

KRAUSZ PROPERTIES

DRAINAGE STUDY

**19601 NORDHOFF STREET
NORTHRIDGE, CA**



PREPARED UNDER THE DIRECTION OF :

A handwritten signature in black ink, appearing to read "Ruv Grutman", written over a horizontal line.

RUVIN GRUTMAN, RCE 41480, LS 5910



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

1988

September, 2002
Job # 4039001



GM Engineering

civil engineers, land surveyors & general contractors

1. PURPOSE OF THE STUDY

The purpose of this drainage study was to determine the drainage impact of the proposed development and to determine any drainage hazards that would affect the project site. This drainage investigation was conducted at the request of Krausz Companies.

2. SCOPE OF THE STUDY

The drainage study consisted of:

- a) Field reconnaissance
- b) Hydrology
- c) Hydraulics

3. FIELD RECONNAISSANCE (EXISTING CONDITIONS)

The proposed project site is located at 19601 Nordhoff Street, Northridge, California within the Chatsworth-Porter Ranch Community Planning Area - see Exhibit 1. The proposed project site is square in shape consisting of approximately 35.5 acres bounded by Prairie Street to the north, Corbin Avenue to the west, Nordhoff Street to the south and Shirley Avenue to the east.

Pursuant to the request of the City of Los Angeles Department of City Planning Staff, the properties located to the north of Prairie Street between Corbin Avenue and Shirley Avenue (Add Area) were also included as part of the environmental analysis. Add Area is comprised of approximately 15 parcels totaling approximately 8 ac.

a) ON-SITE DRAINAGE PATTERN

The project site and Add Area consist of five portions (A through E) with different drainage patterns, see Exhibit 2 Hydrology Map.

Portion "A" located at the southeasterly corner at the intersection of Corbin Avenue and Prairie Street is presently undeveloped. This portion was approved for construction of a senior housing facility and a building permit was issued for a private storm drain conveying the runoff from Portion "A" to the intersection of Shirley Avenue and Nordhoff Street where it joins the existing 66" RCP.

Portions “B” and “C” are comprised of approximately 30.2 acres. They are bounded by Prairie Street to the north, Corbin Avenue to the west, Nordhoff Street to the south, and Shirley Avenue to the east.

Portion “B” is covered with a large parking lot. It drains via sheet flow to the driveway located along its southerly border between Portion “B” and Portion “C”. A private storm drain with catch basins located along this driveway conveys the runoff from the portion “B” to the storm drain along Shirley Avenue.

Portion “C” located northerly to Nordhoff Street currently includes a paved parking lot, buildings, and a citrus orchard. This portion drains via sheet flow to the southeasterly corner (intersection of Shirley Avenue and Nordhoff Street) where it is accepted by a 66” storm drain.

Add Area consists of Portions “D” and “E”.

Portion “D” occupies westerly part of Add Area. It is fully developed and includes paved driveways and structures. Portion “D” drains via sheet flow and concrete gutters to adjacent public streets – Corbin Avenue, Prairie Street, and Melvin Avenue.

Portion “E” consists of the easterly part of Add Area. It is fully developed and consists of paved areas and structures. Portion “E” drains via sheet flow and concrete gutters to the adjacent public streets – Melvin Avenue, Shirley Avenue, and Prairie Street.

b) OFF-SITE DRAINAGE PATTERN

There are several drainage devices located at the northerly border of the project site. The purpose of these devices is to intercept the sheet flow from the neighboring properties to the north (off-site drainage) and direct the flow toward adjacent public streets – Corbin Avenue and Shirley Avenue. These streets convey off-site drainage from approximately 78 ac of the upstream area.

The off-site drainage was evaluated to determine the affect of the project site development on the downstream buildings and infrastructure and to estimate flooding potential for the project site itself. The evaluation was conducted for the 160-ac study area shown on Exhibit 2.

The study area consists of two watersheds hereinafter called Easterly and Westerly watersheds. The Easterly watershed (89 ac) is draining along Shirley Avenue and its southerly prolongation. The Westerly watershed (71 ac) is draining along Corbin Avenue. Hydrology of each watershed is discussed below. There is an existing ridge along westerly line of Portions “A” and “C” that separates Easterly and Westerly watersheds, see Exhibit 2.

Preliminary hydrologic analysis (see attachment) was performed utilizing Los Angeles County Rational method computer application. The study area is located in Rainfall Zone K, predominant soil classification is 019 for Subarea 1 of the Westerly watershed and 016 for all other subareas, see Exhibit 3. This study utilized standard hydrologic values per recommendations of the Los Angeles County Department of Public Works Hydrology/Sedimentation Manual, see Exhibit 4.

EASTERLY WATERSHED

The Easterly watershed includes residential area North of Plummer Street and commercial developments South of Plummer Street. As shown in Exhibit 2 the watershed was divided into five subareas. Initial time of concentration was determined for each subarea, see Exhibit 5. Routing data for the watershed is presented in Exhibit 6. Resulting 50-yr frequency peak discharge at the most downstream point of the project site was estimated to be 240 cfs. (see attachment).

The capacity of the storm drain along Shirley Avenue was analyzed (see attachment). This storm drain is a main outflow drainage device for the project site. Because intersection of Nordhoff Street and Shirley Avenue is an area with the high intensity traffic, even shallow flooding of this intersection should be prevented.

The 66" diameter segment of the storm drain located under this intersection and extending southerly from analysis point 5A to Limekiln Creek Channel was checked for its capacity to convey a 50-yr frequency peak runoff. Downstream from the intersection of Shirley Avenue and Nordhoff Street there is a driveway with a concrete gutter leading to Limekiln Creek Channel. This driveway provides additional outlet for the water from the intersection. It was determined that the 66" diameter segment has sufficient capacity to convey 50-year frequency discharge (241 cfs.).

The segment of the storm drain along Shirley Avenue upstream of the intersection with Nordhoff Street was checked for a 10-yr frequency peak runoff. An approximate 650' long segment of 42" and 39" RCP upstream of the intersection (between analysis points 5A and 3A) has sufficient capacity to convey 10-year frequency peak runoff (132 cfs.).

The most upstream 33" diameter segment of the storm drain along Shirley Avenue is undersized to carry the estimated 101 cfs. 10-year frequency peak flow.

The 10-yr frequency peak runoff along Shirley Avenue is conveyed partially by the storm drain and partially by the street cross-section. Balance of the flow between the street and the storm drain was not established because intercepting capacity of the catch basins was not analyzed. Maximum capacity of the Shirley

Avenue street cross section was estimated to be 112 cfs. curb full and 188 cfs. at property line, see Exhibit 8.

WESTERLY WATERSHED

Westerly watershed includes residential area North of Superior Street West of Melvin Avenue, commercial developments South of Plummer Street West of Melvin Avenue and commercial developments South of Prairie Street West of Corbin Avenue. The watershed was divided into five subareas as shown on Exhibit 2. Initial time of concentration for all subareas is presented in Exhibit 5. Routing data for the watershed is presented in Exhibit 6. The peak discharge for the 50-yr frequency storm runoff was determined at the intersection of Corbin Avenue and Nordhoff Street, see Exhibit 2, point of concentration 5A. The estimated 153 cfs. (see attachment) is conveyed by the street section and the 36" storm drain.

4. PROPOSED CONDITIONS

The proposed development will result in an increase of impervious surface with the drainage pattern substantially remaining the same. A specific development scenario for the project site and Add Area is not known at this time.

EASTERLY WATERSHED

To model proposed conditions the imperviousness of Subarea 4 was increased from 83% to 92% (established by the Los Angeles County for commercial developments, see Exhibit 4). The resulting 50-yr-frequency peak discharge at the most downstream point of the project site was estimated to be 241 cfs. (see Exhibit 2, point of concentration 5A). This presents a negligible 0.4% increase compared to the existing conditions.

WESTERLY WATERSHED

The proposed development will not affect drainage of the westerly watershed. The peak discharge for the 50-yr frequency peak storm runoff at the intersection of Corbin Avenue and Nordhoff Street (see Exhibit 2, point of concentration 5A) will not be affected by the development. It will be conveyed by the street section and the 36" storm drain.

The capacity of Corbin Avenue was estimated to be 83 cfs. (curb full) and 209 cfs. between the street property lines, see Exhibit 7. Therefore, no overflow of the 50-yr frequency peak runoff could be expected from the Westerly watershed into the project site. The existing ridge along the westerly property line shall be preserved. This ridge line protects the project site from an overflow during storm events of a higher magnitude.

Hydrologic computations for the Easterly and Westerly watersheds as well as computations for initial time of concentration for all subareas are attached to this report.

CONCLUSIONS

The proposed development of the project site and Add Area will not create a negative impact on the downstream properties. The project site is not subject to the overflow from the adjacent watershed. The existing ridge along the westerly property line of the project shall be preserved. The project site is outside of the 100-yr flood plain (per FEMA panel # 0601370018C).

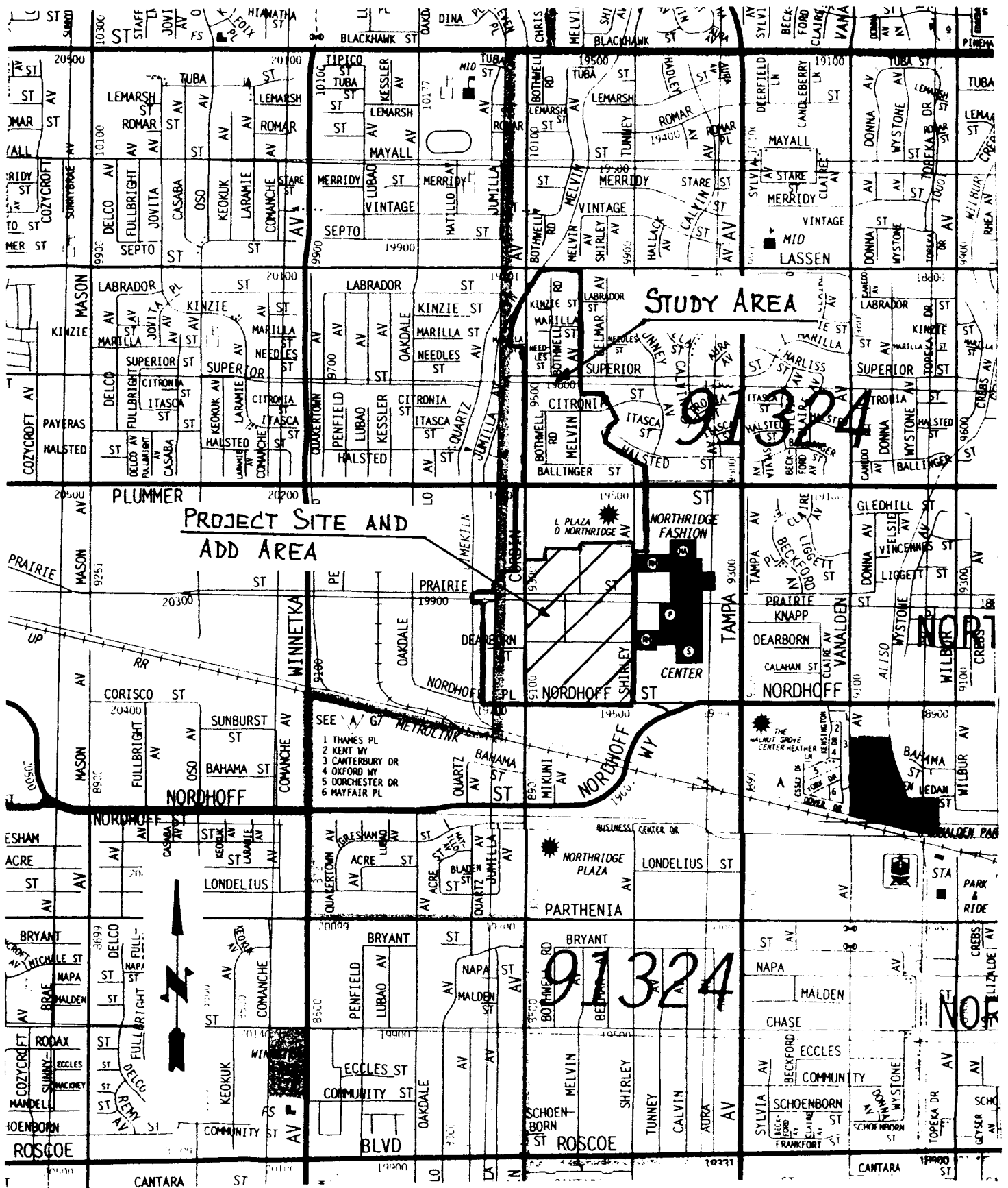
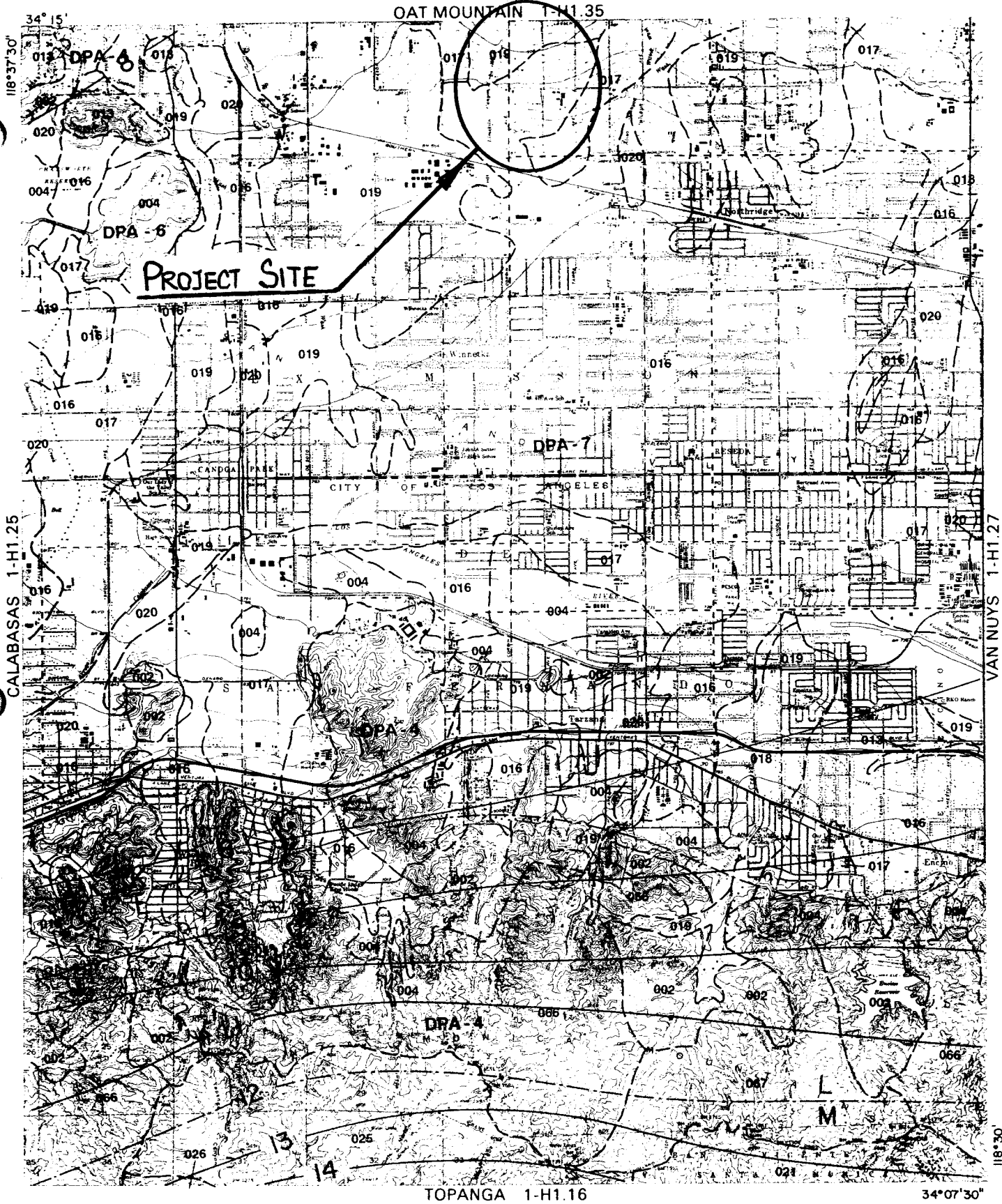


EXHIBIT 1
 VICINITY MAP
 N.T.S.

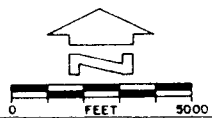


LEGEND

- SOIL CLASSIFICATION AREA
- DEBRIS POTENTIAL AREA

- RAINFALL ZONE
- 12— 50-YEAR ISOHYET (MAX. 24-HOUR AMOUNT)

L A C D P W



CANOGA PARK

1967

hydrologic map

STANDARD VALUES TABLES

Overland
Manning's N Values

Type of Development	N
Industrial-Commercial	0.014
Residential	0.040
Rural	0.060

Standard Lot Values

Type of Development	Lot Length	Lot Slope Range
Industrial-Commercial	200	0.005-0.02
Residential	100	0.01 -0.05
Rural	200	0.05 -1.00

STANDARD RANGE OF
PROPORTION IMPERVIOUS

Type of Development	Proportion Impervious
Single-Family	0.21-0.45
Multi-Family	0.40-0.80
Commercial	0.48-0.92
Industrial	0.60-0.92
Institutional	0.70-0.90

Average Values for Metropolitan Los Angeles County are:
 Single-Family=0.42 Multi-Family=0.68 Commercial=0.92
 Industrial=0.91 Institutional=0.68
 For more detail, see the separate Proportion Impervious Table.

Los Angeles County Department of Public Works
STANDARD VALUES TABLES

CORBIN AND NORDHOFF
HYDROLOGIC CALCULATIONS FOR EIR
INITIAL DATA FOR SUBAREAS - 10 - 25 - 50 yrs FREQUENCY

Subarea	Development Type	Area ac	Rainfall Zone	Soil Type	% Imp.	Initial Area - Overland Flow			Channel Type	Secondary Area			10 yrs		25 yrs		50 yrs			
						Length ft	Upper Elevation	Lower Elevation		Slope	Length ft	Upper Elevation	Lower Elevation	Slope	Tc min	Q cfs	Tc min	Q cfs	Tc min	Q cfs
EAST WATERSHED																				
1E	SF Residential	29.7	K	16	42	100	892.0	890.0	0.02000	Street	2550	890.0	870.6	0.00761	20.1	42.0	19.7	47.3	17.9	60.20
2E	Industrial/Commercial	24.0	K	16	92	200	869.0	863.0	0.03000	Gutter/Street	1700	863.0	850.0	0.00765	7.8	82.0	7.6	70.2	7.2	80.80
3E	Industrial/Commercial	12.1	K	16	92	200	849.8	845.0	0.02400	Gutter/Pipe	532	845.0	837.8	0.01353	8.9	29.0	8.6	32.4	8.1	38.30
4E	Industrial/Commercial	18.1	K	16	92	100	842.5	841.5	0.01000	Gutter	1700	841.5	829.5	0.00706	7.2	50.2	6.9	56.1	6.7	61.40
5E	Multy-Family Resid	5.0	K	16	68	200	849.9	847.9	0.01000	Gutter/Str/Pipe	2275	847.9	829.5	0.00809	10.8	4.2	10.6	4.8	9.7	6.10
TOTAL AREA		88.9																		
WEST WATERSHED																				
1W	SF Residential	23.5	K	19	42	100	919.3	917.3	0.02000	Street	1850	917.3	894.4	0.01238	17.1	24.1	16.2	28.6	15.1	36.80
2W	Street	2.8	K	16	92	50	895.1	894.1	0.02000	Street	1300	894.1	873.2	0.01608	9.1	6.7	8.9	7.5	8.6	8.40
3W	Industrial/Commercial	25.9	K	16	92	200	869.0	863.0	0.03000	Gutter/Street	1700	863.0	850.0	0.00765	10.3	57.5	10.1	64.7	9.7	74.40
4W	Industrial/Commercial	9.9	K	16	92	200	852.0	850.0	0.01000	Gutter/Street	1050	850.0	842.4	0.00724	8.9	23.9	8.3	27.9	8.0	31.30
5W	Industrial/Commercial	8.6	K	16	92	100	845.5	844.5	0.01000	Gutter	1100	844.5	836.0	0.00773	6.0	26.2	5.8	29.4	5.6	31.80
TOTAL AREA		70.7																		

**CORBIN AND NORDHOFF
HYDROLOGY FOR EIR**

ROUTING DATA

08/30/02
40390-01

Subarea	Development Type	Area ac	Rainfall Zone	Soil Type	% Imp.	TC	Total Subareas at Point of Concentr.	Point of Concentr.	Channel Type	Length ft	Upper Elevation	Lower Elevation	Slope	Next Point of Concentr.
EAST WATERSHED														
1E	SF Resident.	29.7	K	16	42	17.9	1E	1A	Street	1200	870.60	850.50	0.017	2A
2E	Industrial/Commercial	24.0	K	16	92	7.2	1E + 2E	2A	Pipe	700	850.00	837.80	0.017	3A
3E	Industrial/Commercial	12.1	K	16	92	8.1	1E - 3E	3A	Pipe	600	837.80	829.50	0.014	4A
4E	Industrial/Commercial	18.1	K	16	92	6.7	1E - 4E	4A						5A
5E	Multi-Family Res.	5.0	K	16	68	9.7	1E - 5E	5A						
WEST WATERSHED														
1W	SF Resident.	23.5	K	19	42	15.1	1W	1A	Street	1300	894.40	873.20	0.016	2A
2W	Street	2.8	K	16	92	8.6	1W + 2W	2A	Street	1300	873.20	850.00	0.018	3A
3W	Industrial/Commercial	25.9	K	16	92	9.7	1W - 3W	3A	Street	600	850.00	842.40	0.013	4A
4W	Industrial/Commercial	9.9	K	16	92	8	1W - 4W	4A	Pipe	600	842.40	836.00	0.011	5A
5W	Industrial/Commercial	8.6	K	16	92	10.8	1W - 5W	5A						

**CORBIN AND NORDHOFF. HYDROLOGY FOR EIR.
DEPTH AT CATCH BASIN ON CORBIN AVE. SOUTH OF PRAIRIE STREET.**

Street width between curbs, ft	64	Design Q, cfs	153.00	Bottom Width b	Side Slope m	Top Width b	Area A	Wet Perimeter p	Hdraulic Radius r	Street Slope s	Roughness Coeff. n	Velocity V fps	Street Capacity Q cfs
Sidewalk width, ft	11												
Gutter width, ft	2												
Curb face, in	8												
Street Slope	0.0105												
Depth h													
Gutter Capacity 0.125				2.00		2.00	0.125	2.125	0.059	0.01050	0.013	1.77	0.22
1/8 Pavement Capacity (on one side of the street) 0.32				9.50		9.50	1.257	9.822	0.128	0.01050	0.013	2.97	3.74
1/4 Pavement Capacity (on one side of the street) 0.46				17.00		17.00	3.120	17.463	0.179	0.01050	0.013	3.72	11.59
3/8 Pavement Capacity (on one side of the street) 0.55				24.50		24.50	4.871	25.047	0.194	0.01050	0.013	3.93	19.15
1/2 Pavement Capacity (on one side of the street) 0.58				32.00		32.00	5.666	32.575	0.174	0.01050	0.013	3.65	20.68
1/2 Street Capacity (depth to the top of curb) 0.67				32.00		32.00	8.599	32.667	0.263	0.01050	0.013	4.81	41.37
1/2 Street Capacity (depth to the back of walk) 0.89				43.00		43.00	16.849	43.667	0.386	0.01050	0.013	6.21	104.60
0.67				32.12		32.12	8.674	32.783	0.265	0.01050	0.013	4.83	41.87
Check street for 50-yr between PL - entire street x-section 0.89				86.00		86.00	33.698	87.333	0.386	0.01050	0.013	6.21	209.19
				86		86							

**CORBIN AND NORDHOFF. HYDROLOGY FOR EIR.
SHIRLEY AVE. CAPACITY NORTH OF INTERSECTION WITH NORDHOFF STREET.**

Street width between curbs, ft	44	Design Q, cfs	241.00	Area	A	Wet Perimeter	p	Hdraulic Radius	r	Street Slope	s	Roughness Coeff.	n	Velocity	V	Street Capacity	Q
Sidewalk width, ft	8	Bottom Width	b	Top Width	b	Side Slope	m	Depth	h	Street Capacity	Q	Velocity	V	Street Capacity	Q		
Gutter width, ft	2	Street Slope	0.0173	1/8 Pavement Capacity (on one side of the street)	0.27	1/4 Pavement Capacity (on one side of the street)	0.38	3/8 Pavement Capacity (on one side of the street)	0.44	1/2 Pavement Capacity (on one side of the street)	0.46	1/2 Street Capacity (depth to the top of curb)	0.67	1/2 Street Capacity (depth to the back of walk)	0.83		
		0.125	2.00	0.125	2.125	0.059	0.01732	0.013	2.28	0.28							
		0.781	7.00	0.781	7.271	0.107	0.01732	0.013	3.40	2.66							
		1.771	12.00	1.771	12.375	0.143	0.01732	0.013	4.12	7.29							
		2.677	17.00	2.677	17.438	0.154	0.01732	0.013	4.31	11.55							
		3.083	22.00	3.083	22.458	0.137	0.01732	0.013	4.00	12.34							
		7.667	22.00	7.667	22.667	0.338	0.01732	0.013	7.30	55.99							
		11.827	30.00	11.827	30.667	0.386	0.01732	0.013	7.97	94.26							
		22.00	22.00	7.667	22.667	0.338	0.01732	0.013	7.30	55.99							
		Check street for 50-yr between PL - entire street x-section															
		0.83	60	23.653	61.333	0.386	0.01732	0.013	7.97	188.52							

ATTACHMENT

DATE: 00000000
 TIME: 000000

MODIFIED RATIONAL METHOD HYDROLOGY
 CORBIN AND NORDHOFF. HYDROLOGY FOR EIR. EAST WATERSHED. EXISTING CONDITIONS.

STORM DAY 4

LOCATION	SUBAREA AREA	SUBAREA Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LENGTH	CONV SLOPE	CONV SIZE	CONV z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	PCT IMPV
5 1A	30.	64.	30.	64.	3	1200.	.01700	.00	.00	0.	16	18	K50	.42
5 2A	24.	90.	54.	134.	4	700.	.01700	3.50	.00	0.	16	7	K50	.92
5 3A	12.	42.	66.	170.	4	600.	.01400	4.00	.00	0.	16	8	K50	.92
5 4A	18.	67.	84.	226.	0	0.	.00000	.00	.00	0.	16	7	K50	.83
5 5A	5.	15.	89.	240.	0	0.	.00000	.00	.00	0.	16	10	K50	.68

1DATE: 00000000
 TIME: 000000

MODIFIED RATIONAL METHOD HYDROLOGY

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR. EAST WATERSHED		MODIFIED RATIONAL METHOD HYDROLOGY																
LOCATION	SUBAREA		TOTAL		CONV		CONV		CONV		CONV		CONTROL SOIL		RAIN		STORM DAY 4	
	AREA	Q	AREA	Q	LNTH	SLOPE	SIZE	Z	Q	NAME	TC	ZONE	IMPV	TC	ZONE	IMPV	PCT	
5 1A	30.	64.	30.	64.	3	.01700	.00	.00	0.	16	18	K50	.42	18	K50	.42		
5 2A	24.	90.	54.	134.	4	.01700	3.50	.00	0.	16	7	K50	.92	7	K50	.92		
5 3A	12.	42.	66.	170.	4	.01400	4.00	.00	0.	16	8	K50	.92	8	K50	.92		
5 4A	18.	67.	84.	226.	0	.00000	.00	.00	0.	16	7	K50	.92	7	K50	.92		
5 5A	5.	15.	89.	241.	0	.00000	.00	.00	0.	16	10	K50	.68	10	K50	.68		

1DATE: 00000000
 TIME: 000000

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR WEST WATERSHED				MODIFIED RATIONAL METHOD HYDROLOGY											
LOCATION	SUBAREA	AREA	Q	TOTAL AREA	TOTAL Q	CONV TYPE	CONV LGTH	CONV SLOPE	CONV SIZE	CONV Z	CONTROL Q	SOIL NAME	TC	RAIN ZONE	STORM DAY
5	1A	24.	42.	24.	42.	3	1300.	.01600	.00	.00	0.	19	15	K50	4
5	2A	3.	10.	27.	44.	3	1300.	.01800	.00	.00	0.	16	9	K50	.92
5	3A	26.	81.	53.	99.	3	600.	.01300	.00	.00	0.	16	10	K50	.92
5	4A	10.	35.	63.	129.	4	600.	.01100	3.75	.00	0.	16	8	K50	.92
5	5A	9.	27.	72.	153.	0	0.	.00000	.00	.00	0.	16	11	K50	.92

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

CORBIN AND NORDHOFF

HEADING LINE NO 2 IS -

HYDROLOGY STUDY FOR EIR. Existing SD in Shirley Ave.

HEADING LINE NO 3 IS -

10-yr North of Nordhoff, 50-yr South of Nordhoff.

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	1 IS A SYSTEM OUTLET U/S DATA	STATION	INVERT	SECT	*	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
		27.84	812.94	1	*	821.00				
ELEMENT NO	2 IS A REACH U/S DATA	STATION	INVERT	SECT	*		0.00	61.50	0.00	0
		79.99	814.74	1	*					
ELEMENT NO	3 IS A REACH U/S DATA	STATION	INVERT	SECT	*		0.00	0.00	0.00	0
		100.00	815.43	1	*					
ELEMENT NO	4 IS A REACH U/S DATA	STATION	INVERT	SECT	*		0.00	0.00	0.00	0
		722.09	818.88	1	*					
ELEMENT NO	5 IS A JUNCTION U/S DATA	STATION	INVERT	SECT	*		0.00	0.00	0.00	1
		723.09	818.89	1	Q3	0.0	0.0	45.00	0.00	0.00
				2	Q4	0.0	820.38	0.00	0.00	0.00
ELEMENT NO	6 IS A REACH U/S DATA	STATION	INVERT	SECT	*		0.00	0.00	0.00	0
		796.30	819.28	1	*					
ELEMENT NO	7 IS A JUNCTION U/S DATA	STATION	INVERT	SECT	*		0.00	0.00	0.00	0
		797.30	819.29	1	Q3	0.0	0.0	60.00	0.00	0.00
				3	Q4	0.0	820.91	0.00	0.00	0.00
ELEMENT NO	8 IS A REACH U/S DATA	STATION	INVERT	SECT	*		0.00	0.00	0.00	0
		802.13	819.32	1	*					
ELEMENT NO	9 IS A JUNCTION U/S DATA	STATION	INVERT	SECT	*		0.00	0.00	0.00	0
		803.13	819.33	1	Q3	0.0	0.0	45.00	0.00	0.00
				3	Q4	0.0	820.94	0.00	0.00	0.00
ELEMENT NO	10 IS A REACH U/S DATA	STATION	INVERT	SECT	*		0.00	0.00	0.00	0
		813.88	819.39	1	*					
ELEMENT NO	11 IS A JUNCTION U/S DATA	STATION	INVERT	SECT	*		0.00	0.00	0.00	0
		821.55	820.52	4	Q3	0.0	0.0	45.00	0.00	0.00
				2	Q4	0.0	821.39	0.00	0.00	0.00

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 12 IS A REACH * * *

ELEMENT NO	DESCRIPTION	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
13	IS A REACH	864.11	822.30	4	0.013	0.00	24.50	0.00	0
14	IS A REACH	902.34	822.96	4	0.013	0.00	24.50	0.00	0
15	IS A JUNCTION	1037.24	825.31	4	0.013	0.00	0.00	0.00	0
16	IS A REACH	1039.24	825.56	5	0.013	0.00	826.31	0.00	0
17	IS A JUNCTION	1467.74	832.43	5	0.013	0.00	0.00	0.00	0
18	IS A REACH	1469.24	832.68	7	0.013	0.00	833.31	0.00	0
19	IS A JUNCTION	1549.91	834.00	7	0.013	0.00	0.00	0.00	0
20	IS A REACH	1552.58	834.25	8	0.013	0.00	834.37	0.00	0
21	IS A WALL ENTRANCE	2036.00	842.96	8	0.013	0.00	0.00	0.00	1
22	IS A SYSTEM HEADWORKS	2036.00	842.96	9	0.500	0.00	0.00	0.00	1

W S ELEV
0.00

F 0 5 1 5 P

PAGE NO 4

WATER SURFACE PROFILE - ELEMENT CARD LISTING

NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING

** WARNING NO. 2 ** - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN HDWKDS, W.S.ELEV = INV + DC

821.55 820.52 2.473 822.993 134.0 18.44 5.281 828.274 0.00 3.329 3.50 0.00 0.00 0 0.00
 13.37 0.04182 .023863 0.32 2.057 0.00 PAGE 2
 F0515P

WATER SURFACE PROFILE LISTING

CORBIN AND NORDHOFF

HYDROLOGY STUDY FOR EIR. Existing SD in Shirley Ave.
 10-yr North of Nordhoff, 50-yr South of Nordhoff.

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.ELEV.	SUPER ELEV	CRITICAL DEPTH	HGT/DIA	BASE/ID NO.	ZL	NO AVBPR PIER
L/ELEM	SO					SF AVE	HF		NORM DEPTH	ZR			
834.92	821.08	2.543	823.622	134.0	17.90	4.973	828.595	0.00	3.329	3.50	0.00	0.00	0 0.00
16.66	0.04182					.021829	0.36		2.057				
851.58	821.78	2.662	824.438	134.0	17.06	4.520	828.958	0.00	3.329	3.50	0.00	0.00	0 0.00
12.53	0.04182					.019637	0.25		2.057				
864.11	822.30	2.795	825.095	134.0	16.27	4.109	829.204	0.00	3.329	3.50	0.00	0.00	0 0.00
38.23	0.01726					.018854	0.72		2.913				
902.34	822.96	2.762	825.722	134.0	16.45	4.203	829.925	0.00	3.329	3.50	0.00	0.00	0 0.00
42.89	0.01742					.019371	0.83		2.900				
945.23	823.71	2.721	826.428	134.0	16.69	4.326	830.754	0.00	3.329	3.50	0.00	0.00	0 0.00
92.01	0.01742					.020772	1.91		2.900				
1037.24	825.31	2.597	827.907	134.0	17.50	4.758	832.665	0.00	3.329	3.50	0.00	0.00	0 0.00
JUNCT STR	0.12500					.022443	0.04						
1039.24	825.56	3.168	828.728	133.0	16.14	4.045	832.773	0.00	3.168	3.25	0.00	0.00	0 0.00
3.34	0.01603					.024285	0.08		3.250				
1042.58	825.61	3.250	828.864	133.0	16.03	3.991	832.855	0.00	3.168	3.25	0.00	0.00	0 0.00
425.16	0.01603					.025753	10.95		3.250				
1467.74	832.43	7.465	839.895	133.0	16.03	3.991	843.886	0.00	3.168	3.25	0.00	0.00	0 0.00
JUNCT STR	0.16667					.032557	0.05						
1469.24	832.68	5.918	838.598	132.0	18.67	5.414	844.012	0.00	2.965	3.00	0.00	0.00	0 0.00

80.67 0.01636 .039167 3.16 3.000 0.00
 1549.91 834.00 7.757 841.757 132.0 18.67 5.414 847.171 0.00 2.965 3.00 0.00 0 0.00
 JUNCT STR 0.09363 .037819 0.10 0.00
 LICENSEE: ENGINEERING TECHNOLOGY INC. F0515P PAGE 3

CORBIN AND NORDHOFF
 HYDROLOGY STUDY FOR EIR. Existing SD in Shirley Ave.
 10-yr North of Nordhoff, 50-yr South of Nordhoff.

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.ELEV.	SUPER ELEV	CRITICAL DEPTH	HGT/DIA	BASE/ID NO.	ZL	NO AVBPR PIER
L/ELEM	SO				SF AVE	HF			NORM DEPTH			ZR	
1552.58	834.25	10.710	844.960	101.0	17.00	4.489	849.449	0.00	2.710	2.75	0.00	0.00	0 0.00
483.42	0.01802				.036471	17.63			2.750			0.00	
2036.00	842.96	19.856	862.816	101.0	17.00	4.489	867.305	0.00	2.710	2.75	0.00	0.00	0 0.00
WALL ENTRANCE													
2036.00	842.96	26.590	869.550	101.0	0.24	0.001	869.551	0.00	0.564	10.00	42.00	0.00	0 0.00

8/29/**
15:55:36
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 2

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 1

Input Data:

Rainfall Frequency Zone	Frequency (yrs.)	Time of Concentration (min)		Max.Conv Code
		Assumed	Calculated	
K	10	5.	20	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Street	1	0-	0	16	.420	.008	29.7	890.0	870.6	.0	.00	0 0
1-	2 Street	1	0-	0	16	.420	.100	.0	870.6	870.5	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
100.0	892.0	890.0	.020	.040	16	.420

8/29/**
 15:55:36
 Vers.1.0

PAI
 TIME OF CONCENTRATION calculated by FL 08/28/02

page 3

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
 EAST WATERSHED
 SUBAREA 1

Reach Data:

Reach No.	Type	Conveyance (ft)		Z		Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
		Depth	Width	Hor	Vert				
1- 1	Street	.50	36.0	.00	.00	2550.0	.0076	3.0	21.0
1- 2	Street	.43	36.0	.00	.00	1.0	.1000	29.7	42.0
Outlet								29.7	42.0

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.
 Depth No. 2 = Gutter to Crown.
 Depth No. 3 = Crown to Curb.
 Depth No. 4 = Curb to Property Line.

Input Data File A:\1E.INP
 Output Data File A:\1E.OUT
 Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
15:55:36
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 5

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 1

Input Data:

Rainfall Frequency Zone	(yrs.)	Time of Concentration (min) Assumed	Calculated	Max.Conv Code
K	25	5.	20	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope (ac)	Area	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Street	1	0-	0 16	.420	.008	29.7	890.0	870.6	.0	.00	0	0
1-	2 Street	1	0-	0 16	.420	.100	.0	870.6	870.5	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
100.0	892.0	890.0	.020	.040	16	.420

8/29/**
15:55:36
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 6

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 1

Reach Data:

Reach No.	Conveyance Type	(ft) Depth	Width	Z Hor	Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1- 1	Street	.52	36.0	.00	.00	2550.0	.0076	3.0	23.7
1- 2	Street	.44	36.0	.00	.00	1.0	.1000	29.7	47.3
Outlet								29.7	47.3

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File A:\1E.INP
Output Data File A:\1E.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
15:55:36
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 8

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 1

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 50	5. 18	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope (ac)	Area	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Street	1	0-	0 16	.420	.008	29.7	890.0	870.6	.0	.00	0	0
1-	2 Street	1	0-	0 16	.420	.100	.0	870.6	870.5	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
100.0	892.0	890.0	.020	.040	16	.420

8/29/**
 15:55:36
 Vers.1.0

PAI
 TIME OF CONCENTRATION calculated by FL 08/28/02

page 9

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
 EAST WATERSHED
 SUBAREA 1

Reach Data:

Reach No.	Type	Conveyance (ft)		Z		Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Street	.56	36.0	.00	.00	2550.0	.0076	3.0	30.1
1-	2 Street	.48	36.0	.00	.00	1.0	.1000	29.7	60.2
Outlet								29.7	60.2

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
1	1	2	3	4	.670	12.	36.
2	.170	.330	.170	.250	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.
 Depth No. 2 = Gutter to Crown.
 Depth No. 3 = Crown to Curb.
 Depth No. 4 = Curb to Property Line.

Input Data File A:\1E.INP
 Output Data File A:\1E.OUT
 Runoff Coefficient Data File RUNCOEF.DAT

8/30/**
15:46:40
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 2

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 2

Input Data:

Rainfall Zone	Frequency (yrs.)	Time of Concentration (min)		Max.Conv Code
		Assumed	Calculated	
K	10	5.	8	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1- 1	Channel	0	0- 0	16	.920	.005	9.6	863.0	857.0	.0	.00	0	0
1- 2	Street	1	0- 0	16	.920	.015	14.4	857.4	850.0	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
200.0	869.0	863.0	.030	.014	16	.920

8/30/**
15:46:40
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 3

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 2

Reach Data:

Reach No.	Type	Conveyance (ft) Depth	Width	Z Hor	Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Channel	.94	2.5	.00	.00	1100.0	.0055	1.0	12.3
1-	2 Channel	1.09	2.5	.00	.00	500.0	.0148	9.6	24.6
Outlet								24.0	62.0

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File a:\22e.inp
Output Data File a:\22e.out
Runoff Coefficient Data File RUNCOEF.DAT

8/30/**
15:46:40
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 5

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 2

Input Data:

Rainfall Frequency	Time of Concentration (min)		Max.Conv	
Zone	(yrs.)	Assumed	Calculated	Code
K	25	5.	8	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1- 1	Channel	0	0- 0	16	.920	.005	9.6	863.0	857.0	.0	.00	0	0
1- 2	Street	1	0- 0	16	.920	.015	14.4	857.4	850.0	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
200.0	869.0	863.0	.030	.014	16	.920

8/30/**
15:46:40
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02
CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 2

page 6

Reach Data:

Reach No.	Type	Conveyance (ft)		Z		Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1- 1	Channel	1.02	2.5	.00	.00	1100.0	.0055	1.0	13.7
1- 2	Channel	1.18	2.5	.00	.00	500.0	.0148	9.6	27.5
Outlet								24.0	70.2

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
1	1	2	3	4	.670	12.	36.
2	.170	.330	.170	.250	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File a:\22e.inp
Output Data File a:\22e.out
Runoff Coefficient Data File RUNCOEF.DAT

8/30/**
15:46:40
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 2

Input Data:

Zone	Rainfall Frequency	Time of Concentration (min)		Max.Conv
	(yrs.)	Assumed	Calculated	Code
K	50	5.	7	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1- 1	Channel	0	0- 0	16	.920	.005	9.6	863.0	857.0	.0	.00	0	0
1- 2	Street	1	0- 0	16	.920	.015	14.4	857.4	850.0	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
200.0	869.0	863.0	.030	.014	16	.920

8/30/**
15:46:40
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 9

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 2

Reach Data:

Reach No.	Conveyance Type	Depth (ft)	Width	Z Hor	Z Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-1	Channel	1.16	2.5	.00	.00	1100.0	.0055	1.0	16.3
1-2	Channel	1.13	3.0	.00	.00	500.0	.0148	9.6	32.5
Outlet								24.0	80.8

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File a:\22e.inp
Output Data File a:\22e.out
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
15:19:44
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 2

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 3

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 10	5. 9	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S X
1- 1	Channel	0	0- 0	16	.920	.015	2.8	845.0	839.7	.0	.00	0 0
1- 2	Pipe	0	0- 0	16	.920	.002	9.3	839.7	837.8	.0	.00	0 0
1- 3	Pipe	0	0- 0	16	.920	.010	.0	837.8	837.7	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
200.0	849.8	845.0	.024	.014	16	.920

8/29/**
15:19:44
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 3

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 3

Reach Data:

Reach No.	Conveyance Type	(ft) Depth	Width	Z Hor	Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1- 1	Channel	.41	1.5	.00	.00	350.0	.0151	.3	3.4
1- 2	Channel	.83	2.5	.00	.00	800.0	.0024	2.8	6.7
1- 3	Channel	1.19	3.0	.00	.00	10.0	.0100	12.1	29.0
Outlet								12.1	29.0

Street Cross-Section Data:

Section No.	Depth (feet) 1	2	No.: 3	4	Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
1	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.

Depth No. 2 = Gutter to Crown.

Depth No. 3 = Crown to Curb.

Depth No. 4 = Curb to Property Line.

Input Data File C:\3E.INP
Output Data File C:\3E.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
15:19:44
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 5

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 3

Input Data:

Rainfall Frequency Zone	(yrs.)	Time of Concentration (min) Assumed	Calculated	Max.Conv Code
K	25	5.	9	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope (ac)	Area	Elev. (ft.) Top	Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1- 1	Channel	0	0- 0	16	.920	.015	2.8	845.0	839.7	.0	.00	0	0
1- 2	Pipe	0	0- 0	16	.920	.002	9.3	839.7	837.8	.0	.00	0	0
1- 3	Pipe	0	0- 0	16	.920	.010	.0	837.8	837.7	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
200.0	849.8	845.0	.024	.014	16	.920

8/29/**
15:19:44
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 6

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 3

Reach Data:

Reach No.	Conveyance Type	Depth (ft)	Width	Z Hor	Z Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1- 1	Channel	.45	1.5	.00	.00	350.0	.0151	.3	3.7
1- 2	Channel	.90	2.5	.00	.00	800.0	.0024	2.8	7.5
1- 3	Channel	1.29	3.0	.00	.00	10.0	.0100	12.1	32.4
Outlet								12.1	32.4

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.

Depth No. 2 = Gutter to Crown.

Depth No. 3 = Crown to Curb.

Depth No. 4 = Curb to Property Line.

Input Data File C:\3E.INP

Output Data File C:\3E.OUT

Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
15:19:44
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 8

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 3

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 50	5. 8	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1- 1	Channel	0	0- 0	16	.920	.015	2.8	845.0	839.7	.0	.00	0	0
1- 2	Pipe	0	0- 0	16	.920	.002	9.3	839.7	837.8	.0	.00	0	0
1- 3	Pipe	0	0- 0	16	.920	.010	.0	837.8	837.7	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
200.0	849.8	845.0	.024	.014	16	.920

8/29/**
15:19:44
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 9

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 3

Reach Data:

Reach No.	Conveyance (ft)		Z		Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top	
	Type	Depth	Width	Hor					Vert
1- 1	Channel	.50	1.5	.00	.00	350.0	.0151	.3	4.4
1- 2	Channel	1.01	2.5	.00	.00	800.0	.0024	2.8	8.9
1- 3	Channel	1.47	3.0	.00	.00	10.0	.0100	12.1	38.3
Outlet								12.1	38.3

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\3E.INP
Output Data File C:\3E.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
13:43:42
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 4

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 10	5. 7	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Channel	0	0-	0	16	.920	.007	18.1	841.5	829.5	.0	.00	0 0
1-	2 Channel	0	0-	0	16	.920	.010	.0	829.5	829.4	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
100.0	842.5	841.5	.010	.014	16	.920

8/29/**
13:43:42
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 3

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 4

Reach Data:

Reach No.	Conveyance Type	(ft) Depth	(ft) Width	Z Hor	Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Channel	1.22	3.0	.00	.00	1700.0	.0071	1.8	25.1
1-	2 Channel	1.54	3.5	.00	.00	10.0	.0100	18.1	50.2
Outlet								18.1	50.2

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\4E.INP
Output Data File C:\4E.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
13:43:42
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 5

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 4

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 25	5. 7	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1- 1	Channel	0	0- 0	16	.920	.007	18.1	841.5	829.5	.0	.00	0	0
1- 2	Channel	0	0- 0	16	.920	.010	.0	829.5	829.4	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
100.0	842.5	841.5	.010	.014	16	.920

8/29/**
13:43:42
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 6

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 4

Reach Data:

Reach No.	Conveyance Type	(ft) Depth	(ft) Width	Z Hor	Z Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Channel	1.32	3.0	.00	.00	1700.0	.0071	1.8	28.1
1-	2 Channel	1.68	3.5	.00	.00	10.0	.0100	18.1	56.1
Outlet								18.1	56.1

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\4E.INP
Output Data File C:\4E.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
13:43:42
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 4

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 50	5. 7	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1- 1	Channel	0	0- 0	16	.920	.007	18.1	841.5	829.5	.0	.00	0	0
1- 2	Channel	0	0- 0	16	.920	.010	.0	829.5	829.4	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
100.0	842.5	841.5	.010	.014	16	.920

8/29/**
13:43:42
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 9

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
EAST WATERSHED
SUBAREA 4

Reach Data:

Reach No.	Conveyance Type	(ft) Depth	Width	Z Hor	Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Channel	1.42	3.0	.00	.00	1700.0	.0071	1.8	30.7
1-	2 Channel	1.58	4.0	.00	.00	10.0	.0100	18.1	61.4
Outlet								18.1	61.4

Street Cross-Section Data:

Section No.	Depth (feet) 1	2	No.: 3	4	Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
1	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.

Depth No. 2 = Gutter to Crown.

Depth No. 3 = Crown to Curb.

Depth No. 4 = Curb to Property Line.

Input Data File C:\4E.INP

Output Data File C:\4E.OUT

Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
10:21:45
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

CORBIN AND NORDHOFF
EAST WATERSHED
SUBAREA 5

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 10	5. 19	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1- 1	Channel	0	0- 0	16	.680	.011	1.8	847.9	843.5	.0	.00	0	0
1- 2	Street	4	0- 0	16	.680	.009	3.0	843.5	839.8	.0	.00	0	0
1- 3	Pipe	0	0- 0	16	.680	.007	.2	839.8	829.5	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
200.0	849.9	847.9	.010	.040	16	.680

8/29/**
10:21:45
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

CORBIN AND NORDHOFF
EAST WATERSHED
SUBAREA 5

Reach Data:

Reach No.	Conveyance (ft)		Z		Length (ft)	Effect. Slope	Area (ac.)		Q (cfs)
	Type	Depth	Width	Hor			Vert	at top	
1- 1	Channel	.35	1.0	.00	.00	400.0	.0110	.2	1.4
1- 2	Channel	.43	1.5	.00	.00	400.0	.0093	1.8	2.8
1- 3	Channel	.73	2.0	.00	.00	1475.0	.0070	4.8	7.4
Outlet								5.0	7.7

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.170	.330	.000	.250	.500	12.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\5E.INP
Output Data File C:\5E.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
10:21:45
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 5

CORBIN AND NORDHOFF
EAST WATERSHED
SUBAREA 5

Input Data:

Rainfall Frequency	Time of Concentration (min)		Max.Conv	
Zone	(yrs.)	Assumed	Calculated	Code
K	25	5.	18	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Channel	0	0-	0	16	.680	.011	1.8	847.9	843.5	.0	.00	0 0
1-	2 Street	4	0-	0	16	.680	.009	3.0	843.5	839.8	.0	.00	0 0
1-	3 Pipe	0	0-	0	16	.680	.007	.2	839.8	829.5	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
200.0	849.9	847.9	.010	.040	16	.680

8/29/**
10:21:45
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 6

CORBIN AND NORDHOFF
EAST WATERSHED
SUBAREA 5

Reach Data:

Reach No.	Conveyance (ft)		Z		Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top	
	Type	Depth	Width	Hor					Vert
1- 1	Channel	.39	1.0	.00	.00	400.0	.0110	.2	1.6
1- 2	Channel	.48	1.5	.00	.00	400.0	.0093	1.8	3.2
1- 3	Channel	.81	2.0	.00	.00	1475.0	.0070	4.8	8.5
Outlet								5.0	8.8

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.170	.330	.000	.250	.500	12.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\5E.INP
Output Data File C:\5E.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
10:21:45
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

CORBIN AND NORDHOFF
EAST WATERSHED
SUBAREA 5

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 50	5. 17	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1- 1	Channel	0	0- 0	16	.680	.011	1.8	847.9	843.5	.0	.00	0	0
1- 2	Street	4	0- 0	16	.680	.009	3.0	843.5	839.8	.0	.00	0	0
1- 3	Pipe	0	0- 0	16	.680	.007	.2	839.8	829.5	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
200.0	849.9	847.9	.010	.040	16	.680

8/29/**
10:21:45
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 9

CORBIN AND NORDHOFF
EAST WATERSHED
SUBAREA 5

Reach Data:

Reach No.	Conveyance Type	(ft) Depth	Width	Z Hor	Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1- 1	Channel	.45	1.0	.00	.00	400.0	.0110	.2	1.9
1- 2	Channel	.54	1.5	.00	.00	400.0	.0093	1.8	3.9
1- 3	Channel	.94	2.0	.00	.00	1475.0	.0070	4.8	10.3
Outlet								5.0	10.8

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.170	.330	.000	.250	.500	12.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\5E.INP
Output Data File C:\5E.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
15:55:14
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 1

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 10	5. 17	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope (ac)	Area	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Street	1	0-	0 19	.420	.012	23.5	917.3	894.5	.0	.00	0	0
1-	2 Street	1	0-	0 19	.420	.010	.0	894.5	894.4	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

- 1=street flow maximum at property line
- 2=pipe maximum size at 8 feet
- 3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size
1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.
1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
100.0	919.3	917.3	.020	.040	19	.420

8/29/**
15:55:14
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 3

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 1

Reach Data:

Reach No.	Conveyance Type	Depth (ft)	Width	Z Hor	Z Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1- 1	Street	.41	36.0	.00	.00	1850.0	.0123	2.4	12.0
1- 2	Street	.50	36.0	.00	.00	10.0	.0100	23.5	24.1
Outlet								23.5	24.1

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File A:\1W.INP
Output Data File A:\1W.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
15:55:14
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 5

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 1

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 25	5. 16	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Street	1	0-	0 19	.420	.012	23.5	917.3	894.5	.0	.00	0	0
1-	2 Street	1	0-	0 19	.420	.010	.0	894.5	894.4	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
100.0	919.3	917.3	.020	.040	19	.420

8/29/**
15:55:14
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 6

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 1

Reach Data:

Reach No.	Conveyance (ft) Type	Depth	Width	Z Hor	Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Street	.43	36.0	.00	.00	1850.0	.0123	2.4	14.3
1-	2 Street	.53	36.0	.00	.00	10.0	.0100	23.5	28.6
Outlet								23.5	28.6

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File A:\1W.INP
Output Data File A:\1W.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
15:55:14
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 8

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 1

Input Data:

Rainfall Frequency Zone	Frequency (yrs.)	Time of Concentration (min)		Max.Conv Code
		Assumed	Calculated	
K	50	5.	15	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope (ac)	Area	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S X
1-	1 Street	1	0-	0	19	.420	.012	23.5	917.3	894.5	.0	.00 0 0
1-	2 Street	1	0-	0	19	.420	.010	.0	894.5	894.4	.0	.00 0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
100.0	919.3	917.3	.020	.040	19	.420

8/29/**
 15:55:14
 Vers.1.0

PAI
 TIME OF CONCENTRATION calculated by FL 08/28/02

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
 WEST WATERSHED
 SUBAREA 1

Reach Data:

Reach No.	Conveyance Type	(ft)		Z		Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1- 1	Street	.46	36.0	.00	.00	1850.0	.0123	2.4	18.4
1- 2	Street	.57	36.0	.00	.00	10.0	.0100	23.5	36.8
Outlet								23.5	36.8

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
 Depth No. 2 = Gutter to Crown.
 Depth No. 3 = Crown to Curb.
 Depth No. 4 = Curb to Property Line.

Input Data File A:\1W.INP
 Output Data File A:\1W.OUT
 Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
9:17:36
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02

page 2

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 2

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 10	5. 9	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix X	
1-	1 1/2 St.	1	0-	0	16	.920	.016	2.8	894.1	873.2	.0	.00	0 0
1-	2 1/2 St.	1	0-	0	16	.920	.100	.0	873.2	873.1	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
50.0	895.1	894.1	.020	.014	16	.920

8/29/**
9:17:36
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02

page 3

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 2

Reach Data:

Reach No.	Conveyance Type	(ft) Depth	(ft) Width	Z Hor	Z Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 1/2 St.	.33	36.0	.00	.00	1300.0	.0161	.3	3.4
1-	2 1/2 St.	.31	36.0	.00	.00	1.0	.1000	2.8	6.7
Outlet								2.8	6.7

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File c:\22w.inp
Output Data File c:\22w.out
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
9:17:36
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02

page 5

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 2

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 25	5. 9	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 1/2 St.	1	0-	0	16	.920	.016	2.8	894.1	873.2	.0	.00	0 0
1-	2 1/2 St.	1	0-	0	16	.920	.100	.0	873.2	873.1	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
50.0	895.1	894.1	.020	.014	16	.920

8/29/**
 9:17:36
 Vers.1.0

PAI
 TIME OF CONCENTRATION calculated by FL 08/29/02

page 6

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
 WEST WATERSHED
 SUBAREA 2

Reach Data:

Reach No.	Conveyance (ft) Type	Depth	Width	Z Hor	Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 1/2 St.	.34	36.0	.00	.00	1300.0	.0161	.3	3.7
1-	2 1/2 St.	.32	36.0	.00	.00	1.0	.1000	2.8	7.5
Outlet								2.8	7.5

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
 Depth No. 2 = Gutter to Crown.
 Depth No. 3 = Crown to Curb.
 Depth No. 4 = Curb to Property Line.

Input Data File c:\22w.inp
 Output Data File c:\22w.out
 Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
 9:17:36
 Vers.1.0

PAI
 TIME OF CONCENTRATION calculated by FL 08/29/02

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
 WEST WATERSHED
 SUBAREA 2

Input Data:

Rainfall Frequency Zone	Frequency (yrs.)	Time of Concentration (min)		Max.Conv Code
		Assumed	Calculated	
K	50	5.	9	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S X
1-	1 1/2 St.	1	0- 0	16	.920	.016	2.8	894.1	873.2	.0	.00	0 0
1-	2 1/2 St.	1	0- 0	16	.920	.100	.0	873.2	873.1	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
50.0	895.1	894.1	.020	.014	16	.920

8/29/**
9:17:36
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02

page 9

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 2

Reach Data:

Reach No.	Conveyance (ft)		Z		Length (ft)	Effect. Slope	Area (ac.)		Q (cfs) at top
	Type	Depth	Width	Hor			Vert	at top	
1- 1 1/2 St.	.35	36.0	.00	.00	1300.0	.0161	.3	4.2	
1- 2 1/2 St.	.33	36.0	.00	.00	1.0	.1000	2.8	8.4	
Outlet							2.8	8.4	

Street Cross-Section Data:
Section Depth (feet) No.:

No.	Depth (feet)				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File c:\22w.inp
Output Data File c:\22w.out
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
10:32:19
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02
CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 3

Input Data:

Rainfall Frequency	Time of Concentration (min)		Max.Conv	
Zone	(yrs.)	Assumed	Calculated	Code
K	10	5.	10	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Channel	0	0-	0	16	.920	.013	2.0	863.0	856.4	.0	.00	0 0
1-	2 Street	1	0-	0	16	.920	.005	23.9	856.4	850.0	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
200.0	869.0	863.0	.030	.014	16	.920

8/29/**
10:32:19
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02
CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 3

page 3

Reach Data:

Reach No.	Conveyance Type	Depth (ft)	Width	Z Hor	Z Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Channel	.47	1.0	.00	.00	500.0	.0132	.2	2.3
1-	2 Channel	.75	1.5	.00	.00	1200.0	.0053	2.0	4.5
Outlet								25.9	57.5

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
No.	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\3W.INP
Output Data File C:\3W.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
10:32:19
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 5

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 3

Input Data:

Rainfall Zone	Frequency	Time of Concentration (min)		Max.Conv
	(yrs.)	Assumed	Calculated	Code
K	25	5.	10	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Channel	0	0-	0	16	.920	.013	2.0	863.0	856.4	.0	.00	0 0
1-	2 Street	1	0-	0	16	.920	.005	23.9	856.4	850.0	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
200.0	869.0	863.0	.030	.014	16	.920

8/29/**
10:32:19
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 6

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 3

Reach Data:

Reach No.	Conveyance Type	Depth (ft)	Width	Z Hor	Z Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Channel	.35	1.5	.00	.00	500.0	.0132	.2	2.5
1-	2 Channel	.62	2.0	.00	.00	1200.0	.0053	2.0	5.0
Outlet								25.9	64.7

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\3W.INP
Output Data File C:\3W.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
10:32:19
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 3

Input Data:

Rainfall Frequency	Time of Concentration (min)	Max.Conv
Zone (yrs.)	Assumed Calculated	Code
K 50	5. 10	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.) Top	Elev. (ft.) Bottom	Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Channel	0	0-	0 16	.920	.013	2.0	863.0	856.4	.0	.00	0	0
1-	2 Street	1	0-	0 16	.920	.005	23.9	856.4	850.0	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

- 1=street flow maximum at property line
- 2=pipe maximum size at 8 feet
- 3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft) Top	Elevation (ft) Bottom	Slope	Manning's N	Soil No.	Proportion Impervious
200.0	869.0	863.0	.030	.014	16	.920

8/29/**
 10:32:19
 Vers.1.0

PAI
 TIME OF CONCENTRATION calculated by FL 08/28/02
 CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
 WEST WATERSHED
 SUBAREA 3

Reach Data:

Reach No.	Conveyance Type	Conveyance (ft)		Z		Length (ft)	Effect. Slope	Area (ac.)		Q (cfs) at top
		Depth	Width	Hor	Vert			at top	at top	
1-1	Channel	.39	1.5	.00	.00	500.0	.0132	.2		2.8
1-2	Channel	.67	2.0	.00	.00	1200.0	.0053	2.0		5.7
								25.9		74.4
Outlet										

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.

Depth No. 1 = Gutter.
 Depth No. 2 = Gutter to Crown.
 Depth No. 3 = Crown to Curb.
 Depth No. 4 = Curb to Property Line.

Input Data File C:\3W.INP
 Output Data File C:\3W.OUT
 Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
10:43:25
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02

CORBIN AND NORDHOFF
WEST WATERSHED
SUBAREA 4

```
Eiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii»
o
o                               Subarea No.  A  1                               o
o                                                                                   o
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii¹
o
o                               TIME OF CONCENTRATION =  9. MINUTES           o
o                               *****                                       o
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii¹
o
o                               Rainfall :      Zone = K                       o
o                               Frequency = 10 Years                          o
o                                                                                   o
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii¹
o
o                               Subarea Area =  10. Acres                       o
o                                                                                   o
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii¹
o
o                               Outlet Q =  24. cfs                            o
o                                                                                   o
Eiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii¼
```

Travel Time:

Reach No.	Reach Time
Land	4.9
1- 1	2.2
1- 2	1.8
Total	8.9

8/29/**
10:43:25
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02

CORBIN AND NORDHOFF
WEST WATERSHED
SUBAREA 4

Input Data:

Zone	Rainfall Frequency (yrs.)	Time of Concentration (min)		Max.Conv Code
		Assumed	Calculated	
K	10	5.	9	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Channel	0	0-	0	16	.920	.009	2.8	850.0	844.5	.0	.00	0 0
1-	2 1/2 St.	1	0-	0	16	.920	.005	7.1	844.5	842.4	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
200.0	852.0	850.0	.010	.014	16	.920

8/29/**
10:43:25
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02
CORBIN AND NORDHOFF
WEST WATERSHED
SUBAREA 4

Reach Data:

Reach No.	Conveyance (ft)		Z		Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top	
	Type	Depth	Width	Hor					Vert
1- 1	Channel	.50	1.5	.00	.00	600.0	.0092	.3	3.4
1- 2	Channel	.79	2.0	.00	.00	450.0	.0047	2.8	6.7
Outlet							9.9	23.9	

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\4W.INP
Output Data File C:\4W.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
10:43:25
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02

CORBIN AND NORDHOFF
WEST WATERSHED
SUBAREA 4

Input Data:

Rainfall Frequency	Time of Concentration (min)		Max.Conv	
Zone	(yrs.)	Assumed	Calculated	Code
K	25	5.	8	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Channel	0	0- 0	16	.920	.009	2.8	850.0	844.5	.0	.00	0	0
1-	2 1/2 St.	1	0- 0	16	.920	.005	7.1	844.5	842.4	.0	.00	0	0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
200.0	852.0	850.0	.010	.014	16	.920

8/29/**
10:43:25
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02

page 6

CORBIN AND NORDHOFF
WEST WATERSHED
SUBAREA 4

Reach Data:

Reach No.	Conveyance Type	(ft) Depth	Width	Z Hor	Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1- 1	Channel	.56	1.5	.00	.00	600.0	.0092	.3	4.0
1- 2	Channel	.91	2.0	.00	.00	450.0	.0047	2.8	8.0
Outlet								9.9	27.9

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
No.	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\4W.INP
Output Data File C:\4W.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
10:43:25
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02

CORBIN AND NORDHOFF
WEST WATERSHED
SUBAREA 4

```
Eiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii»
o
o          Subarea No.  A  1          o
o
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii1
o
o          TIME OF CONCENTRATION =  8. MINUTES          o
o          *****          o
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii1
o
o          Rainfall :      Zone = K          o
o          Frequency = 50 Years          o
o
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii1
o
o          Subarea Area =  10. Acres          o
o
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii1
o
o          Outlet Q =  31. cfs          o
o
Eiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii¼
```

Travel Time:

Reach No.	Reach Time
Land	4.3
1- 1	2.0
1- 2	1.7

Total	8.0

8/29/**
10:43:25
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02

page 8

CORBIN AND NORDHOFF
WEST WATERSHED
SUBAREA 4

Input Data:

Rainfall Zone	Frequency (yrs.)	Time of Concentration (min)		Max.Conv Code
		Assumed	Calculated	
K	50	5.	8	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Channel	0	0-	0	16	.920	.009	2.8	850.0	844.5	.0	.00	0 0
1-	2 1/2 St.	1	0-	0	16	.920	.005	7.1	844.5	842.4	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
200.0	852.0	850.0	.010	.014	16	.920

8/29/**
10:43:25
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/29/02

page 9

CORBIN AND NORDHOFF
WEST WATERSHED
SUBAREA 4

Reach Data:

Reach No.	Conveyance Type	(ft) Depth	(ft) Width	Z Hor	Z Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Channel	.60	1.5	.00	.00	600.0	.0092	.3	4.4
1-	2 Channel	.98	2.0	.00	.00	450.0	.0047	2.8	8.9
Outlet								9.9	31.3

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.170	.330	.170	.250	.670	12.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\4W.INP
Output Data File C:\4W.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
13:54: 5
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 2

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 5

Input Data:

Rainfall Zone	Frequency (yrs.)	Time of Concentration (min)		Max.Conv Code
		Assumed	Calculated	
K	10	5.	6	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
								Top	Bottom				
1-	1 Channel	0	0-	0	16	.920	.008	8.6	844.5	836.0	.0	.00	0 0
1-	2 Channel	0	0-	0	16	.920	.010	.0	836.0	835.9	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
100.0	845.5	844.5	.010	.014	16	.920

8/29/**
 13:54: 5
 Vers.1.0

PAI
 TIME OF CONCENTRATION calculated by FL 08/28/02

page 3

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
 WEST WATERSHED
 SUBAREA 5

Reach Data:

Reach No.	Conveyance (ft) Type	Depth	Width	Z Hor	Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Channel	.88	2.5	.00	.00	1100.0	.0077	.9	13.1
1-	2 Channel	1.12	3.0	.00	.00	10.0	.0100	8.6	26.2
Outlet								8.6	26.2

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
 Depth No. 2 = Gutter to Crown.
 Depth No. 3 = Crown to Curb.
 Depth No. 4 = Curb to Property Line.

Input Data File C:\5W.INP
 Output Data File C:\5W.OUT
 Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
13:54: 5
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02
CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 5

Input Data:

Rainfall Zone	Frequency	Time of Concentration (min)		Max.Conv Code
	(yrs.)	Assumed	Calculated	
K	25	5.	6	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
1-	1 Channel	0	0-	0	16	.920	.008	8.6	844.5	836.0	.0	.00	0 0
1-	2 Channel	0	0-	0	16	.920	.010	.0	836.0	835.9	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
100.0	845.5	844.5	.010	.014	16	.920

8/29/**
13:54: 5
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 6

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 5

Reach Data:

Reach No.	Type	Conveyance (ft)	Depth	Width	Z	Hor	Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Channel	.95	2.5		.00	.00		1100.0	.0077	.9	14.7
1-	2 Channel	1.20	3.0		.00	.00		10.0	.0100	8.6	29.4
Outlet										8.6	29.4

Street Cross-Section Data:

Section No.	Depth (feet)	No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
		1	2	3	4			
1	.000	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\5W.INP
Output Data File C:\5W.OUT
Runoff Coefficient Data File RUNCOEF.DAT

8/29/**
13:54: 5
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 5

Input Data:

Rainfall Zone	Frequency (yrs.)	Time of Concentration (min)		Max.Conv Code
		Assumed	Calculated	
K	50	5.	6	0

Component Area Data:

Reach No.	Convey. Type	Strt No.	Junct No.	Soil No.	Prop. Imp.	Map Slope	Area (ac)	Elev. (ft.)		Ext. Q (cfs)	Fixed Size	Fix S	Fix X
								Top	Bottom				
1-	1 Channel	0	0-	0	16	.920	.008	8.6	844.5	836.0	.0	.00	0 0
1-	2 Channel	0	0-	0	16	.920	.010	.0	836.0	835.9	.0	.00	0 0

Code Definitions:

Maximum Conveyance Code: 0=no limits

1=street flow maximum at property line

2=pipe maximum size at 8 feet

3=both 1 and 2 apply

Fix=fixed value code: S=size : 0=fixed size is a minimum drain size

1=fixed size is the exact drain size

X=ext.Q: 0=External Q varies with frequency.

1=External Q is constant with frequency change.

Strt No.: Street Cross-Section No. - See Street-Cross-Section Data list.

Junct No.: Reach No. junctioning with top of this reach.

Lot or Overland Flow Data:

Length (ft.)	Elevation (ft)		Slope	Manning's N	Soil No.	Proportion Impervious
	Top	Bottom				
100.0	845.5	844.5	.010	.014	16	.920

8/29/**
13:54: 5
Vers.1.0

PAI
TIME OF CONCENTRATION calculated by FL 08/28/02

page 9

CORBIN AND NORDHOFF. HYDROLOGY FOR EIR
WEST WATERSHED
SUBAREA 5

Reach Data:

Reach No.	Conveyance Type	Depth (ft)	Width	Z Hor	Z Vert	Length (ft)	Effect. Slope	Area (ac.) at top	Q (cfs) at top
1-	1 Channel	1.00	2.5	.00	.00	1100.0	.0077	.9	15.9
1-	2 Channel	1.28	3.0	.00	.00	10.0	.0100	8.6	31.8
Outlet								8.6	31.8

Street Cross-Section Data:

Section No.	Depth (feet) No.:				Curb Height	Horiz. Distance Curb-Prop. Line	Width (ft.)
	1	2	3	4			
1	.000	.000	.000	.000	.670	0.	36.
2	.000	.000	.000	.000	.670	0.	66.
3	.000	.000	.000	.000	.670	0.	44.
4	.000	.000	.000	.000	.500	0.	36.

Depth No. 1 = Gutter.
Depth No. 2 = Gutter to Crown.
Depth No. 3 = Crown to Curb.
Depth No. 4 = Curb to Property Line.

Input Data File C:\5W.INP
Output Data File C:\5W.OUT
Runoff Coefficient Data File RUNCOEF.DAT