3.25	- 00.	- 1.38		00.	200	
1266.910	916.900	3.162	920.062	29.30	3.56	.20	920.26	00.	1.71	1.05	3.250	000.	00.	1 .0
- 625.0	. 0439				-	.0011	.01	3.16	.22	. 90.	.013	<u>-</u> 00.	_ 	- PIPE
	- - -	2.918	920.048	29.30	3.73	.22	920.26	- 00.	1.71	1.97	3.250	000.	- 00.	1.0
# 60 P	. 0439				-	.0012	- 00.	2.92	.33	06.		00.	- 00.	- PIPE
14/5.583		2.750	920.031	29.30	3.91	.24	920.27	- 00.	1.71	2.35	3.250	000.	- 00·	1 .0
706.7	. 0439			-	-	.0012	00.	2.75	.39	. 06.	.013	- -00.	- 00.	- PIPE
- - HYDRAULIC	917.385 - - JUMP	2.628	920.013	29.30	4.08	.26	920.27	- 00.	1.71	2.56	3.250	000.	- 00.	1 .0
1277.946	917.385	1.062	918.448	1 05 90	,	- 6		-	_				-	
6.911		-	-	2	- -	2.40	920.85	00.	1.71	3.05	3.250	000.	- 00.	1.0
1284 856	- 000 110	-				.0223	.15	1.06	2.49	- 06.	.013			- PIPE
- -	- -	1.096	918.784	29.30	11.92	2.21	920.99	- 00.	1.71	3.07	3.250	000.	- 00.	1 .0
1291 514	7550.		_			7610.	.13	1.10	2.35	- 06.	- -	- 00.	- 00.	PIPE
- -	- -	1.135	919.116 - -	29.30	11.36	2.00	921.12	.00.	1.71	3.10	3.250	000.	- 00.	1.0
						.0173	60.	1.13	2.19	.90	-1-	- 00.	-) 00.	- PIPE

FILE: 2778.WSW

W S P G W - CIVILDESIGN Version 12.4
For: Pace Engineering, Inc., Chatsworth, California - S/N 747
WATER SURFACE PROFILE LISTING
EXISTING CALTRANS DRAIN IN AVE SAN LUIS AND
MULHOLLAND DRIVE S/O 101 FRWY. PER EX. S.D. PLANS

Date:10-18-2000 Time: 1:11:21

W.O. 2778-DOT-DEVLOPMENT CONDITIONS-LINE "B"-2778.WSW **********************************

* * * Ith	4. Ch	0.		0.		0.		0.		0		0		0.		c		c	
******* No Wth	Type		- PTPE	-	- PIPE		- PIPE	_ ~	- PIPE		- PIPE	-	- PIPE	-	- PIPE		 gard	1 .	- PIPE
* * * * * * * * * * * * * * * * * * * *	- * * ZR .	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00		2 6	00.
******* Base Wt	1 [i, *	000.	- 00.	000.	- 00.	000.	00.	000.	1	000.	- 00.	- 000.	- 00.	000.	- 00.	1000.	- 0	- 000	-1-00.
******* Height/ DiaFT	· 2 *	3.250		3.250		3.250	1	3.250		3.250		3.250		3.250		3.250		3.250	
Flow Top	- Norm Dp ******	3.12	. 90	3.15	. 90	3.17	. 90.	3.19	1	2.86		2.87	- 27.	2.90		2.93		2.96	
Critical Depth	Froude N	1.71	2.05	1.71	1.92	1.71	1.79	1.71	1.67	1.35	2.45	1.35	2.40	1.35	2.25	1.35	- 2.10	1.35	1.97
Super Elev	- SE Dpth ******	- 00.	1.18	- 00	1.22	00.	1.26	00.	1.31	00.	85	- 00 .	- 86	- 00.	- 68.	- 00.		- 00.	
Energy Grd.El.	- HF ******	921.21	90.	921.28	- 0.	921.32	.03	921.36	00.	921.36	- 50.	921.40	-11.	921.52	80.	921.60	90.	921.65	- 04
Vel Head	SF Ave	1.82	.0151	1.66	- 0133	1.51	.0116	1.37	0169 .0169	1.82	.0224	1.76	.020.	1.60	- -	1.46	- - - - .0157	1.32	.0138
Vel (FPS)	* * * *	10.83	1	10.33	1	9.85	_	9.39	1	10.82	1	10.65	1	10.16	1	9.69	<u>.</u> 1	9.24	,
Q (CFS)	* * * * * *	29.30		29.30	 I	29.30		29.30		18.70	 1	18.70		18.70		18.70	1	18.70	1
Water Elev	* * * * * * * * * * * * * * * * * * *	919.390		919.620	_	919.817		919.987	- -	919.540	<u> </u>	919.642	<u> </u>	919.916		920.141		920.330	1
Depth (FT)	* * * * *	1.175		1.217	-	1.261		1.307		.850	_	. 859		688.		. 920	<u>-</u> -	952	<u>.</u>
Invert	Ch Slope ******	918.215	.0439	918.403	.0439	918.556	. 0439	918.680	0000.	918.690	.0439	918.782	.0439	919.027	.0439	919.221	.0439	919.378	. 0439
Station	L/Elem *******	1296.823	4.287	1301.109	3.478	1304.587	2.823	1307.410	JUNCT STR	1307.410	2.094	1309.504	5.579	1315.083	4.424	1319.508	3.557	1323.065	2.891

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Date:10-18-2000 Time: 1:11:21

FILE: 2778.WSW
FOI: Pace Engineering, Inc., Chatsworth, California - S/N 747
WATER SURFACE PROFILE LISTING
EXISTING CALTRANS DRAIN IN AVE SAN LUIS AND
MULHOLLAND DRIVE S/O 101 FRWY. PER EX. S.D. PLANS
W.O. 2778-POST-DEVLOPMENT CONDITIONS-LINE "B"-2778.WSW

****** No Wth Prs/Pip	oe Ch	0.	ĕ	٥.	ă	0.	ñ	0.	ម៉	0.	Ē	0.	M	0.	ы	0.	ш	0.	ы
* NO Pre	- Type ****		- PIPE		PIPE	_ ~	- PIPE	_ H	- PIPE		- PIPE	— .	PIPE		- PIPE		- PIPE	_ - -	- PIPE
* * * * * *	- * * * * *	00.	-	00.	00.	00.	00.	00.	00.	00.	. 00	00.	.00	00.	. 00	00.	.00	00.	00.
Base Wt or I.D.	- X-Fall *****	000.	00.	000.	00.	000.	00.	000.	00.	000.	00.	000.	00.	000.	00.	000.	00.	000.	00.
******** Height/ DiaFT	*******	3.250		3.250	- - - 013	3.250		3.250		3.250		3.250	- 	3.250	.013	3.250	.013	3.250	.013
******* Flow Top Width		2.99	. 72	3.02	.72	3.04	. 72	3.07	. 72	3.10	. 72	3.12	. 72	3.14	. 27.	3.17	. 27.	3.19	- 27.
********* Critical Depth	Froude N	1.35	1.84	1.35	1.72	1.35	- 1.61	1.35	1.51	1.35	1.41	1.35	1.32	1.35	1.23	1.35	1.15	1.35	1.07
******** Super Elev	SE Dpth	00.	- 66.	- 00.	1.02	00.	1.06	_ 00.	1.09	- 00.	1.13	- 00.	1.17	00.	1.21	00.	1.26	- 00.	1.30
******* Energy Grd.El.	HF *****	921.69	. 03	921.72	. 02	921.74	.01	921.76	.01	921.77	.01	921.77	- 00.	921.78	00.	921.78	00.	921.78	00.
****** Vel Head	SF Ave ****	1.20	.0120	1.09	.0105	1.00	.0092	06.	.0081	. 82	.0071	.75	.0062	- 69.	.0055	. 62	.0048	.56	.0042
Vel (FPS)	* * * * * * * * * * * * * * * * * * * *	8.81	1	8.40	1	8.01	1	7.63	1	7.28	 !	6.94	<u>-</u> !	6.62	; ;	6.31		6.01	<u> </u>
A******** Q (CFS)	* * * * * * * * * * * * * * * * * * *	18.70	 1	18.70		18.70		18.70	<u> </u>	18.70		18.70	-	18.70		18.70	_	18.70	
Water Elev	* * * * * * * * * * * * * * * * * * *	920.490		920.628		920.747		920.852	<u> </u>	920.944	_	921.025		921.098	_	921.162		921.219	_
Depth (FT)	* * * * * * * * * * * * * * * * * * * *	. 985		1.020		1.056	_	1.093	_	1.132		1.172	_	1.214		1.258		1.303	_
Station Elev (FT) Elev (CFS)	Ch Slope	919.505	.0439	919.608	.0439	919.692	.0439	919.759	.0439	919.812	.0439	919.853	.0439	919.884	.0439	919.904	.0439	919.916	.0439
Station	L/Elem	1325.955	2.351	1328.307	1.906	1330.212	1.533	1331.745	1.212	1332.957	.936	1333.893	689.	1334.581	.470	1335.051	.270	1335.321	680.

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For: Pace Engineering, Inc., Chatsworth, California - S/N 747 PAGE 6	Tim *	18-2000 ******** Base Wt Or I.D. - X-Fall ******	Date:10- ******* Height/ DiaFT - "N" *******	Flow Top Width	VILDESIGN Version 12.4 tsworth, California - S/N 747 URFACE PROFILE LISTING E SAN LUIS AND WY. PER EX. S.D. PLANS ***********************************	nia - S/ ISTING PLANS E "B"-27 ******** Super Elev SE Dpth *******	W S P G W - CIVILDESIGN Version 12.4 ering, Inc., Chatsworth, California - 8 WATER SURFACE PROFILE LISTING RANS DRAIN IN AVE SAN LUIS AND DRIVE S/O 101 FRWY. PER EX. S.D. PLANS 3-POST-DEVLOPMENT CONDITIONS-LINE "B"-2 O Vel Vel Berery Super CFS) (FPS) Head Grd.El. Elev	CIVILDES: hatsworth SURFACE AVE SAN I FRWY. PEI FRWY. PEI Head	S P G W - C ng, Inc., Ch WATER S DRAIN IN A VE S/O 101 F ********** Vel (FPS)	EXISTING CALTRANS DRAIN IN AVE SAN LUIS AND WOTER SURFACE PROFILE LISTING WOLHOLLAND DRIVE S/O 101 FRWY. PER EX. S.D. PLANS W.O. 2778-POST-DEVLOPMENT CONDITIONS-LINE "B"-2778.WSW WATER O Vel Vel Bergy Super Critical Flow T Elev (CFS) (FPS) Head Grd.El. Elev Depth Width SF Ave Grd.El. Blev Depth Width ***********************************	For: Pace Engineering, Inc., Chatsworth, California - S/N 747 EXISTING CALTRANS DRAIN IN AVE SAN LUIS AND MULHOLLAND DRIVE S/O 101 FRWY. PER EX. S.D. PLANS W.O. 2778-POST-DEVLOPMENT CONDITIONS-LINE "B"-2778.WSV Septh Water O Vel Vel Energy Super Critis Flev CFS) (FPS) Head Grd.El. Elev Dept Frought ******* ********* ******* **********	Formula 1.352	For: Pace Engineering, Inc.: Chatsworth, California - S/N 747 EXISTING CALTERNS DRAIN IN AVE SAN LUIS AND MULDES IN STAN IN STREAM CONDITIONS-LINE "B"-2778.WSW **********************************	**************************************
_								_	-	(950 919 900		1333.410 919.930	1777.410
		: : :				,								1225 410
OO PIPE			1 i i i i i i i i i i i i i i i i i i i	(S)	ceral Flow	Large Lat	alysis - 1	ction An	ING - Jur	WAKN.	-			
- OC BITE	1	- 00	.013	_	1.00	1.35			T. F.	MADNI	1	1 1 1		•
0. 1 .0	· '		002.0	1		<u>-</u>	ı	1	<u> </u>	1	<u>-</u>	_	0000.	JUNCT STR
			3 250	3.20	1.35	- 00.	921.78	.51	5.73		921.272	1.352	919.920	1333.410
*****	* *	****	***	*	k k								- 0	01235
R Type Ch	[2	X-Fall	"N"	Norm Dp	Froude N	SE Dpth	HF	SF Ave	****	*****	****	****	*****	***
	2	or 1.D.	D14F1	י דמכוו	-	1	1	1	1	1	1	1	Ch Slope	L/Elem
No Wth		Base Wt	Height/	Flow Top	Critical	Super	Energy Grd.El.	Vel	(FPS)	(CFS)	Elev	(FT)	Elev -	Station
*****	* * *	******	*****	******	****	*******	***	*****	*******		Water	Depth	Invert	
					78.WSW	E "B"-27	TIONS-LIN	ENT COND	-DEVLOPM	TSO4-8777	· O · M	******	******	******
						PLANS	REX. S.D.	FRWY. PEF	S/0 101	AND DRIVE	MULHOLL			
le: 1:11:21	T.Tm	18-2000	Dare: 10-	-			JUIS AND	AVE SAN I	RAIN IN	CALTRANS D	EXISTING			
,	E	0000	Date.10	•		ISTING	PROFILE L	SURFACE	WATER		01110			
					N 747	nia - S/	n, Califor	hatswort	Inc., C	gineering,	r. race En	2		
						n 12.4	IGN Versic	CIVILDES	P G W	Ω 3 ·	,	G		

APPENDIX O

Line "B"
Existing 39" R.C.P.
Caltrans Drain in
Mulholland Drive and
Avenue San Luis
Per Survey - Post-Development
and
"W.S.P.G.W." Hydraulic Printouts

T1 T2 T3 S0	-"2778SUR-WSW	"-LINE "B"	AVE SAN L AIN ADJUS	UIS & MULHOLLANI TED PER SURVEY	0	
R	40.000 905.11 82.220 905.32			909.793		
JX	82.220 905.32				.000 .000 0	
R	325.000 906.57		3.100	905.330		
R	412.880 907.00				.000 .000 1	00
R	550.000 907.70				.000 .000 0	
R	710.000 909.000				15.465 .000 0	
JX	710.000 909.010				-18.046 .000 1	
R	748.880 909.690		1.200	909.630		
R	933.880 912.930				.000 .000 0	0
R	1022.500 914.490				.000 .000 0	
R	1035.990 914.730	0 1 .013			-56.417 .000 0	
JX	1035.990 914.740	0 1 2 .013	40 400		.000000	
R	1050.990 915.000	0 1 .013	40.400	915.380	65.0 .00	0
JX	1050.990 915.010) 1 2 013	001		.000 .000 1	•
R	1137.870 915.760) 1 013	.001	915.630	70.0 .00	0
R	1184.990 916.180) 1 013			.000 .000 0	
R	1201.730 916.330	1 .013			-29.998 .000 0	
R	1248.850 916.740	1 013			.000 .000 0	
R	1266.910 916.800	1 013			29.998 .000 0	
R	1307.410 917.350	1 013			.000 .000 1	
JX	1307.410 917.360	1 3 013	10.600		.000 .000 0	
R	1335.410 917.730	1 013	10.000	917.980	45.0 .000)
JX	1335.410 917.740	1 2 2 013	9.350	9 250 070 250	.000 .000 0	
SH	1335.410 917.740	1	3.330	9.350 918.360	918.360 47.0-65.0 .000)
CD	1 4 1 .000	3.250 .00	00 .000	917.740		
CD	2 4 1 .000	2.000 .00				
CD	3 4 1 .000	2.000 .00				
Q	.001	.0		.000 .00		

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FILE: 2778sur.WSW

W S P G W - CIVILDESIGN Version 12.4
For: Pace Engineering, Inc., Chatsworth, California - S/N 747
WATER SURFACE PROFILE LISTING
EXISTING CALTRANS DRAIN IN AVE SAN LUIS & MULHOLLAND
DRIVE S/O 101 FRWY. STORM DRAIN ADJUSTED PER SURVEY

Date:10-17-2000 Time: 8:21:37

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-"2778SUR-WSW"	
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*****	******	*		= +	LINE "B"									
Station	Invert		Water Elev	Q (CFS)	Vel (FPS)	vel Vel Head	******* Energy Grd.El.	Super	critical	******** Flow Top Width	******** Height/ DiaFT	Base Wt	*****	No wth
L/Elem ******	Ch Slope	* * * * * * * * * * * * * * * * * * *	1 * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	SF Ave	HF ***	SE Dpth	Froude N	Norm Dp	* * * * * * * * * *	X-Fall *****	ZR -	Type Ch
40.000	905.110	4.683	909.793	74.00	8.92	1.24	911.03	°	2.72	00.	3.250	000.	00.	1 .0
42.220	0500.				1	.0800.	.34	4.68	00.	3.25	- 	1	00.	- PIPE
82.220	905.320	4.812	910.132	74.00	8.92	1.24	911.37	00.	2.72	00.	3.250	000.	00.	1 .0
JUNCT STR	0000.				1	7700.	- 00.	4.81	- 00.			00.	00.	- PIPE
82.220	905.330	5.005	910.335	70.90	8.55	1.13	911.47	- · ·	2.67	00.	3.250	000.	00.	1 .0
242.780	.0051			_ -	1	.0074	1.79	5.00	- 00.	3.25		00.	00.	PIPE
325.000	906.570	5.612	912.182	70.90	8.55	1.13	913.32	- 00.	2.67	00.	3.250	000.	- 00:	1.0
87.880	.0049			_	- 1	. 0074	.65	5.61	- - -	3.25	.013	00.	_ 	- PIPE
412.880	907.000	5.830	912.830	70.90	8.55	1.13	913.96	00.	2.67	00.	3.250	000.	- 00.	0.
137.120	.0051		- -		1	.0074	1.01	00.	- 00.	3.25		- 00.	- 00.	- PIPE
550.000	907.700	6.235	913.935	70.90	8.55	1.13	915.07	00.	2.67	00.	3.250	- 000.	_ 	1.0
160.000	.0081	_	-		1	.0074	1.18	00.	00.	2.54		-00.	- 00.	- PIPE
710.000	909.000	6.273	915.273	70.90	8.55	1.13	916.41	- 00.	2.67	00.	3.250	000.	_ 	٥.
JUNCT STR	0000.		-	<u> </u>	1	.0072	- 00.	6.27	- 00.	1	 .013		- 00.	- PIPE
710.000	909.010	6.338	915.348	69.70	8.40	1.10	916.44	00.	2.65	00.	3.250	000.	- 00	1.0
38.880	.0175		-	- -	<u>, </u>	.0071	.28	6.34	- 00.	1.89	 .013	- • • •	- 00.	- PIPE
748.880	909.696	5.935	915.625	69.70	8.40	1.10	916.72	_ 00.	2.65	00.	3.250	000.	- 00.	1.0
185.000	.0175	_		<u>.</u>	<u>.</u>	.0071	1.32	5.94	- 00.	1.89	- -		- 00.	- PIPE

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Date:10-17-2000 Time: 8:21:37 FILE: 2778sur.WSW

For: Pace Engineering, Inc., Chatsworth, California - S/N 747

WATER SURFACE PROFILE LISTING

EXISTING CALTRANS DRAIN IN AVE SAN LUIS & MULHOLLAND
DRIVE S/O 101 FRWY. STORM DRAIN ADJUSTED PER SURVEY
-"2778SUR-WSW"-LINE "B"

.****** No Wth	Type Ch	C	. HQ10	o.	PIPE	٥.	PIPE	0.	Ē.	0.		i i	•	°.		0.	ю́
*	٠ .								- PTPE		- PIPE		- PIPE	_	- PIPE		- PIPE
* * *	- * * Z *			00.	 00.	00.	- 00.	00.	- 00	00.	00.	00.	00.	00.	. 00	00.	.00
****** Base Wt or I D	X X *	000.	- 00	000.	· 00·	000.	- 00.	_ 000.	- 00.	000.	- 00.	- 000.	- 00.	000.	- 00.	000.	00.
******** Height/ DiaFT	* * * * * * * * * * * * * * * * * * *	3.250		3.250		3.250	.013	3.250		3.250	013	3.250		3.250	.013	3.250	.013
******* Flow Top Width	- Norm Dp ******	00.	1.88	00.	1.88	00.	1.88	1.57	1	00.	1.15	- 00.	1.39	- 00.	1.39	.73	1.38
Critical Depth	Froude N	2.65	- - -	2.65	00.	2.65	00.	2.65		1.71	00.	1.71	- 00.	1.71		1.71	- -
Super Elev	SE Dpth	00.	00.	00.	3.26	- 00.	3.25	- 00.	3.05	00.	- 4.09 3.86	- 00.	3.85	- 00.	3.25	- 00.	3.21
Energy Grd.El.	- HF	918.04	. 63	918.84	.01	918.85	80.	918.93	- 00.	919.03	.00	919.06	.10	919.16	.01	919.16	.04
Vel Head	SF Ave	1.10	1700.	1.10	1700.	1.10	9900.	1.15	- - - 0037	.19	- - .0013 .0013	. 19	.0012	.19	.0012	19.	.0011
Vel (FPS)	! * * * *	8.40	1	8.40		8.40	_	8.62	-	3.53	·	3.53	<u>.</u> -	3.53	<u>. </u>	3.54	_
Q (CFS)	** ** ** ** **	69.70	1	069.70		69.70		69.70		29.30		29.30	<u> </u>	29.30	_	29.30	-
Water Elev	* * * * *	916.944		917.749		917.755	_	917.779		918.833		918.862	-	918.964		918.969	-
Depth (FT)	! ** ** **	4.014		3.259		3.250		3.049	_	4.093		3.852		3.250		3.209	
Invert Elev	Ch Slope	912.930	.0176	914.490	.0178	- 2	.0178	914.730	0000.	914.740	.0173	915.010	.0086	915.714	.0086	915.760	.0089
Station	L/Elem ******	933.880	88.620	1022.500	.818	1023.318	12.672	1035.990	JUNCT STR	1035.990	15.000 JUNCT STR	1050.990	81.584	1132.574	5.296	1137.870	32.173

FILE: 2778sur.WSW

For: Pace Engineering, Inc., Chatsworth, California - S/N 747

WATER SURFACE PROFILE LISTING
EXISTING CALTRANS DRAIN IN AVE SAN LUIS & MULHOLLAND
DRIVE S/O 101 FRWY. STORM DRAIN ADJUSTED PER SURVEY
-"2778SUR-WSW"-LINE "B"

Date:10-17-2000 Time: 8:21:37

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******* No Wth	Prs/Pip	Type ch		0.	ы	0.	_E 1	0.	۲۰	0			0.	F-3	0.		c	•		0.		0.	
* * NO	Prs	Type		ا _	PIPE		- PIPE		 prog	-	- -		٦ <u>-</u>	PIPE		- DIDE	: 	· _ ˈ	3414 	ч_	PIPE	٦_	- PIPE
* * *	ZI	ZR ****		00	00.	00.	. 00	00.	- 00	00.	,		00.	00.	00.	00.	00		00.	00.	00.	00.	00.
**** Base	or I.D.	X-Fall		000.	00.	000.] - 00 ·	000.	- 00.	000.	- 00	- 6		00.	000.	- - -	- 000	· ·		000.	00.	000.	
**** Heig	DiaFT	******		- - -	.013	3.250	.013	3.250		3.250	- 013	0 20 0		.013	3.250	.013	3.250		7	3.250	.013	3.250	.013
Flow Top	- אזמרוו	Norm Dp ******	10	10.1	1.38	2.23	1.38	2.51	- 1.38	2.52	- 1.39	1,7,0	-	1.39	2.85	1.39	2.95	- 06		3.04	1.39	3.04	1.84
********Critical	- modeon -	Froude N	1.71	-	.32	1.71	.37	1.71	.42	1.71	. 42	1.7.1	+	.47	1.71	.51	1.71	- 45	-	- -	.61	1.71	- -
******** Super Elev		SE Dpth		-	2.95	- 00.	2.81	00.	2.66	.01	2.67	- 03	' -	2.54	.02	2.43	. 02	2.33	60		2.23	- 00.	2.20
******** Energy Grd.El.		HF *******	919.20	,	70.	919.22	.02	919.24	00.	919.24	.02	919.26	1	.02	919.27	. 02	919.29	.02	15.919	-	00.	919.31	.04
Vel Head	1	******	.21			.23	.0012	.25	.0013	.25	.0013	.28		5100.	.31	.0016	.34	- -	137	-	.0020	.37	.0020
Vel (FPS)	1	****	3.71	-		3.85	•	4.03	-	4.04	-	4.24	÷		4.44	-	4.66	1	4.89	1		4.91	_
Q (CFS)	1	*****	29.30	ī		29.30	_	29.30		29.30		29.30	-	_	29.30		29.30	<u>-</u> .	29.30	-	_	29.30	-
Water Elev	ı	****	918.985	•		918.987	_	918.984	_	918.984		918.977	· ·		918.967 - -		918.954	-	918.938	-		918.936	-
Depth (FT)	1	* * * * * *	2.939	<u>.</u>	- :			2.658	-	2.654	-	2.525	<u> </u>	- 6	2.409		2.303		2.205	1		2.196	
Invert	Ch Slope	* * * * * * *	916.047	6800.	001 319		0600.	916.326	0600.	916.330	.0087	916.453	.0087	- 010	- -	/800.	916.651	, 7800.	916.732	- -		ע	.0033
Station		* * * * *	1170.043	14.947	1184.990		707:01	1201.281	448		14.086 	1215.816	12.173	1227 989	- -		1238.628	9.331	1247.959	- -	- 010		18.060

FILE: 2778sur.WSW

For: Pace Engineering, Inc., Chatsworth, California - S/N 747

WATER SURFACE PROFILE LISTING DRISTING CALTRANS DRAIN IN AVE SAN LUIS & MULHOLLAND DRIVE S/O 101 FRWY. STORM DRAIN ADJUSTED PER SURVEY -"2778SUR-WSW"-LINE "B"

Date:10-17-2000 Time: 8:21:37

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Prs/Pip ****** 0. 0 No Wth PIPE ZR ***** 00. 00. 00 00. 00. $Z\Gamma$ 00 00. 00. 00. 00. Energy | Super | Critical | Flow Top | Height | Base Wt Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. X-Fall 000. 000 00. 000 00. 000 000. 000 00 00. 000 000 00. 3.250 3.250 3.250 Z 3.250 .013 3.250 3.250 .013 3.250 .013 .013 .013 .013 .013 .013 ***** Froude N Norm Dp 3.07 1.23 3.07 3.20 1.23 3.21 3.24 1.23 1.23 3.25 3.24 ****** . 64 1.59 1.53 1.43 1.24 1.71 1.71 1.08 1.71 1.71 SE Dpth 1.34 1.37 00. 1.42 00. 00. 1.53 . 59 . 65 00. 00 00. 00 00 00 919.35 00. 919.35 60. .10 90. 919.51 919.62 .03 .02 00. ΗF 919.71 .01 919.74 .39 .39 SF Ave ***** 1.28 Head .0021 .0095 1.21 1.10 1.00 9800 9200 . 91 . 83 0067 .0059 . 75 5.01 8.41 5.01 9.07 8.82 8.02 7.65 (FPS) 29.30 29.30 29.30 29.30 29.30 29.30 29.30 29.30 29.30 Q (CFS) ****** 918.962 918.957 918.146 918.305 918.518 918.678 918.803 918.904 918.988 Elev Depth (FT) 2.157 2.157 1.341 1.370 1.420 1.473 1.528 1.585 1.646 ****** 916.800 916.805 916.936 916.805 917.099 Slope .0136 917.205 917.275 917.319 917.343 .0136 .0136 .0136 .0136 .0136 Invert .0136 .0136 Elev JUMP 뒨 ****** .346 1266.910 HYDRAULIC 1267.256 1267.256 1276.915 Station 11.976 9.659 1296.740 1288.892 7.848 5.168 1301.908 3.227 1305.135 .538 L/Elem 1306.872 1.736

FILE: 2778sur.WSW

For: Pace Engineering, Inc., Chatsworth, California - S/N 747

WATER SURFACE PROFILE LISTING

WATER SURFACE PROFILE LISTING

EXISTING CALTRANS DRAIN IN AVE SAN LUIS & MULHOLLAND

DRIVE S/O 101 FRWY. STORM DRAIN ADJUSTED PER SURVEY

-"2778SUR-WSW"-LINE "B"

-"2778SUR-WSW"-LINE "B"

Date:10-17-2000 Time: 8:21:37

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******* No Wth	ors/Pip	*******	1 .0	PIPE			7 1 1	0.	PIPE	0. 1	- PIPE	C	•	3 A T A	0.	IPE	0.	- PIPE	0.
*	ZL	*	- 00.	- 00·	_	_	_	-	.00.	- ` . 00 ·	- - 00.	_ °0.		_	.00.	.00.	- 00	- 00	00 1
**	or I.D.	* * * * *	000.	- 00.	T 000.	- 6	-		00.	000.	00.	- 000.	<u>+</u> 6	-	-1-	- 00.	000	- - . 00·	. 000.
**** Heic	FT	* * * * * *	3.250	- - -	3.250	- -	3.250	- :	.013	3.250		3.250		- 030	-1-	.013	3.250	- -	3.250
Flow Top	<u>' z</u>	****	3.25	<u>. </u>	2.95	- - 86.	3.04	- 6	86.	3.10	. 98	3.15	- 86	, a	04.5	86.	3.21	, (.35
Critical Denth	1 124	****	1.71	1.00	1.35	. 36	1.35	- 06		1.35	.42	1.35		1.35	-	.50	1.35	.1- .53.	0
Super	SE Dpth	* * * * *	00.	1.71	00.	2.30	- 00.		-	00.	2.12	00.	2.03	_ 00·	-	1.95	. 00.	 1.88 arde [atera]	00.
Energy Grd.El.	HF	****	919.74	00.	919.80	.01	919.81	- 0.		919.81	.01	919.82	.01	919.82	ī	.01	919.83	Analysis - La	7.75
Vel Head	SF Ave	k k k k k	89.	.0025	. 14	8000.	.15	8000.		- 17	.0010	.18	.0011	.20	- ;	.0012	. 22		- 00.
Vel (FPS)			6.62	•	2.97	•	3.12	<u>, </u>	0	3.27		3.43	_	3.60	-		3.77	G - Junction	.45
Q (CFS)	! + * * * * * * * * * * * * * * * * * *		29.30	_	18.70		18.70		18 70	•	_	18.70		18.70	.	1	18.70	WARNING	
Water Elev	** ** * * * * * * * * * * * * * *		919.060 -		919.664	-	919.655	-	919.645	_		919.634		919.621	<u>.</u>	- 20	- -	-	917.749
Depth (FT)			-	_	2.304	_	2.206		2.115	-		2.030	_	1.950	_	1 877		1	
Invert Elev	L/Elem Ch Slope	917 350	1- 0000	-	917.360	.0132	917.449	.0132	917.530		7	917.604	.0132	917.671	.0132	917.730	- -	-	917.740
Station	L/Elem *******	1307.410	- TOWIT			6.742	1314.152	6.127	1320.279	5.592	1325 871	1/0.0251	5.091 	1330.963	4.448	1335.410	- -	_	1335.410

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APPENDIX P

Line "B"
Existing 39" R.C.P.
Caltrans Drain in
Mulholland Drive and
Avenue San Luis.
Adjusted Per Survey to
Determine Maximum Capacity.
"W.S.P.G.W." Hydraulic Printouts

Tl	EXISTING	CALTRANS	דמקת	TAT TAT	7.7.7						
T2	EXISTING DRIVE S/O	101 FRW	V CT	CODM P	AVE ,	SAN LUIS	& MULHO	LLAND			_
T3	DRIVE S/O	THE MAYE	ATTM C	ORM L	DRAIN	ADJUSTE	PER SU	RVEY		4	0
SO		0 905.11		APACI	.TY-	"2778POS	.WSW"-LIN	VE "B"			
R		0 905.320						909.793			
JX	82.22	0 905.320 0 905.330) 1	_	.013						
R	325.00	0 905.330 0 906.570) 1	2	.013	3.100)	905.33	.000	.000	0 0
R	412 00	0 906.5/0) 1		.013			203.33	20.0		.000
R	FEO 00	907.000	1		.013				.000	.000) 1
R	770.000	907.700	1		.013				.000	.000	0
JX	710.000	909.000	1		.013				15.465	.000	0
R	710.000	909.010	1	2	.013	1.200		000 50	-18.046	.000) 1
R	748.880	909.690	1		.013	_,		909.63	55.5		.000
	933.880	912.930	1		.013				.000	.000	
R	1022.500	914.490	1		.013				.000	.000	
R	1035.990	914.730	1		.013				-56.417	.000	
JX	1035.990	914.740	1	-	.013	40.400			.000	.000	•
R	1050.990	915.000	1		013	40.400		915.380	65.0	.000	-
JX	1050.990	915.010	1	_	013	007			.000	.000	.000
R	1137.870	915.760	1	-	013	.001		915.630	70.0	.000	-
R	1184.990	916.180	1						.000	000	.000
R	1201.730	916.330	î		013				-29.998	.000	_
R	1248.850	916 740	1		013				.000	.000	
R	1266.910	916 800	7		013					.000	_
R	1307.410	917 350	- -		013				29.998	.000	•
JX	1307.410	917 360	1	_	013				.000	.000	_
R	1335.410	917.360			013	28.000		917.980	.000	.000	0
JX	1335.410	917.730	1		013			217.500	45.0		.000
SH	1335.410	917.740		2 2.	013	9.350	9.350	917 000	.000	.000	0
CD	1335.410 1 4 1		1				9.330	17.740	917.900 47.0-65	. 0	.000
CD		.000		250	. 0	00 .000	.000	.00			
Q	2 4 1	.000		000	. 0		.000				
×		.001	. 0				.000	.00			

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For: Pace Engineering, Inc., Chatsworth, California - S/N 747

EXISTING CALTRANS DRAIN IN AVE SAN LUIS & MULHOLLAND
DRIVE S/O 101 FRWY. STORM DRAIN ADJUSTED PER SURVEY
TO DETERMINE MAXIMUM CAPACITY- "2778POS.WSW"-LINE "B"

*********	**************************************	********* Depth (FT)	******** Water Elev	Q (CFS)	vel Vel (FPS)	vel Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ DiaFT	Base Wt or I.D.	ZL	No Wth Prs/Pip	th Sip
L/Elem	ch Slope	· * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	* * * *	* * * *	* SF Ave * * * *	- * * * * * * * * * * * * * * * * * * *	- SE Dpth ******	Froude N	- Norm Dp ******	*******	- X-Fall *****	- ZR ****	Type Ch ******	다. *
40.000	905.110	4.683	909.793	91.40	11.02	1.89	911.68	- 00.	2.94	00.	3.250	000.	00.	_ - _	٥.
42.220	0500.	1	1	<u>.</u> -	1	.0123	.52	4.68	. 00.	3.25	.013	00.	00.	PIPE	
82.220	905.320	4.990	910.310	91.40	11.02	1.89	912.20	00.	2.94	00.	3.250	000.	00.		0.
JUNCT STR	0000.		1	1	-	.0118	00.	4.99	00.		.013	00.	00.	PIPE	
82.220	905.330	5.232	910.562	88.30	10.64	1.76	912.32	- 00.	2.91	00.	3.250	000.	00.	<u>-</u>	0.
242.780	1500.	1	1	- -	-	.0114	2.78	5.23	00.	3.25	.013	00.	00.	PIPE	
325.000	906.570	6.856	913.426	88.30	10.64	1.76	915.19	- 00.	2.91	00.	3.250	000.	00.	. H _	0.
87.880	- 0049	1	1	<u> </u>	ı	 .0114	1.01	6.86	00.	3.25	.013	00.	00.	PIPE	
412.880	907.000	7.431	914.431	88.30	10.64	1.76	916.19	- 00.	2.91	00.	3.250	000.	00.	<u>-</u>	٥.
137.120	1500.		1	1	1	.0114	1.57	- 00.	00.	3.25	.013	00.	00.	PIPE	
550.000	907.700	8.446	916.146	88.30	10.64	1.76	917.90	00.	2.91	00.	3.250	000.	00.		0.
160.000	.0081	1	1	1	1	0114	1.83	- 00.	00.	3.25	.013	00.	00.	PIPE	
710.000	000.606	9.221	918.221	88.30	10.64	1.76	919.98	00.	2.91	00.	3.250	000.	00.	_ - ' <u>-</u>	0.
- JUNCT STR	0000.		- -	1	-	- 0113	00.	9.22	00.		.013	00.	00.	PIPE	
710.000	909.010	9.305	918.315	87.10	10.50	1.71	920.03	00.	2.90	00.	3.250	000.	00.		0.
38.880	0175	1	1	-	1	- 1110.	. 43	- - 9.31 	00.	2.19	 .013	00.	00.	PIPE	
748.880	909.696	9.058	918.748	87.10	10.50	1.71	920.46	00.	2.90	00.	3.250	0001	00.	- <u>-</u>	0.
185.000	.0175	1	1	1	1	.0111	2.06	90.6	00.	2.19	.013	00.	00.	PIPE	

FILE: 2778pos.WSW

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WATER SURFACE PROFILE LISTING Date:10-18-2000 Time: 9:19:17	MULHOLLAND	ID PER SURVEY	OS.WSW"-LINE "B"
WATER SURFACE 1	EXISTING CALTRANS DRAIN IN AVE SAN LUIS & MULHOLLAND	DRIVE S/O 101 FRWY. STORM DRAIN ADJUSTED PER SURVEY	TO DETERMINE MAXIMUM CAPACITY- "2778POS.WSW"-LINE "B"

**************************************	**************************************	**************************************	**************************************	· * · · · · · · · · · · · · · · · · · ·		×	Energy Grd.El.	Super Elev Elev CR Dath	******** Critical Depth	Flow Top width	******* Height/ DiaFT	**************************************	* * * *	******* No Wth Prs/Pip
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933.880	912.930	7.876	920.806	87.10	10.50	1.71	922.52	00.	2.90	00.	3.250	000.	00.	0. 1
88.620	.0176			_		.0111	66.	- 00.	00.	2.19	.013	00.	00.	PIPE
1022.500	914.490	7.574	922.064	87.10	10.50	1.71	923.78	00.	2.90	00.	3.250	000.	00.	.0
13.490	.0178	-	-	i .	-	.0111	.15	7.57	- 00.	2.18	.013	100.	00.	PIPE
1035.990	914.730	7.484	922.214	87.10	10.50	1.71	923.93	. 00	2.90	00.	3.250	000.	00.	1 .0
JUNCT STR	0000.	_	_		_	.0072	00.	7.48	00.		.013	00.	00.	PIPE
1035.990	914.740	9.091	923.831	46.70	5.63	. 49	924.32	- 00.	2.18	00.	3.250	000.	00.	٥.
15.000 JUNCT STR	.0000		_	 	-	.0032	.00.	9.09	00.	1.49	.013	000	00.	PIPE PIPE
1050.990	915.010	8.869	923.879	46.70	5.63	49	924.37	00.	2.18	00.	3.250	000.	00.	٠. ا
86.880	9800.	<u></u>				.0032	.28	8.87	00.	1.83	.013	00.	00.	PIPE
1137.870	915.760	8.422	924.182	46.70	5.63	64.	924.67	00.	2.18	00.	3.250	000.	00.	1 .0
47.120	6800.		_			.0032	.15		- 00	1.81	.013	00.	00.	PIPE
1184.990	916.180	8.209	924.389	46.70	5.63	. 49	924.88	 00.	2.18	00.	3.250	000.	00.	٥.
16.740	0600.				_ !	.0032	. 05.	8.21	00.	1.81	.013	00.	00.	- PIPE
1201.730	916.330	8.113	924.443	46.70	5.63	. 49	924.94	- 00.	2.18	00.	3.250	000.	00.	.0
47.120	.0087	_		-		.0032	.15	00.	00.	1.83	.013	00.	00.	PIPE

Date:10-18-2000 Time: 9:19:17

FILE: 2778pos.WSW

W S P G W - CIVILDESIGN Version 12.4 For: Pace Engineering, Inc., Chatsworth, California - S/N 747 WATER SURFACE PROFILE LISTING EXISTING CALTRANS DRAIN IN AVE SAN LUIS & MULHOLLAND

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******* Base Wt or I.D.	X.Fall *****	000.	- 00.	000.	- 00.	000.	- 00.	000.	00.	000.	00.	000.	
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**************************************	Norm Dp *******	00.	2.61	00.	1.60	00.	1	00.	86.	00.	. (s)	00.	
critical Depth	Froude N	2.18	- 00.	2.18	- 00.	2.18	. 00.	1.35	00.	1.35	- - .00 Lateral Flow(s	.01	
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******* Vel Head	SF Ave ***	.49	.0032	4.	.0032	.49	- 0019	80.	.0005	80.	- - .0003 Junction Analysis	- 00.	
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Depth (FT)	* * * * * * * * * * * * * * * * * * *	7.911	<u>.</u> -	7.933	<u>. </u>	7.512		7.916	<u> </u>	7.560	· · · · · · · · · · · · · · · · · · ·	7.593	1
**************************************	L/Elem Ch Slope	916.740	.0033	916.800	.0136	917.350	0000.	917.360	.0132	917.730	0000.	917.740	
******** Station	L/Elem ******	1248.850	18.060	1266.910	40.500	1307.410	JUNCT STR	1307.410	28.000	1335.410	JUNCT STR	1335.410	i

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Date:10-18-2000 Time: 9:19:17

FILE: 2778pos.WSW

W S P G W - CIVILDESIGN Version 12.4 For: Pace Engineering, Inc., Chatsworth, California - S/N 747 WATER SURFACE PROFILE LISTING EXISTING CALTRANS DRAIN IN AVE SAN LUIS & MULHOLLAND

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******* Base Wt or I.D.	X.Fall *****	000.	- 00.	000.	- 00.	000.	- 00.	000.	00.	000.	00.	000.	
******* Height/ DiaFT	* * * * * * * * * * * * * * * * * * *	3.250	.013	3.250	.013	3.250	.013	3.250	.013	3.250	.013	3.250	
**************************************	Norm Dp *******	00.	2.61	00.	1.60	00.	1	00.	86.	00.	. (s)	00.	
critical Depth	Froude N	2.18	- 00.	2.18	- 00.	2.18	. 00.	1.35	00.	1.35	- - .00 Lateral Flow(s	.01	
**** per lev	SE Dpth	- 00.	7.91	00.	7.93	00.	7.51	- 00.	7.92	- 00.	- 7.56 Large Lat	- 00.	
**************************************	· · · · · · · · · · · · · ·	925.14	90.	925.22	13	925.35	00.	925.35	.01	925.37	00	925.33	
******* Vel Head	SF Ave ***	.49	.0032	4.	.0032	.49	- 0019	80.	.0005	80.	- - .0003 Junction Analysis	- 00.	
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	* * * * * *	46.70	·	46.70		46.70		18.70	1	18.70	- WARN]	00.	1
Water Elev	· * * * * * * * * * * * * * * * * * * *	924.651		924.733		924.862	1	925.276		925.290	1 1	925.333	1
Depth (FT)	* * * * * * * * * * * * * * * * * * *	7.911	<u>.</u> -	7.933	<u>. </u>	7.512		7.916	<u> </u>	7.560	· · · · · · · · · · · · · · · · · · ·	7.593	1
**************************************	L/Elem Ch Slope	916.740	.0033	916.800	.0136	917.350	0000.	917.360	.0132	917.730	0000.	917.740	
******** Station	L/Elem ******	1248.850	18.060	1266.910	40.500	1307.410	JUNCT STR	1307.410	28.000	1335.410	JUNCT STR	1335.410	i

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APPENDIX Q

GM Engineering
"Hydraulic Analysis
Dry Canyon Creek at
Mulholland Dr. Crossing"

MOTION PICTURE AND TELEVISION FUND

12100 Wilshire Boulevard, Suite 1950 Los Angeles, CA 90025

HYDRAULIC ANALYSIS DRY CANYON CREEK AT MULHOLLAND DR. CROSSING



PREPARED UNDER THE DIRECTION OF:

RUVIN GRUTMAN,

RCE 41480



GM Engineering

GM Engineering Business Center 14401 Gilmore Street, Suite 100 Van Nuys, CA 91401

> March 6, 2000 Job *8340102



GM Engineers, land surveyors & general contractors

HYDRAULIC ANALYSIS

1. Purpose

The purpose of this analysis was to establish a magnitude of an overflow from Dry Canyon Creek at Mulholland Drive in the case Dry Canyon Creek experiencing the 5,610 cfs. 50-year frequency peak flow. The analysis was performed per the request of MPTF.

2. Project Site

The project site covers the area in the vicinity of the existing 18 ft. x 10 ft. culvert under Mulholland Drive just northerly of Valmar Road. The culvert was constructed by the City of Los Angeles in 1969.

3. Area of Concern

A portion of Dry Canyon Creek upstream of the site limits is an unimproved natural channel. This channel is within the jurisdiction of US Army Corps of Engineers (blue line stream) and it is also a designated Flood Control Channel. Per the County data this portion of the channel conveys runoff from the upstream 2350-acre (3.7 sq. miles) watershed. The 50-year frequency runoff from this watershed was estimated by the County engineers in their 1992 study to be 5,610 cfs.

The maximum capacity of the 18'x10' culvert is estimated to be approximately 3,000 cfs (much less than the clear water flow of 5,610 cfs). Therefore, an overflow above the road surface is expected to occur. The concern about consequences of the overflow generated the need for this hydraulic analysis of the flow in the culvert and along the street.

4. Hydrology

In 1934 the channel improvements for Dry Canyon Wash were designed by Los Angeles County Flood Control District (the District). The peak discharge at that time was estimated to be 1,350 cfs.

The 1970-1971 budget estimate by the District included channel improvements of Dry Canyon Creek downstream of Mulholland Drive. The improvements were sized for 4,370 cfs. flow.

In 1984 drainage improvements upstream of the project site were performed as a part of Tract No.37893. The design peak

discharge at this time was estimated to be 5,170 cfs.

In 1992 the clear water peak runoff was estimated by the County engineers to be 5,610 cfs. The channel improvements designed to handle this peak discharge were initiated by the County in 1995.

5. Topographic Survey

The field survey was conducted to obtain accurate crosssections of the creek and other geometrical features of the stream, the street and the culvert. The survey also verified the location and profile of the ridge line along the left bank. The aerial mapping of the stream was performed to obtain a base map for delineating the flood plain.

6. Hydraulic Model

Hydraulic modeling of the stream was performed by utilizing U.S. Army Corps of Engineers computer program HEC-2.

Hydraulic analysis consisted of two HEC-2 computer runs.

1. The purpose of the 1-st computer run was to determine the portion of the total overflow to the street.

The attached computer printout shows the input data: Surveyed stream cross-sections, Culvert geometry, Roughness coefficients, Peak discharges, etc.

The output shows that the 5,610 cfs. clear flow peak discharge splits at the culvert entrance. The water surface at this point, Section M-330 (Stream Section No.490) raises to elevation 953.41. It is 3.8 feet above the lowest elevation of the street. During this flood stage, the 3,090 cfs. is conveyed by the culvert and 2,520 cfs. spread over the street pavement.

2. The purpose of the 2-nd computer run was to establish consequences of the 2,520 cfs. flow across and along the street.

The street cross-slope in this area is estimated to be 1%. The longitudinal slope along the street is also 1%. The flow therefore tends to proceed across the pavement at 45° angle to the street as shown in Exhibit 1.

The line projected from the corner of the building at the culvert outlet effectively splits the street flow into westerly and easterly routes.

The easterly route crosses the street and joins the Dry Canyon Creek channel flow. The westerly route proceeds northwesterly along Mulholland Drive.

The 2-nd computer run shows flow distribution at the section M-250. It is estimated that at this section, the 750 cfs portion of the flow (30% of the 2,520 cfs) will proceed along westerly route. The easterly route therefore, will consist of the remaining 1,770 cfs (70%). The westerly route also splits. 280 cfs will enter the adjacent agricultural area and the remaining 470 cfs will flow along the pavement and the existing buildings toward the commercial center.

7. Conclusions

- a) During 5,610 cfs. flow (50 year frequency) in Dry Canyon Creek, a 2,520 cfs. overflow occurs at the culvert crossing Mulholland Drive. This flow splits and 1770 cfs. crosses the street, outfalls back into the stream channel and joins 3090 cfs. conveyed by the culvert.
- b) A 750 cfs portion of the overflow proceeds northwesterly along Mulholland Drive. This street flow splits along the ridge line at the left bank (Section M-150, see Exhibit 1). A 280 cfs. portion is expected to enter the adjacent agricultural area. The remaining 470 cfs. will flow northwesterly along the pavement and existing buildings toward the commercial center.

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RDLEN .00	LS; NO INLET ES	IF INLET CONTROLS.	EG = 9. 1.62 FEET		OF ACCEPTABLE RANGE,		ocurv 3090.	.00 347.1 .050		WSELK ALOB XNL ITRIAL	1.47 FEET	.00 194.1 .050		
COFQ 2.63	ED WINGWALLS; O 75 DEGREES	ARGE I LARGE	WEIR FLOW, ENDED		OUTSIDE O		QWEIR 2537.	.00 1837.1 3.35 180.		CRIWS QROB VROB XLOBR	EXTENDED	.00 727.7 3.72 45.		* * * *
ENTLC .50	WITH FLARE LARED 30 TO		CONTROL + W	THAN HVINS	NCE CHANGE		H4 2.95	953.41 2275.9 6.18 180.	:42	CWSEL QCH VCH XLCH	530.00 EXT	953.47 4163.6 6.13 40.	42	* * * * * * * * * * * * * * * * * * *
CUNV .015	BOX CULVERT WITH FLARE WINGWALLS FLARED 30 TO		E→	CHANGED MORE TI	: CONVEYANCE	ERT	EGOC 964.80	19.01 1497.0 4.31 180.	22:15:	DEPTH QLOB VLOB XLOBL		16.27 718.6 3.70 35.	22:15:42	* * * * * * * * * * * * * * * * * * *
SC CUNO	CHART 8 - BC SCALE 1 - WI	5130, EGIC= 970.51. 5135, EGOC= 964.80 *SECNO 490.000	SPECIAL CULVERT INJ 3280 CROSS SECTION	3301 HV CHANG	3302 WARNING:	SPECIAL CULVERT	EGIC 970.51	490.000 5610.0 .02	1 05MAR00	SECNO Q TIME SLOPE	*SECNO 530.000 3280 CROSS SECTION	530.000 5610.0 .02	1 05MAROO	******************************

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HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

ANYON CREEK

SUMMARY PRINTOUT TABLE 101

	SECNO	EGOC	ELLC	EGIC	ELTRD	OCULV	QWEIR	CLASS	H4	DEPTH	CWSEL	VCH	EG	
*	490.000	964.80	944.50	970.51	949.60	3089.66	2537.37	16.00	2.95	19.01	953.41	6.18	953.79	
Н	OSMAROO	22:15:42									щ	PAGE 7		
ANY	ANYON CREEK													
SUM	SUMMARY PRINTOUT TABLE 105	UT TABLE	105											
	SECNO	CWSEL	HL	OLOSS	TOPWID	QLOB	ОСН	QROB						
! ! !	210.000	944.66	.32	90.	126.06	87.62	3869.10	903.27	! ! !					
*	310.000	945.00	.76	4.03	21.74	00.	4860.00	00.						
*	490.000	953.41	2.95	00.	346.52	1496.98	2275.91	1837.11						
	530.000	953.47	80.	60.	144.67	718.62	4163.63	727.75						

SUMMARY OF ERRORS AND SPECIAL NOTES

22:15:42

05MAR00

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PAGE

1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE		490.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
OUTSID	UMED NERGY	DISINC
CHANGE	PTH ASSI	CHANGE
CONVEYANCE	CRITICAL DEPTH ASSUMED MINIMUM SPECIFIC ENERGY	CONVEYANCE
Н		, 1
70.000 PROFILE=	PROFILE= PROFILE=	PROFILE=
70.000	310.000	490.000
WARNING SECNO=	CAUTION SECNO= CAUTION SECNO=	WARNING SECNO=

 $^{\prime\prime}$ 22:00:44 PAGE PAGE THIS RUN EXECUTED 05MAR00 FQ. ×× × × WSEL 950 XXXXXXX XXXXX XXXXX O × × × × HVINS XXXXX 950 XXXXXXX METRIC 220 STRT 0.01 2.6 180 949.62 ******************* IDIR Version 4.6.2; May 1991 -1 948.9 HEC-2 WATER SURFACE PROFILES T1 GM ENGINEERING JOB#8340102 T2 SPLIT FLOW DETERMINATION T3 MULHOLLAND DRIVE NINV 4.6.2; May 1991 SPLIT FLOW BEING PERFORMED TW SPLIT AT MULHOLLAND
WS 4 250
WC 948.3 80 22:00:44 22:00:44 SF SPLIT FLOW ANALYSIS ÖNI 05MAR00 Version J1 ICHECK 05MAR00

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										m					
		88	60 122		15 56 126	,	15 160		126	PAGE					
ITRACE		947	947.65 944.4		949.62 948.35		950		951		L-BANK ELEV R-BANK ELEV SSTA ENDST				948.30 947.00 .98 140.00
CHNIM		09	43 99		50		112		53		OLOSS TWA ELMIN TOPWID				.00 .0 .0 139.02
IBW		947.4	70 948.09 948.13	80	949.57 948.8	100	949.9	80	949.6		HL VOL WTN CORAR				0000
ALLDC		40	60 14 87	80	32 75 200	150	80 325	06	22		HV AROB XNR ICONT				.39 60.2 .035 0
FN		0.3	80 948.43 947	80	949.56 948.68 949.89	35	950.31 950.8	0.3	950		EG ACH XNCH IDC			Ę	948.35 34.4 .015
XSECH		0.1 83 2 140	8 · 8 5 · 8	152	16 68 180	240	35 240	0.1 126	12		WSELK ALOB XNL ITRIAL			2.86 FEET	950.00
XSECV		015 7.6 5.1	0 16 16	99	50 43 55	80	9.30 49.6	.05	952		CRIWS QROB VROB XLOBR			.00 EXTENDED	947.92 279.2 4.64 0.
PRFVS	FT -	. 46	1 948.16 2 947.16	က	949.50 6 948.95 2 949.43	æ	9. 9. 0.	9		.44	CWSEL QCH VCH XLCH		.300	.00 EX	947.96 190.5 5.54 0.
IPLOT		750 .035 7 110	11 72 132	H	66 152		200	0.	180	22:00:44	DEPTH QLOB VLOB XLOBL		.100 CEHV=	ECTION	2.86
NPROF		1 .035 948.3 947.8	70 948.9 947.55 948.54	150	950 949.62 947.83	250	949.5 949.6	330	055 954 952	05MAR00	SECNO Q TIME SLOPE	*PROF 1	CCHV= .100 CEH *SECNO .000	O CROSS S	.000 469.8 .00
52		X X X X X X X X X X X X X X X X X X X	X 2 GR 9 GR 9	X X	3 R R R	X X	GR GR	XXX	S R G	н		* P.F	CCE RS	328	

*SECNO 70.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.80

					٥ (ر	500						
948.90 947.16 .28 131.87	949.62 947.83 66.65					L-BANK ELEV R-BANK ELEV SSTA ENDST		950.31 949.60 .00 325.00				
.02 .2 944.40 131.59	.07 .4 947.83 112.88					OLOSS TWA ELMIN TOPWID		.08 .9 949.30 325.00				
						HL VOL WTN CORAR		.38 1.0 000.				
.20 85.1 .035	21.7 21.7 035	.40				HV AROB XNR ICONT		. 72 91.4 . 035	7			
948.69 45.0 .015	949.85 75.0 .015	949				EG ACH XNCH IDC		951.99 227.0 .015	= 951.2			
0000	0000	CWSEL=				WSELK ALOB XNL ITRIAL	1.77 FEET	.00 131.8 .035	CWSEL	325. 44 1		.61 FEET
948.02 308.1 3.62 60.	SEL, CWSEL IFIC ENERGY D 940 949.40 9.40 949.40 48.4 5.62 2.23	150.00				CRIWS QROB VROB XLOBR	ENDED	SEL NERGY 951.27 252.3 2.76 150.	250.00	240. 70.7 10.1 227.0 91.4 7.8 2.8 1.4 1.1		EXTENDED
948.49 161.7 3.59 70.	⊼ S E 4 4	SECNO=	. 180. 21.7 2.2 2.8		44	CWSEL QCH VCH XLCH	250.00 EXTENDED	ED WSEL, CWSEL SPECIFIC ENERGY SUMED 951.27 951 176.8 25 7.78 25	SECNO=	9.0 66.1 3.4 1.5	.300	330.00 EXTE
4.09 .0 .00 .00	10 150.000 20 TRIALS ATTEMPTED WSJ PROBABLE MINIMUM SPECII CRITICAL DEPTH ASSUMED 1.57 949 469.8 .0 42: 0.0 1.57 103824 80. 5	SUTION FOR	. 89.7 75.0 5.6	00	22:00:4	DEPTH QLOB VLOB XLOBL	SECTION	20 TRIALS ATTEMPTED WS PROBABLE MINIMUM SPECI CRITICAL DEPTH ASSUMED 0.000 1.97 951 500.0 480.9 176 .01 3.65 7 03872 35. 1	FOR	. 35. 10.2 65.6 3.9 1.9	O CEHV=	rion
70.000 469.8 .00	*SECNO 150.000 3685 20 TRIALS ATTEMPTED 3693 PROBABLE MINIMUM SPI 3720 CRITICAL DEPTH ASSUN 150.000 1.57 6469.8 01 003824 80.	FLOW DISTRIBUTION	STA= 67 PER Q= AREA= VEL= DEPTH=	*SECNO 250.000	1 05MAR00	SECNO Q TIME SLOPE	3280 CROSS SI	3685 20 TRIALS 3693 PROBABLE 1 3720 CRITICAL 1 250.000 2500.0 .01	FLOW DISTRIBUTION	STA= 0. PER Q= AREA= VEL= DEPTH=	*CCHV= .100	3280 CROSS SECTION

									.01K	47.04	84.78	6.	401.77	163.70	
	PAGE 5		PAGE 6	22:00:44					AREA	94.58	130.10	96.67	450.12	332.43	PAGE 7
	ц	USSNO 250.000	ш	05MAR00 22					VCH	5.54	3.59	5.62	7.78	8.26	
950.00 951.00 8.36 180.00		000		ЕХЕСИТЕD 05М					10*KS	99.72	30.70	38.24	38.72	233.22	
.07 96 1.4 99 49.60		usws DssNo 951.275		THIS RUN EX		ERRORS LIST			ខ	948.35	948.69	949.85	951.99	953.57	
. 62 . 000 . 000		DSWS US		Н		SUMMARY OF EI			CRIWS	947.92	948.02	949.40	951.27	952.61	
. 96 . 9. 8 050		NITER DE				NI			CWSEL	947.96	948.49	949.40	951.27	952.61	
953.57 255.5 .050		TABER N				TION NUMBER INDICATES MESSAGE			O	469.77	469.77	469.77	2500.00	2500.00	
.00 .050 .050		TCQ T 280.24				NUMBER INI			ELMIN	945.10	944.40	947.83	949.30	949.60	
IL IRGY 952.61 288.3 4.82 90.		TASQ 280.23		* * *	* * *	CROSS-SECTION			ELLC	00.	00.	00.	00.	00.	
) WSEL, CWSE PECIFIC ENE JMED 952.61 2110.7 8.26		ERRAC 1		**************************************	991 *******	OF		150	ELTRD	00.	00.	00.	00.	00.	
ATTEMPTED WSEL, CWSEL MINIMUM SPECIFIC ENER DEPTH ASSUMED 3.01 2110.7 101.0 2110.7 5.88 8.26 65.	22:00:44	MULHOLLAND QCOMP EI	22:00:44	**************************************	.2; May 1 *******	((*) AT LEFT		PRINTOUT TABLE	XLCH	00.	70.00	80.00	100.00	80.00	
20 TRIALS PROBABLE M CRITICAL D 80.000 :500.0 .02	05MAR00	SPLIT AT M ASQ Q0 280.23	05MAR00	****** WATER	Version 4.6.2; May 1991 **********************************	- ASTERISK	LLAND DRIVE	SUMMARY PRINTC	SECNO	000.	70.000	150.000	250.000	330.000	
3685 3693 3720 2 3	1 05	MI	1 09	***** HEC-2	Ver **	NOTE-	LLAN	SUM			*	*	*	*	Н

LLAND DRIVE

SUMMARY PRINTOUT TABLE 150

XLCH	00.	70.00	80.00	100.00	80.00	
TOPWID	139.02	131.59	112.88	325.00	171.64	
DIFKWS	-2.04	00.	00.	00.	00.	
DIFWSX	00.	.53	. 92	1.87	1.33	
DIFWSP	00.	00.	00.	00.	00.	
CWSEL	947.96	948.49	949.40	951.27	952.61	
a	469.77	469.77	469.77	2500.00	2500.00	22:00:44
SECNO	000.	70.000	150.000	250.000	330.000	05MAR00
		*	*	*	*	Н

SUMMARY OF ERRORS AND SPECIAL NOTES

70.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE	1 CRITICAL DEPTH ASSUMED 1 PROBABLE MINIMUM SPECIFIC ENERGY 1 20 TRIALS ATTEMPTED TO BALANCE WSEL	CRITICAL DEPTH ASSUMED PROBABLE MINIMUM SPECIFIC ENERGY 20 TRIALS ATTEMPTED TO BALANCE WSEL	1 CRITICAL DEPTH ASSUMED 1 PROBABLE MINIMUM SPECIFIC ENERGY 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
Н		ннн	
PROFILE=	PROFILE=	PROFILE=	PROFILE=
	PROFILE=	PROFILE=	PROFILE=
	PROFILE=	PROFILE=	PROFILE=
70.000	150.000	250.000	330.000
	150.000	250.000	330.000
	150.000	250.000	330.000
WARNING SECNO=	CAUTION SECNO-	CAUTION SECNO=	CAUTION SECNO=
	CAUTION SECNO-	CAUTION SECNO=	CAUTION SECNO=
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