EASTERN CANAL NORTH FDS

MFC015
FCD 98-36

For:

FLOOD CONTROL DISTRICT of MARICOPA COUNTY

TECHNICAL DATA NOTEBOOK

Volume 2

October 2001

By:

PRIMATECH
ENGINEERS & CONSULTANTS

EASTERN CANAL NORTH FDS

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APPENDIX D

SUPPORTING DOCUMENTATION FOR HYDROLOGIC ANALYSIS

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D.2 Physical Parameter Calculations

D.3 Hydrograph Routing Data

D.4 Reservoir Routing Data - Ponding Areas

D.5 Flow Splits and Diversions Data

- D.5.1 Retention Basin Diversions
- D.5.2 Street Intersection Diversions
- D.5.3 Storm Drain Diversions
- D.5.4 Post-Hydraulics, HEC-2 – based Flow Diversions

D.6 Hydrologic Calculations

- D.6.1 The HEC-1 Model
- D.6.2 Indirect Methods of Discharge Verification

Appendix D.1

Precipitation Data

*** O U T P U T D A T A ***

REVISED JUNE 1988 TO UPDATE COMPUTATION OF SHORT-DURATION VALUES

PRECIPITATION FREQUENCY VALUES FOR Mesa Floodplain Delineation Stdy
PRIMARY ZONE NUMBER= 7
SHORT-DURATION ZONE NUMBER= 8

OPTION NUMBER 2 --- INPUT OF 12 PRECIP VALUES
LATITUDE 33.42N LONGITUDE 111.44W ELEVATION 1316 FEET

POINT VALUES

RETURN PERIOD

DURATION	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR	500-YR	
5-MIN	.20	.34	.43	.55	.65	.74	.96	5-MIN
10-MIN	.30	.52	.66	.85	.99	1.14	1.47	10-MIN
15-MIN	.36	.65	.83	1.08	1.27	1.46	1.90	15-MIN
30-MIN	.47	.87	1.13	1.46	1.72	1.98	2.57	30-MIN
1-HR	.58	1.08	1.40	1.83	2.15	2.48	3.22	1-HR
2-HR	.69	1.20	1.54	1.98	2.31	2.65	3.43	2-HR
3-HR	.77	1.29	1.63	2.08	2.42	2.77	3.56	3-HR
6-HR	.91	1.45	1.80	2.27	2.63	2.99	3.82	6-HR
12-HR	1.12	1.65	1.99	2.47	2.84	3.20	4.04	12-HR
24-HR	1.33	1.84	2.19	2.67	3.04	3.41	4.26	24-HR

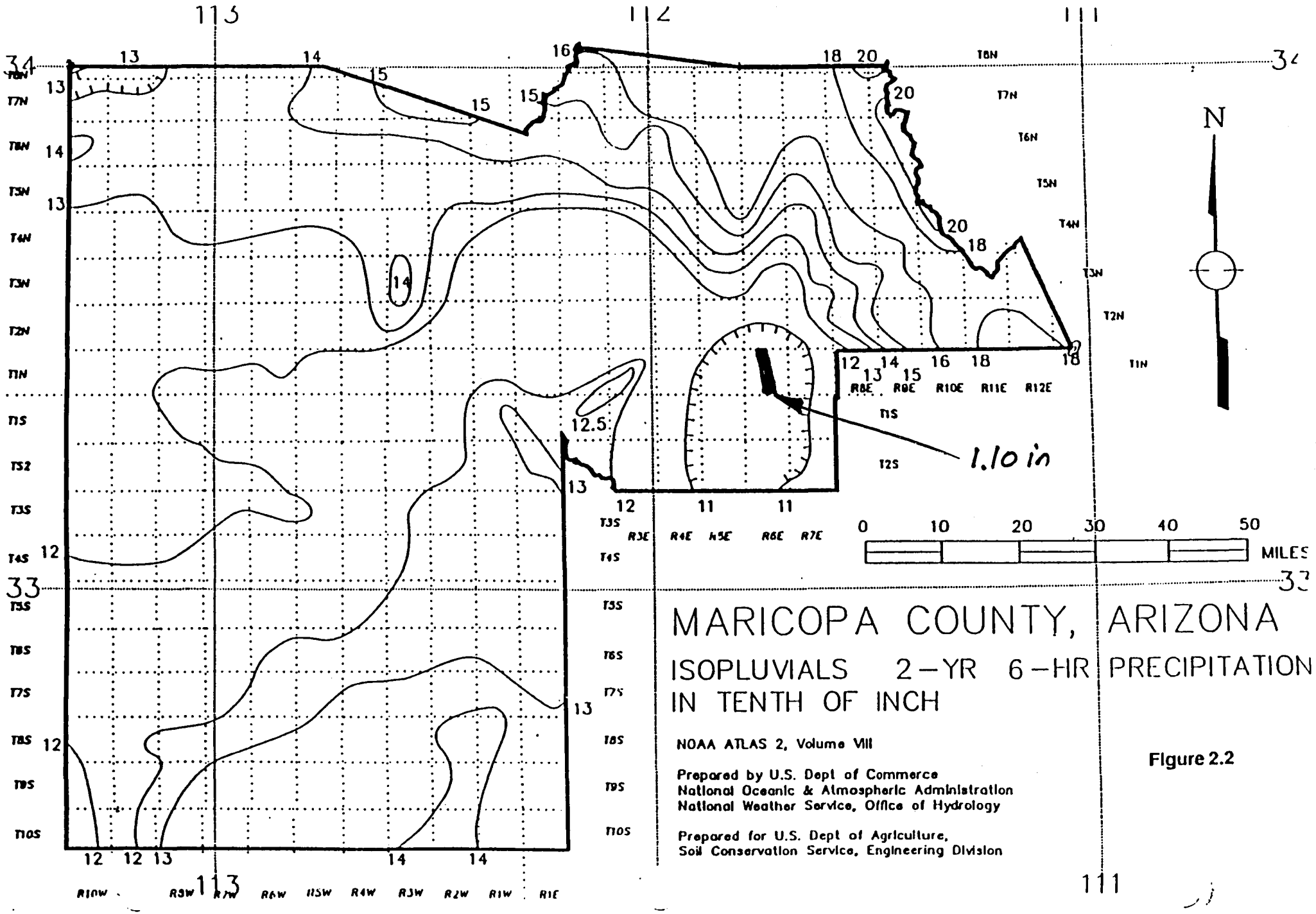
* IF YOUR SITE IS IN ARIZONA OR NEW MEXICO, PLEASE CONSULT THE FOLLOWING PAPER FOR REVISED DEPTH-AREA VALUES:
DEPTH-AREA RATIOS IN THE SEMI-ARID SOUTHWEST UNITED STATES
NOAA TECHNICAL MEMORANDUM NWS HYDRO-40
ZEHR AND MYERS
AUGUST 1984

INPUT DATA

PROJECT NAME=Mesa Floodplain Delineation Stdy
ZONE= 7 SHORT-DURATION ZONE= 8
LATITUDE= 33.42 LONGITUDE= 111.44 ELEVATION= 1316
12-VALUE PRECIPITATION OPTION
PRECIPITATION VALUE:

1.10	1.31
1.60	2.35
2.70	3.00
1.31	1.85
2.20	2.70
3.02	3.40

* * * * E N D O F R U N * * * *


MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 2-YR 6-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
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33

Figure 2.2

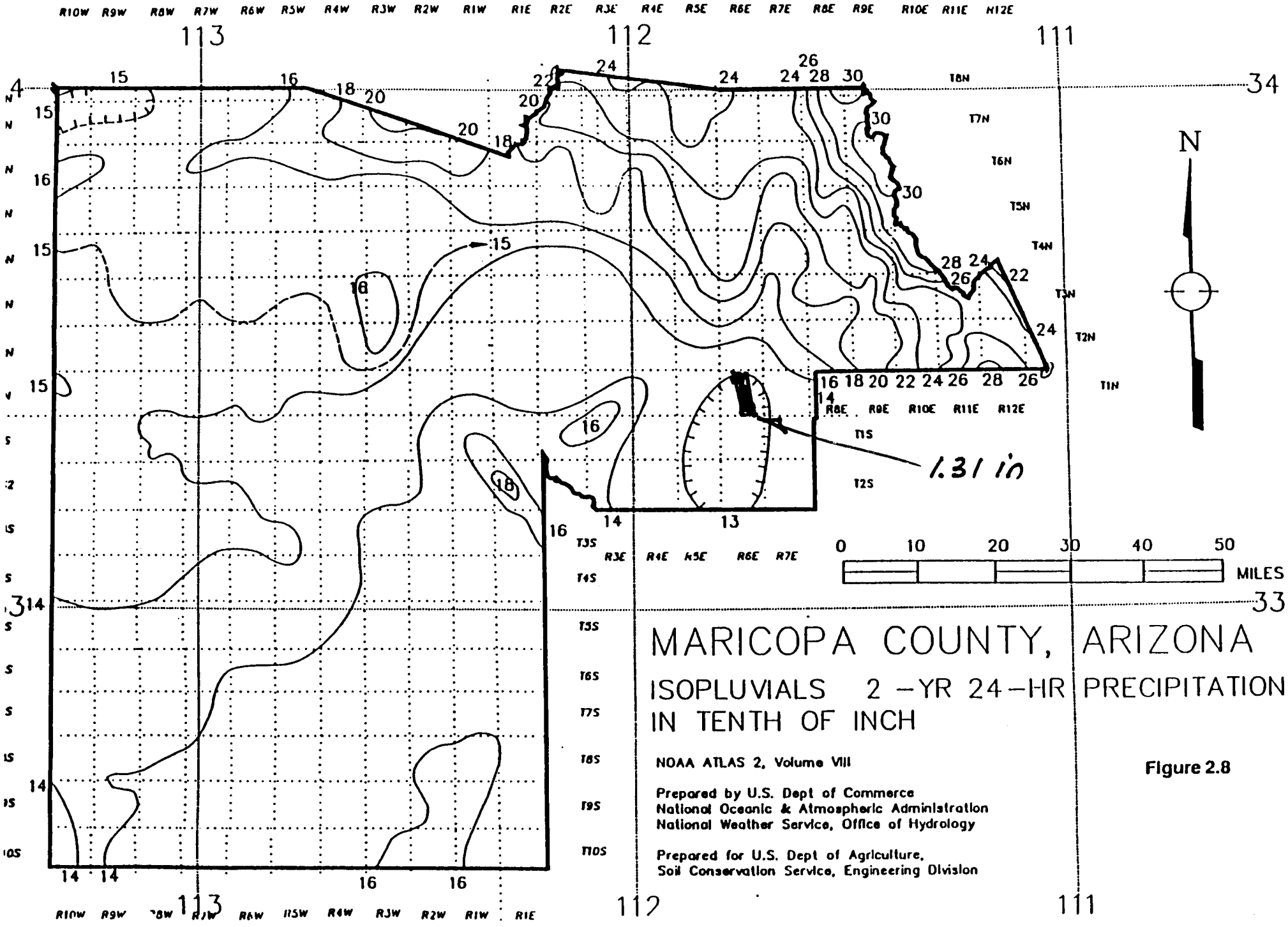
MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 2 -YR 24-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
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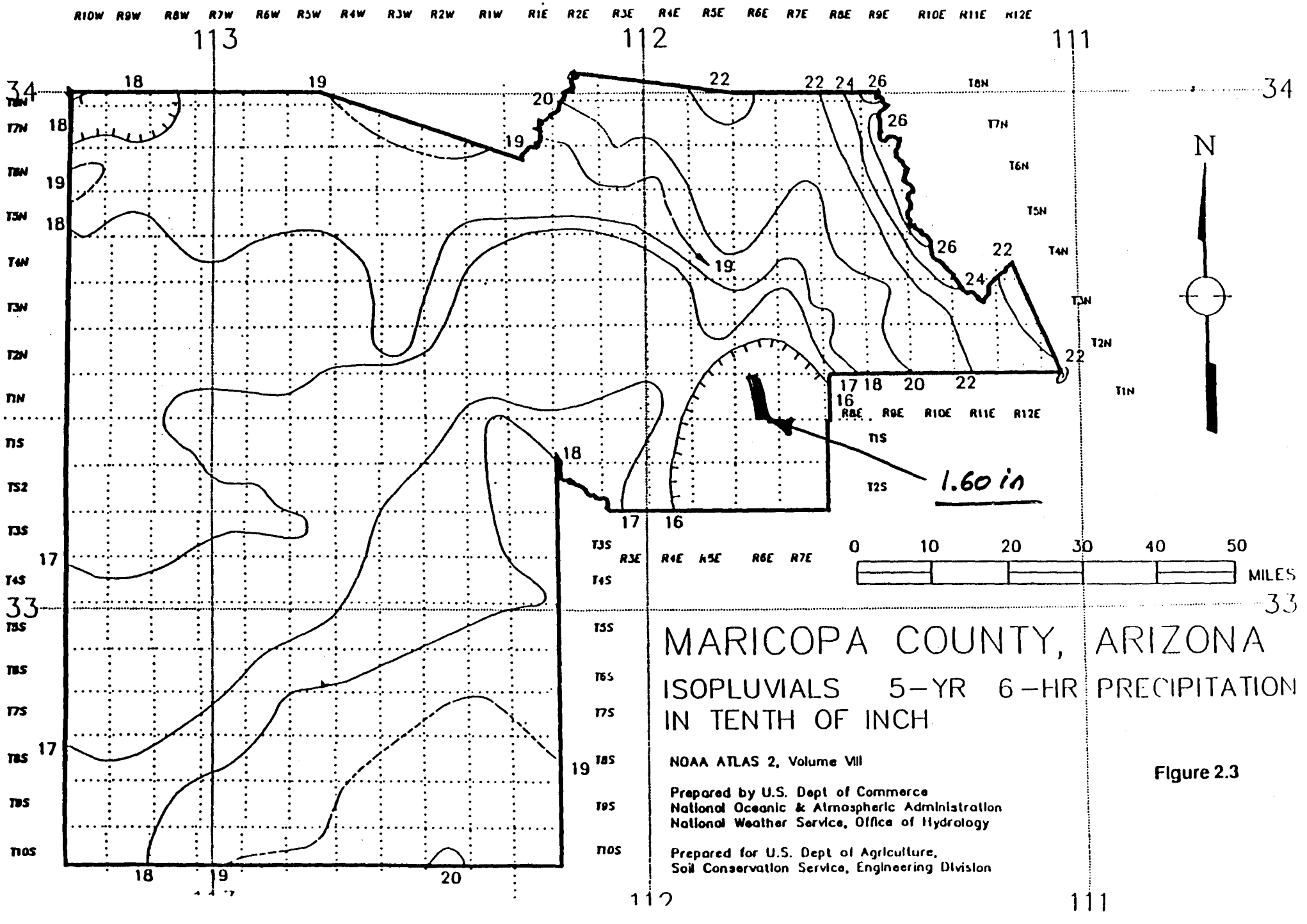
Figure 2.8


MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 5-YR 6-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
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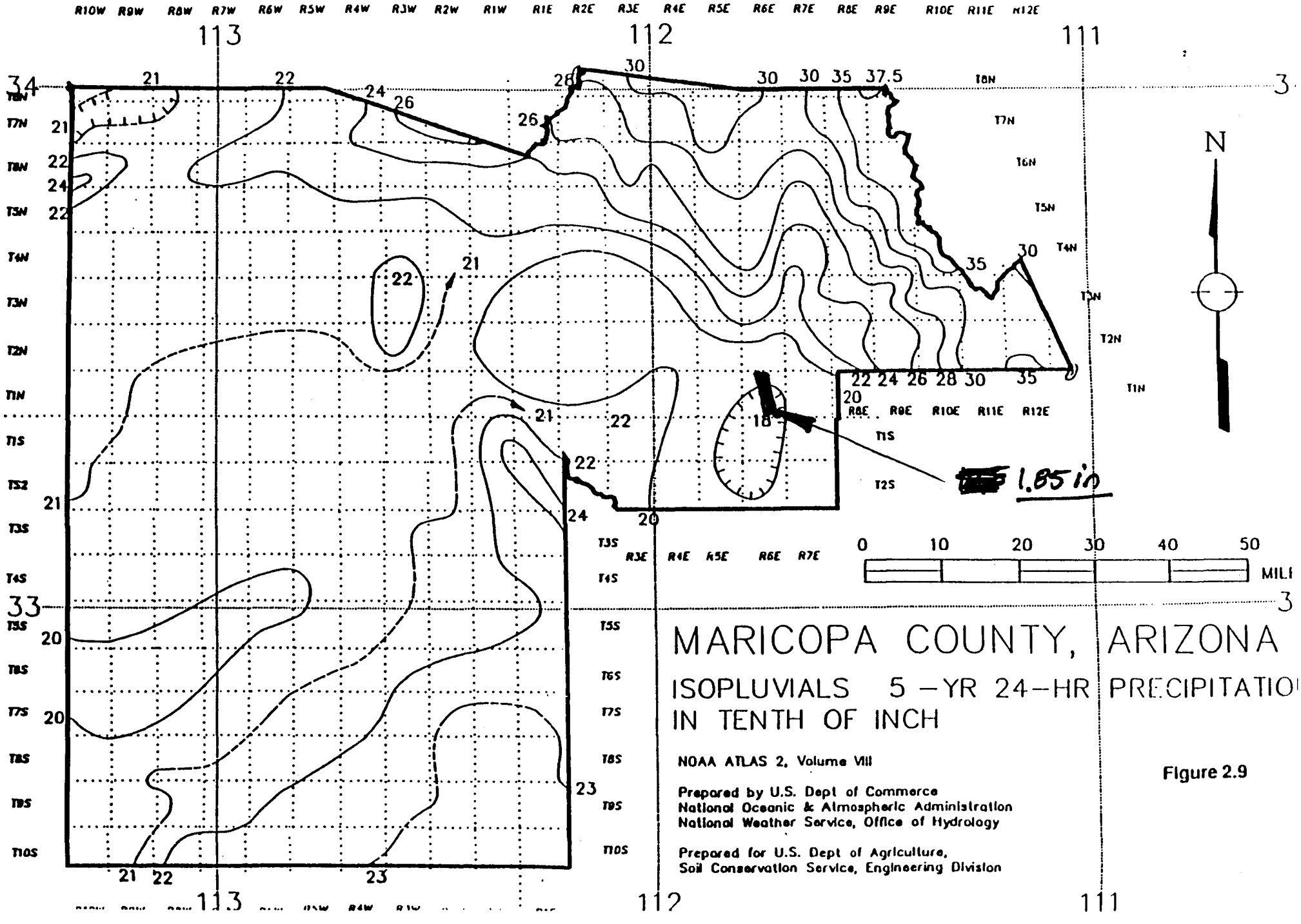
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NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
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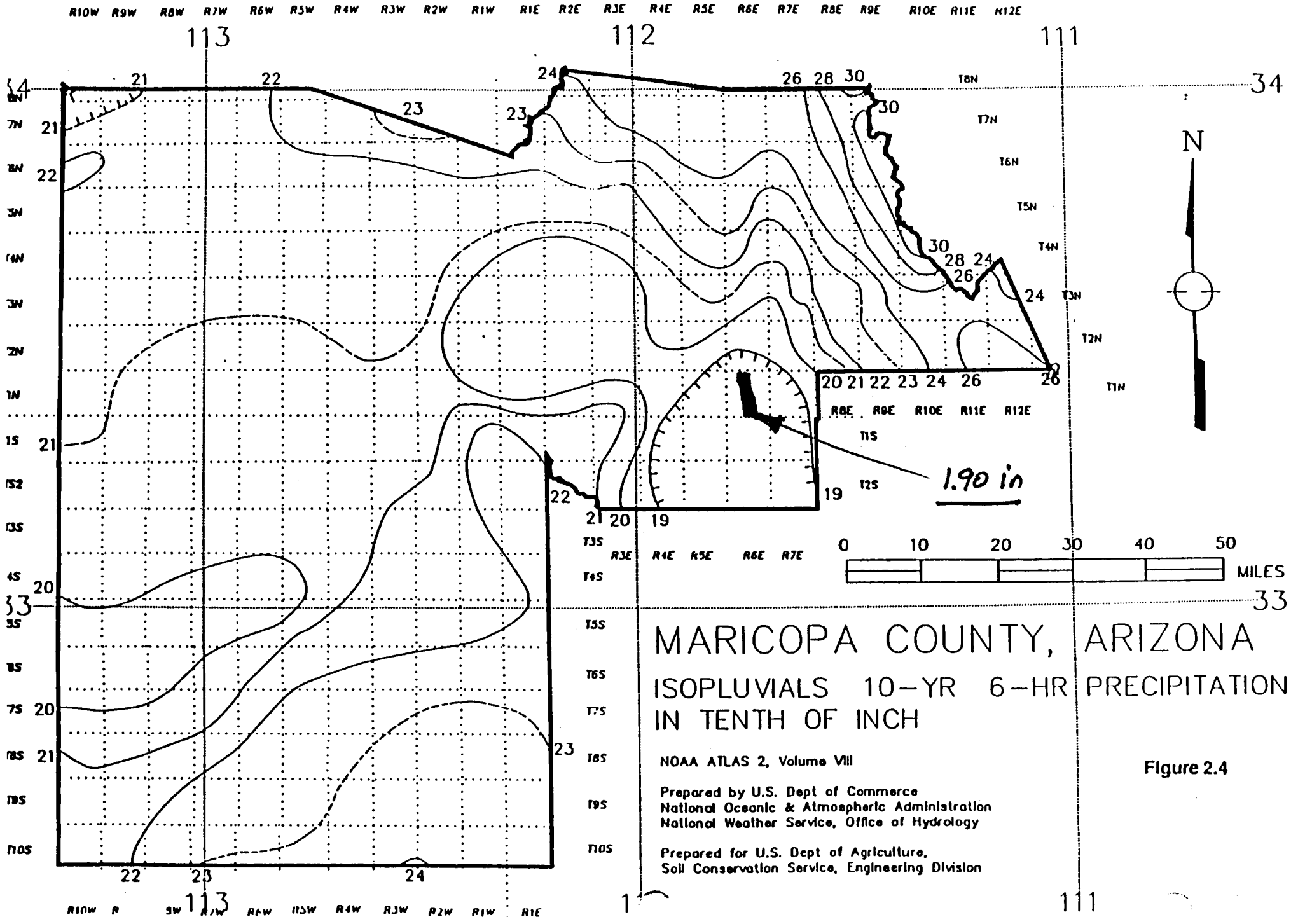
Figure 2.9


MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 10-YR 6-HR PRECIPITATION
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NOAA ATLAS 2, Volume VIII
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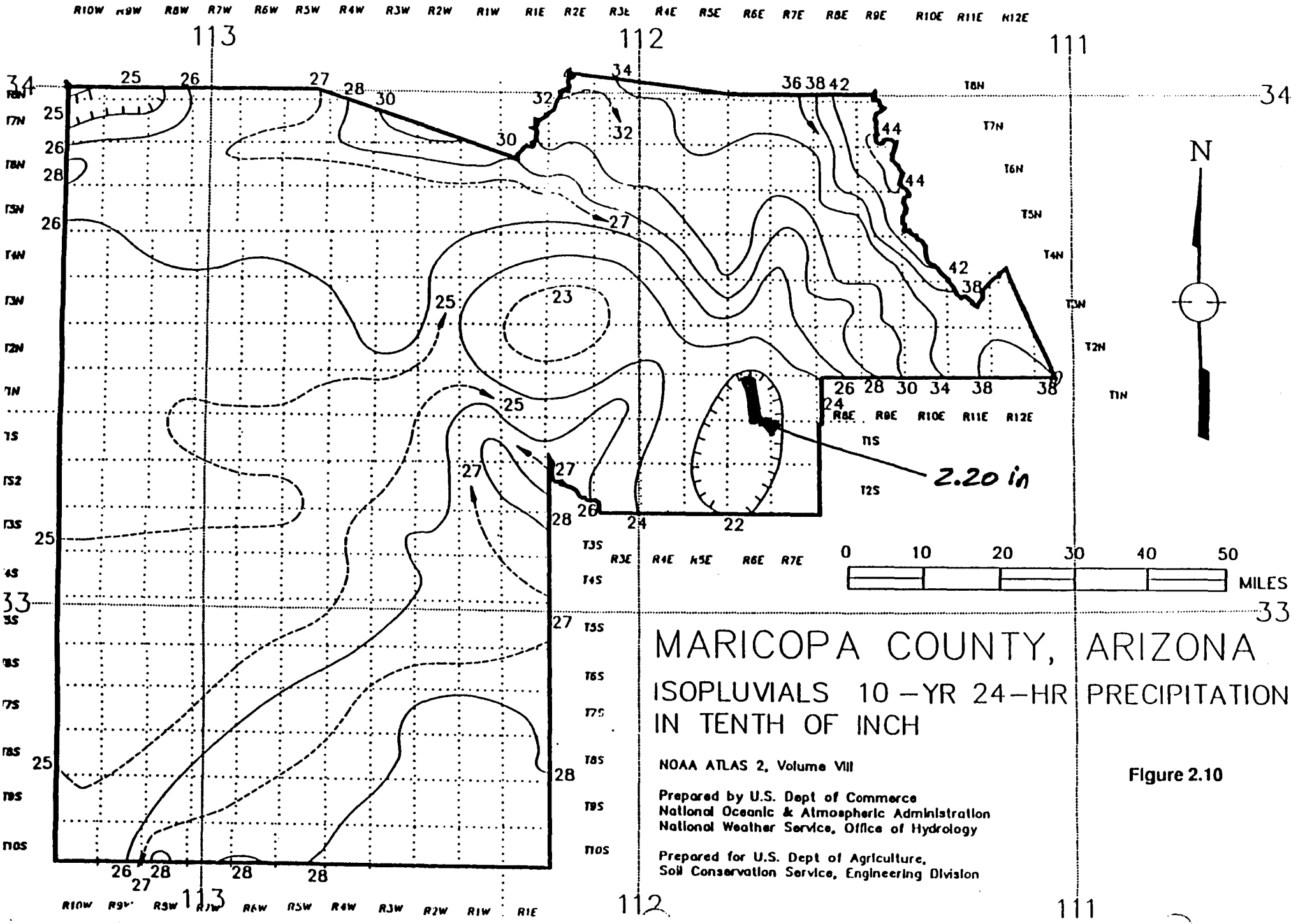
Figure 2.4


MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 10-YR 24-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
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National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
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MILES
2.20 in
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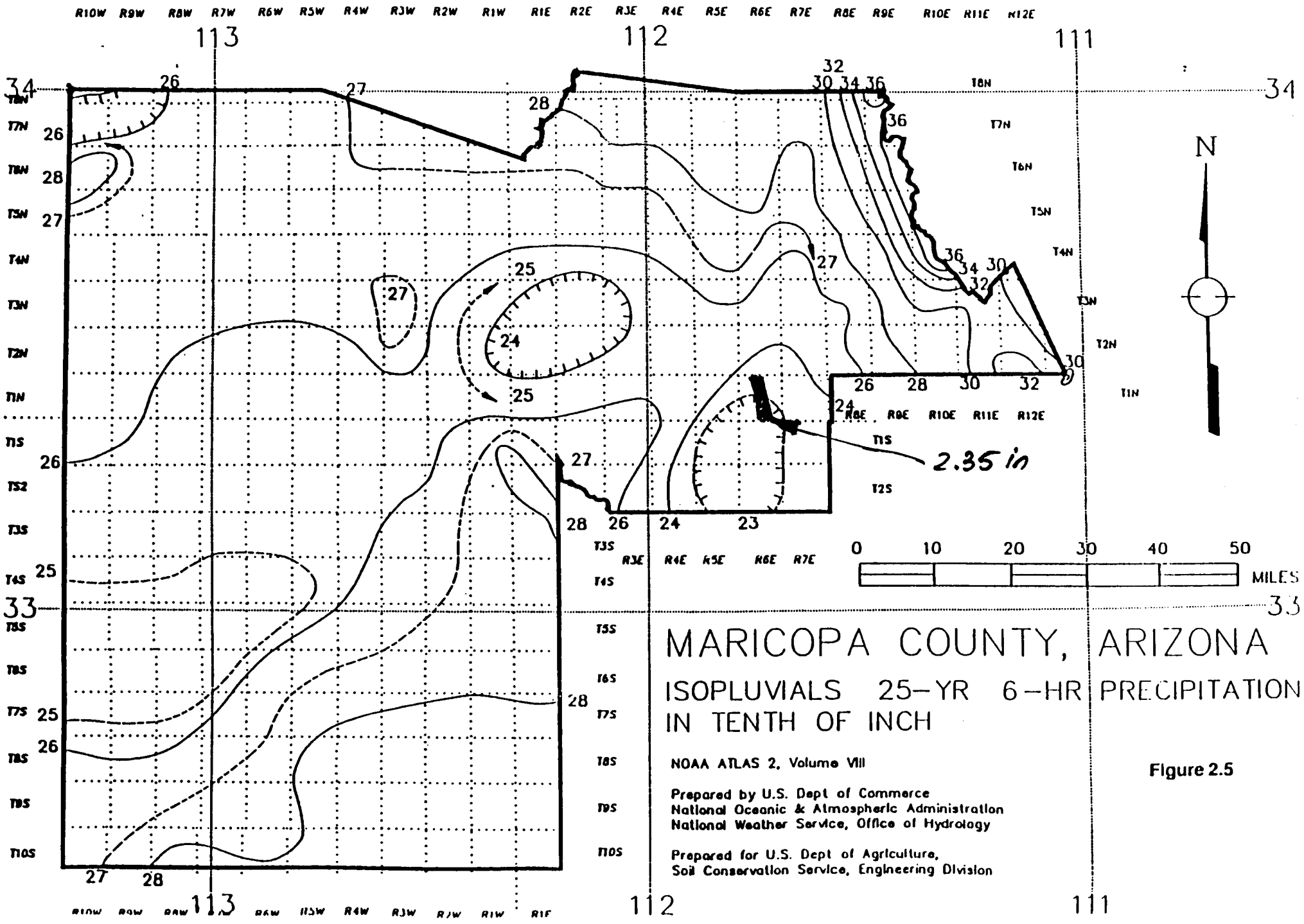
Figure 2.10


MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 25-YR 6-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
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MILES
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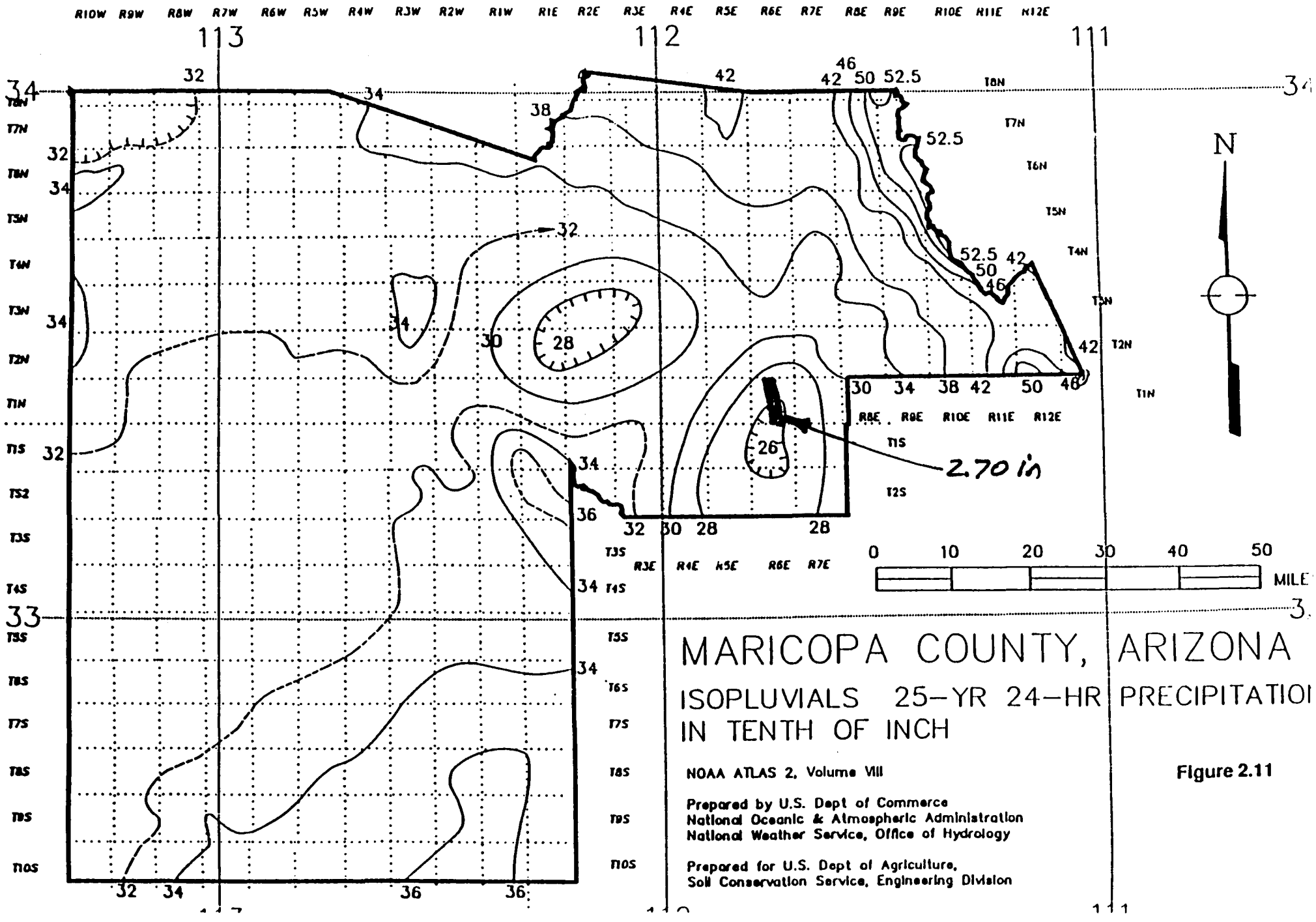
Figure 2.5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MILE
MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 25-YR 24-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
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Prepared for U.S. Dept of Agriculture,
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Figure 2.11

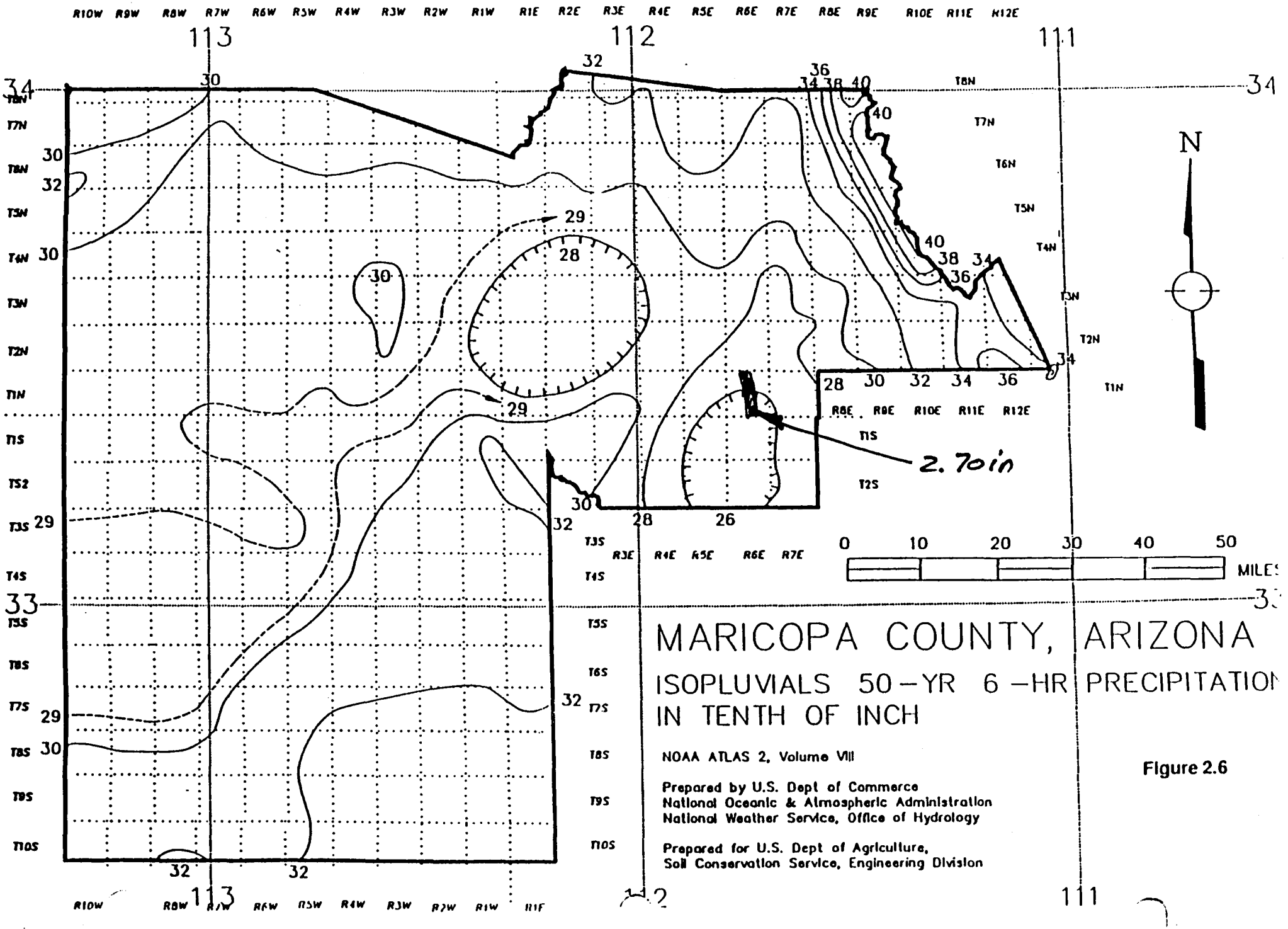
MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 50-YR 6-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
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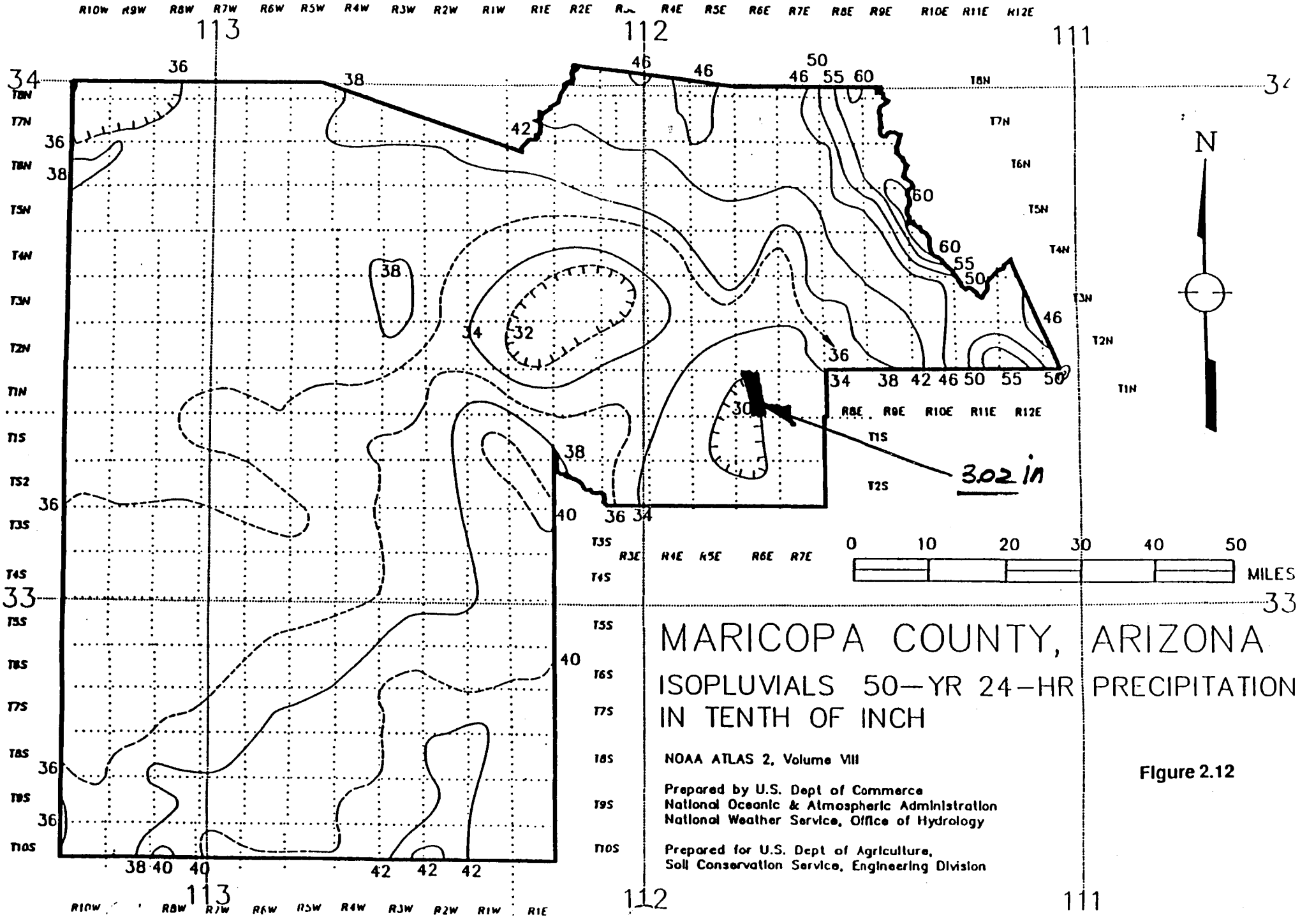
Figure 2.6


MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 50—YR 24—HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
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National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
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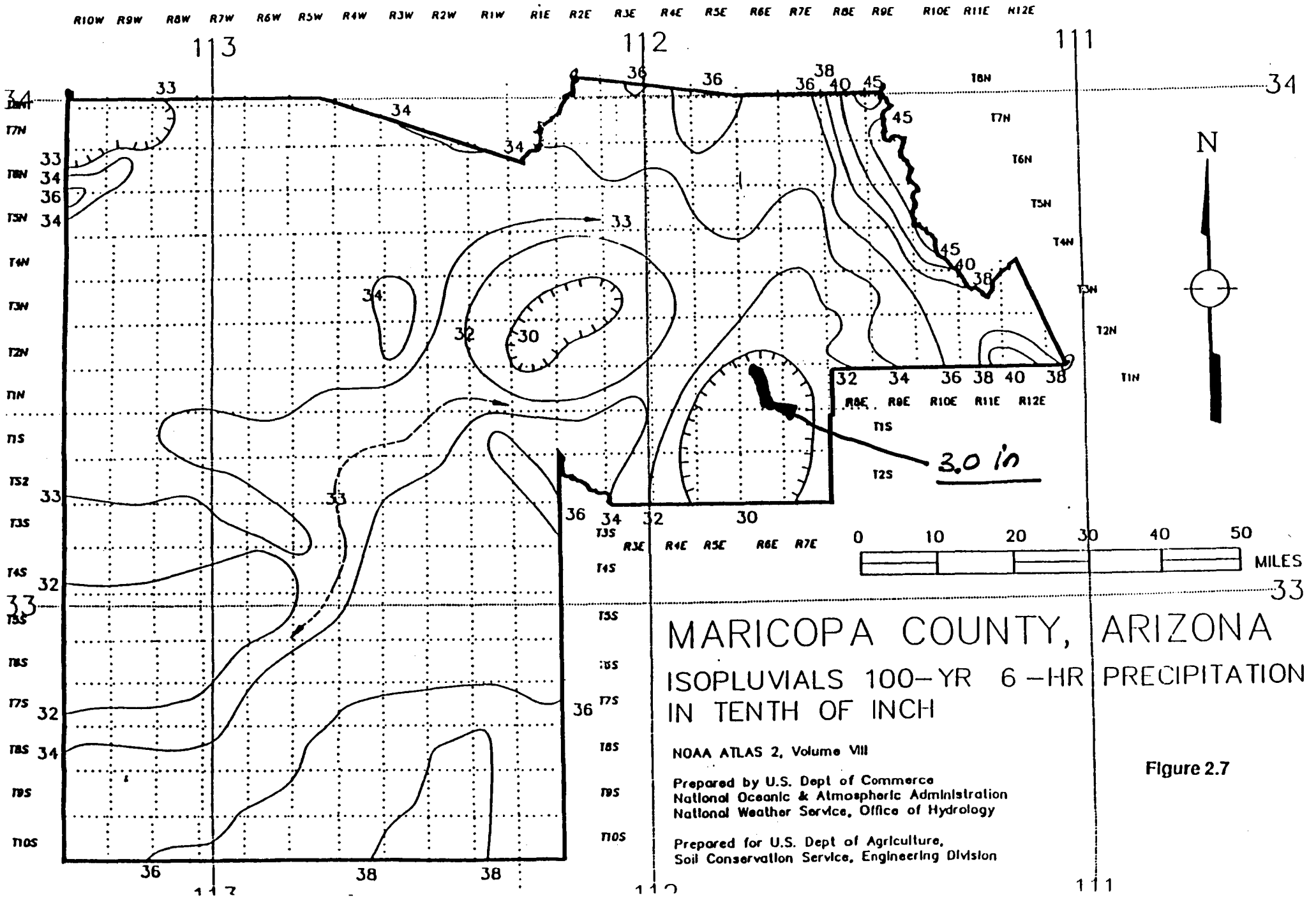
Figure 2.12


MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 100-YR 6-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
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National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
3.0 in
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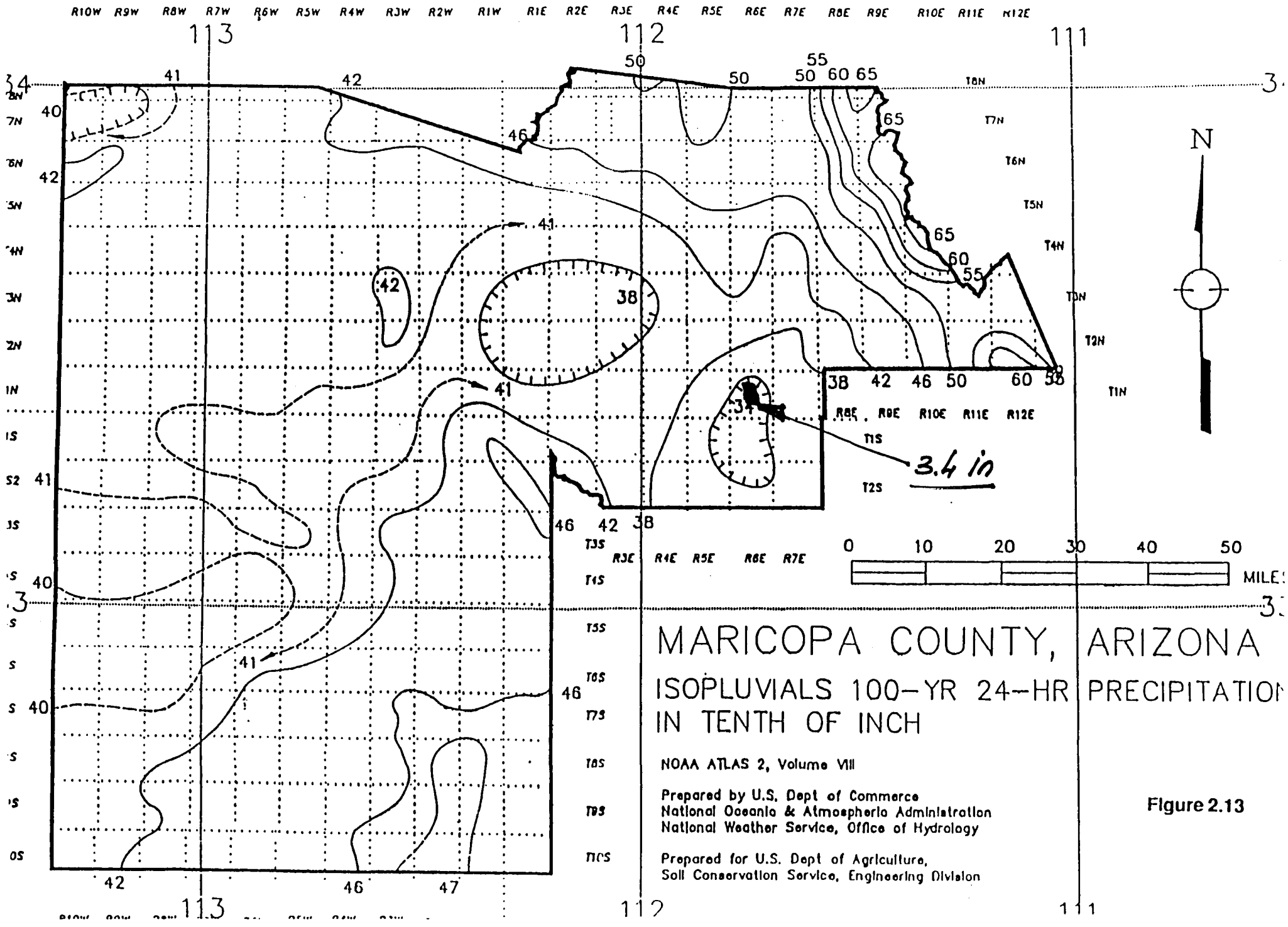
Figure 2.7


MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 100-YR 24-HR PRECIPITATION
IN TENTH OF INCH
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National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
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113 112 111

Figure 2.13

```
ID DDM MCUHP1 Mesa Flood Plain Delineation Study: 100-year, 24-hour
ID
IT     5                    300
IO     3
* DDM   ***** Inserted *****
KK     1
KM SUB-BASIN 1
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .934
KM   L =  .50  Kb = .060  Adj. Slope =    4.0
BA  .041
IN    15
KM RAINFALL DEPTH OF 3.39 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
PB 3.166
KM THE FOLLOWING PC RECORD USED A 24-HR SCS TYPE II STORM
PC  .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
PC  .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
PC  .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
PC  .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
PC  .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
PC  .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
PC  .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
PC  .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
PC  .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
    .983    .986    .989    .992    .995    .998   1.000
LG  .260    .250   4.800    .360  27.000
UC 1.258   1.694
UA     (ENTER VALUES FOR URBAN OR NATURAL BASIN)
UA     (ENTER VALUES FOR URBAN OR NATURAL BASIN)
* DDM   ***** Inserted *****
KK    12
KM SUB-BASIN 12
KM 24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .934
KM   L =  .50  Kb = .054  Adj. Slope =    4.0
BA  .131
LG  .300    .250   4.450    .450  15.000
UC 1.263    .877
UA     (ENTER VALUES FOR URBAN OR NATURAL BASIN)
UA     (ENTER VALUES FOR URBAN OR NATURAL BASIN)
ZZ
```

Appendix D.2

Physical Parameter Calculations

- Sub Basins Area, Flow Path Length, Slope and Kb
- Soil Distribution within Sub Basins
- Land Use Distribution within Sub Basins

PRIMATECH
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Sub-Basin Parameter Computation Sheet: Area, Flow Path, Slope & Kb

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Drainage Area #	Area (mi^2)	L (mi)	S (ft / mi)	Kb
1	0.041	0.24	20.0	0.060
2	**0.089**	**0.40**	**18.0**	**0.060**
3	**0.065**	**0.44**	**17.0**	**0.056**
4	**0.118**	**0.69**	**18.0**	**0.054**
5	0.146	0.64	25.0	0.053
6	0.065	0.44	24.0	0.057
8	0.037	0.30	28.0	0.058
9	0.067	0.42	34.0	0.051
10	**0.063**	**0.42**	**23.0**	**0.047**
11	0.063	0.49	21.0	0.030
12	0.131	0.65	24.0	0.054
13	**0.063**	**0.20**	**58.0**	**0.099**
15	0.141	0.77	29.0	0.053
16	0.100	0.45	27.0	0.055
17	0.100	0.79	36.0	0.055
18	0.108	0.63	39.0	0.055
19	0.069	0.42	31.0	0.057
20	0.149	0.66	36.0	0.053
21	**0.247**	**0.52**	**29.0**	**0.050**
22	**0.060**	**0.39**	**26.0**	**0.053**
25	**0.102**	**0.79**	**15.0**	**0.055**
26	**0.108**	**0.30**	**22.0**	**0.055**
27	**0.109**	**0.36**	**22.0**	**0.055**
28	**0.062**	**0.39**	**23.0**	**0.058**
29	0.063	0.38	29.0	0.110
30	0.063	0.38	31.0	0.110
31	0.030	0.31	25.0	0.062
32	0.033	0.28	31.0	0.117
33	0.062	0.54	33.0	0.097
34	0.065	0.54	32.0	0.096
35	0.062	0.53	33.0	0.083
36	0.071	0.51	32.0	0.095
37	0.069	0.46	28.0	0.057
38	0.049	0.36	43.0	0.059
39	0.074	0.45	26.0	0.057
40	0.055	0.40	31.0	0.059
41	0.031	0.27	37.0	0.062
42	0.073	0.68	21.0	0.057
43	0.062	0.48	25.0	0.030
44	0.112	0.63	21.0	0.054
45	0.067	0.54	37.0	0.058
46	0.058	0.57	32.0	0.058
47	0.048	0.43	23.0	0.060
48	0.123	0.62	27.0	0.103

Drainage Area #	Area (mi^2)	L (mi)	S (ft / mi)	Kb
49	**0.126**	**0.55**	**29.0**	**0.054**
50	0.071	0.60	33.0	0.109
51	0.057	0.51	40.0	0.100
52	0.085	0.42	40.0	0.083
53	0.042	0.40	35.0	0.060
54	0.060	0.40	40.0	0.058
55	0.070	0.34	31.0	0.057
56	0.049	0.42	44.0	0.059
57	**0.086**	**0.23**	**14.0**	**0.056**
58	0.075	0.56	37.0	0.057
59	0.083	0.44	50.0	0.090
60	**0.064**	**0.38**	**24.0**	**0.033**
61	0.071	0.39	46.0	0.044
62	0.025	0.29	31.0	0.063
63	0.122	0.63	21.0	0.054
64	0.061	0.49	24.0	0.044
65	0.081	0.47	32.0	0.056
66	0.068	0.37	32.0	0.049
67	0.069	0.68	30.0	0.039
68	0.053	0.62	23.0	0.059
69	0.075	0.57	35.0	0.054
70	0.055	0.54	37.0	0.059
71	0.101	0.59	33.0	0.051
73	0.059	0.35	34.0	0.048
74	0.064	0.34	34.0	0.050
76	0.132	0.68	39.0	0.049
77	0.137	1.18	22.0	0.053
79	0.120	0.55	36.0	0.038
80	0.108	0.46	31.0	0.053
81	0.054	0.53	41.0	0.041
82	0.047	0.46	35.0	0.060
83	0.035	0.44	32.0	0.032
84	0.047	0.34	9.0	0.054
85	0.121	0.56	29.0	0.068
86	0.095	0.52	26.0	0.055
87	0.055	0.44	28.0	0.059
88	0.084	0.62	35.0	0.054
89	0.067	0.69	41.0	0.058
90	0.092	0.63	38.0	0.056
91	0.079	0.36	34.0	0.057
92	0.074	0.64	19.0	0.053
93	0.048	0.46	50.0	0.059
94	0.102	0.52	21.0	0.055
96	0.069	0.42	16.0	0.057

PRIMATECH
ENGINEERS & CONSULTANTS

Sub-Basin Parameter Computation Sheet: Area, Flow Path, Slope & Kb

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Drainage Area #	Area (mi^2)	L (mi)	S (ft / mi)	Kb
97	0.043	0.28	14.0	0.037
98	0.045	0.35	29.0	0.056
99	0.075	0.45	32.0	0.057
100	0.052	0.58	30.0	0.059
101	0.087	0.63	31.0	0.056
102	0.097	0.68	24.0	0.055
103	0.090	0.63	27.0	0.056
104	0.073	0.54	30.0	0.056
105	0.036	0.43	30.0	0.061
106	0.067	0.54	22.0	0.058
107	0.154	0.56	27.0	0.053
108	0.099	0.64	25.0	0.051
110	0.072	0.42	26.0	0.055
111	0.056	0.40	28.0	0.059
112	0.044	0.36	30.0	0.063
113	0.092	0.71	23.0	0.063
114	0.080	0.63	25.0	0.056
115	0.042	0.34	29.0	0.089
116	0.140	0.63	27.0	0.053
118	0.158	0.77	32.0	0.044
120	0.057	0.34	30.0	0.111
121	0.040	0.36	22.0	0.031
122	0.093	0.47	25.0	0.056
123	0.103	0.54	33.0	0.050
124	0.072	0.57	39.0	0.095
125	0.101	0.70	37.0	0.055
128	0.114	0.66	29.0	0.060
129	0.116	0.59	31.0	0.043
130	0.087	0.54	24.0	0.079
131	0.051	0.35	14.0	0.056
132	0.093	0.54	22.0	0.051
133	0.051	0.49	18.0	0.059
134	0.101	0.51	35.0	0.085
135	0.105	0.65	35.0	0.099
136	0.066	0.41	29.0	0.062
137	0.032	0.52	75.0	0.062
138	0.073	0.56	27.0	0.083
139	0.098	0.54	28.0	0.105
141	0.038	0.32	31.0	0.100
142	0.084	0.38	32.0	0.107
143	0.093	0.62	39.0	0.056
144	0.069	0.49	37.0	0.052
146	0.044	0.51	83.0	0.060
147	0.084	0.60	33.0	0.072

Drainage Area #	Area (mi^2)	L (mi)	S (ft / mi)	Kb
148	0.047	0.48	42.0	0.103
149	0.087	0.77	39.0	0.106
150	0.096	0.59	41.0	0.087
151	0.022	0.28	38.0	0.064
152	**0.097**	**0.48**	**25.0**	**0.055**
153	0.039	0.35	25.0	0.061
155	0.043	0.31	38.0	0.056
156	0.129	0.57	18.0	0.054
157	0.152	0.76	18.0	0.053
158	0.089	0.46	14.0	0.056
159	0.076	0.76	14.0	0.057
160	0.078	0.57	20.0	0.057
161	0.088	0.61	6.0	0.056
162	0.137	0.65	24.0	0.053
163	0.152	0.46	36.0	0.053
164	0.091	0.46	36.0	0.056
165	0.097	0.65	26.0	0.055
166	0.081	0.79	24.0	0.056
168	0.051	0.47	25.0	0.054
170	**0.063**	**0.37**	**24.0**	**0.065**
180	**0.021**	**0.16**	**25.0**	**0.063**
181	**0.024**	**0.19**	**21.0**	**0.039**

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Sub-Basin Parameter Computation Sheet: Area and Soil Data

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Basin ID	Area (mi^2)	Soil Types (mi^2)											
		AnA	Co	Es	Gm	Mo	Mv	LaA	PnA	PnC	Po	RlA	Ru
1	0.041							0.004			0.037		
2	**0.089**							**0.063**	**0.019**		**0.007**		
3	**0.065**							**0.028**	**0.036**		**0.001**		
4	**0.118**							**0.059**	**0.032**		**0.027**		
5	0.146							0.044	0.047		0.055		
6	0.065							0.016	0.016		0.033		
8	0.037								0.018		0.019		
9	0.067							0.012	0.039		0.016		
10	**0.063**							**0.013**	**0.016**		**0.034**		
11	0.063							0.007	0.031		0.025		
12	0.131							0.031	0.056		0.044		
13	0.063							0.033	0.012		0.018		
15	0.141							0.131	0.001		0.009		
16	0.1							0.100					
17	0.1							0.100					
18	0.108							0.108					
19	0.069							0.069					
20	0.149							0.149					
21	**0.247**							**0.181**	**0.024**		**0.042**		
22	**0.06**							**0.026**	**0.023**		**0.011**		
25	**0.102**							**0.011**	**0.027**		**0.064**		
26	**0.108**						**0.073**	**0.008**	**0.019**		**0.008**		
27	**0.109**						**0.033**	**0.013**	**0.015**		**0.048**		
28	**0.062**						**0.049**	**0.007**			**0.006**		
29	0.063						0.028	0.035					
30	0.063						0.063						
31	0.03						0.030						
32	0.033						0.033						
33	0.062						0.061	0.001					
34	0.065						0.059	0.006					
35	0.062						0.062						
36	0.071						0.071						
37	0.069						0.031	0.038					
38	0.049						0.048	0.001					
39	0.074						0.074						
40	0.055						0.055						
41	0.031						0.031						
42	0.073						0.073						
43	0.062						0.062						
44	0.112						0.112						
45	0.067						0.067						
46	0.058						0.058						
47	0.048						0.048						
48	0.123						0.123						
49	**0.126**						**0.126**						
50	0.071						0.071						

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Sub-Basin Parameter Computation Sheet: Area and Soil Data

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Basin ID	Area (mi^2)	Soil Types (mi^2)											
		AnA	Co	Es	Gm	Mo	Mv	LaA	PnA	PnC	Po	RIA	Ru
51	0.057						0.057						
52	0.085				0.015		0.070						
53	0.042						0.042						
54	0.060				0.002		0.058						
55	0.070						0.070						
56	0.049				0.008		0.041						
57	**0.086**		**0.009**				**0.077**						
58	0.075						0.075						
59	0.083				0.043		0.040						
60	**0.064**		**0.038**				**0.026**						
61	0.071		0.022				0.049						
62	0.025		0.025										
63	0.122		0.122										
64	0.061		0.061										
65	0.081		0.081										
66	0.068		0.063	0.005									
67	0.069		0.065				0.004						
68	0.053		0.038				0.015						
69	0.075		0.065			0.003	0.007						
70	0.055						0.055						
71	0.101		0.026				0.075						
73	0.059		0.025	0.031			0.003						
74	0.064		0.025	0.039									
76	0.132			0.010	0.085		0.037						
77	0.137			0.069	0.068								
79	0.120		0.088	0.024	0.008								
80	0.108				0.108								
81	0.054		0.019		0.030	0.002	0.003						
82	0.047		0.006		0.022	0.008	0.011						
83	0.035				0.035								
84	0.047		0.010			0.002	0.035						
85	0.121		0.005			0.012	0.104						
86	0.095				0.034	0.001	0.060						
87	0.055			0.002		0.004	0.049						
88	0.084			0.042	0.034		0.008						
89	0.067			0.019			0.048						
90	0.092			0.033			0.059						
91	0.079			0.050	0.024		0.005						
92	0.074					0.022	0.052						
93	0.048						0.048						
94	0.102				0.001		0.101						
96	0.069				0.055		0.014						
97	0.043				0.043								
98	0.045						0.045						
99	0.075						0.075						
100	0.052						0.052						

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Sub-Basin Parameter Computation Sheet: Area and Soil Data

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Basin ID	Area (mi^2)	Soil Types (mi^2)											
		AnA	Co	Es	Gm	Mo	Mv	LaA	PnA	PnC	Po	RIA	Ru
101	0.087				0.011		0.076						
102	0.097				0.097								
103	0.090				0.090								
104	0.073	0.001			0.072								
105	0.036						0.036						
106	0.067				0.004		0.063						
107	0.154	0.017			0.137								
108	0.099	0.031			0.068								
110	0.072			0.001	0.025		0.046						
111	0.056				0.034		0.022						
112	0.044				0.026		0.018						
113	0.092				0.046		0.046						
114	0.080				0.065		0.015						
115	0.042				0.042								
116	0.140	0.001			0.139								
118	0.158	0.046			0.112								
120	0.057				0.057								
121	0.040				0.040								
122	0.093				0.093								
123	0.103				0.103								
124	0.072	0.015			0.057								
125	0.101				0.101								
128	0.114				0.104		0.010						
129	0.116				0.059		0.057						
130	0.087	0.039			0.001		0.047						
131	0.051				0.051								
132	0.093				0.080		0.013						
133	0.051				0.037		0.014						
134	0.101				0.080		0.021						
135	0.105		0.050		0.024		0.031						
136	0.066				0.066								
137	0.032				0.032								
138	0.073				0.046		0.027						
139	0.098			0.028	0.002		0.068						
141	0.038			0.017	0.021								
142	0.084	0.038					0.046						
143	0.093				0.093								
144	0.069				0.069								
146	0.044				0.041		0.003						
147	0.084			0.006	0.049		0.029						
148	0.047				0.043		0.004						
149	0.087			0.021	0.052		0.014						
150	0.096			0.062	0.019		0.015						
151	0.022							0.008	0.008		0.006		
152	**0.097**							**0.096**			**0.001**		
153	0.039							0.001	0.037		0.001		

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Sub-Basin Parameter Computation Sheet: Area and Soil Data

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Basin ID	Area (mi^2)	Soil Types (mi^2)											
		AnA	Co	Es	Gm	Mo	Mv	LaA	PnA	PnC	Po	RIA	Ru
155	0.043						0.043						
156	0.129							0.105	0.002		0.022		
157	0.152							0.050	0.054		0.048		
158	0.089							0.038	0.024		0.027		
159	0.076							0.045	0.026		0.005		
160	0.078							0.025	0.053				
161	0.088							0.049	0.039				
162	0.137							0.014	0.086		0.037		
163	0.152							0.100	0.051		0.001		
164	0.091							0.049	0.023		0.001	0.018	
165	0.097							0.032	0.008	0.048	0.009		
166	0.081							0.002	0.041	0.006	0.023	0.006	0.003
168	0.051							0.027	0.014		0.010		
170	**0.063**							**0.036**	**0.007**		**0.020**		
180	**0.021**		**0.021**										
181	**0.024**		**0.024**										

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Sub-Basin Parameter Computation Sheet: Area and Land Use Data

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Basin ID	Area (mi^2)	Land Use Types (mi^2)										
		R-43	R-35	R-15	R-9	R-7	R-4	R-2	AG	PA, OS	M-1	Comm
1	0.041			0.008		0.033						
2	**0.089**			**0.014**	**0.069**					**0.006**		
3	**0.065**				**0.019**		**0.041**					**0.005**
4	**0.118**			**0.02**	**0.098**							
5	0.146			0.014	0.132							
6	0.065				0.024		0.021	0.014				0.006
8	0.037	0.001			0.016		0.002	0.015				0.003
9	0.067	0.018					0.034					0.015
10	**0.063**	**0.040**										**0.023**
11	0.063	0.002			0.002			0.058				0.001
12	0.131		0.124	0.001						0.006		
13	**0.063**			**0.003**				**0.003**		**0.052**		**0.005**
15	0.141		0.141									
16	0.100		0.100									
17	0.100		0.100									
18	0.108		0.108									
19	0.069		0.067	0.002								
20	0.149		0.146	0.003								
21	**0.247**	**0.005**		**0.242**								
22	**0.060**	**0.048**										**0.012**
25	**0.102**	**0.004**		**0.098**								
26	**0.108**			**0.108**								
27	**0.109**			**0.109**								
28	**0.062**								**0.062**			
29	0.063		0.003						0.060			
30	0.063			0.002					0.061			
31	0.030			0.029					0.001			
32	0.033								0.032			0.001
33	0.062		0.015						0.047			
34	0.065		0.017						0.048			
35	0.062		0.032						0.030			
36	0.071		0.018						0.053			
37	0.069			0.069								
38	0.049		0.002	0.046								0.001
39	0.074		0.005	0.065					0.004			
40	0.055		0.051	0.002					0.002			
41	0.031		0.002						0.001			0.028
42	0.073			0.072				0.001				
43	0.062			0.062								
44	0.112			0.112								
45	0.067			0.003					0.061			0.003
46	0.058								0.058			
47	0.048			0.048								
48	0.123								0.123			
49	**0.126**			**0.005**	**0.016**	**0.105**						
50	0.071								0.071			

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Sub-Basin Parameter Computation Sheet: Area and Land Use Data

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Basin ID	Area (mi^2)	Land Use Types (mi^2)										
		R-43	R-35	R-15	R-9	R-7	R-4	R-2	AG	PA, OS	M-1	Comm
51	0.057		0.012						0.045			
52	0.085		0.001	0.040					0.044			
53	0.042		0.042									
54	0.060		0.002	0.058								
55	0.070		0.067		0.003							
56	0.049				0.002				0.047			
57	**0.086**			**0.046**	**0.040**							
58	0.075				0.026	0.049						
59	0.083				0.002			0.026	0.055			
60	**0.064**				**0.001**	**0.003**	**0.003**					**0.057**
61	0.071				0.028	0.006		0.002	0.004	0.003		0.028
62	0.025						0.025					
63	0.122						0.122					
64	0.061						0.042					0.019
65	0.081						0.081					
66	0.068						0.047					0.021
67	0.069						0.022					0.047
68	0.053						0.053					
69	0.075						0.068					0.007
70	0.055				0.025	0.028		0.002				
71	0.101							0.086*				0.015
73	0.059						0.037					0.022
74	0.064						0.046					0.018
76	0.132						0.005	0.105				0.022
77	0.137							0.135				0.002
79	0.120						0.049					0.071
80	0.108						0.101					0.007
81	0.054						0.101		0.003			0.041
82	0.047						0.045					0.002
83	0.035							0.005				0.030
84	0.047						0.038					0.009
85	0.121			0.009			0.038		0.049			0.025
86	0.095							0.092				0.003
87	0.055						0.053	0.001	0.001			
88	0.084						0.001	0.078				0.005
89	0.067							0.067				
90	0.092						0.002[1]	0.090				
91	0.079				0.001		0.071	0.005				0.002
92	0.074				0.049			0.013				0.012[1]
93	0.048				0.031		0.005	0.011				0.001
94	0.102	0.002				0.097[2]		0.003				
96	0.069	0.069										
97	0.043	0.009										0.034
98	0.045						0.009[1]	0.029				0.007
99	0.075						0.013	0.062				
100	0.052						0.052					

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Sub-Basin Parameter Computation Sheet: Area and Land Use Data

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Basin ID	Area (mi^2)	Land Use Types (mi^2)										
		R-43	R-35	R-15	R-9	R-7	R-4	R-2	AG	PA, OS	M-1	Comm
101	0.087							0.087				
102	0.097							0.097*				
103	0.090							0.090*				
104	0.073	0.002		0.003			0.015	0.046				0.007
105	0.036							0.036[1]				
106	0.067							0.066		0.001		
107	0.154							0.154				
108	0.099			0.007				0.074				0.018
110	0.072						0.025	0.040	0.002	0.003		0.002
111	0.056							0.056				
112	0.044						0.022		0.009			0.013
113	0.092				0.077				0.015			
114	0.080				0.076	0.002		0.001	0.001			
115	0.042					0.020		0.001	0.021			
116	0.140					0.138		0.001				0.001
118	0.158				0.007	0.099			0.004			0.048
120	0.057								0.056			0.001
121	0.040								0.004	0.005		0.031
122	0.093	0.032		0.061								
123	0.103			0.071	0.011							0.021
124	0.072				0.019				0.050		0.001	0.002
125	0.101			0.002	0.099							
128	0.114			0.015		0.057			0.018	0.012		0.012
129	0.116				0.061				0.008		0.047	
130	0.087								0.056		0.031	
131	0.051			0.044						0.002		0.005
132	0.093				0.076							0.017
133	0.051				0.051							
134	0.101				0.040				0.061			
135	0.105								0.097		0.002	0.006
136	0.066				0.013				0.011		0.040	0.002
137	0.032				0.032							
138	0.073				0.037				0.036			
139	0.098								0.098			
141	0.038				0.011				0.027			
142	0.084								0.084			
143	0.093			0.002	0.083		0.008					
144	0.069			0.014	0.025		0.017					0.013
146	0.044			0.001	0.043							
147	0.084				0.057				0.027			
148	0.047				0.009				0.038			
149	0.087								0.087			
150	0.096	0.003							0.072			0.021
151	0.022		0.022									
152	**0.097**		**0.097**									
153	0.039					0.037	0.001	0.001				

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Sub-Basin Parameter Computation Sheet: Area and Land Use Data

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Basin ID	Area (mi^2)	Land Use Types (mi^2)										
		R-43	R-35	R-15	R-9	R-7	R-4	R-2	AG	PA, OS	M-1	Comm
155	0.043			0.023				0.014				0.006
156	0.129		0.129									
157	0.152		0.152									
158	0.089		0.089									
159	0.076		0.076									
160	0.078		0.078									
161	0.088			0.005	0.083							
162	0.137			0.004	0.133							
163	0.152			0.014	0.138							
164	0.091		0.062	0.001	0.028							
165	0.097		0.011	0.070	0.016							
166	0.081	0.013		0.039	0.029							
168	0.051	0.042								0.001		0.008
170	**0.063**		**0.052**	**0.002**						**0.009**		
180	**0.021**				**0.019**		**0.001**					**0.001**
181	**0.024**				**0.002**		**0.003**					**0.019**

NOTES

* R-3 Land Use Category included in the value.

[1] Include OS less than .0005 sq mi.

[2] Includes R-4 less than 0.0005 sq.mi.

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Sub-Basin Parameter Computation Sheet: Loss Parameters, Tc, and R

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Drainage Area #	Area (mi^2)	IA	DTHETA	PSIF	XKSAT	RTIMP	Tc	R
1	0.041	0.26	0.25	4.80	0.36	27%	3.540	0.231
2	0.089	0.27	0.25	4.80	0.37	26%	0.617	0.413
3	0.065	0.24	0.26	3.74	0.67	32%	0.667	0.581
4	0.118	0.26	0.25	4.80	0.36	27%	0.850	0.776
5	0.146	0.25	0.25	4.55	0.42	30%	0.579	0.423
6	0.065	0.25	0.25	4.60	0.40	40%	0.463	0.387
8	0.037	0.23	0.25	4.45	0.45	43%	0.346	0.285
9	0.067	0.23	0.25	4.60	0.38	42%	0.363	0.280
10	0.063	0.25	0.25	4.80	0.32	30%	0.458	0.376
11	0.063	0.10	0.25	4.40	0.55	80%	0.325	0.290
12	0.131	0.30	0.25	4.45	0.45	15%	0.650	0.518
13	0.063	0.45	0.25	4.80	0.45	7%	0.371	0.164
15	0.141	0.30	0.25	4.80	0.36	15%	0.642	0.560
16	0.100	0.30	0.25	4.80	0.36	15%	0.458	0.305
17	0.100	0.30	0.25	4.80	0.36	15%	0.608	0.656
18	0.108	0.30	0.25	4.80	0.36	15%	0.492	0.413
19	0.069	0.30	0.25	4.80	0.36	15%	0.425	0.328
20	0.149	0.30	0.25	4.80	0.36	15%	0.512	0.374
21	0.247	0.30	0.25	4.80	0.36	15%	0.542	0.246
22	0.060	0.27	0.25	4.80	0.32	23%	0.458	0.364
25	0.102	0.30	0.25	4.80	0.36	15%	1.117	1.272
26	0.108	0.30	0.25	5.60	0.26	15%	0.425	0.194
27	0.109	0.30	0.25	5.10	0.32	15%	0.496	0.265
28	0.062	0.25	0.25	5.70	0.25	45%	0.479	0.376
29	0.063	0.50	0.25	4.80	0.46	0%	0.788	0.633
30	0.063	0.50	0.25	4.80	0.46	0%	1.558	1.350
31	0.030	0.30	0.25	4.80	0.36	15%	0.400	0.387
32	0.033	0.50	0.25	4.80	0.46	0%	0.625	0.554
33	0.062	0.45	0.25	4.80	0.44	4%	0.846	0.916
34	0.065	0.45	0.25	4.80	0.44	4%	0.850	0.869
35	0.062	0.40	0.25	4.80	0.41	8%	0.696	0.726
36	0.071	0.45	0.25	4.80	0.44	4%	0.804	0.766
37	0.069	0.30	0.25	4.80	0.36	15%	0.467	0.392
38	0.049	0.30	0.25	4.80	0.36	15%	0.342	0.277
39	0.074	0.30	0.25	4.80	0.36	15%	0.417	0.326
40	0.055	0.30	0.25	4.80	0.36	15%	0.421	0.355
41	0.031	0.30	0.25	4.80	0.36	15%	0.308	0.255
42	0.073	0.30	0.25	4.80	0.36	15%	0.721	0.840
43	0.062	0.30	0.25	4.80	0.36	15%	0.512	0.478
44	0.112	0.30	0.25	4.80	0.36	15%	0.650	0.552
45	0.067	0.30	0.25	4.80	0.36	15%	0.471	0.457
46	0.058	0.30	0.25	4.80	0.36	15%	0.521	0.580
47	0.048	0.30	0.25	4.80	0.36	15%	0.504	0.497

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Sub-Basin Parameter Computation Sheet: Loss Parameters, Tc, and R

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Drainage Area #	Area (mi^2)	IA	DTHETA	PSIF	XKSAT	RTIMP	Tc	R
48	0.123	0.50	0.25	4.80	0.46	0%	1.146	0.969
49	0.126	0.25	0.25	6.00	0.22	29%	0.533	0.372
50	0.071	0.50	0.25	4.80	0.46	0%	1.058	1.183
51	0.057	0.46	0.25	4.80	0.44	3%	0.758	0.813
52	0.085	0.41	0.25	4.80	0.42	7%	0.533	0.375
53	0.042	0.30	0.25	4.80	0.36	15%	0.404	0.396
54	0.060	0.30	0.25	4.80	0.36	15%	0.375	0.297
55	0.070	0.30	0.25	4.80	0.36	15%	0.367	0.233
56	0.049	0.30	0.25	4.80	0.36	15%	0.375	0.347
57	0.086	0.28	0.21	6.40	0.19	22%	0.412	0.173
58	0.075	0.25	0.25	4.80	0.36	30%	0.458	0.428
59	0.083	0.42	0.25	4.80	0.44	15%	0.521	0.384
60	0.064	0.12	0.15	8.00	0.12	75%	0.300	0.215
61	0.071	0.18	0.23	6.20	0.21	54%	0.267	0.181
62	0.025	0.25	0.15	9.70	0.06	45%	0.321	0.319
63	0.122	0.25	0.15	9.70	0.06	45%	0.546	0.433
64	0.061	0.20	0.15	9.70	0.06	56%	0.412	0.385
65	0.081	0.25	0.15	9.70	0.06	45%	0.396	0.303
66	0.068	0.20	0.15	8.80	0.07	56%	0.313	0.213
67	0.069	0.15	0.15	9.70	0.06	69%	0.400	0.451
68	0.053	0.25	0.15	8.00	0.10	45%	0.558	0.705
69	0.075	0.24	0.15	8.80	0.07	48%	0.421	0.395
70	0.055	0.25	0.25	4.80	0.36	30%	0.458	0.497
71	0.101	0.23	0.25	5.80	0.23	50%	0.438	0.358
73	0.059	0.19	0.17	6.80	0.16	58%	0.292	0.204
74	0.064	0.21	0.19	6.60	0.18	55%	0.296	0.194
76	0.132	0.22	0.25	4.80	0.37	51%	0.446	0.352
77	0.137	0.25	0.25	4.80	0.36	45%	0.925	1.203
79	0.120	0.16	0.15	8.00	0.11	66%	0.325	0.221
80	0.108	0.24	0.25	4.80	0.36	47%	0.404	0.259
81	0.054	0.15	0.21	6.40	0.22	69%	0.321	0.333
82	0.047	0.25	0.25	5.20	0.30	45%	0.417	0.430
83	0.035	0.10	0.25	4.80	0.43	80%	0.267	0.299
84	0.047	0.22	0.25	5.70	0.25	52%	0.538	0.448
85	0.121	0.32	0.25	4.90	0.41	32%	0.600	0.440
86	0.095	0.25	0.25	4.80	0.36	45%	0.479	0.371
87	0.055	0.25	0.25	4.70	0.38	45%	0.442	0.405
88	0.084	0.24	0.25	4.80	0.36	48%	0.467	0.445
89	0.067	0.25	0.25	4.80	0.36	45%	0.496	0.589
90	0.092	0.25	0.25	4.80	0.36	45%	0.471	0.432
91	0.079	0.25	0.25	4.55	0.42	45%	0.354	0.219
92	0.074	0.23	0.25	4.55	0.42	41%	0.637	0.693
93	0.048	0.25	0.25	4.80	0.36	36%	0.363	0.364

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Sub-Basin Parameter Computation Sheet: Loss Parameters, Tc, and R

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Drainage Area #	Area (mi^2)	IA	DTHETA	PSIF	XKSAT	RTIMP	Tc	R
94	0.102	0.25	0.25	4.80	0.36	30%	0.542	0.408
96	0.069	0.30	0.25	4.80	0.31	5%	0.563	0.448
97	0.043	0.14	0.25	4.80	0.36	64%	0.308	0.218
98	0.045	0.23	0.25	4.80	0.37	50%	0.358	0.299
99	0.075	0.25	0.25	4.80	0.36	45%	0.412	0.320
100	0.052	0.25	0.25	4.80	0.36	45%	0.508	0.609
101	0.087	0.25	0.25	4.80	0.36	45%	0.512	0.490
102	0.097	0.25	0.25	4.80	0.36	45%	0.604	0.587
103	0.090	0.25	0.25	4.80	0.36	45%	0.546	0.515
104	0.073	0.25	0.25	4.80	0.36	46%	0.467	0.431
105	0.036	0.25	0.25	4.80	0.36	45%	0.429	0.490
106	0.067	0.25	0.25	4.80	0.36	45%	0.550	0.543
107	0.154	0.25	0.25	4.70	0.38	45%	0.483	0.302
108	0.099	0.22	0.25	4.55	0.43	51%	0.533	0.482
110	0.072	0.24	0.25	4.80	0.36	48%	0.417	0.313
111	0.056	0.25	0.25	4.80	0.36	45%	0.412	0.344
112	0.044	0.26	0.25	4.80	0.41	46%	0.396	0.347
113	0.092	0.29	0.25	4.80	0.38	25%	0.758	0.806
114	0.080	0.25	0.25	4.80	0.36	30%	0.587	0.598
115	0.042	0.38	0.25	4.80	0.42	14%	0.542	0.481
116	0.140	0.25	0.25	4.80	0.36	30%	0.542	0.397
118	0.158	0.20	0.25	4.55	0.43	46%	0.492	0.391
120	0.057	0.50	0.25	4.80	0.46	0%	0.712	0.548
121	0.040	0.10	0.25	4.80	0.43	80%	0.267	0.236
122	0.093	0.30	0.25	4.80	0.34	11%	0.492	0.356
123	0.103	0.25	0.25	4.80	0.36	30%	0.429	0.323
124	0.072	0.43	0.25	4.60	0.49	8%	0.792	0.816
125	0.101	0.25	0.25	4.80	0.36	30%	0.521	0.498
128	0.114	0.28	0.25	4.80	0.39	30%	0.608	0.527
129	0.116	0.24	0.25	4.80	0.37	32%	0.421	0.317
130	0.087	0.38	0.25	4.00	0.69	20%	0.808	0.718
131	0.051	0.27	0.25	4.80	0.36	24%	0.504	0.407
132	0.093	0.22	0.25	4.65	0.40	39%	0.508	0.413
133	0.051	0.25	0.25	4.45	0.45	30%	0.608	0.657
134	0.101	0.40	0.25	4.60	0.48	12%	0.679	0.519
135	0.105	0.47	0.25	4.80	0.46	6%	1.146	1.102
136	0.066	0.28	0.25	4.80	0.39	29%	0.446	0.348
137	0.032	0.25	0.25	4.80	0.36	30%	0.350	0.486
138	0.073	0.37	0.25	4.50	0.50	15%	0.804	0.812
139	0.098	0.50	0.25	4.25	0.64	0%	1.092	0.936
141	0.038	0.43	0.25	4.80	0.44	9%	0.575	0.519
142	0.084	0.50	0.25	4.40	0.59	0%	0.767	0.521
143	0.093	0.25	0.25	4.80	0.36	31%	0.475	0.428

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Sub-Basin Parameter Computation Sheet: Loss Parameters, Tc, and R

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Drainage Area #	Area (mi^2)	IA	DTHETA	PSIF	XKSAT	RTIMP	Tc	R
144	0.069	0.22	0.25	4.80	0.37	43%	0.387	0.335
146	0.044	0.25	0.25	4.70	0.38	30%	0.325	0.368
147	0.084	0.33	0.25	4.50	0.48	20%	0.663	0.639
148	0.047	0.45	0.25	4.70	0.46	6%	0.717	0.812
149	0.087	0.50	0.25	4.65	0.49	0%	1.179	1.450
150	0.096	0.41	0.25	4.65	0.49	18%	0.704	0.625
151	0.022	0.30	0.25	4.50	0.43	15%	0.329	0.343
152	0.097	0.30	0.25	4.80	0.36	15%	0.592	0.434
153	0.039	0.25	0.25	4.00	0.56	30%	0.433	0.401
155	0.043	0.26	0.25	4.80	0.36	34%	0.304	0.233
156	0.129	0.30	0.25	4.80	0.36	15%	0.650	0.470
157	0.152	0.30	0.25	4.50	0.43	15%	0.825	0.702
158	0.089	0.30	0.25	4.60	0.40	15%	0.650	0.489
159	0.076	0.30	0.25	4.55	0.42	15%	0.983	1.267
160	0.078	0.30	0.25	4.30	0.49	15%	0.679	0.658
161	0.088	0.25	0.25	4.45	0.45	29%	1.163	1.177
162	0.137	0.25	0.25	4.30	0.49	30%	0.613	0.472
163	0.152	0.25	0.25	4.55	0.42	29%	0.396	0.208
164	0.091	0.29	0.25	4.60	0.40	18%	0.429	0.305
165	0.097	0.29	0.25	4.35	0.48	17%	0.637	0.601
166	0.081	0.28	0.25	0.43	0.51	21%	0.779	0.973
168	0.051	0.26	0.25	4.60	0.35	18%	0.471	0.478
170	0.063	0.33	0.25	4.80	0.38	13%	0.575	0.437
180	0.021	0.24	0.15	9.70	0.06	33%	0.262	0.175
181	0.024	0.13	0.15	9.70	0.06	71%	0.233	0.163

Appendix D.3

Hydrograph Routing Data

- Length
- Elevations
- Type
- Slope
- Velocity
- NSTPS

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Subject: **Routing Parameters Computation Sheet: Length, Elevations, Type, Slope, Velocity and NSTPS**
Eastern Canal North FDS
FCD98-36

Route	U/S Node ID	D/S Node ID	Reach Length (ft)	U/S Elevation (ft)	D/S Elevation (ft)	Δz (ft)	Type	Approx. Slope (ft/ft)	Average Velocity (ft/s)	NSTPS
RCP1	CP3	CP4	1645	1292.0	1290.0	2.0	5	0.0012	2.27	2
RCP2	CP4	CPMA	524	1292.0	1290.0	2.0	Special type	0.0038	2.00	1
RCP3	CPMA	CP18	2837	1290.0	1289.7	0.3	5	0.0001	2.27	4
RCP4	4	CP4	1971	1296.5	1290.0	6.5	1	0.0033	3.41	2
RCP5	CP14B	CP15	1374	1305.9	1301.2	4.7	3	0.0034	3.02	2
RCP6	CP15	CP16	1447	1301.2	1291.8	9.4	3	0.0065	3.37	1
RCP8	CP16	CPMA	1080	1294.8	1292.0	2.8	3	0.0026	2.66	1
RCP10	CP19	CP21	1251	1294.8	1291.8	3.0	3	0.0024	3.99	1
RCP11	CP12	CP15	1320	1304.7	1301.2	3.5	3	0.0027	2.41	2
RCP12	1B12	CP12A	1356	1314.2	1310.9	3.3	2	0.0024	2.68	2
RCP13	CP12A	CP12	1283	1311.0	1304.7	6.6	3	0.0051	3.45	1
RCP15	CP8	CP11	2035	1326.0	1314.0	12.0	1	0.0059	3.59	2
RCP16	CPA2	CP10	1986	1335.7	1324.5	11.2	2	0.0056	3.75	2
RCP17	CP17	CP32	993	1319.9	1316.0	3.9	1	0.0039	2.88	1
RCP18	CP18A	CP31	1350	1327.2	1324.8	2.4	1	0.0018	3.03	1
RCP19	CP32	CP35	2600	1316.0	1303.7	12.3	Special type	0.0047	2.00	4
RCP20	CP31	CP33A	1576	1324.8	1313.4	11.4	1	0.0072	4.39	1
RCP22	22	CP19	1301	1300.0	1294.8	5.2	1	0.0040	3.41	1
RCP23	CP35	CP37A	1552	1303.7	1293.0	10.7	2	0.0069	2.95	2
RCP25	PA25	COM26A	1167	1291.0	1288.1	2.9	5	0.0025	1.60	2
RCP26	COM26B	CP38	1156	1291.5	1288.5	3.0	Special type	0.0026	2.00	2
RCP27	CP37A	COM26A	790	1293.0	1291.5	1.5	2	0.0019	2.15	1
RCP28	CP36	CP29	1274	1299.0	1293.5	5.5	Special type	0.0043	1.50	3
RCP29	CP29A	CP36	1288	1304.5	1299.0	5.5	Special type	0.0043	1.80	2
RCP30	CP29A	COM26B	979	1294.0	1291.5	2.5	3	0.0026	3.10	1
RCP31	31	CP28	659	1304.1	1301.0	3.1	Special type	0.0047	2.00	1
RCP32	CP28	CP29	1288	1301.0	1294.0	7.0	3	0.0054	3.59	1
RCP33	CP33A	CP25	667	1313.4	1311.9	1.5	3	0.0023	2.89	1
RCP34	CP25	CP26	660	1311.9	1309.8	2.1	3	0.0032	3.02	1
RCP35	CP26	CP27	668	1309.8	1307.5	2.3	3	0.0034	2.66	1

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Subject: **Routing Parameters Computation Sheet: Length, Elevations, Type, Slope, Velocity and NSTPS**
Eastern Canal North FDS
FCD98-36

Route	U/S Node ID	D/S Node ID	Reach Length (ft)	U/S Elevation (ft)	D/S Elevation (ft)	Δz (ft)	Type	Approx. Slope (ft/ft)	Average Velocity (ft/s)	NSTPS
RCP36	CP27	CP28	1288	1307.5	1301.0	6.5	3	0.0050	3.59	1
RCP37	CP22	CP24	1283	1327.0	1322.0	5.0	1	0.0039	3.50	1
RCP38	38	CP22	1410	1335.5	1327.0	8.5	1	0.0060	4.57	1
RCP39	CP24	CP27	2673	1322.2	1307.5	14.7	3	0.0055	3.66	2
RCP40	CP23	CP24	1502	1331.1	1322.2	8.9	3	0.0059	3.93	1
RCP41	41	CP23	1073	1339.2	1331.1	8.1	3	0.0075	4.27	1
RCP44	PA44	CP44	183	1288.0	1287.9	0.1	2	0.0005	3.85	1
RCP46	CP41	CP42	1294	1303.5	1299.0	4.5	3	0.0035	3.10	1
RCP48	CP42	CP44	2050	1299.0	1287.9	11.1	2	0.0054	3.72	2
RCP49	CP49	CP60A	1338	1295.4	1291.0	4.4	3	0.0033	2.76	2
RCP50	CP50A	CP42	3176	1317.7	1299.0	18.7	Special type	0.0059	2.60	4
RCP52	CP52A	CP46	841	1332.0	1329.0	3.0	3	0.0036	3.26	1
RCP53	2B53	CP40	500	1322.0	1318.0	4.0	2	0.0080	3.82	1
RCP54	2B54	CP40	1948	1329.0	1316.0	13.0	3	0.0067	2.93	2
RCP55	2B55	CP42	2711	1314.5	1299.0	15.5	1	0.0057	3.80	2
RCP56	CP47	COM59	872	1327.5	1323.5	4.0	3	0.0046	3.18	1
RCP58	58	CP50	328	1309.0	1308.1	0.9	1	0.0027	3.23	1
RCP59	COM59	COM76	1120	1323.5	1319.1	4.4	3	0.0039	2.93	1
RCP61	CP52A	CP60A	1354	1296.8	1291.0	5.8	3	0.0043	3.34	1
RCP63	PA64	CP57	680	1282.3	1282.2	0.1	5	0.0002	2.27	1
RCP65	3B65	CP56	2123	1299.9	1287.8	12.1	1	0.0057	4.57	2
RCP66	CP55	CP56	1823	1295.6	1288.0	7.6	4	0.0042	4.36	1
RCP67	CP57	CP58	738	1282.2	1282.0	0.2	5	0.0002	2.27	1
RCP69	3B69	CP68	1601	1290.0	1285.0	5.0	2	0.0031	2.43	2
RCP70	CP50	CP51	860	1308.0	1305.5	2.5	1	0.0029	2.88	1
RCP71	CP71A	CP52	1290	1303.0	1296.8	6.2	3	0.0048	3.41	1
RCP73	73	CP55	2095	1307.9	1295.6	12.3	Special type	0.0059	2.10	3
RCP74	CP98	CP55	1440	1304.0	1295.6	8.4	4	0.0058	4.60	1
RCP76	COM76	CP71A	2650	1319.5	1303.0	16.5	3	0.0062	3.99	2
RCP77	COM77	CP60	800	1313.6	1311.1	2.5	4	0.0031	5.01	1

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Subject: **Routing Parameters Computation Sheet: Length, Elevations, Type, Slope, Velocity and NSTPS**
Eastern Canal North FDS
FCD98-36

Route	U/S Node ID	D/S Node ID	Reach Length (ft)	U/S Elevation (ft)	D/S Elevation (ft)	Δz (ft)	Type	Approx. Slope (ft/ft)	Average Velocity (ft/s)	NSTPS
RCP79	CP60	CP98	1268	1311.1	1304.0	7.1	4	0.0056	4.60	1
RCP80	3B80	CP60	2654	1330.0	1312.0	18.0	4	0.0068	5.01	2
RCP81	CP81A	CP62	590	1306.4	1305.2	1.2	4	0.0020	3.28	1
RCP82	CP62	CP66	1325	1305.2	1300.2	5.0	3	0.0038	3.10	1
RCP83	83	CP60	2676	1329.7	1311.1	18.6	4	0.0070	5.01	2
RCP85	CP67	CP68	392	1288.0	1286.0	2.0	3	0.0051	3.45	1
RCP86	COM86	CP67	2597	1300.2	1288.0	12.2	3	0.0047	3.73	2
RCP87	CP65	CP66	1876	1310.2	1300.2	10.0	3	0.0053	3.80	2
RCP88	88	CP64	527	1318.0	1316.0	2.0	1	0.0038	3.41	1
RCP89	CP63	CP65	785	1315.4	1310.2	5.2	3	0.0066	3.73	1
RCP91	4B91	CP63	2613	1331.2	1315.4	15.8	3	0.0060	3.93	2
RCP93	CP70	CP77	904	1377.5	1376.3	1.2	5	0.0013	2.45	1
RCP97	CP120	CP85	1749	1280.9	1279.5	1.4	5	0.0008	2.27	3
RCP98	CP76	CP75	985	1294.6	1293.2	1.4	1	0.0014	2.07	2
RCP99	4B99	CP76	980	1300.1	1294.6	5.5	1	0.0056	2.77	1
RCP100	CP75	CP74	462	1293.2	1290.0	3.2	2	0.0069	1.89	1
RCP102	COM102	CP103	1340	1292.0	1290.4	1.6	3	0.0012	3.52	1
RCP103	CP103	CP84	576	1290.4	1290.0	0.4	3	0.0007	3.26	1
RCP105	105	CP75	3180	1308.0	1293.2	14.8	1	0.0047	4.25	2
RCP106	CP73	CP74	2830	1308.4	1291.1	17.3	2	0.0061	3.95	2
RCP108	CP83	CP84	2700	1303.0	1290.0	13.0	3	0.0048	3.80	2
RCP110	4B110	CP73	1202	1316.0	1313.2	2.8	1	0.0023	3.41	1
RCP111	4B111	CP73	280	1316.0	1313.2	2.8	2	0.0100	4.85	1
RCP112	COM112	CP61	645	1325.4	1323.7	1.7	1	0.0026	3.32	1
RCP113	CP61	CP114A	545	1323.7	1322.6	1.1	1	0.0020	4.89	1
RCP114	CP114A	COM115	661	1322.6	1321.5	1.1	3	0.0017	2.01	1
RCP115	COM115	CP80	880	1321.5	1320.1	1.4	4	0.0016	2.16	1
RCP116	CP80	CP81	1192	1320.1	1317.7	2.4	4	0.0020	3.11	1
RCP118	CP81	CP83	2513	1317.7	1303.0	14.7	3	0.0058	3.66	2
RCP122	CP89	CP90	1044	1292.0	1289.4	2.6	2	0.0025	2.37	1

PRIMATECH
ENGINEERS & CONSULTANTS

Subject: **Routing Parameters Computation Sheet: Length, Elevations, Type, Slope, Velocity and NSTPS**
Eastern Canal North FDS
FCD98-36

Route	U/S Node ID	D/S Node ID	Reach Length (ft)	U/S Elevation (ft)	D/S Elevation (ft)	Δz (ft)	Type	Approx. Slope (ft/ft)	Average Velocity (ft/s)	NSTPS
RCP123	123	CP89	1538	1300.0	1292.0	8.0	1	0.0052	3.80	1
RCP124	CP124	CP87	916	1308.0	1300.7	7.3	2	0.0080	2.43	1
RCP128	CP128	CP92	2766	1279.5	1278.8	0.7	5	0.0003	2.27	4
RCP129	CP92	CP97	790	1278.8	1278.6	0.2	5	0.0003	2.27	1
RCP131	CP90	CP91	667	1289.4	1287.0	2.4	3	0.0036	3.99	1
RCP132	CP88	CP91	2902	1289.1	1275.5	13.6	ADOT channel	0.0047	7.50	1
RCP134	134	CP97	2171	1292.0	1282.0	10.0	Special type	0.0046	2.00	4
RCP135	CP96	CP97	741	1284.6	1282.0	2.6	2	0.0035	3.12	1
RCP136	CP87	CP88	2478	1300.7	1289.1	11.6	ADOT channel	0.0047	7.50	1
RCP138	138	CP95	1587	1303.0	1294.5	8.5	2	0.0054	4.02	1
RCP139	CP95	CP96	2402	1294.5	1284.6	9.9	2	0.0041	3.12	3
RCP141	141	CP94	1345	1310.0	1303.0	5.0	Special type	0.0037	1.20	4
RCP142	CP94	CP95	2238	1303.0	1294.5	5.0	2	0.0022	3.39	2
RCP143	CP86	CP87	1397	1307.3	1300.7	6.6	ADOT channel	0.0047	7.50	1
RCP144	CP144	CP86	1323	1313.5	1307.3	6.2	ADOT channel	0.0047	7.50	1
RCP147	147	CP94	1896	1316.0	1303.0	13.0	Special type	0.0069	1.50	4
RCP148	148	RCP248	925	1319.8	1314.0	5.8	Special type	0.0063	1.50	2
RCP149	CP93	CP94	1144	1311.6	1303.0	8.6	2	0.0075	3.92	1
RCP150	150	CP93	994	1316.2	1311.6	4.6	2	0.0046	3.92	1
RCP152	CP10	CP200	1306	1324.5	1317.4	7.1	2	0.0054	3.61	1
RCP153	1B153	CP16	708	1298.0	1291.8	6.2	Special type	0.0088	1.53	2
RCP155	2B155	CP39	2238	1297.2	1288.0	9.2	1	0.0041	3.50	2
RCP156	156	CP5	1347	1336.8	1331.4	5.4	1	0.0040	3.80	1
RCP157	CP5	CP6	1284	1331.4	1324.0	7.4	1	0.0058	4.03	1
RCP158	CP6	CP7	1322	1324.0	1318.5	5.5	2	0.0042	3.54	1
RCP159	CP7	CP9	1279	1318.5	1314.2	4.3	2	0.0034	2.77	2
RCP160	160	CP7	1511	1323.3	1318.5	4.8	2	0.0032	2.86	2
RCP161	161	CP13	1425	1314.4	1310.1	4.3	2	0.0030	2.77	2
RCP162	CP13	CP14	1260	1310.1	1305.9	4.2	3	0.0033	2.85	1
RCP163	CP1	CP2	2452	1301.0	1292.4	8.6	1	0.0035	3.32	2

PRIMATECH
ENGINEERS & CONSULTANTS

Subject: **Routing Parameters Computation Sheet: Length, Elevations, Type, Slope, Velocity and NSTPS**
Eastern Canal North FDS
FCD98-36

Route	U/S Node ID	D/S Node ID	Reach Length (ft)	U/S Elevation (ft)	D/S Elevation (ft)	Δz (ft)	Type	Approx. Slope (ft/ft)	Average Velocity (ft/s)	NSTPS
RCP164	0B164	CP1	720	1303.0	1301.0	2.0	2	0.0028	1.96	1
RCP200	CP200	CP12A	1383	1317.4	1311.0	6.4	3	0.0046	3.32	1
RCP248	RCP148	CP94	721	1314.0	1311.6	2.4	2	0.0033	3.92	1
RSD15	15	SD+151	710				Storm drain	-	-	-

Routing Type Legend

1	Residential Street
2	Collector Street
3	Major Collector Street
4	Arterial Street
5	Earthen or Concrete Channel
ADOT Channel	ADOT Channel
Special Type	Overland flow not confined into a channel cross section

Normal Depth Routing - Residential (Type
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	Residential Street (Type 1)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.002500	ft/ft
Water Surface Elevation	10.49	ft

Elevation range: 10.00 ft to 20.39 ft.

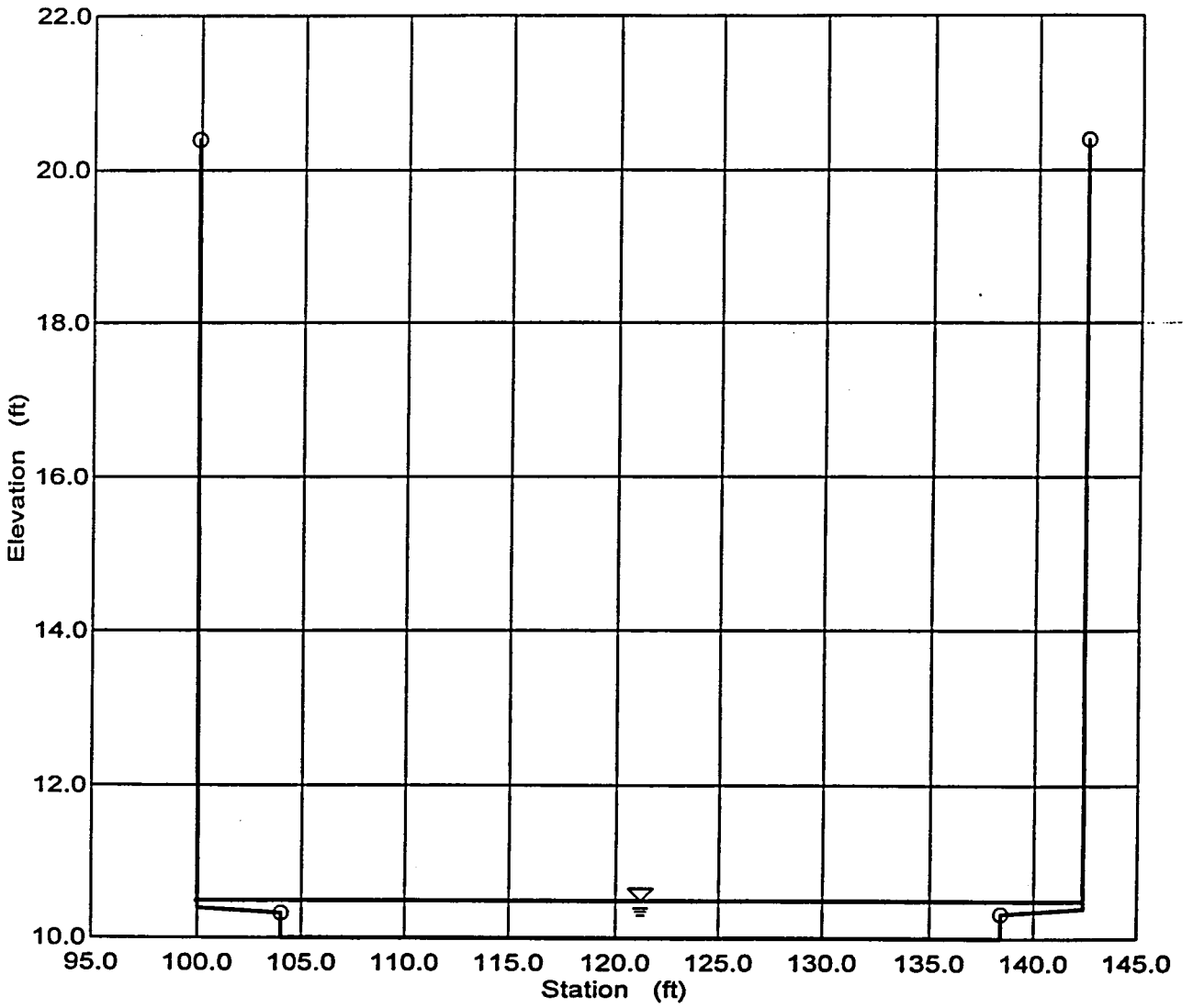
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
99.99	20.39	99.99	104.00	0.013
100.00	10.39	104.00	138.40	0.016
104.00	10.33	138.40	142.41	0.013
104.00	10.00			
138.40	10.00			
138.40	10.33			
142.40	10.39			
142.41	20.39			

Results		
Wtd. Mannings Coefficient	0.015	
Discharge	49.54	cfs
Flow Area	17.90	ft²
Wetted Perimeter	43.26	ft
Top Width	42.40	ft
Height	0.49	ft
Critical Depth	10.42	ft
Critical Slope	0.004470	ft/ft
Velocity	2.77	ft/s
Velocity Head	0.12	ft
Specific Energy	10.61	ft
Froude Number	0.75	
Flow is subcritical.		

Normal Depth Routing - Residential (Type 1)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	Residential Street (Type 1)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.015	
Channel Slope	0.002500	ft/ft
Water Surface Elevation	10.49	ft
Discharge	49.54	cfs



N. D. Routing - Collector (Type 2)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	Collector Street (Type 2)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.001400	ft/ft
Water Surface Elevation	10.42	ft

Elevation range: 10.00 ft to 20.32 ft.

Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
99.99	20.32	99.99	104.00	0.013
100.00	10.32	104.00	152.00	0.016
104.00	10.26	152.00	156.41	0.013
104.00	10.00			
152.00	10.00			
152.00	10.26			
156.00	10.32			
156.41	20.32			

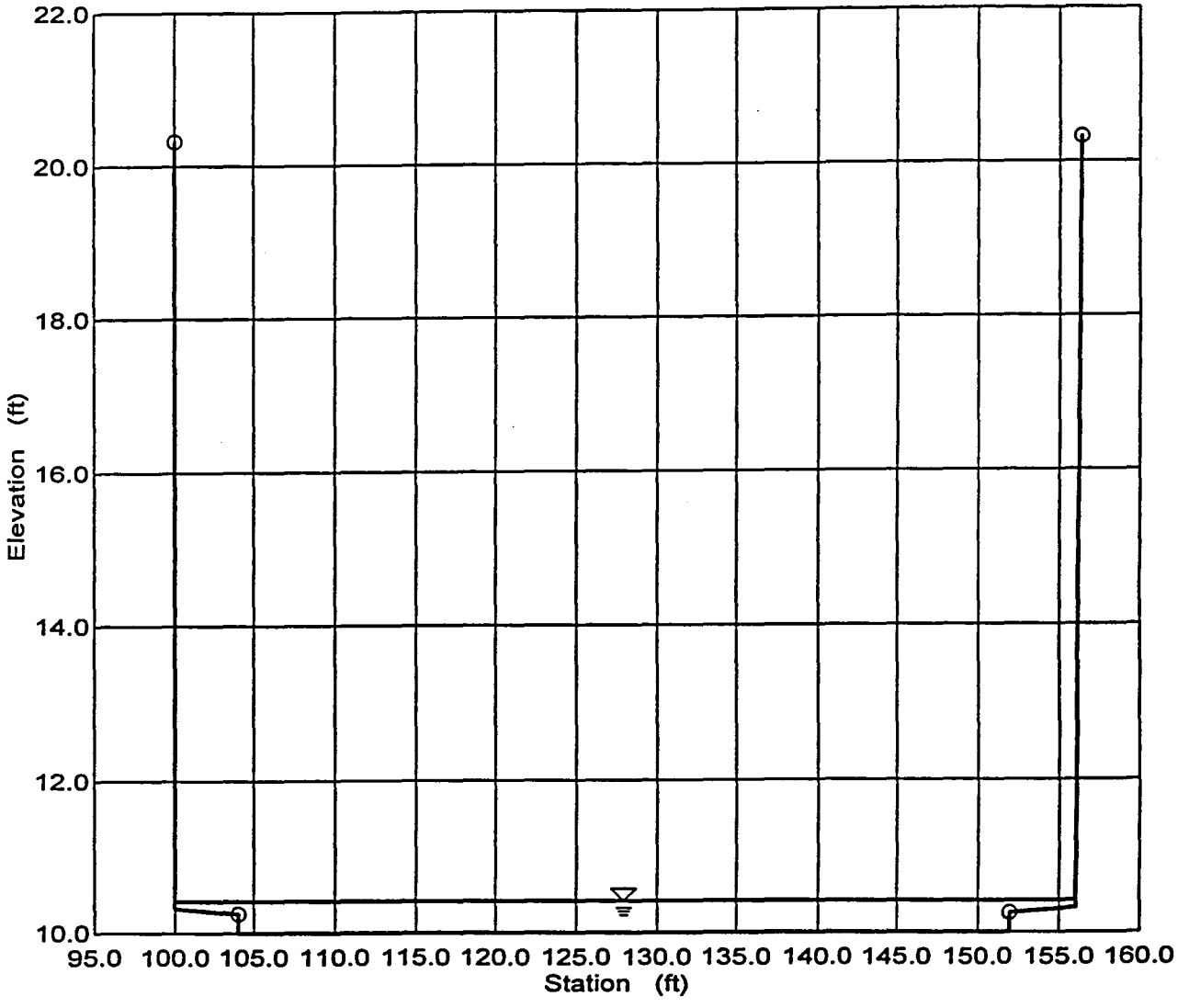
Results		
Wtd. Mannings Coefficient	0.015	
Discharge	40.13	cfs
Flow Area	21.20	ft²
Wetted Perimeter	56.72	ft
Top Width	56.00	ft
Height	0.42	ft
Critical Depth	10.28	ft
Critical Slope	0.005432	ft/ft
Velocity	1.89	ft/s
Velocity Head	0.06	ft
Specific Energy	10.48	ft
Froude Number	0.54	

Flow is subcritical.

N. D. Routing - Collector (Type 2)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	Collector Street (Type 2)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.015	
Channel Slope	0.001400	ft/ft
Water Surface Elevation	10.42	ft
Discharge	40.13	cfs



N. D. Routing - Major Collector (Type 3)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	Major Collector Street (Type 3)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.004900	ft/ft
Water Surface Elevation	10.41	ft

Elevation range: 10.00 ft to 20.31 ft.

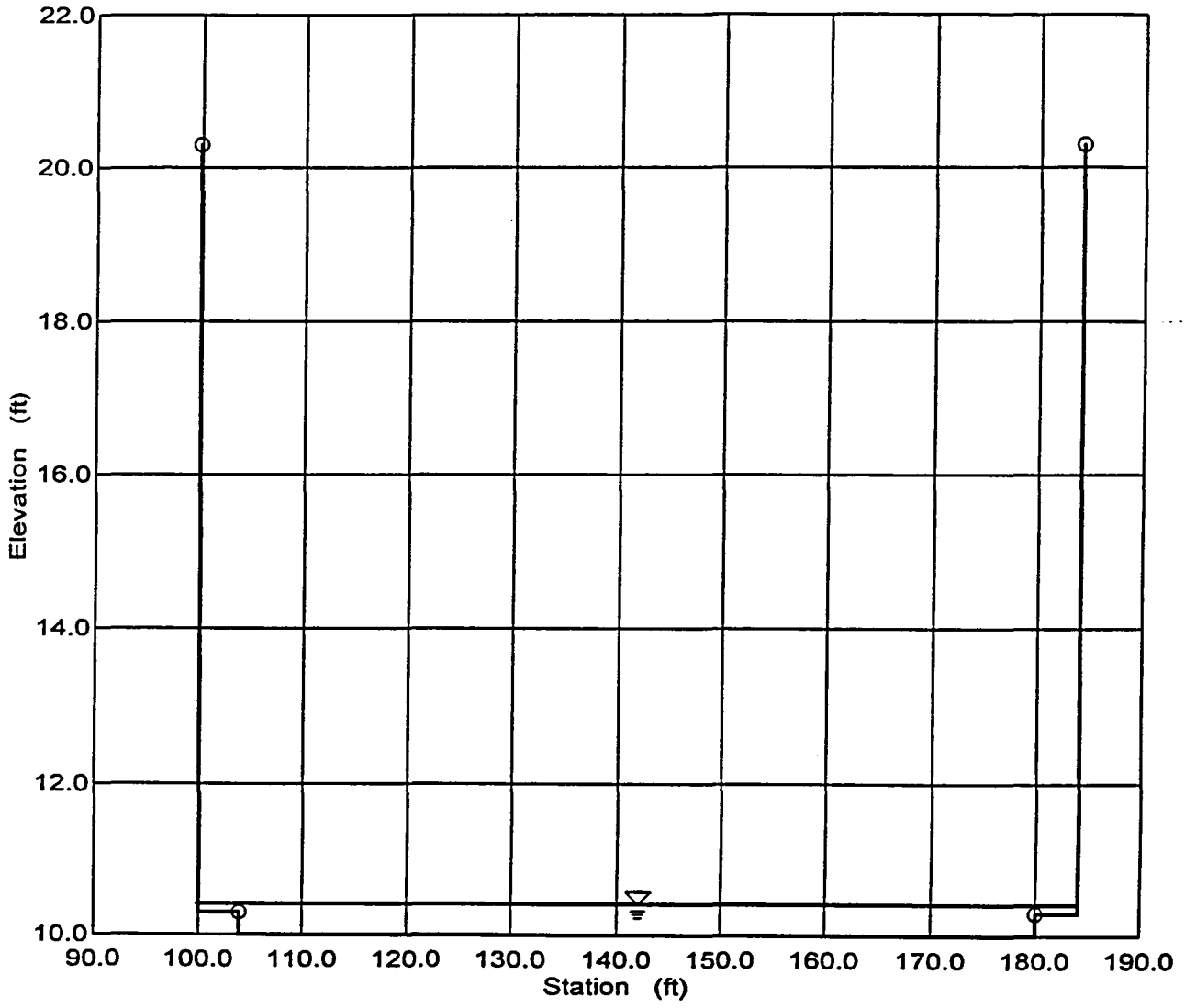
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
99.99	20.31	99.99	104.00	0.013
100.00	10.31	104.00	180.02	0.016
104.00	10.31	180.02	184.03	0.013
104.00	10.00			
180.02	10.00			
180.02	10.31			
184.02	10.31			
184.03	20.31			

Results		
Wtd. Mannings Coefficient	0.015	
Discharge	112.58	cfs
Flow Area	31.97	ft²
Wetted Perimeter	84.84	ft
Top Width	84.02	ft
Height	0.41	ft
Critical Depth	10.41	ft
Critical Slope	0.004833	ft/ft
Velocity	3.52	ft/s
Velocity Head	0.19	ft
Specific Energy	10.60	ft
Froude Number	1.01	
Flow is supercritical.		

N. D. Routing - Major Collector (Type 3)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	Major Collector Street (Type 3)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.015	
Channel Slope	0.004900	ft/ft
Water Surface Elevation	10.41	ft
Discharge	112.58	cfs



N. D. Routing - Arterial (Type 4)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	Arterial Street (Type 4)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.002800	ft/ft
Water Surface Elevation	10.53	ft

Elevation range: 10.00 ft to 20.43 ft.

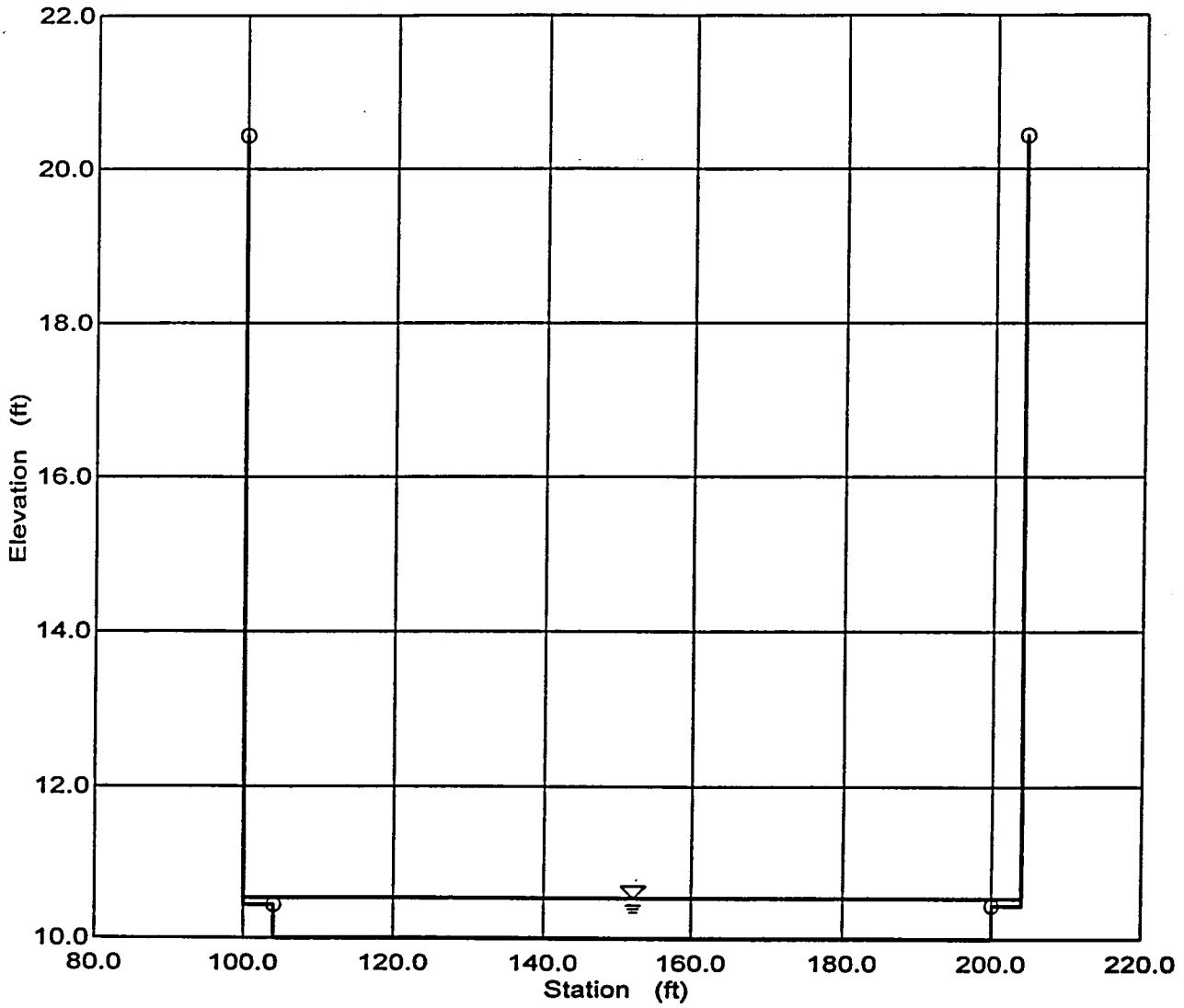
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
99.99	20.43	99.99	104.00	0.013
100.00	10.43	104.00	200.15	0.016
104.00	10.43	200.15	204.15	0.013
104.00	10.00			
200.15	10.00			
200.15	10.43			
204.15	10.43			
204.15	20.43			

Results		
Wtd. Mannings Coefficient	0.015	
Discharge	164.06	cfs
Flow Area	51.76	ft²
Wetted Perimeter	105.21	ft
Top Width	104.15	ft
Height	0.53	ft
Critical Depth	10.46	ft
Critical Slope	0.004580	ft/ft
Velocity	3.17	ft/s
Velocity Head	0.16	ft
Specific Energy	10.69	ft
Froude Number	0.79	
Flow is subcritical.		

N. D. Routing - Arterial (Type 4)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	Arterial Street (Type 4)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.015	
Channel Slope	0.002800	ft/ft
Water Surface Elevation	10.53	ft
Discharge	164.06	cfs



Dirt Channel (Type 5)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	Dirt Channel (Type 5)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.000500	ft/ft
Water Surface Elevation	17.75	ft

Elevation range: 13.00 ft to 30.00 ft.

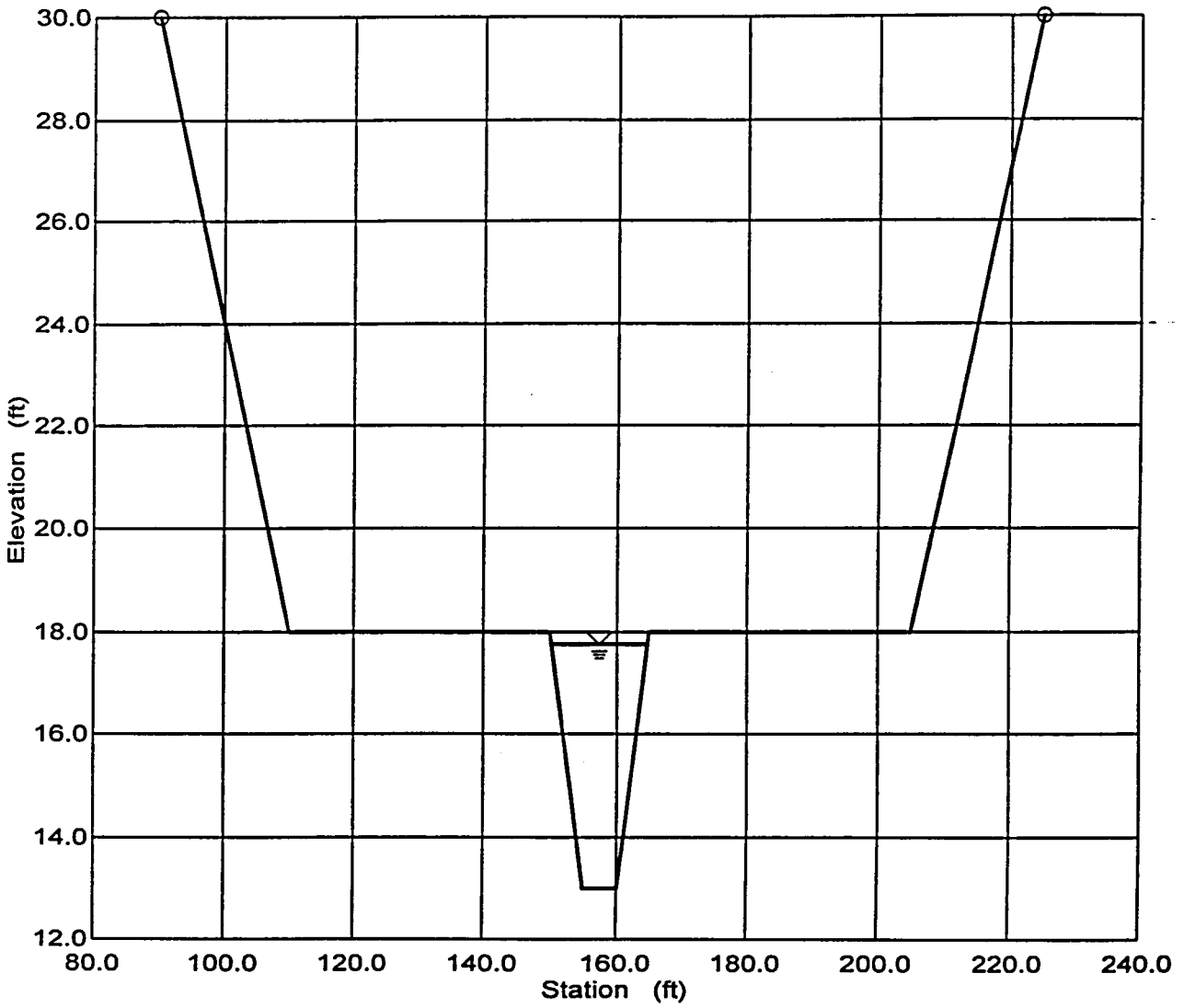
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
90.00	30.00	90.00	225.00	0.027
110.00	18.00			
150.00	18.00			
155.00	13.00			
160.00	13.00			
165.00	18.00			
205.00	18.00			
225.00	30.00			

Results		
Wtd. Mannings Coefficient	0.027	
Discharge	105.32	cfs
Flow Area	46.31	ft²
Wetted Perimeter	18.44	ft
Top Width	14.50	ft
Height	4.75	ft
Critical Depth	15.07	ft
Critical Slope	0.011417	ft/ft
Velocity	2.27	ft/s
Velocity Head	0.08	ft
Specific Energy	17.83	ft
Froude Number	0.22	
Flow is subcritical.		

Dirt Channel (Type 5)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	Dirt Channel (Type 5)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.027	
Channel Slope	0.000500	ft/ft
Water Surface Elevation	17.75	ft
Discharge	105.32	cfs



RCP33 @ Val Vista Dr
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\routings.fm2
Worksheet	RCP33 @ Val Vista Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.002297	ft/ft
Water Surface Elevation	1,313.31	ft

Elevation range: 1,312.81 ft to 1,313.57 ft.

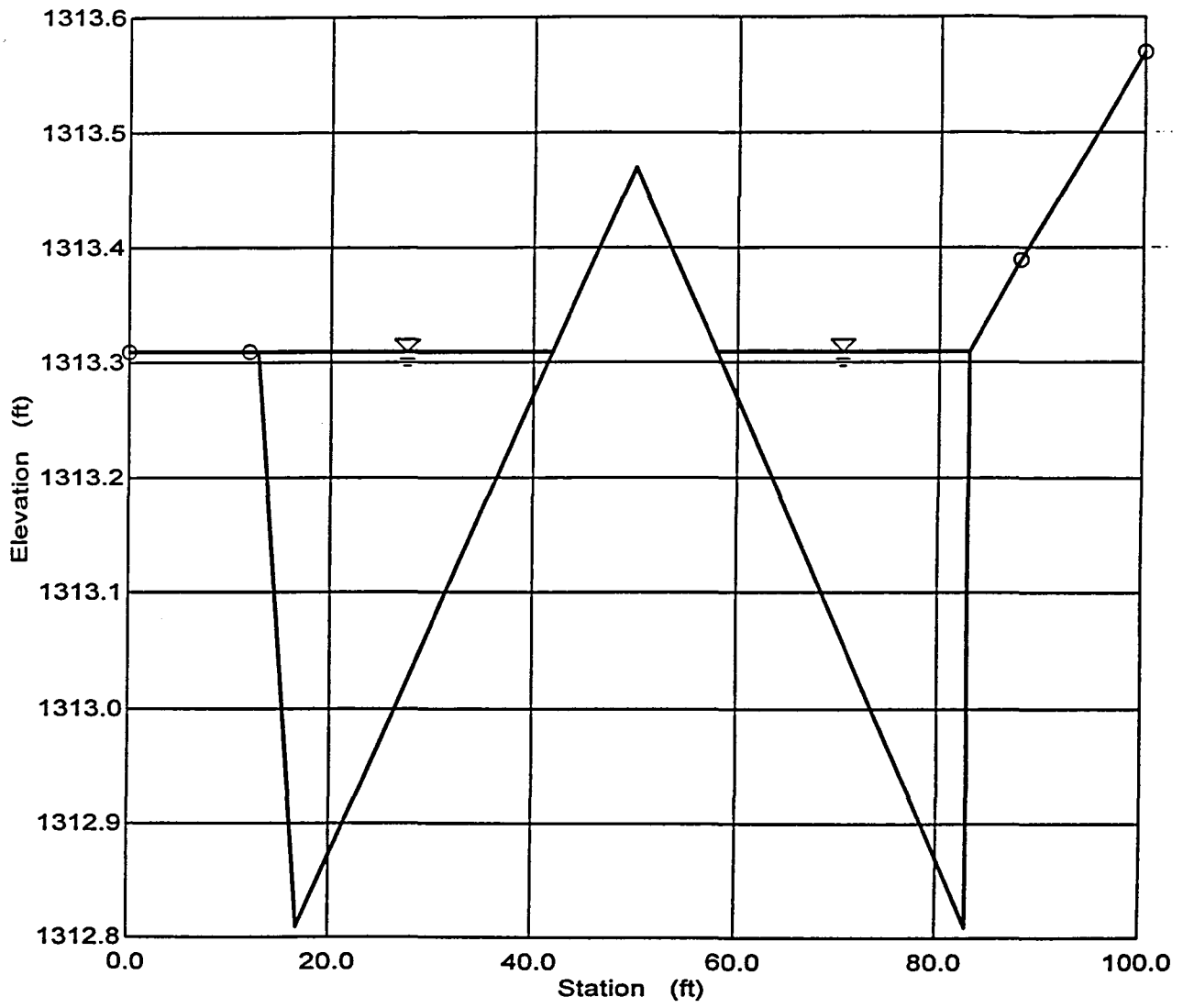
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
0.00	1,313.31	0.00	12.00	0.020
12.00	1,313.31	12.00	88.00	0.016
13.00	1,313.31	88.00	100.00	0.020
17.00	1,312.81			
50.00	1,313.47			
83.00	1,312.81			
83.00	1,313.31			
88.00	1,313.39			
100.00	1,313.57			

Results		
Wtd. Mannings Coefficient	0.016	
Discharge	23.69	cfs
Flow Area	13.50	ft^2
Wetted Perimeter	54.54	ft
Top Width	54.00	ft
Height	0.50	ft
Critical Depth	1,313.22	ft
Critical Slope	0.006398	ft/ft
Velocity	1.75	ft/s
Velocity Head	0.05	ft
Specific Energy	1,313.36	ft
Froude Number	0.62	
Flow is subcritical.		
Flow is divided.		

RCP33 @ Val Vista Dr
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\routings.fm2
Worksheet	RCP33 @ Val Vista Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.016	
Channel Slope	0.002297	ft/ft
Water Surface Elevation	1,313.31	ft
Discharge	23.69	cfs



RCP33 @ Val Vista Dr
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\routings.fm2
Worksheet	RCP33 @ Val Vista Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.002297	ft/ft
Water Surface Elevation	1,313.47	ft

Elevation range: 1,312.81 ft to 1,313.57 ft.

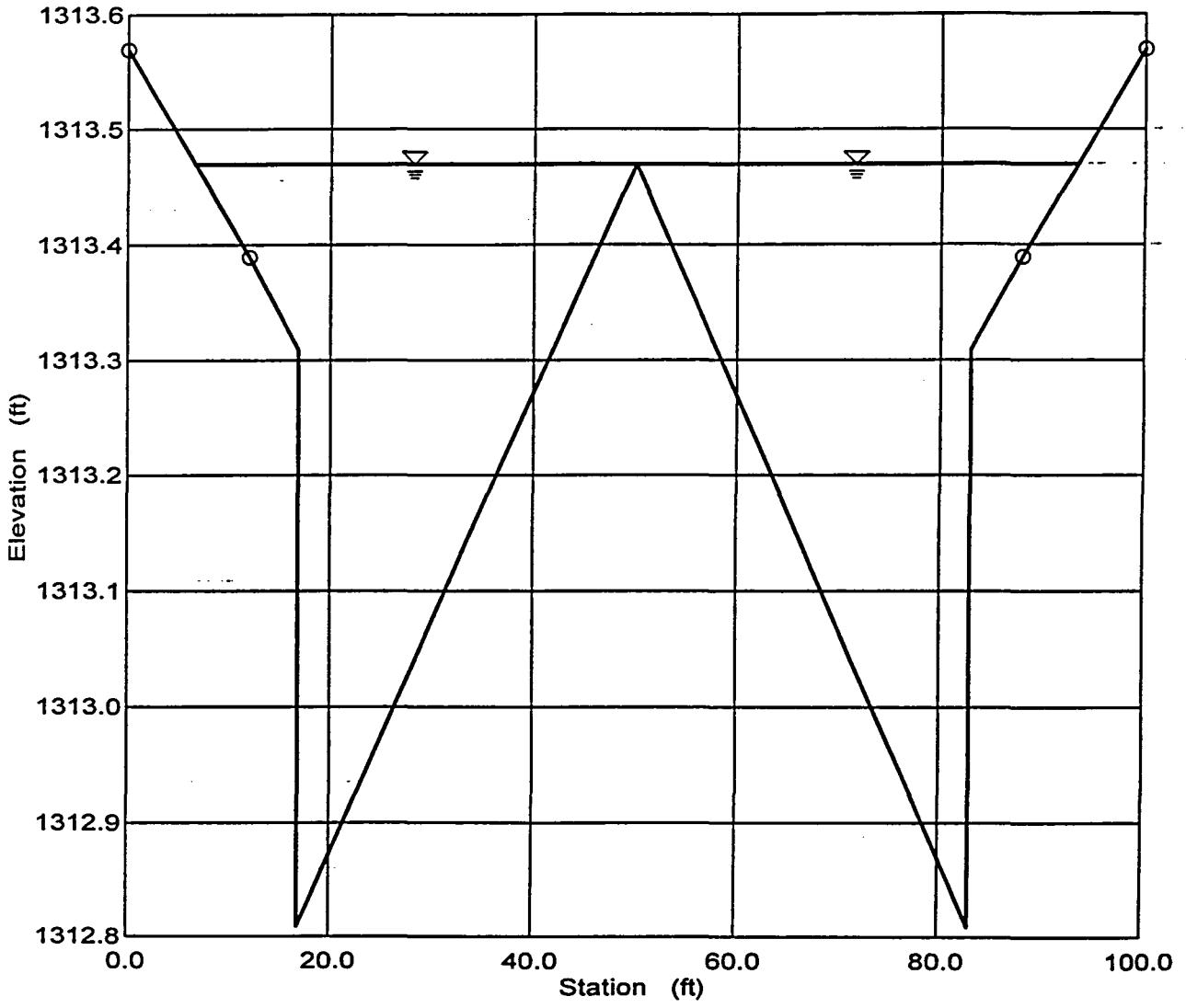
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
0.00	1,313.57	0.00	12.00	0.020
12.00	1,313.39	12.00	88.00	0.016
17.00	1,313.31	88.00	100.00	0.020
17.00	1,312.81			
50.00	1,313.47			
83.00	1,312.81			
83.00	1,313.31			
88.00	1,313.39			
100.00	1,313.57			

Results		
Wtd. Mannings Coefficient	0.017	
Discharge	41.85	cfs
Flow Area	23.41	ft^2
Wetted Perimeter	87.68	ft
Top Width	86.67	ft
Height	0.66	ft
Critical Depth	1,313.35	ft
Critical Slope	0.006065	ft/ft
Velocity	1.79	ft/s
Velocity Head	0.05	ft
Specific Energy	1,313.52	ft
Froude Number	0.61	
Flow is subcritical.		
Flow is divided.		

RCP33 @ Val Vista Dr
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\routings.fm2
Worksheet	RCP33 @ Val Vista Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.017	
Channel Slope	0.002297	ft/ft
Water Surface Elevation	1,313.47	ft
Discharge	41.85	cfs



RCP33 @ Val Vista Dr
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\routings.fm2
Worksheet	RCP33 @ Val Vista Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.002297	ft/ft
Water Surface Elevation	1,313.31	ft

Elevation range: 1,312.81 ft to 1,313.57 ft.

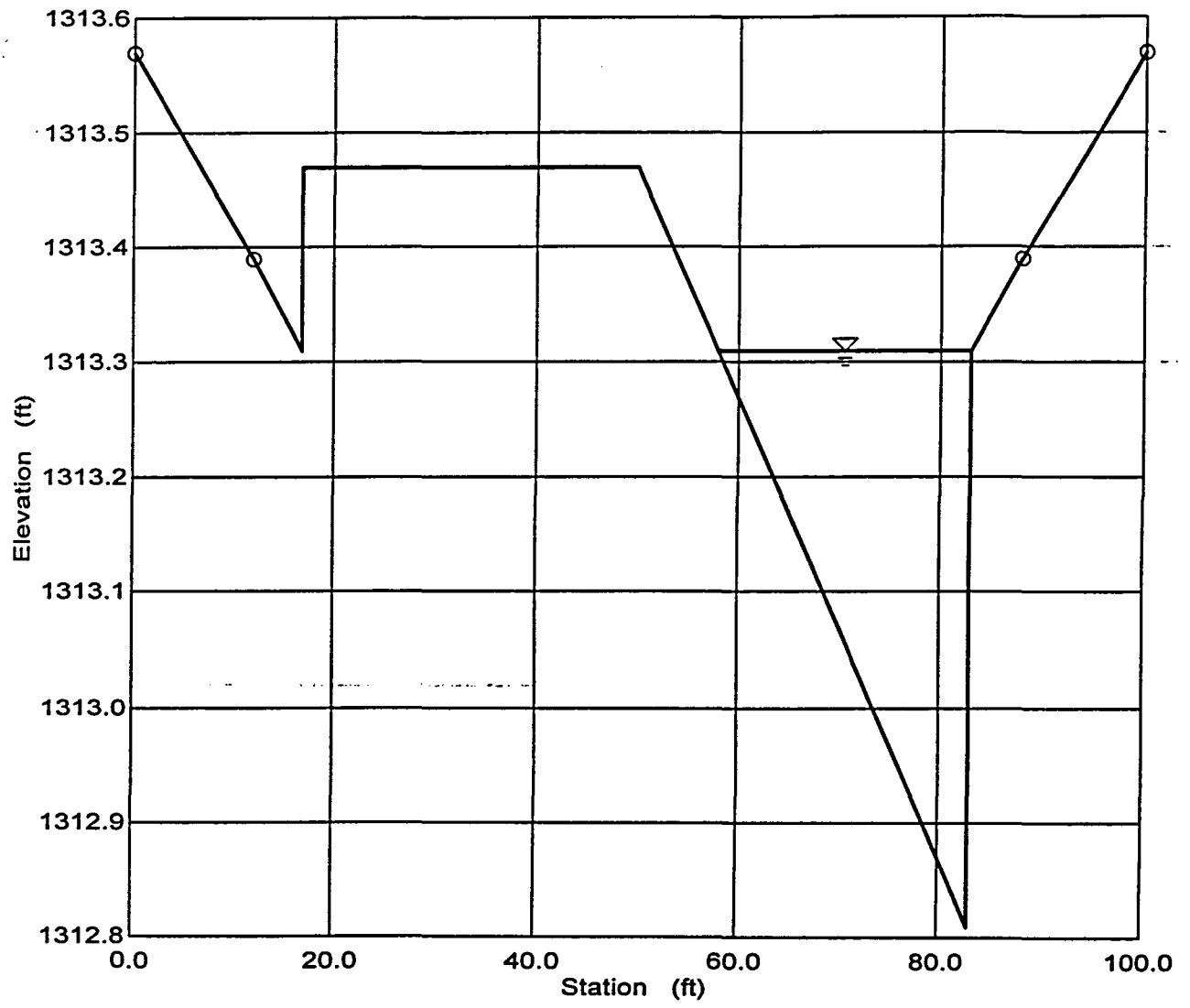
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
0.00	1,313.57	0.00	12.00	0.020
12.00	1,313.39	12.00	88.00	0.016
17.00	1,313.31	88.00	100.00	0.020
17.00	1,313.47			
50.00	1,313.47			
83.00	1,312.81			
83.00	1,313.31			
88.00	1,313.39			
100.00	1,313.57			

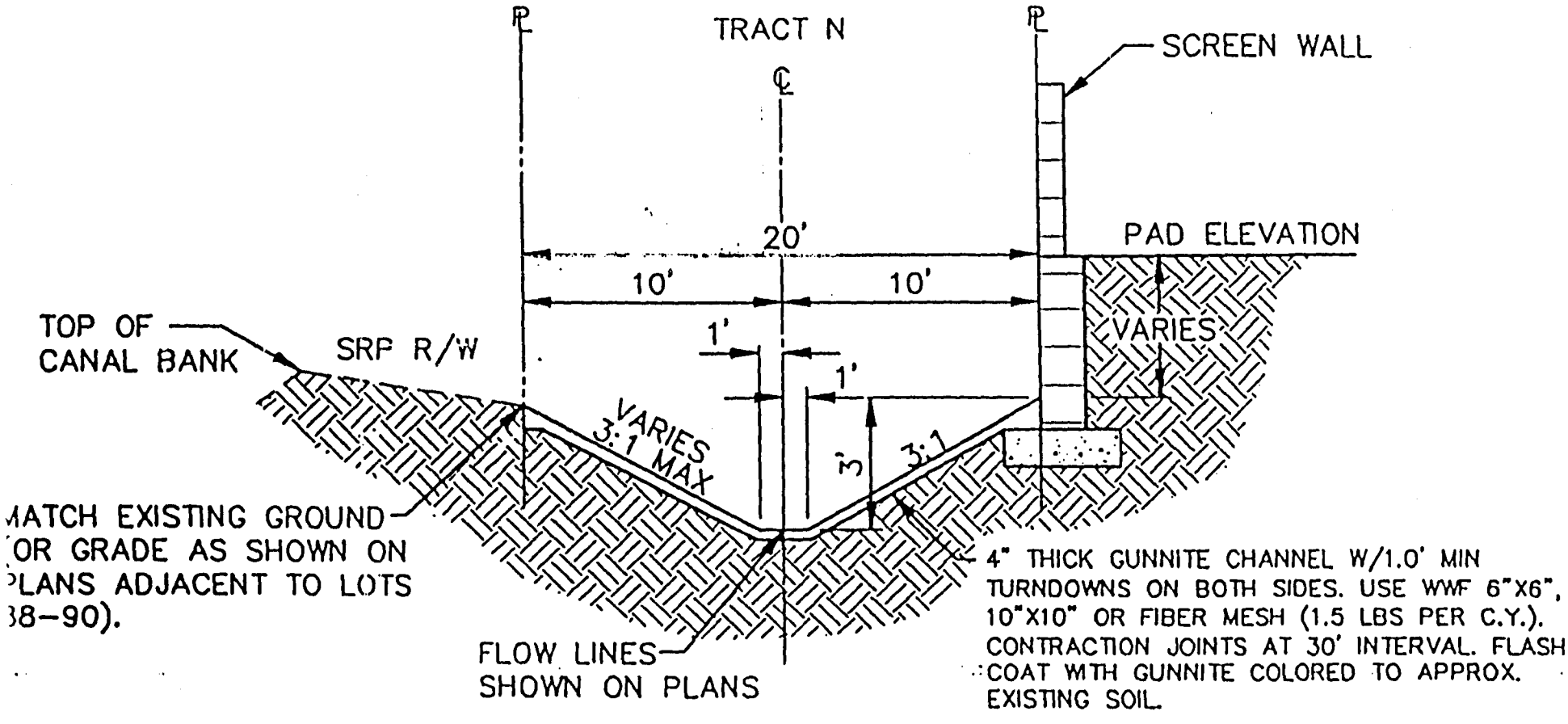
Results		
Wtd. Mannings Coefficient	0.016	
Discharge	10.89	cfs
Flow Area	6.25	ft^2
Wetted Perimeter	25.50	ft
Top Width	25.00	ft
Height	0.50	ft
Critical Depth	1,313.22	ft
Critical Slope	0.006490	ft/ft
Velocity	1.74	ft/s
Velocity Head	0.05	ft
Specific Energy	1,313.36	ft
Froude Number	0.61	
Flow is subcritical.		

RCP33 @ Val Vista Dr
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\routings.fm2
Worksheet	RCP33 @ Val Vista Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.016	
Channel Slope	0.002297	ft/ft
Water Surface Elevation	1,313.31	ft
Discharge	10.89	cfs

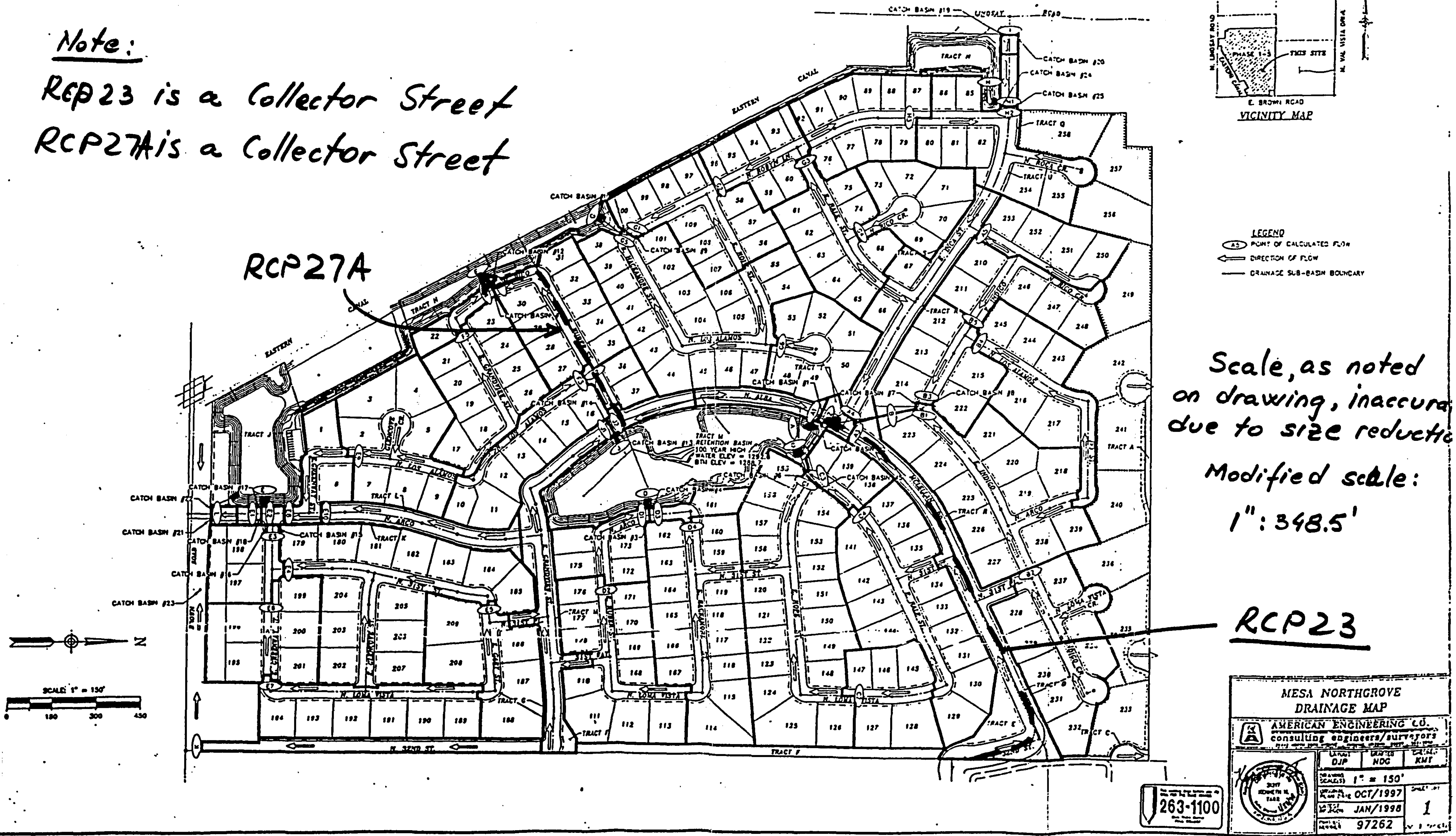




SECTION Q-Q

RCP25[redacted]

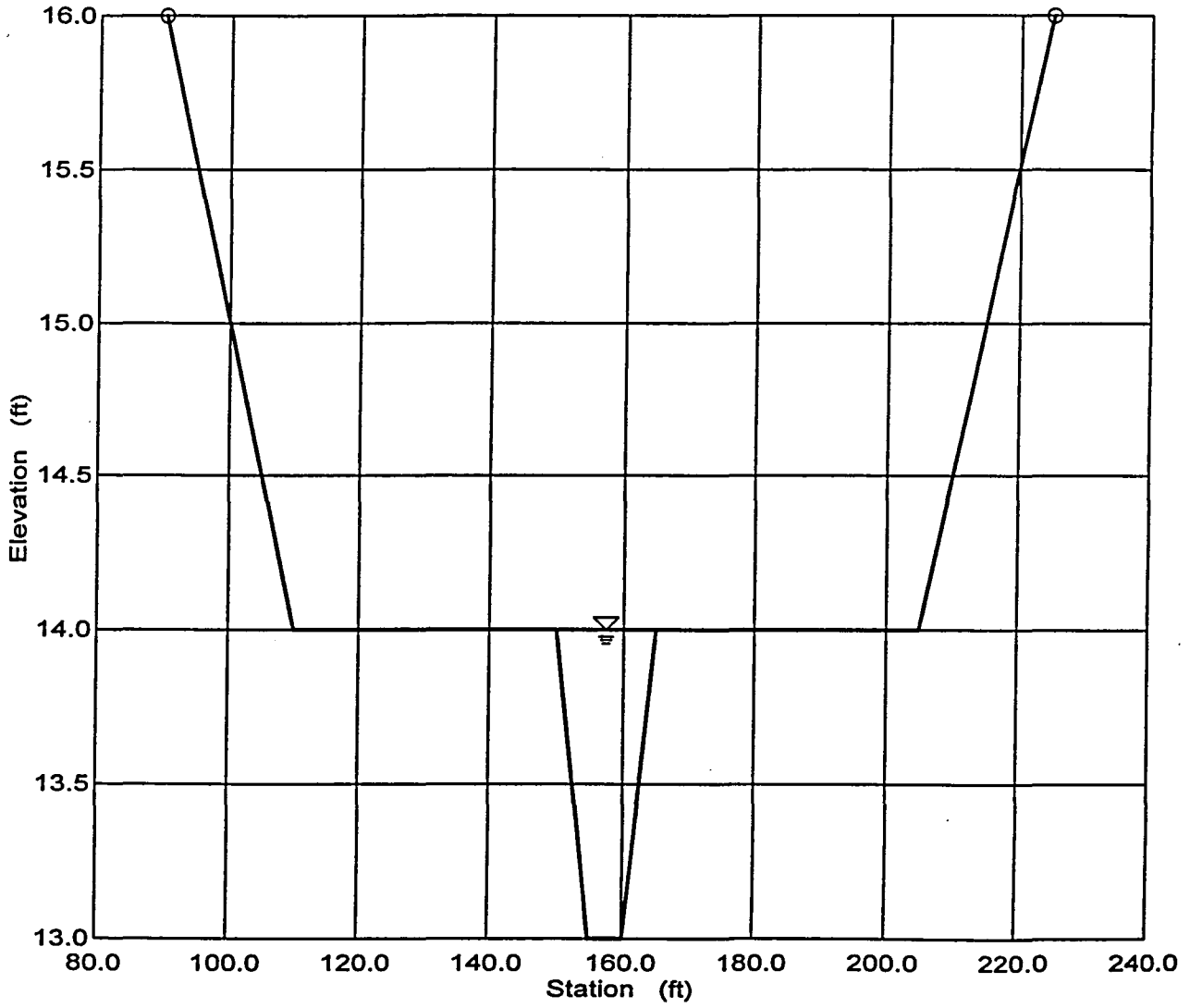
DRAINAGE MAP FOR MESA NORTHGROVE



RCP2, RCP26 (Special Type)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP2, RCP26 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.035	
Channel Slope	0.003800	ft/ft
Water Surface Elevation	14.00	ft
Discharge	19.80	cfs



RCP2, RCP26 (Special Type)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP2, RCP26 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.003800	ft/ft
Water Surface Elevation	14.00	ft

Elevation range: 13.00 ft to 16.00 ft.

Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
90.00	16.00	90.00	225.00	0.035
110.00	14.00			
150.00	14.00			
155.00	13.00			
160.00	13.00			
165.00	14.00			
205.00	14.00			
225.00	16.00			

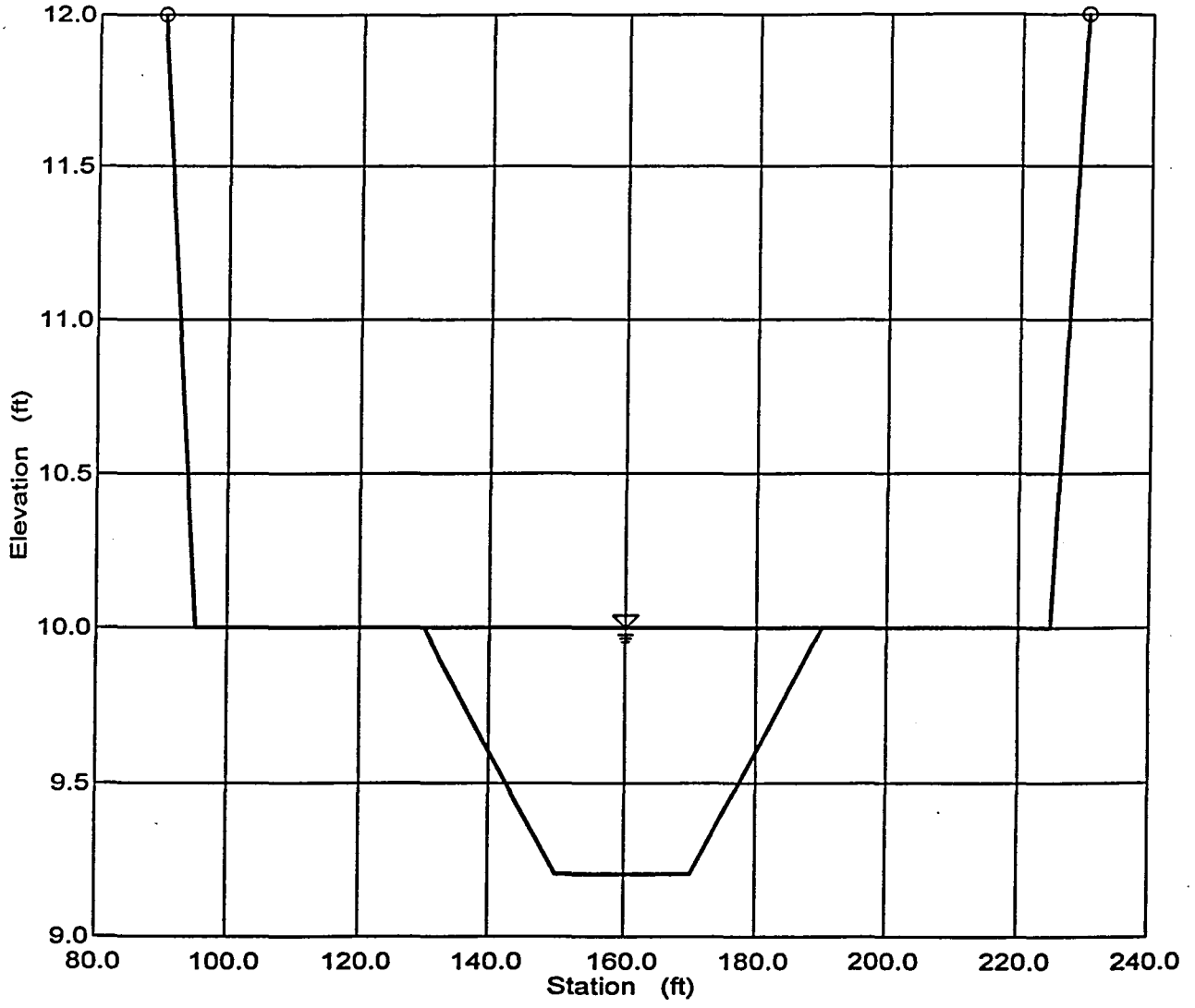
Results		
Wtd. Mannings Coefficient	0.035	
Discharge	19.80	cfs
Flow Area	10.00	ft^2
Wetted Perimeter	15.20	ft
Top Width	15.00	ft
Height	1.00	ft
Critical Depth	13.63	ft
Critical Slope	0.023532	ft/ft
Velocity	1.98	ft/s
Velocity Head	0.06	ft
Specific Energy	14.06	ft
Froude Number	0.43	

Flow is subcritical.

RCP19 (Special Type)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP19 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.035	
Channel Slope	0.004700	ft/ft
Water Surface Elevation	10.00	ft
Discharge	61.23	cfs



RCP19 (Special Type)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP19 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.004700	ft/ft
Water Surface Elevation	10.00	ft

Elevation range: 9.20 ft to 12.00 ft.

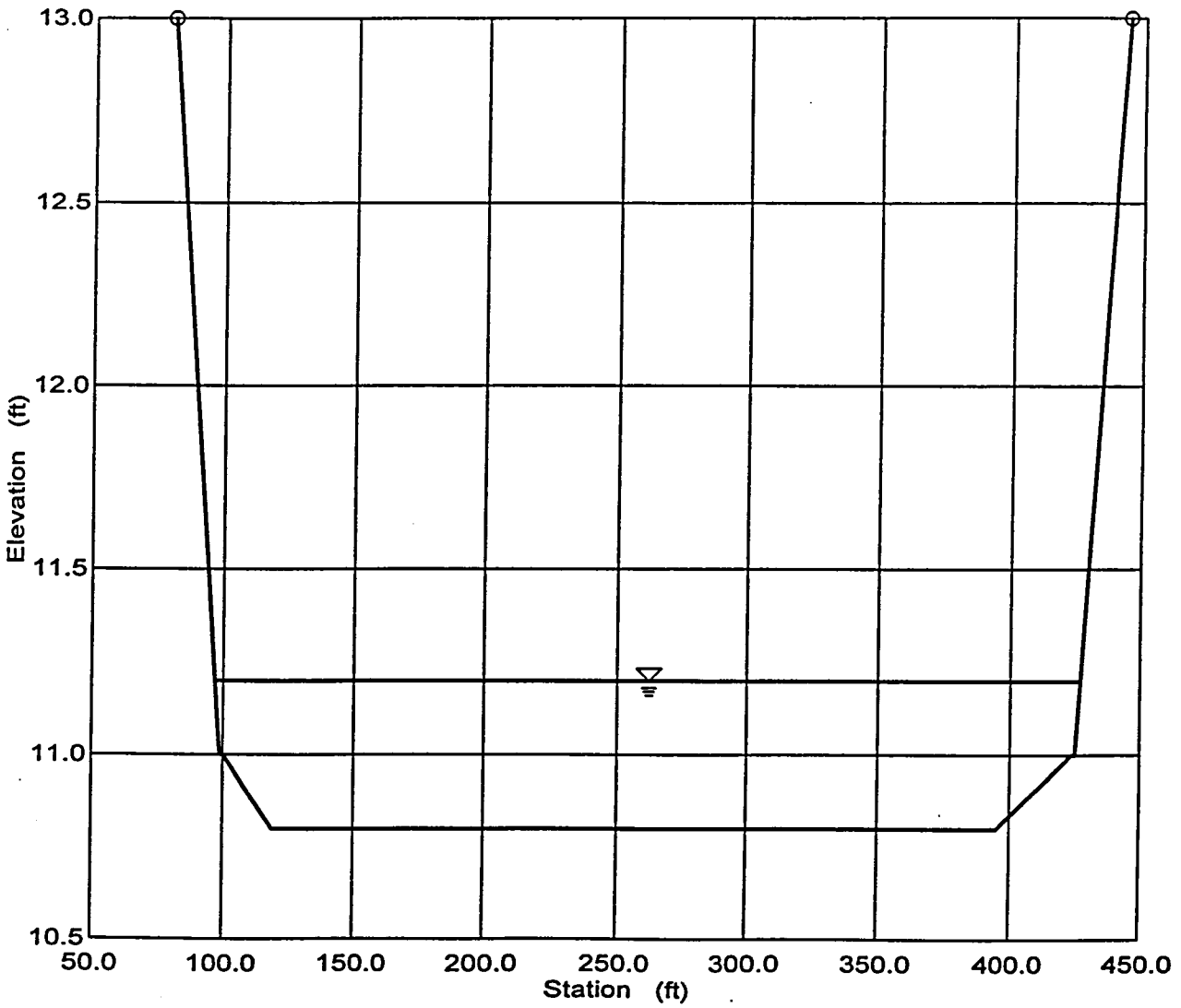
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
90.00	12.00	90.00	230.00	0.035
95.00	10.00			
130.00	10.00			
150.00	9.20			
170.00	9.20			
190.00	10.00			
225.00	10.00			
230.00	12.00			

Results		
Wtd. Mannings Coefficient	0.035	
Discharge	61.23	cfs
Flow Area	32.00	ft^2
Wetted Perimeter	60.03	ft
Top Width	60.00	ft
Height	0.80	ft
Critical Depth	9.73	ft
Critical Slope	0.024700	ft/ft
Velocity	1.91	ft/s
Velocity Head	0.06	ft
Specific Energy	10.06	ft
Froude Number	0.46	
Flow is subcritical.		

RCP28 (Special Type)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP28 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.035	
Channel Slope	0.004300	ft/ft
Water Surface Elevation	11.20	ft
Discharge	183.66	cfs



RCP28 (Special Type)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP28 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.004300	ft/ft
Water Surface Elevation	11.20	ft

Elevation range: 10.80 ft to 13.00 ft.

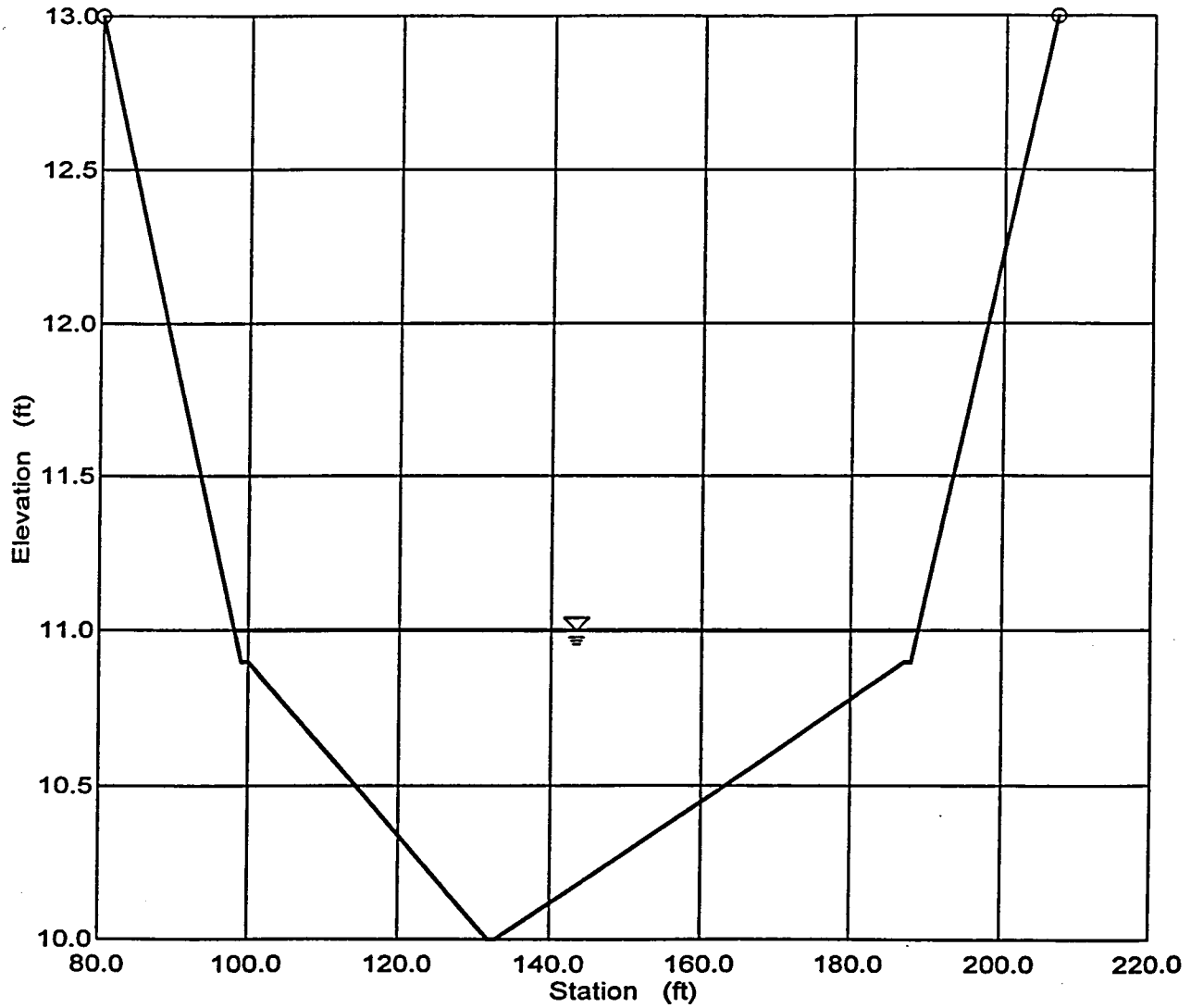
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
80.00	13.00	80.00	444.00	0.035
99.00	11.00			
100.00	11.00			
119.00	10.80			
395.00	10.80			
424.00	11.00			
425.00	11.00			
444.00	13.00			

Results		
Wtd. Mannings Coefficient	0.035	
Discharge	183.66	cfs
Flow Area	125.58	ft^2
Wetted Perimeter	329.82	ft
Top Width	329.80	ft
Height	0.40	ft
Critical Depth	11.03	ft
Critical Slope	0.029834	ft/ft
Velocity	1.46	ft/s
Velocity Head	0.03	ft
Specific Energy	11.23	ft
Froude Number	0.42	
Flow is subcritical.		

RCP29 (Special Type)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP29 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.035	
Channel Slope	0.004300	ft/ft
Water Surface Elevation	11.00	ft
Discharge	89.14	cfs



RCP29 (Special Type)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP29 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.004300	ft/ft
Water Surface Elevation	11.00	ft

Elevation range: 10.00 ft to 13.00 ft.

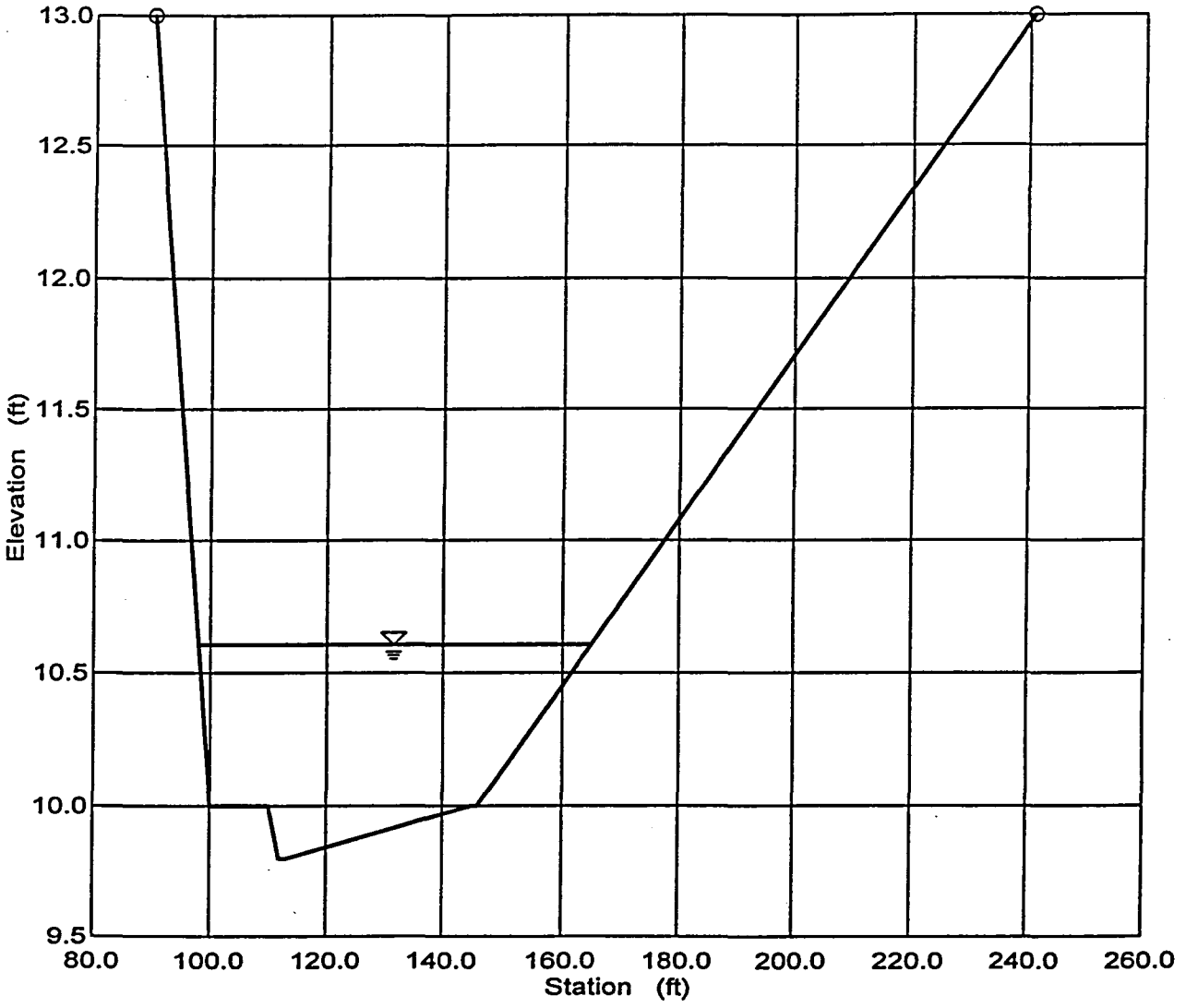
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
80.00	13.00	80.00	207.00	0.035
99.00	10.90			
100.00	10.90			
132.00	10.00			
133.00	10.00			
187.00	10.90			
188.00	10.90			
207.00	13.00			

Results		
Wtd. Mannings Coefficient	0.035	
Discharge	89.14	cfs
Flow Area	48.59	ft^2
Wetted Perimeter	90.84	ft
Top Width	90.81	ft
Height	1.00	ft
Critical Depth	10.73	ft
Critical Slope	0.024916	ft/ft
Velocity	1.83	ft/s
Velocity Head	0.05	ft
Specific Energy	11.05	ft
Froude Number	0.44	
Flow is subcritical.		

RCP31 (Special Type)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP31 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.035	
Channel Slope	0.004700	ft/ft
Water Surface Elevation	10.60	ft
Discharge	74.05	cfs



RCP31 (Special Type)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP31 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.004700	ft/ft
Water Surface Elevation	10.60	ft

Elevation range: 9.80 ft to 13.00 ft.

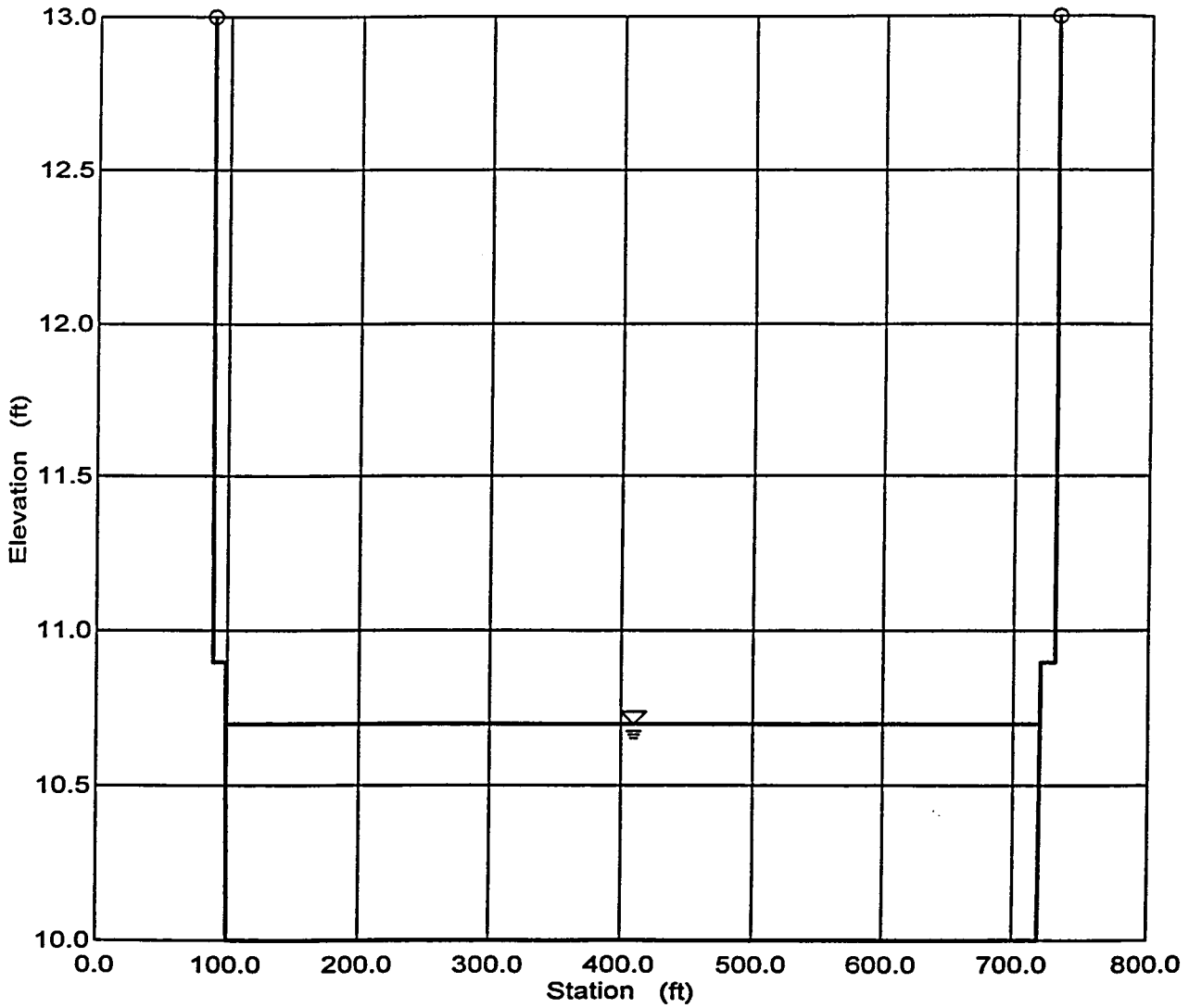
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
90.00	13.00	90.00	241.00	0.035
100.00	10.00			
110.00	10.00			
112.00	9.80			
113.00	9.80			
145.00	10.00			
146.00	10.00			
241.00	13.00			

Results		
Wtd. Mannings Coefficient	0.035	
Discharge	74.05	cfs
Flow Area	37.50	ft²
Wetted Perimeter	67.11	ft
Top Width	67.00	ft
Height	0.80	ft
Critical Depth	10.34	ft
Critical Slope	0.024905	ft/ft
Velocity	1.97	ft/s
Velocity Head	0.06	ft
Specific Energy	10.66	ft
Froude Number	0.47	
Flow is subcritical.		

RCP50 (Special Type)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP50 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.035	
Channel Slope	0.005900	ft/ft
Water Surface Elevation	10.70	ft
Discharge	1,113.80	cfs



RCP50 (Special Type)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP50 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.005900	ft/ft
Water Surface Elevation	10.70	ft

Elevation range: 10.00 ft to 13.00 ft.

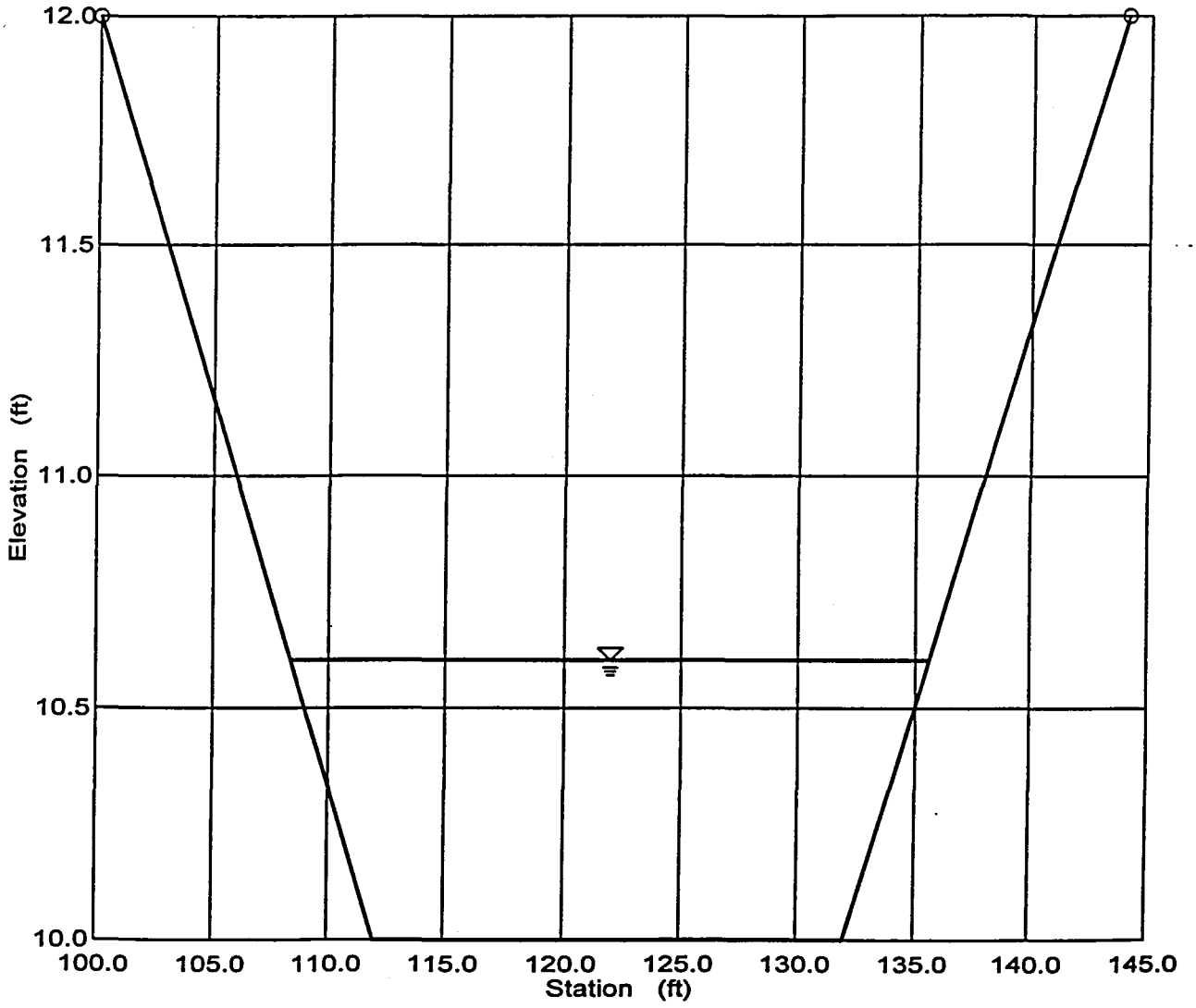
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
89.00	13.00	89.00	731.00	0.035
90.00	10.90			
99.00	10.90			
100.00	10.00			
719.00	10.00			
720.00	10.90			
730.00	10.90			
731.00	13.00			

Results		
Wtd. Mannings Coefficient	0.035	
Discharge	1,113.80	cfs
Flow Area	433.84	ft²
Wetted Perimeter	621.09	ft
Top Width	620.56	ft
Height	0.70	ft
Critical Depth	10.47	ft
Critical Slope	0.023064	ft/ft
Velocity	2.57	ft/s
Velocity Head	0.10	ft
Specific Energy	10.80	ft
Froude Number	0.54	
Flow is subcritical.		

RCP73 (Special Type)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP73 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.035	
Channel Slope	0.005900	ft/ft
Water Surface Elevation	10.60	ft
Discharge	29.81	cfs



RCP73 (Special Type)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP73 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.005900	ft/ft
Water Surface Elevation	10.60	ft

Elevation range: 10.00 ft to 12.00 ft.

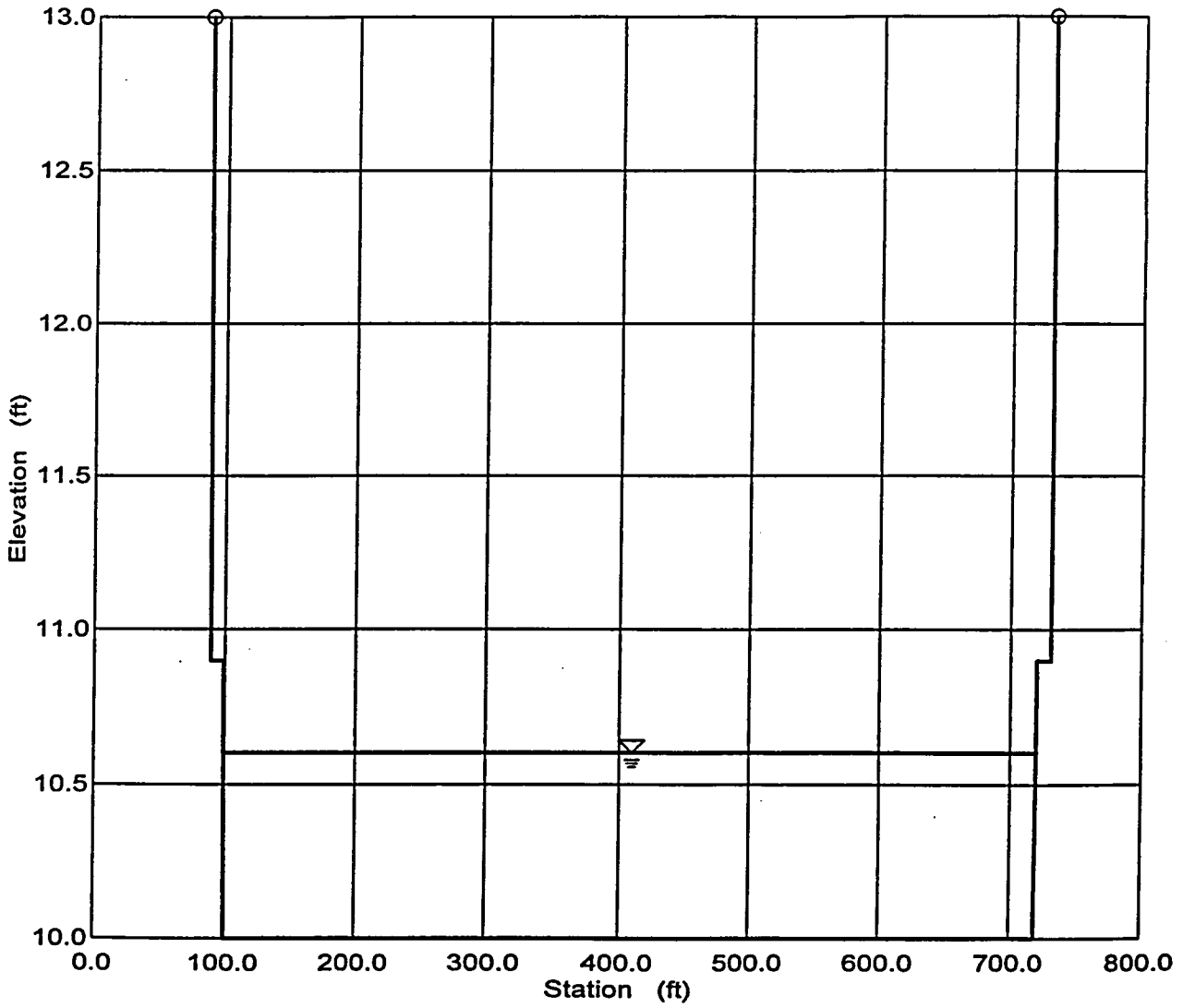
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
100.00	12.00	100.00	144.00	0.035
106.00	11.00			
112.00	10.00			
122.00	10.00			
128.00	10.00			
132.00	10.00			
138.00	11.00			
144.00	12.00			

Results		
Wtd. Mannings Coefficient	0.035	
Discharge	29.81	cfs
Flow Area	14.16	ft^2
Wetted Perimeter	27.30	ft
Top Width	27.20	ft
Height	0.60	ft
Critical Depth	10.39	ft
Critical Slope	0.025270	ft/ft
Velocity	2.11	ft/s
Velocity Head	0.07	ft
Specific Energy	10.67	ft
Froude Number	0.51	
Flow is subcritical.		

RCP134 (Special Type)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP134 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.035	
Channel Slope	0.004600	ft/ft
Water Surface Elevation	10.60	ft
Discharge	760.66	cfs



RCP134 (Special Type)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP134 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.004600	ft/ft
Water Surface Elevation	10.60	ft

Elevation range: 10.00 ft to 13.00 ft.

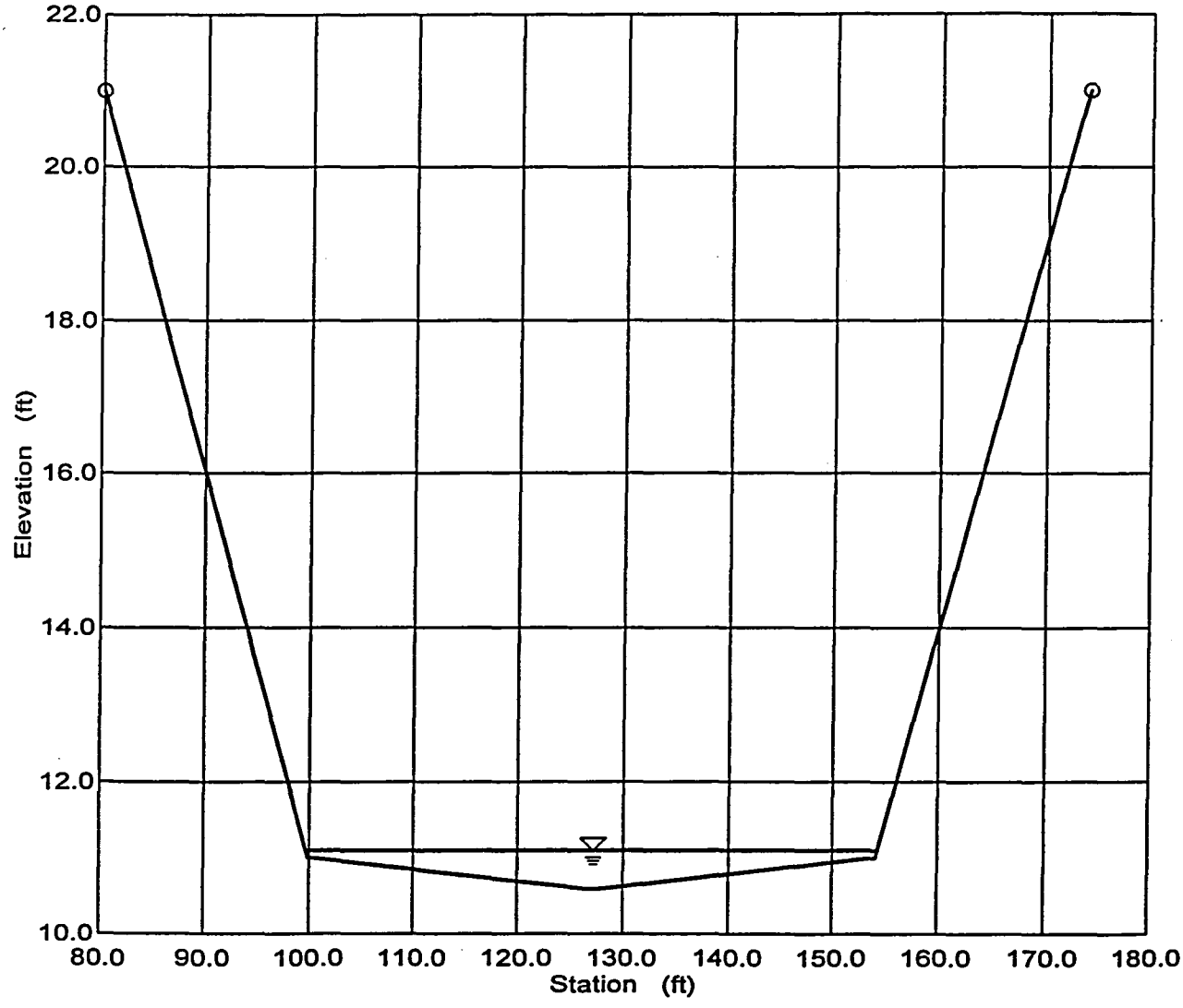
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
89.00	13.00	89.00	731.00	0.035
90.00	10.90			
99.00	10.90			
100.00	10.00			
719.00	10.00			
720.00	10.90			
730.00	10.90			
731.00	13.00			

Results		
Wtd. Mannings Coefficient	0.035	
Discharge	760.66	cfs
Flow Area	371.80	ft^2
Wetted Perimeter	620.79	ft
Top Width	620.33	ft
Height	0.60	ft
Critical Depth	10.36	ft
Critical Slope	0.025099	ft/ft
Velocity	2.05	ft/s
Velocity Head	0.07	ft
Specific Energy	10.67	ft
Froude Number	0.47	
Flow is subcritical.		

RCP141 (Special Type)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP141 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.035	
Channel Slope	0.003700	ft/ft
Water Surface Elevation	11.10	ft
Discharge	19.06	cfs



RCP141 (Special Type)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP141 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.003700	ft/ft
Water Surface Elevation	11.10	ft

Elevation range: 10.60 ft to 21.00 ft.

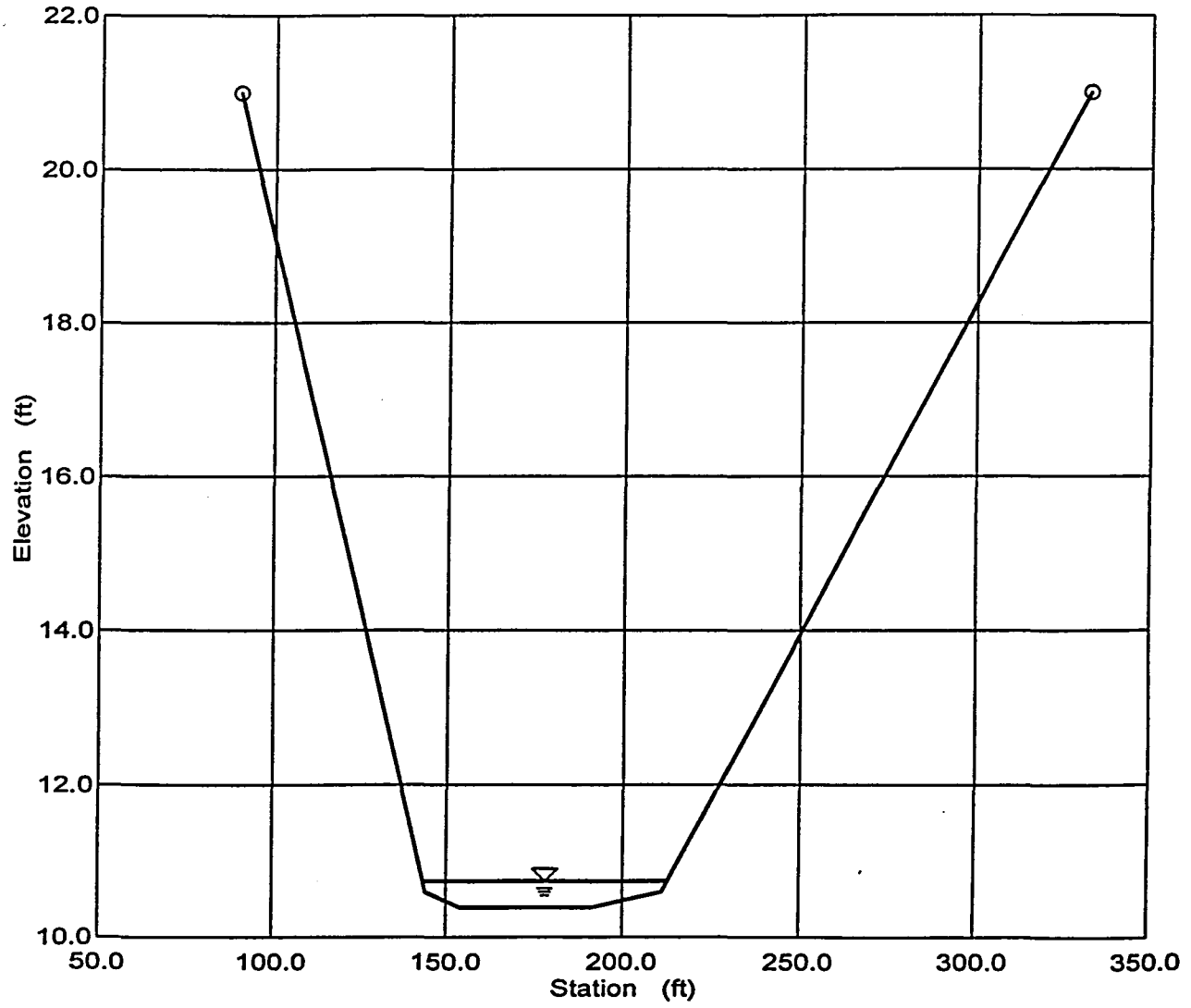
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
80.00	21.00	80.00	174.00	0.035
99.90	11.00			
100.00	11.00			
126.50	10.60			
127.50	10.60			
154.00	11.00			
154.10	11.00			
174.00	21.00			

Results		
Wtd. Mannings Coefficient	0.035	
Discharge	19.06	cfs
Flow Area	16.44	ft^2
Wetted Perimeter	54.65	ft
Top Width	54.60	ft
Height	0.50	ft
Critical Depth	10.94	ft
Critical Slope	0.031966	ft/ft
Velocity	1.16	ft/s
Velocity Head	0.02	ft
Specific Energy	11.12	ft
Froude Number	0.37	
Flow is subcritical.		

RCP147, RCP148 (Special Type)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP147, RCP148 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.035	
Channel Slope	0.006900	ft/ft
Water Surface Elevation	10.73	ft
Discharge	28.94	cfs



RCP147, RCP148 (Special Type)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP147, RCP148 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.006900	ft/ft
Water Surface Elevation	10.73	ft

Elevation range: 10.40 ft to 21.00 ft.

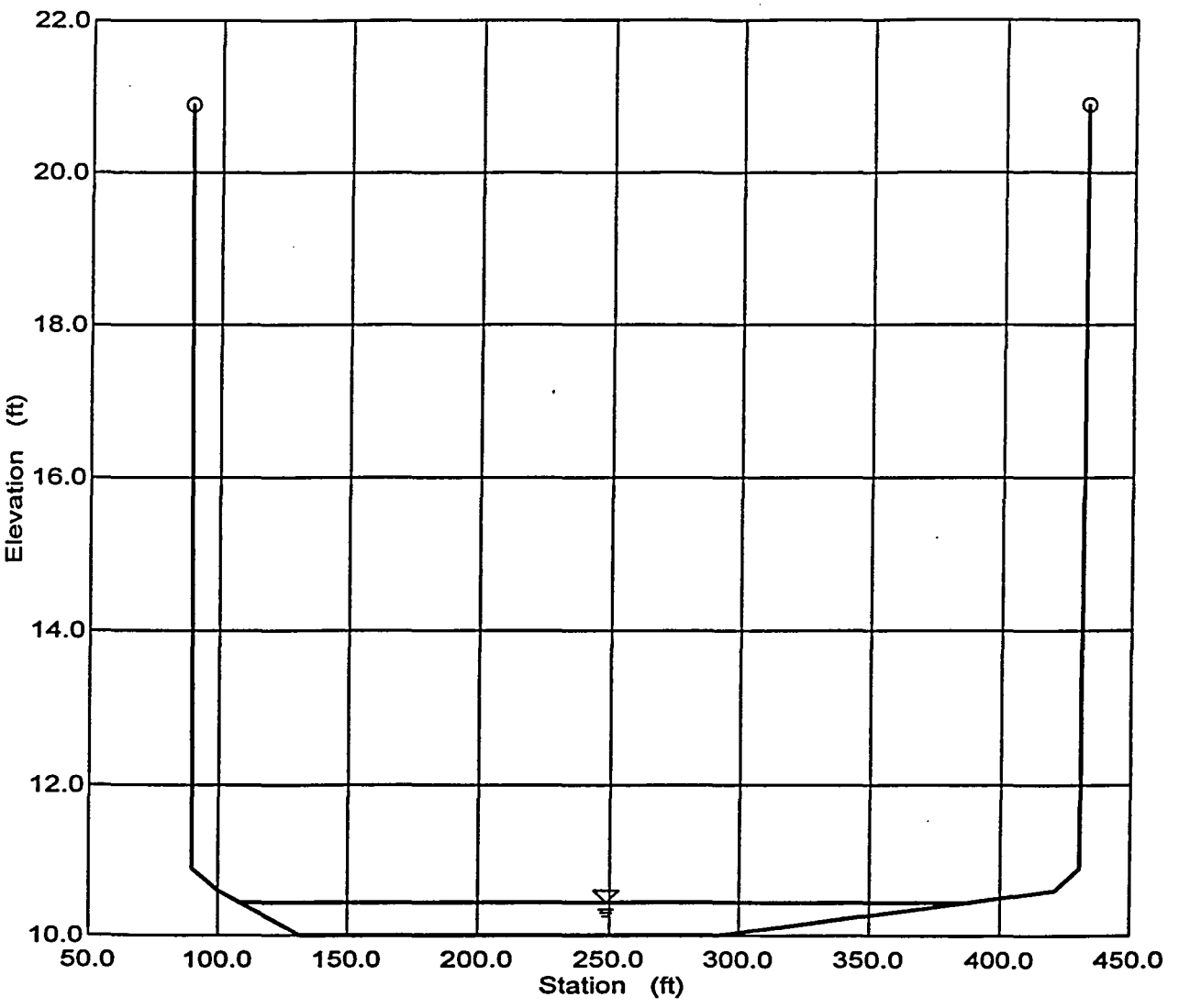
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
90.00	21.00	90.00	332.00	0.035
143.90	10.60			
144.00	10.60			
154.00	10.40			
191.00	10.40			
211.00	10.60			
211.10	10.60			
332.00	21.00			

Results		
Wtd. Mannings Coefficient	0.035	
Discharge	28.94	cfs
Flow Area	19.28	ft^2
Wetted Perimeter	69.41	ft
Top Width	69.39	ft
Height	0.33	ft
Critical Depth	10.62	ft
Critical Slope	0.031703	ft/ft
Velocity	1.50	ft/s
Velocity Head	0.04	ft
Specific Energy	10.77	ft
Froude Number	0.50	
Flow is subcritical.		

RCP153 (Special Type)
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP153 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.035	
Channel Slope	0.008800	ft/ft
Water Surface Elevation	10.45	ft
Discharge	196.54	cfs



RCP153 (Special Type)
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\typ rout.fm2
Worksheet	RCP153 (Special Type)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.008800	ft/ft
Water Surface Elevation	10.45	ft

Elevation range: 10.00 ft to 20.90 ft.

Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
89.00	20.90	89.00	432.00	0.035
90.00	10.90			
100.00	10.60			
132.00	10.00			
291.00	10.00			
421.00	10.60			
431.00	10.90			
432.00	20.90			

Results		
Wtd. Mannings Coefficient	0.035	
Discharge	196.54	cfs
Flow Area	98.89	ft²
Wetted Perimeter	280.51	ft
Top Width	280.50	ft
Height	0.45	ft
Critical Depth	10.33	ft
Critical Slope	0.027635	ft/ft
Velocity	1.99	ft/s
Velocity Head	0.06	ft
Specific Energy	10.51	ft
Froude Number	0.59	
Flow is subcritical.		

Appendix D.4

Reservoir Routing Data - Ponding Areas

- Summary Table for Ponding Areas
- Ponding Area Delineation
- Uniform Flow Computations (Normal Depth)
- Weir Flow Computations
- Composite Storage Volume Computations
- Culvert Flow Computations
- Supporting Nomographs for Culvert Flow Computations
- Supporting Maps

PRIMATECH
ENGINEERS & CONSULTANTS

Subject: **Eastern Canal North FDS**
Composite Storage Volume Computations (Files EC10024Z)
Ponding Areas

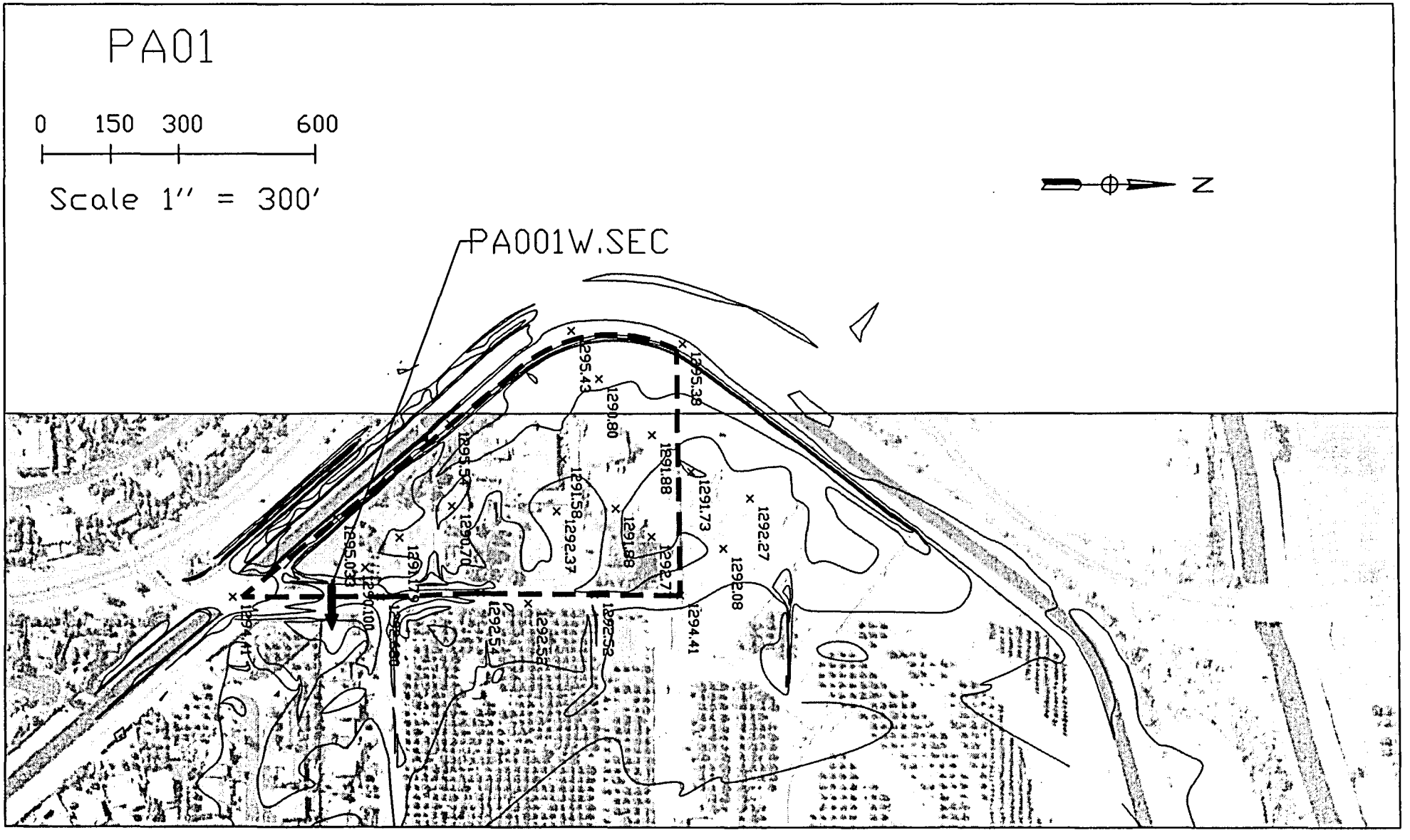
By: **F. Braileanu**
Checked: **A. Tang**
Project No.: **FCD98-36**

Ponding Area	Peak Flow* (cfs)	Time of Peak (hrs)	Basin Area (mi^2)	Maximum Stage (ft)	Time of Maximum Stage (hrs)	Minimum Weir Elevation Along Eastern Canal (cfs)	Minimum Weir Elevation Along Street (cfs)	Minimum Elevation in Ponding Area** (ft)	Innundation Depth (ft)	Total Flow Along the Canal [cfs]	Flow Overtopping Eastern Canal [cfs]
PA01	0.00	0.00	0.42	1291.68	26.83	1292.52	1292.52	1290.10	1.58	0.00	0.00
PA02	0.00	0.00	0.67	1285.60	25.42	1292.60	--	1283.50	2.10	0.00	0.00
PA03	271.00	13.00	3.36	1293.49	13.00	1294.00	1293.00	1292.00	1.49	271.00	0.00
PA09	24.00	19.17	3.48	1290.73	19.17	1291.50	1292.00	1287.00	3.73	24.00	0.00
PA25	236.00	12.83	3.70	1292.99	12.83	--	--	1288.00	4.99	74.00	162.00
PA26	58.00	15.92	5.38	1291.52	15.92	1291.44	1291.50	1284.50	7.02	6.00	52.00
PA44	0.00	0.00	5.67	1288.48	25.83	1289.30	--	1283.70	4.78	0.00	0.00
PA47	12.00	13.17	6.35	1288.12	13.17	1289.00	--	1287.00	1.12	12.00	0.00
PA57	0.00	0.00	7.24	1288.13	41.58	1289.00	--	1282.30	5.83	0.00	0.00
PA180	152.00	13.00	0.80	1288.41	13.00	1288.80	1289.00	1284.20	4.21	152.00	0.00
PA181	68.00	12.92	7.26	1288.26	12.92	1289.10	1289.80	1287.90	0.36	68.00	0.00
PA64	272.00	12.92	8.12	1288.25	12.92	1287.80	1288.00	1283.90	4.35	50.00	222.00
PA84	284.00	13.25	9.06	1285.72	13.25	1287.20	--	1279.15	6.57	284.00	0.00
PA94	18.00	26.17	9.96	1284.49	26.17	1285.50	--	1275.25	9.24	18.00	0.00
PA97	15.00	14.42	10.95	1284.02	14.42	1286.40	1286.00	1279.00	5.02	15.00	0.00
PA128	0.00	0.00	12.03	1277.06	29.25	1283.50	--	1265.60	11.46	60.00	0.00
PA130	171.00	14.08	13.05	1280.68	14.08	1281.80	--	1276.00	4.68	171.00	0.00

Notes * Outflow from Ponding Area
** Some ponding areas have retention basins within their limits. Whenever the case, the bottom elevation of retention basins is considered.

Ponding Area PA01

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Weir Flow Computation Sheet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1291.88
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1292.08
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1292.27
1291.88
1291.58
1292.37
1290.70
1295.50
1295.03
1292.54
1292.58
1292.58

PRIMATECH
ENGINEERS & CONSULTANTS

Subject:	Eastern Canal North FDS	By:	F. Braileanu
	Composite Storage Volume Computations	Checked:	W. Haas
	Ponding Areas	Project No.:	FCD98-36

Ponding/Reservoir I.D. **PA01**

Weir Coefficient = 2.8

Min Weir Crest Elevation = 1292.52

						Capacity on North-East Side of Canal				
Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1290.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1291.00	2.24	1.12	1.01	1.01	0.00	0.00	0.00	0.00	0.00	0.00
1292.00	5.45	3.85	3.85	4.85	0.00	0.00	0.00	0.00	0.00	0.00
1292.52	6.59	6.02	3.13	7.98	0.00	0.00	0.00	0.00	0.00	0.00
1292.54	6.63	6.61	0.13	8.12	0.00	0.03	0.00	0.00	0.03	0.03
1292.68	6.94	6.79	0.95	9.07	0.00	14.90	0.00	0.00	14.90	14.90
1293.00	7.64	7.29	2.33	11.40	0.00	89.87	0.00	0.00	89.87	89.87
1294.00	7.64	7.64	7.64	19.04	0.00	400.95	0.00	0.00	400.95	400.95

NOTES:

- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	6/2/00

Weir Flow Computation

LOCATION/DESCRIPTION:

Weir Flow over Hermosa Vista Drive, East of Ponding Area PA01

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	7		
Bank Stations.....Left:	100.00	.....Right:	1084.96
Encroatchment Stations.....Left:	100.00	.....Right:	1284.96
Elevation.....Max:	1294.41	.....Min:	1292.52

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1293.00	100.00	2	1292.52	290.53	3	1292.54	540.92
4	1292.68	762.07	5	1293.00	886.85	6	1294.00	996.26
7	1294.41	1084.96						

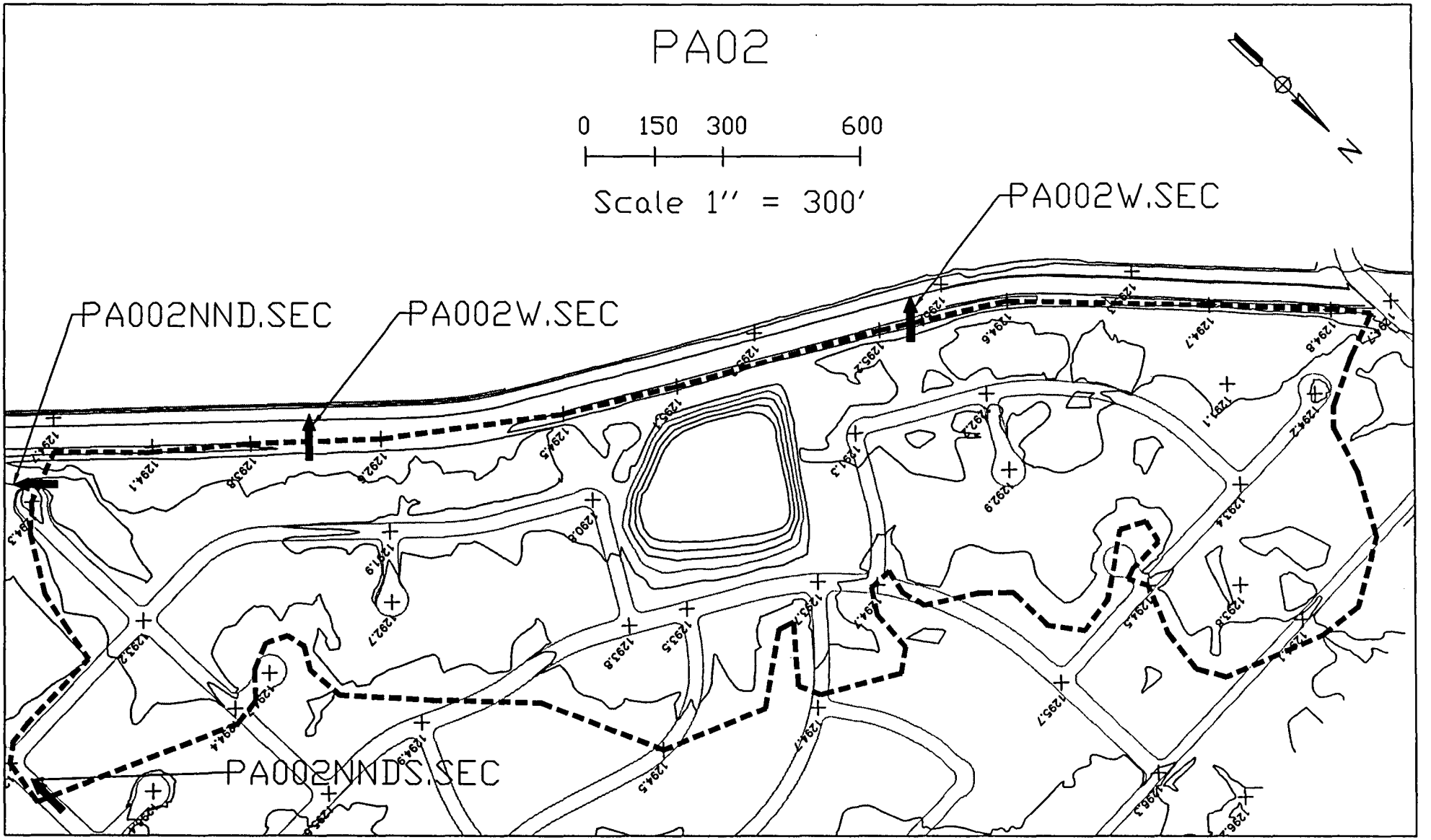
COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1292.52	0.00	0.00	0.00	0.00
1292.54	0.99	0.02	250.39	2.50
1292.68	14.90	0.16	471.54	53.04
1293.00	89.87	0.48	596.32	223.90
1294.00	400.95	1.48	705.73	874.92

NOTES:

Ponding Area PA02

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Uniform Flow Computation Sheet
- Weir Flow Computation Sheet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Scale 1'' = 300'
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PA002W.SEC
PA002NND.SEC
PA002W.SEC
PA002NNDS.SEC

PRIMATECH
ENGINEERS & CONSULTANTS

Subject:	**Eastern Canal North FDS**	By:	**F. Braileanu**
	Composite Storage Volume Computations	Checked:	**W. Haas**
	Ponding Areas	Project No.:	**FCD98-36**

Ponding/Reservoir I.D. **PA02**

Weir Coefficient = 2.7

Min Weir Crest Elevation = 1292.60

						Capacity on North-East Side of Canal				
Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1283.50	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1284.00	1.64	1.61	0.80	0.80	0.00	0.00	0.00	0.00	0.00	0.00
1286.00	1.96	1.80	3.60	4.40	0.00	0.00	0.00	0.00	0.00	0.00
1288.00	2.29	2.13	4.25	8.65	0.00	0.00	0.00	0.00	0.00	0.00
1290.00	2.70	2.50	4.99	13.64	0.00	0.00	0.00	0.00	0.00	0.00
1292.00	12.13	7.41	14.82	28.47	0.00	0.00	0.00	0.00	0.00	0.00
1292.60	18.35	15.24	9.14	37.61	0.00	22.00	0.00	0.00	22.00	22.00
1293.80	30.80	24.57	29.49	67.10	749.10	148.30	0.00	0.00	148.30	897.40
1294.00	32.87	31.83	6.37	73.47	1110.20	179.40	0.00	0.00	179.40	1289.60
1294.10	34.49	33.68	3.37	76.84	1347.60	189.20	0.00	0.00	189.20	1536.80
1294.30	37.74	36.12	7.22	84.06	1980.40	214.00	1.20	0.00	215.20	2195.60
1294.50	40.99	39.36	7.87	91.93	2838.80	262.50	12.30	0.00	274.80	3113.60

NOTES:

- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*

PRIMATECH
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Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

Between Hermosa Vista Drive and McKellips Road, flow that overtops Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 12
Bank Stations.....Left: 0.00 .....Right: 2597.20
Encroatchment Stations.....Left: 0.00 .....Right: 2597.20
Elevation.....Max: 1295.20 .....Min: 1292.60

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1294.30	0.00	2	1294.10	257.02	3	1293.80	469.15
4	1292.60	752.00	5	1294.00	1034.50	6	1294.50	1155.07
7	1295.10	1410.18	8	1295.20	1870.70	9	1294.60	2156.60
10	1294.00	2221.32	11	1294.00	2367.99	12	1294.70	2597.21

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1292.60	0.00	0.00	0.00	0.00
1293.80	749.10	1.20	527.60	316.60
1294.00	1110.20	1.40	709.80	440.30
1294.10	1347.60	1.50	994.20	532.80
1294.30	1980.40	1.70	1385.30	770.80
1294.50	2838.80	1.90	1519.40	1061.20

NOTES:

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Uniform Flow Computation

LOCATION/DESCRIPTION:

Between Hermosa Vista Drive and McKellips Road, Surface flow along the East bank of Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	5	Bed Slope:	2.22E-03		
Bank Stations.....Left:	100.00	.....Right:	135.60		
Encroatchment Stations.....Left:	100.00	.....Right:	135.60		
Elevation.....Max:	1300.00	.....Min:	1292.00		
Manning's n.....Left OB:	0.017	....Channel:	0.022	..Right OB:	0.023

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1300.00	99.99	2	1292.00	100.00	3	1292.00	115.83
4	1294.00	128.14	5	1294.30	135.56			

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Mean Velocity (fps)	ne	ALPHA	Area (ft^2)	Top Water (ft)	Froude Number
1292.60	22.00	2.10	0.022	1.00	10.60	19.50	0.50
1293.80	148.30	3.90	0.022	1.00	38.50	26.90	0.57
1294.00	179.40	4.10	0.022	1.00	44.00	28.10	0.58
1294.10	189.20	4.00	0.022	1.00	46.90	30.60	0.57
1294.30	214.00	4.00	0.022	1.00	53.50	35.60	0.57
1294.50	262.50	4.30	0.022	1.00	60.60	35.60	0.58

NOTES:

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Uniform Flow Computation

LOCATION/DESCRIPTION:

Between Hermosa Vista Drive and McKellips Road, street drainage (see maps)

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	7	Bed Slope:	4.40E-03		
Bank Stations.....Left:	10.00	.....Right:	53.00		
Encroatchment Stations.....Left:	10.00	.....Right:	53.00		
Elevation.....Max:	1294.70	.....Min:	1294.16		
Manning's n.....Left OB:	0.014	....Channel:	0.014	..Right OB:	0.014

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1294.70	10.00	2	1294.66	14.50	3	1294.16	14.51
4	1294.50	31.50	5	1294.16	48.49	6	1294.66	48.50
7	1294.70	53.00						

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Mean Velocity (fps)	ne	ALPHA	Area (ft^2)	Top Water (ft)	Froude Number
1294.30	1.20	1.20	0.014	1.00	1.00	14.00	0.79
1294.50	12.30	2.10	0.014	1.00	2.80	34.00	0.91

NOTES:

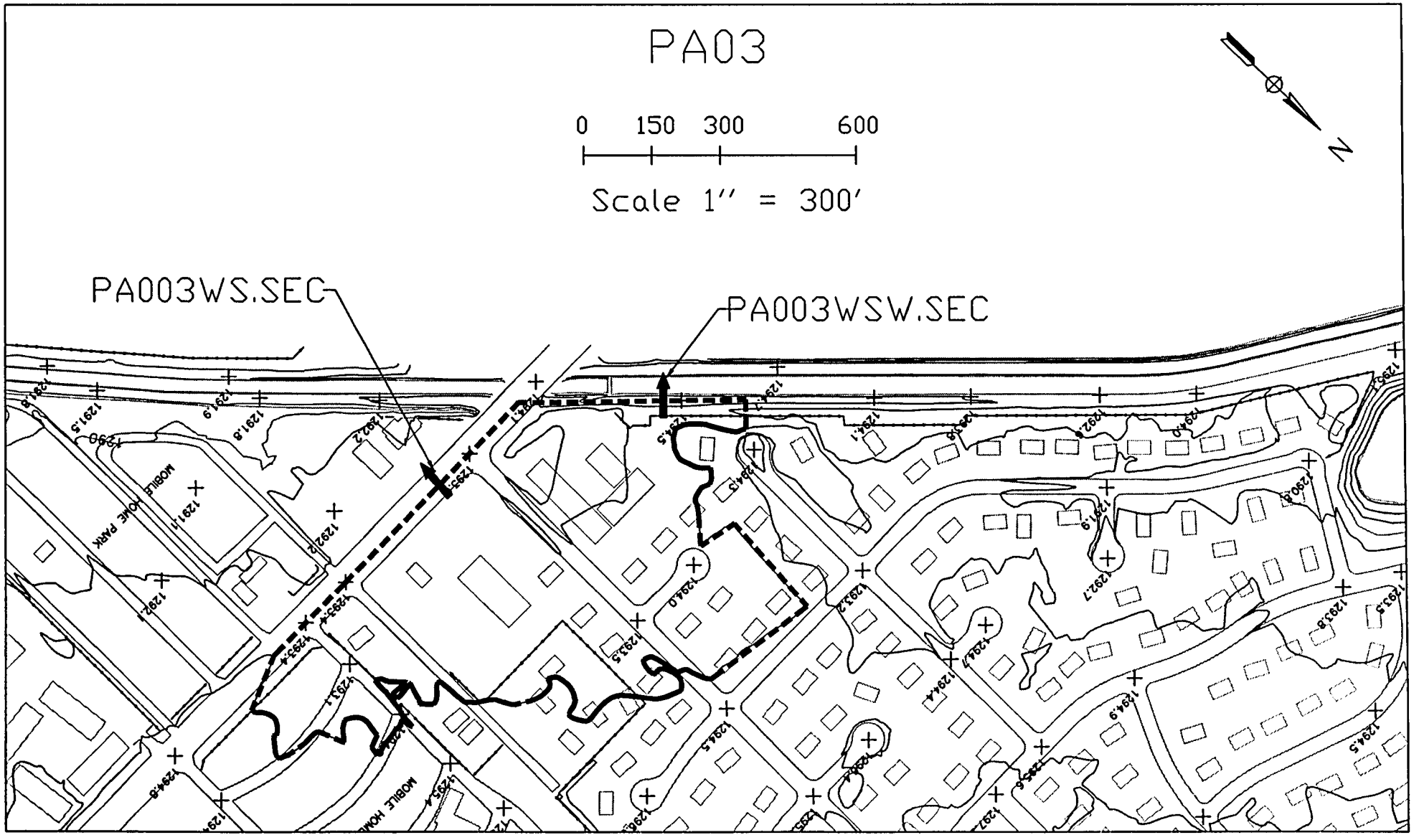
Ponding Area PA03

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Weir Flow Computation Sheets

PA03

0 150 300 600

Scale 1'' = 300'



PRIMATECH
ENGINEERS & CONSULTANTS

Subject:	**Eastern Canal North FDS**	By:	**F. Braileanu**
	Composite Storage Volume Computations	Checked:	**W. Haas**
	Ponding Areas	Project No.:	**FCD98-36**

Ponding/Reservoir I.D. **PA03**

Weir Coefficient = 2.7

Min Weir Crest Elevation = 1294.00

						Capacity on North-East Side of Canal				
Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1292.00	0.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1293.00	5.36	3.17	3.17	3.17	0.00	0.00	0.00	0.00	0.00	0.00
1293.40	7.01	6.19	2.47	5.64	0.00	121.10	0.00	0.00	121.10	121.10
1294.00	13.28	10.14	6.09	11.73	0.00	1105.60	0.00	0.00	1105.60	1105.60
1294.10	13.89	13.58	1.36	13.09	2.50	1352.30	0.00	0.00	1352.30	1354.80
1294.50	17.06	15.48	6.19	19.28	139.40	2604.90	0.00	0.00	2604.90	2744.30

NOTES:

- The 24-inch RCP culvert that crosses McKellips Road was not considered as having any transport capacity because of the large quantity of debries collected inside the pipe at both ends.
- The flow could overtop Eastern Canal and McKellips Road. The weir coefficient and Min. weir crest elevation given above were used for The flow that overtops Eastern Canal.
- For the flow that overtops McKellips Road, a weir coefficient of 2.8 and a minimum weir crest elevation of 1293.00 ft were considered.
- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	4/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

North of McKellips Road, flow that overtops Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	3		
Bank Stations.....Left:	0.00	.....Right:	365.00
Encroatchment Stations.....Left:	0.00	.....Right:	365.00
Elevation.....Max:	1294.50	.....Min:	1294.00

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1294.00	0.00	2	1294.50	364.99	3	1294.50	365.00

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1294.00	0.00	0.00	0.00	0.00
1294.10	2.50	0.10	73.00	3.60
1294.50	139.40	0.50	365.00	91.20

NOTES:

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

Flow overtoping McKellips Road

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 6

Bank Stations.....Left: 0.00 .....Right: 971.00

Encroatchment Stations.....Left: 0.00 .....Right: 971.00

Elevation.....Max: 1294.50 .....Min: 1293.00

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1294.50	0.00	2	1294.00	212.58	3	1293.40	317.11
4	1293.40	438.80	5	1293.00	828.16	6	1294.50	970.98

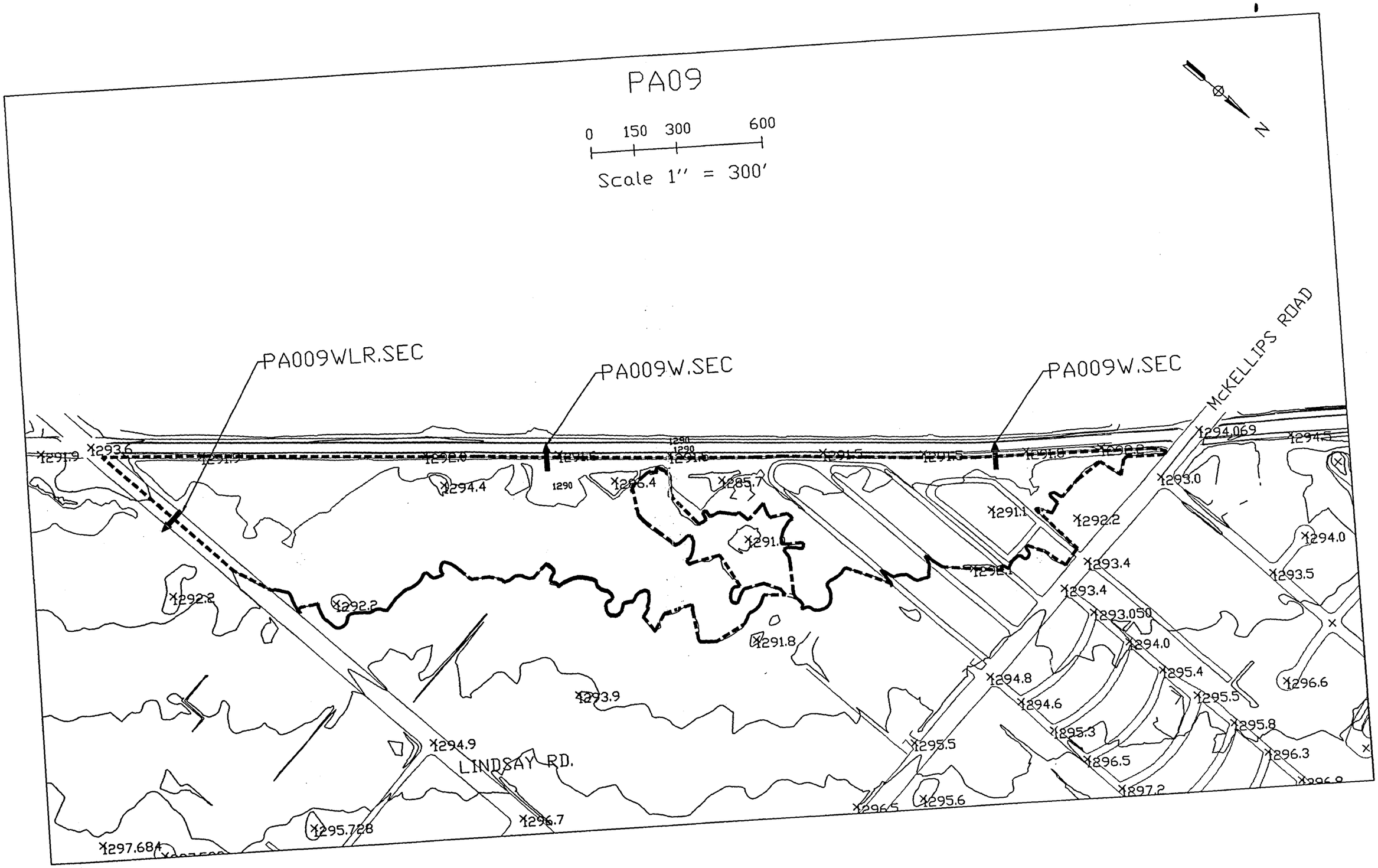
COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1293.00	0.00	0.00	0.00	0.00
1293.40	121.10	0.40	427.40	85.50
1294.00	1105.60	1.00	710.80	463.50
1294.10	1352.30	1.10	762.80	537.10
1294.50	2604.90	1.50	971.00	883.90

NOTES:

Ponding Area PA09

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Weir Flow Computation Sheet
- Culvert Flow Computation Sheet
- Supporting Nomograph for Culvert Flow Computation Sheet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PA009W.SEC
McKELLIPS ROAD
LINDSAY RD.
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PRIMATECH
ENGINEERS & CONSULTANTS

Subject: **Eastern Canal North FDS**
Composite Storage Volume Computations
Ponding Areas

By: **F. Braileanu**
Checked: **W. Haas**
Project No.: **FCD98-36**

Ponding/Reservoir I.D. **PA09**

Weir Coefficient = 2.7
Min Weir Crest Elevation = 1291.50

Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Capacity on North-East Side of Canal: Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1287.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1288.00	0.30	0.15	0.15	0.15	0.00	0.00	0.00	4.20	4.20	4.20
1290.00	8.19	4.25	8.49	8.64	0.00	0.00	0.00	20.00	20.00	20.00
1291.50	25.64	16.92	25.37	34.02	0.00	0.00	0.00	27.26	27.26	27.26
1291.60	26.80	26.22	2.62	36.64	92.60	0.00	0.00	27.75	27.75	120.35
1291.80	29.13	27.96	5.59	42.23	601.20	0.00	0.00	28.72	28.72	629.92
1291.90	30.29	29.71	2.97	45.20	1291.80	0.00	0.00	29.20	29.20	1321.00
1292.00	31.45	30.87	3.09	48.29	1503.00	0.00	0.00	30.00	30.00	1533.00
1292.50	37.27	34.36	17.18	65.47	2559.00	465.40	0.00	32.00	497.40	3056.40

NOTES:

- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

Eastern McKellips Road and Lindsay Road, flow that overtops Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 10

Bank Stations.....Left: 0.00 .....Right: 3780.82

Encroatchment Stations.....Left: 0.00 .....Right: 3780.82

Elevation.....Max: 1292.50 .....Min: 1291.50

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1293.00	0.00	2	1291.90	346.53	3	1292.00	1128.68
4	1291.60	1589.64	5	1291.50	1980.16	6	1291.50	2511.66
7	1291.50	2861.37	8	1291.80	3217.20	9	1292.2	3477.71
10	1293.80	3780.82						

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1291.50	0.00	0.00	0.00	0.00
1291.60	92.60	0.10	1390.30	113.50
1291.80	601.20	0.30	1777.60	430.50
1291.90	1291.80	0.40	2167.10	824.80
1292.00	1503.00	0.50	2286.22	945.39
1292.50	2559.00	1.00	2881.80	1548.31

NOTES:

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

Eastern Canal - Lindsey Road, flow that overtops Lindsay Road

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	4		
Bank Stations.....Left:	0.00	.....Right:	1138.20
Encroatchment Stations.....Left:	0.00	.....Right:	1138.20
Elevation.....Max:	1294.00	.....Min:	1292.00

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1294.00	0.00	2	1292.00	530.48	3	1292.00	911.21
4	1293.25	1138.22						

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1292.00	0.10	0.00	381.60	0.70
1292.50	465.40	0.50	604.20	246.20
1293.00	1566.55	1.00	827.60	604.20
1293.25	2364.10	1.25	939.30	825.00
1294.00	5747.20	2.00	1138.20	1604.10

NOTES:

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Uniform Flow Computation

LOCATION/DESCRIPTION:

Between McKellips Road and Lindsey Road, Surface flow along the east bank of Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	4	Bed Slope:	8.60E-04		
Bank Stations.....Left:	0.00	.....Right:	73.50		
Encroatchment Stations.....Left:	0.00	.....Right:	73.50		
Elevation.....Max:	1292.00	.....Min:	1290.00		
Manning's n.....Left OB:	0.03	.Channel:	0.03	..Right OB:	0.03

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1292.00	0.00	2	1290.00	9.68	3	1290.00	59.29
4	1292.00	73.47						

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Mean Velocity (fps)	ne	ALPHA	Area (ft^2)	Top Water (ft)	Froude Number
1290.00	0.00	0.00	0.030	1.00	0.10	49.60	0.09
1291.50	151.70	1.70	0.030	1.00	87.80	67.50	0.27
1291.60	169.80	1.80	0.030	1.00	94.60	68.70	0.27
1291.80	208.70	1.90	0.030	1.00	108.60	71.10	0.27
1292.00	251.40	2.00	0.030	1.00	123.10	73.50	0.28

NOTES:

Subject:	**Eastern Canal North FDS**	By:	**F. Braileanu**
	Composite Storage Volume Computations	Checked:	**D. Dust**
	Ponding Areas	Project No.:	**FCD98-36**

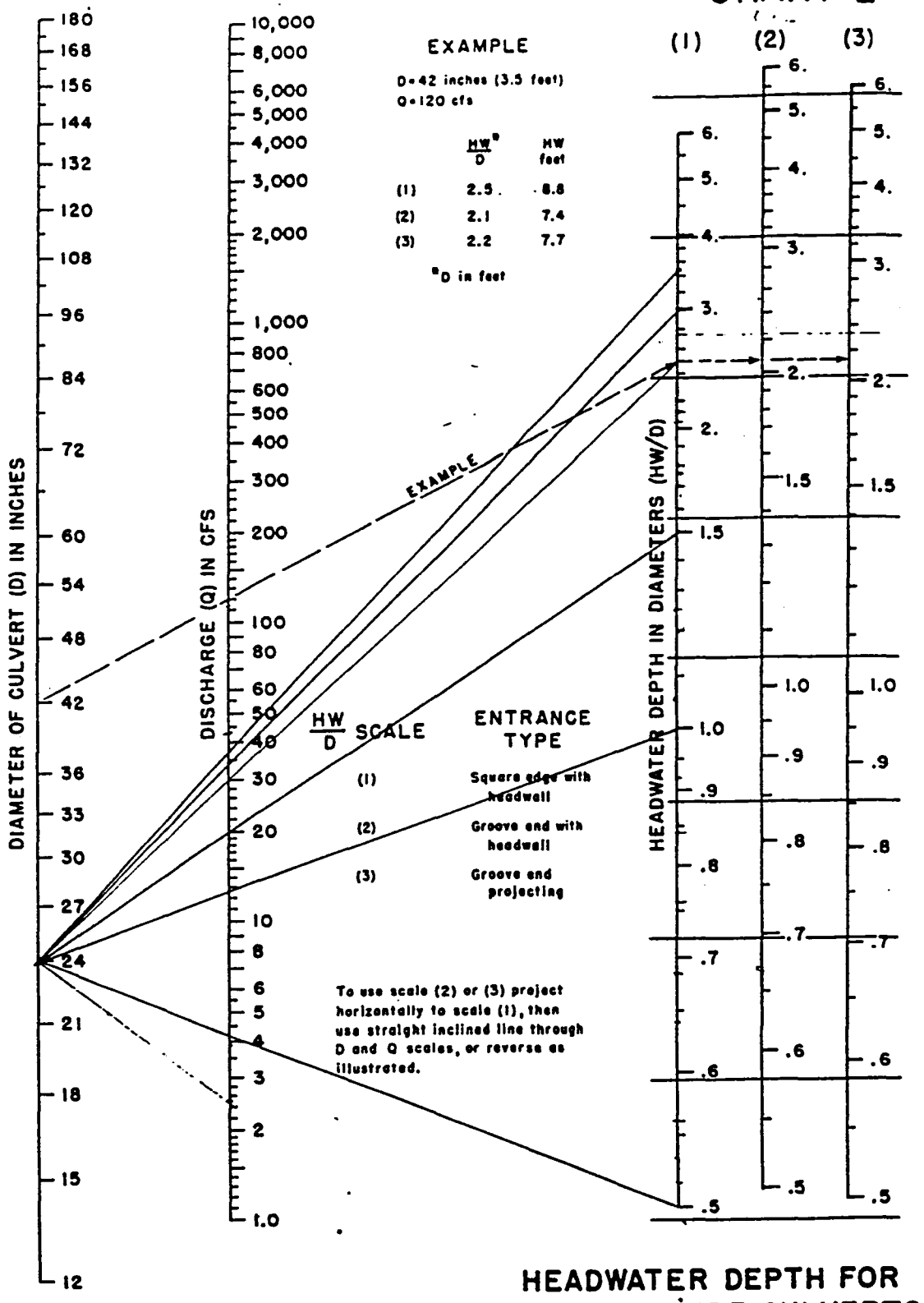
Ponding/Reservoir I.D. **PA09**

Culvert Type: 24-inch RCP

Bottom Elevation at Culvert Inlet (ft)	Water Surface Elevation (ft)	Headwater (ft)	Headwater-Culvert Diameter Ratio	Discharge (cfs)
1287.00	1288.00	1.00	0.50	4.20
1287.00	1289.00	2.00	1.00	12.65
1287.00	1290.00	3.00	1.50	20.00
1287.00	1291.90	4.90	2.45	29.20
1287.00	1292.00	5.00	2.50	30.00
1287.00	1292.50	5.50	2.75	32.00
1287.00	1293.00	6.00	3.00	33.75
1287.00	1293.25	6.25	3.13	35.00
1287.00	1294.00	7.00	3.50	37.50

NOTE: The discharge was calculated using nomographs for RCP culverts with inlet control.

CHART 2



HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

HEADWATER SCALES 2 & 3
REVISED MAY 1964

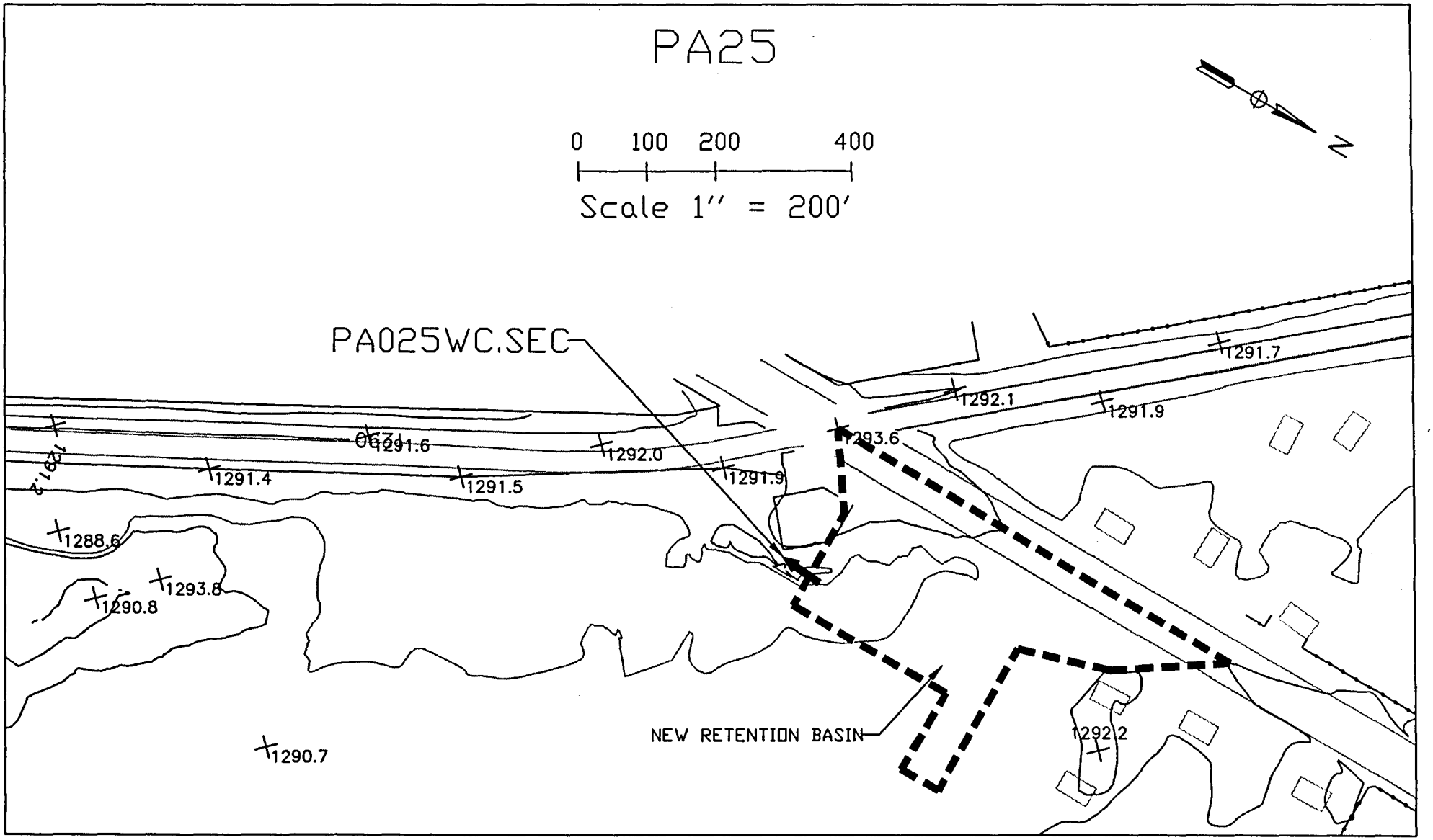
BUREAU OF PUBLIC ROADS JAN. 1963

REF

Ponding Area PA25

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Weir Flow Computation Sheet
- The Cross Section of the Weir
- Supporting Plan View of the new Retention Basin

PA25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PA025WC.SEC
1291.7
1292.1
1291.9
1293.6
1291.6
1292.0
1291.4
1291.5
1291.9
1288.6
1293.8
1290.8
1290.7
NEW RETENTION BASIN
1292.2

PRIMATECH
ENGINEERS & CONSULTANTS

Subject:	Eastern Canal North FDS	By:	F. Braileanu
	Composite Storage Volume Computations	Checked:	W. Haas
	Ponding Areas	Project No.:	FCD98-36

Ponding/Reservior I.D. **PA25**

Weir Coefficient = 2.8

Min Weir Crest Elevation = 1291.00 ft

Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Capacity on North-East Side of Canal: Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1288.00	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1289.00	0.66	0.61	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00
1290.00	0.71	0.69	0.68	1.29	0.00	0.00	0.00	0.00	0.00	0.00
1291.00	0.76	0.74	0.73	2.02	0.00	0.00	0.00	0.00	0.00	0.00
1292.00	0.76	0.76	0.76	2.78	0.00	84.00	0.00	0.00	84.00	84.00
1293.00	1.14	0.95	0.94	3.73	0.00	237.59	0.00	0.00	237.59	237.59
1293.50	1.25	1.20	0.60	4.32	0.00	442.72	0.00	0.00	442.72	442.72

NOTES:
- The flow may not overtop Eastern Canal. The only breakout from the Ponding Area is over the weir placed at the south end of Tract N retention basin.
- For the flow that spills ocer the weir, a weir coefficient of 2.8 and a minimum weir crest elevation of 1291.00 ft were considered.
- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*
- The latest drainage maps for Mesa Northgrove were used to evaluate the parameters of this Ponding Area.

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

Flow that overtops the weir and gets into the channel that connects PA25 and PA26

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 5

Bank Stations.....Left: 100.00 .....Right: 130.00

Encroatchment Stations.....Left: 100.00 .....Right: 130.00

Elevation.....Max: 1293.00 .....Min: 1291.00

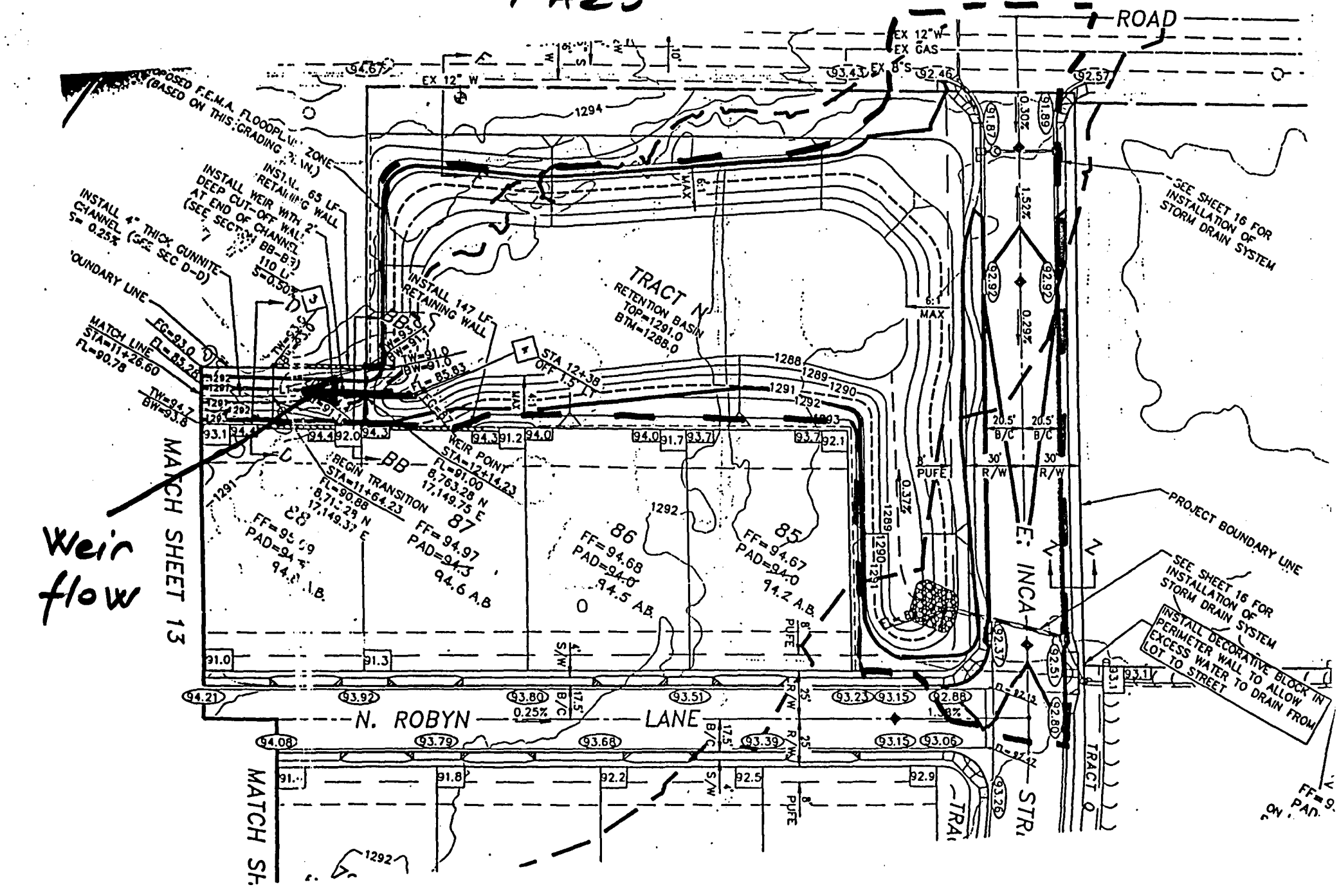
No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1293.00	100.00	2	1291.12	100.00	3	1291.00	115.00
4	1291.12	130.00	5	1293.00	130.00			

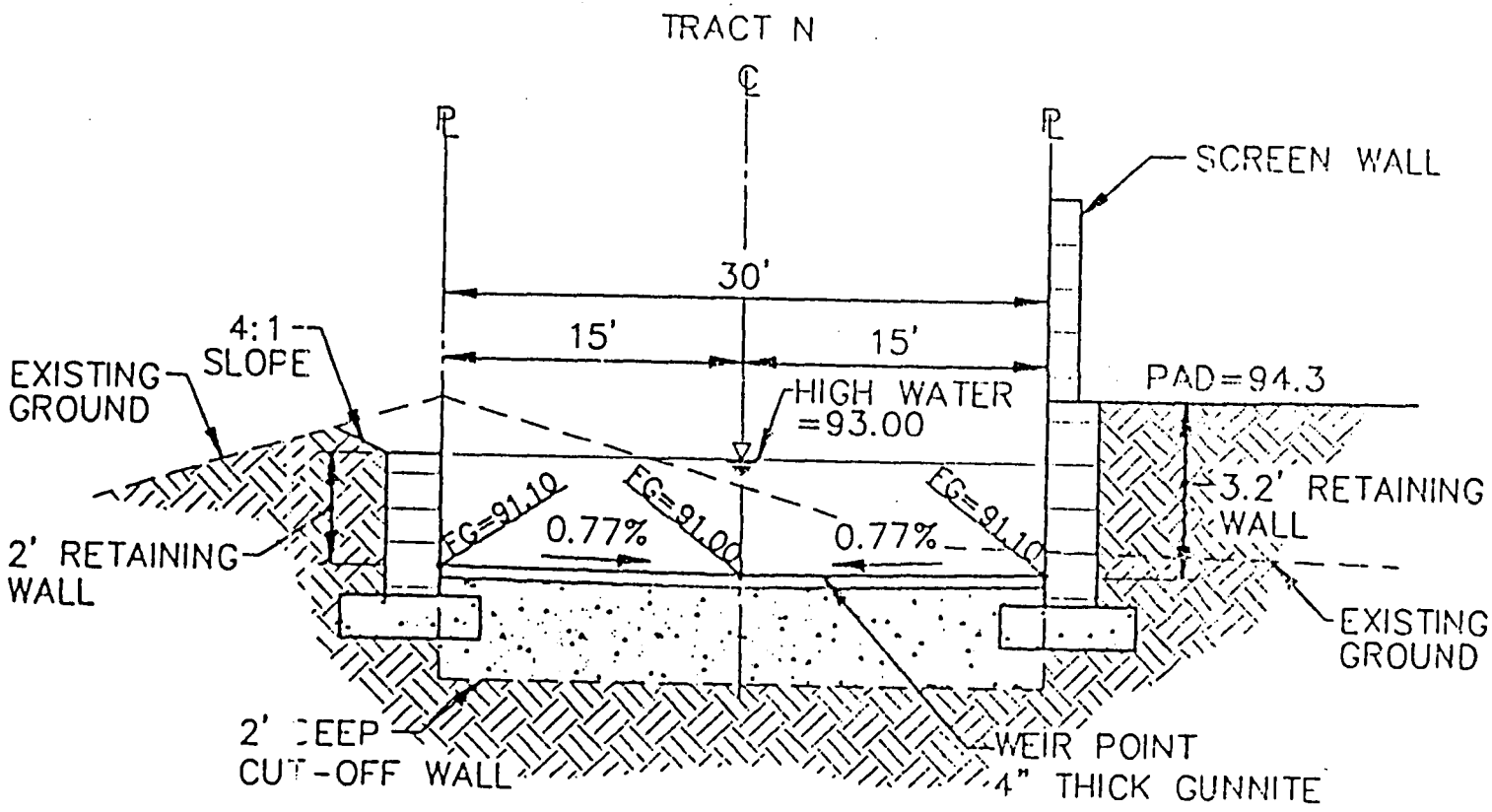
COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1288.00	0.00	0.00	0.00	0.00
1289.00	0.00	0.00	0.00	0.00
1290.00	0.00	0.00	0.00	0.00
1291.00	0.00	0.00	0.00	0.00
1292.00	84.00	1.00	30.00	28.24
1293.00	237.59	2.00	30.00	58.20
1293.50	442.72	2.50	30.00	76.01

NOTES:

PA25


ROAD
EX 12" W
EX GAS
EX 8" S
PROPOSED F.E.M.A. FLOODPLAIN ZONE (BASED ON THIS GRADING PLAN)
INSTALL 65 LF RETAINING WALL
INSTALL WEIR WITH 2' DEEP CUT-OFF WALL AT END OF CHANNEL (SEE SECTION BB-B7) 110 LF S=0.50%
INSTALL 4" THICK GUNNITE CHANNEL (SEE SEC D-D) S= 0.25%
BOUNDARY LINE
MATCH LINE STA=11+26.60 FL=90.78
INSTALL 147 LF RETAINING WALL
TRACT N
RETENTION BASIN TOP=1291.0 BTM=1288.0
STA 12+38 OFF 1.5' LT
WEIR POINT STA=12+14.23 FL=91.00 8,763.28 N 17,149.75 E
BEGIN TRANSITION STA=11+64.23 FL=90.88 8,71[illegible] N 17,149.3[illegible] E
SEE SHEET 16 FOR INSTALLATION OF STORM DRAIN SYSTEM
PROJECT BOUNDARY LINE
INSTALL DECORATIVE BLOCK IN PERIMETER WALL TO ALLOW EXCESS WATER TO DRAIN FROM LOT TO STREET
MATCH SHEET 13
N. ROBYN LANE
E. INCA STR
TRACT Q
Weir flow

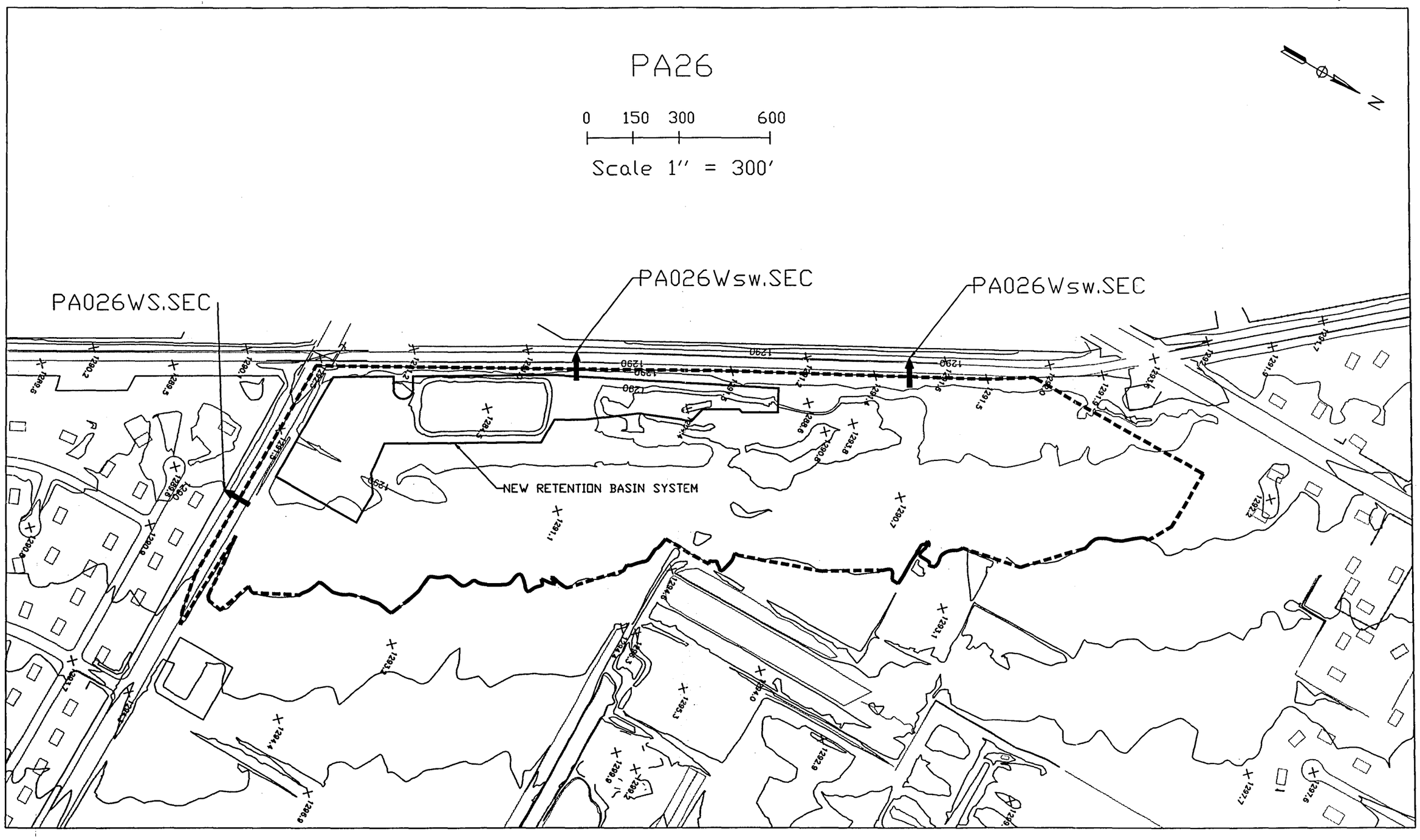


SECTION BB-BB

CROSS SECTION OF THE WEIR

Ponding Area PA26

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Weir Flow Computation Sheets
- Plan View of the new Retention Basin System


PA26
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Scale 1" = 300'
N
PA026WS.SEC
PA026Wsw.SEC
PA026Wsw.SEC
NEW RETENTION BASIN SYSTEM

PRIMATECH
ENGINEERS & CONSULTANTS

Subject:	**Eastern Canal North FDS**	By:	**F. Braileanu**
	Composite Storage Volume Computations	Checked:	**W. Haas**
	Ponding Areas	Project No.:	**FCD98-36**

Ponding/Reservior I.D. **PA26**

Weir Coefficient = 2.7

Min Weir Crest Elevation = 1291.44 ft

Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Capacity on North-East Side of Canal: Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1284.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1285.00	1.35	0.68	0.23	0.23	0.00	0.00	0.00	0.00	0.00	0.00
1286.00	2.76	2.06	2.01	2.24	0.00	0.00	0.00	0.00	0.00	0.00
1288.00	4.33	3.54	7.03	9.27	0.00	0.00	0.00	0.00	0.00	0.00
1288.60	4.65	4.49	2.69	11.96	0.00	0.00	0.00	0.00	0.00	0.00
1290.00	5.41	5.03	7.04	19.00	0.00	0.00	0.00	0.00	0.00	0.00
1290.80	5.90	5.66	4.52	23.52	0.00	0.00	0.00	0.00	0.00	0.00
1291.00	6.03	5.96	1.19	24.71	0.00	0.00	0.00	0.00	0.00	0.00
1291.44	6.30	6.16	2.71	27.42	0.00	0.00	0.00	0.00	0.00	0.00
1291.50	6.33	6.32	0.38	27.80	13.56	0.00	0.00	0.00	0.00	13.56
1291.90	6.58	6.45	2.58	30.39	962.84	146.60	0.00	0.00	146.60	1109.44
1292.00	6.64	6.61	0.66	31.05	1530.37	256.10	0.00	0.00	256.10	1786.47

NOTES:
- The flow may overtop Eastern Canal and Brown Road. The weir coefficient and Min. weir crest elevation given above were used for the flow that overtops the Canal.
- For the flow that overtops Brown Road, a weir coefficient of 2.8 and a minimum weir crest elevation of 1291.50 ft were considered.
- There is no culvert that crosses Brown Road. A storm drain collects the storm water from the vicinity of East bank of Eastern Canal and conveys it into the ponding area.
- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*
- The latest drainage maps for Mesa Northgrove were used to evaluate the parameters of this Ponding Area.

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	6/15/99

Weir Flow Computation

LOCATION/DESCRIPTION:

Between Lindsay and Brown Road, flow that overtops Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	7		
Bank Stations.....Left:	0.00	.....Right:	2675.00
Encroatchment Stations.....Left:	0.00	.....Right:	2675.00
Elevation.....Max:	1292.43	.....Min:	1291.40

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1292.43	0.00	2	1292.00	68.48	3	1291.50	1356.00
4	1291.44	1831.00	5	1291.50	2199.00	6	1291.90	2584.00
7	1292.00	2675.00						

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1291.50	13.56	0.04	843.00	24.22
1291.90	962.84	0.44	2258.10	626.38
1292.00	1530.37	0.54	2606.50	883.00
1292.43	4902.48	0.96	2675.00	1991.85

NOTES:

WEIR FLOW.xls, PA026Wsw.SEC

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

Between Lindsay Raoad and Brown Road, flow that ovetops Brown Road

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	4		
Bank Stations.....Left:	0.00	.....Right:	803.20
Encroatchment Stations.....Left:	0.00	.....Right:	803.20
Elevation.....Max:	1292.43	.....Min:	1291.50

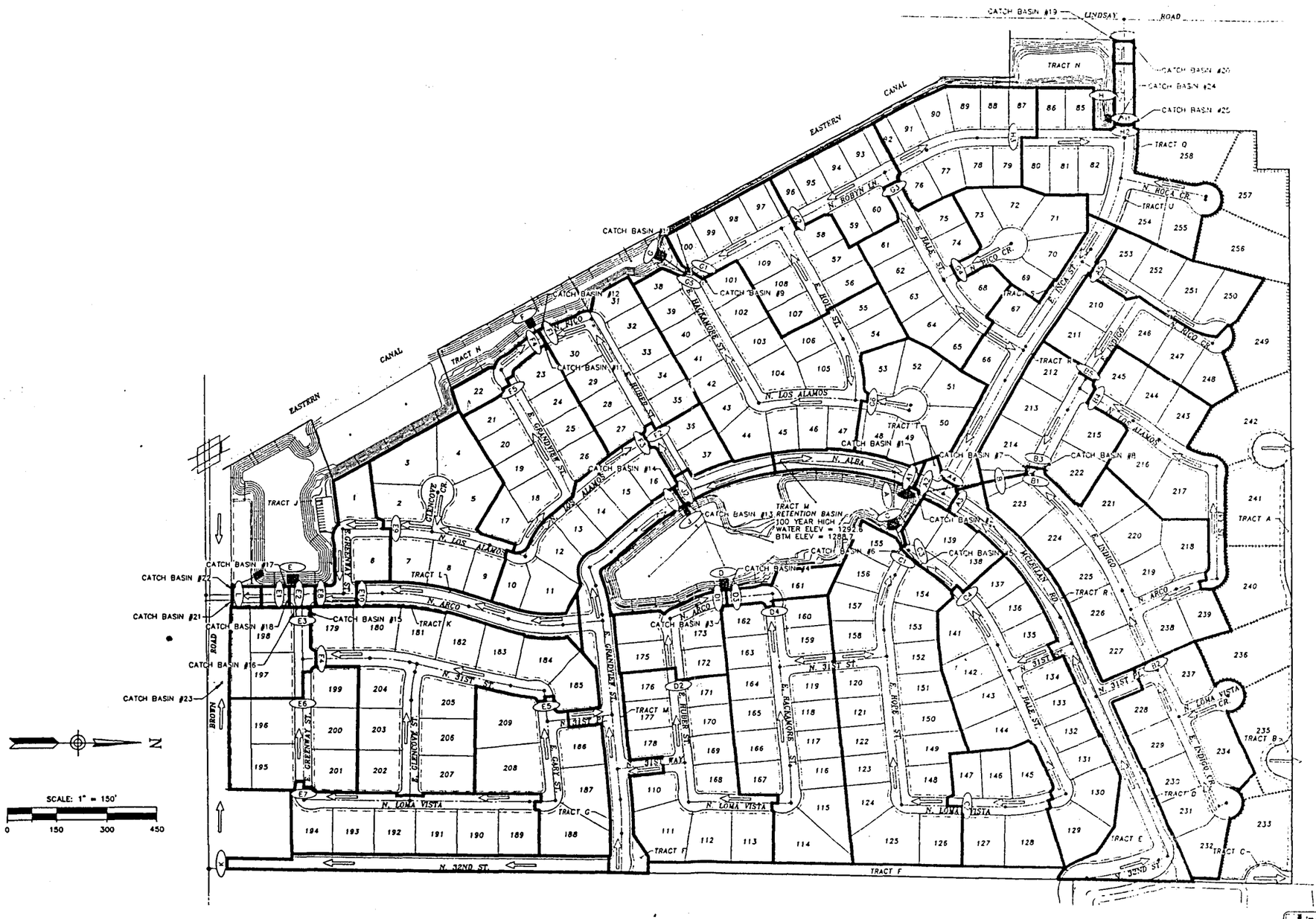
No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1292.00	0.00	2	1291.50	554.94	3	1292.00	646.73
4	1292.43	803.18						

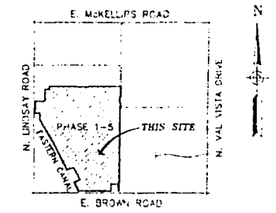
COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1291.50	0.00	0.00	0.00	0.00
1291.90	146.60	0.40	217.40	103.50
1292.00	256.10	0.50	646.70	161.70

NOTES:

DRAINAGE MAP
FOR
MESA NORTHGROVE





VICINITY MAP

LEGEND

- (A5) POINT OF CALCULATED FLOW
- DIRECTION OF FLOW
- DRAINAGE SUB-BASIN BOUNDARY

263-1100

MESA NORTHGROVE
DRAINAGE MAP

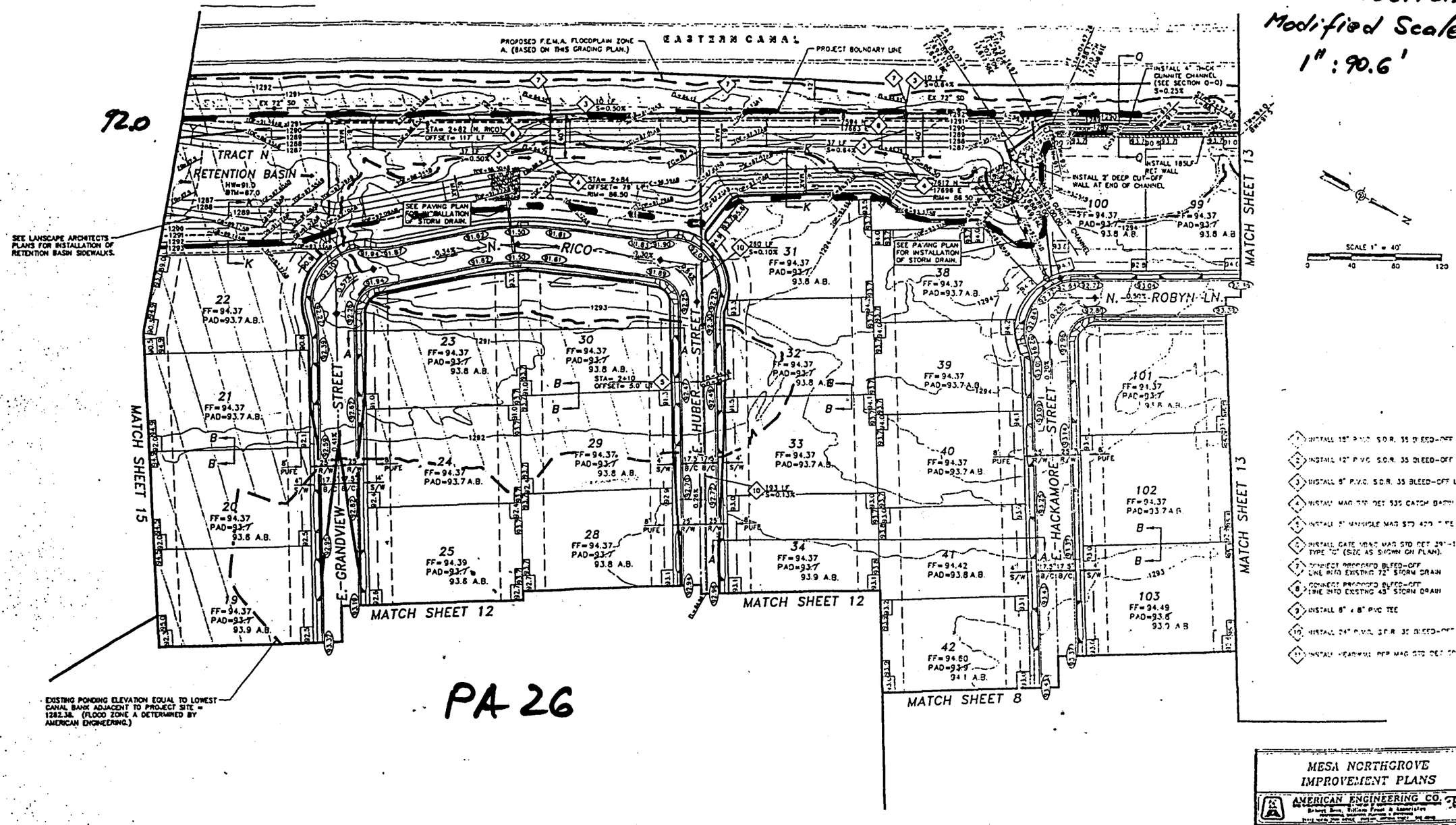
AMERICAN ENGINEERING CO.
consulting engineers/surveyors

DJP	NDG	KMT
1" = 150'		
OCT/1997		
JAN/1998		1
97262		

D:\SSKPROJ\97262\72K2DWG1 Wed Jan 28 14 29 42 1998 JGN

Scale, as noted on drawing, is inaccurate due to size reduction.
Modified Scale
1" : 90.6'

92.0



PA 26

LINE	DIRECTION	DISTANCE
L1	N67°32'03"W	27.72
L2	N28°24'41"W	170.0

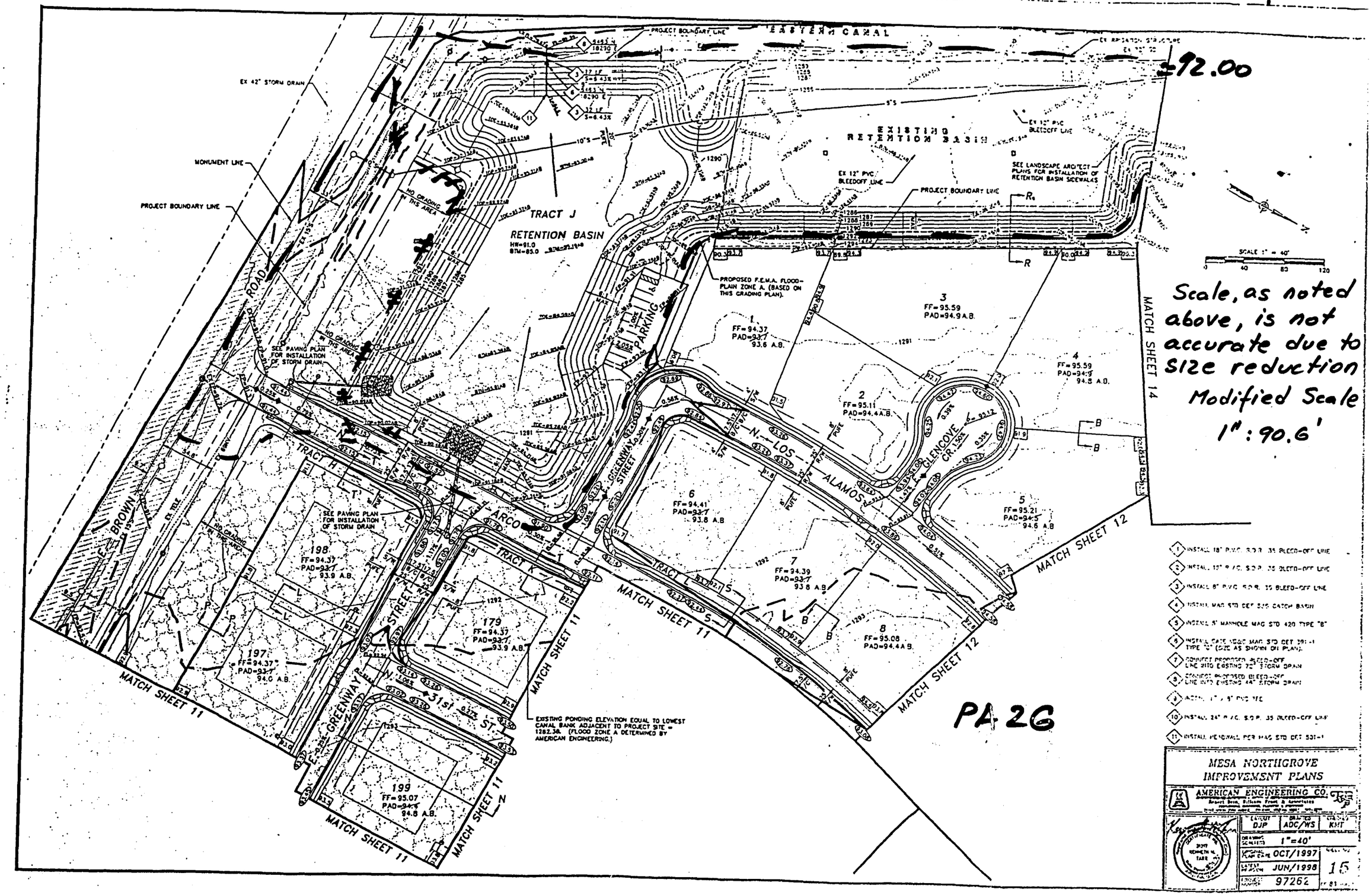
CURVE	RADIUS	LENGTH	TANGENT	DELTA
C1	18.00'	7.24	3.67'	23°03'03"
C2	18.00	12.29	6.40	39°07'22"

263-1100

MESA NORTHGROVE
IMPROVEMENT PLANS

AMERICAN ENGINEERING CO.

DESIGN DJP	DRAWN ADC/WS	CHECKED KMT
DRAWING SCALE(S) 1"=40'		
ORIGINAL PLAN DATE OCT/1997		SHEET NO. 14
LAST REVISION APR/1998		
JOB NO. 97262		



92.00

Scale, as noted above, is not accurate due to size reduction

Modified Scale 1" : 90.6'

PA 26

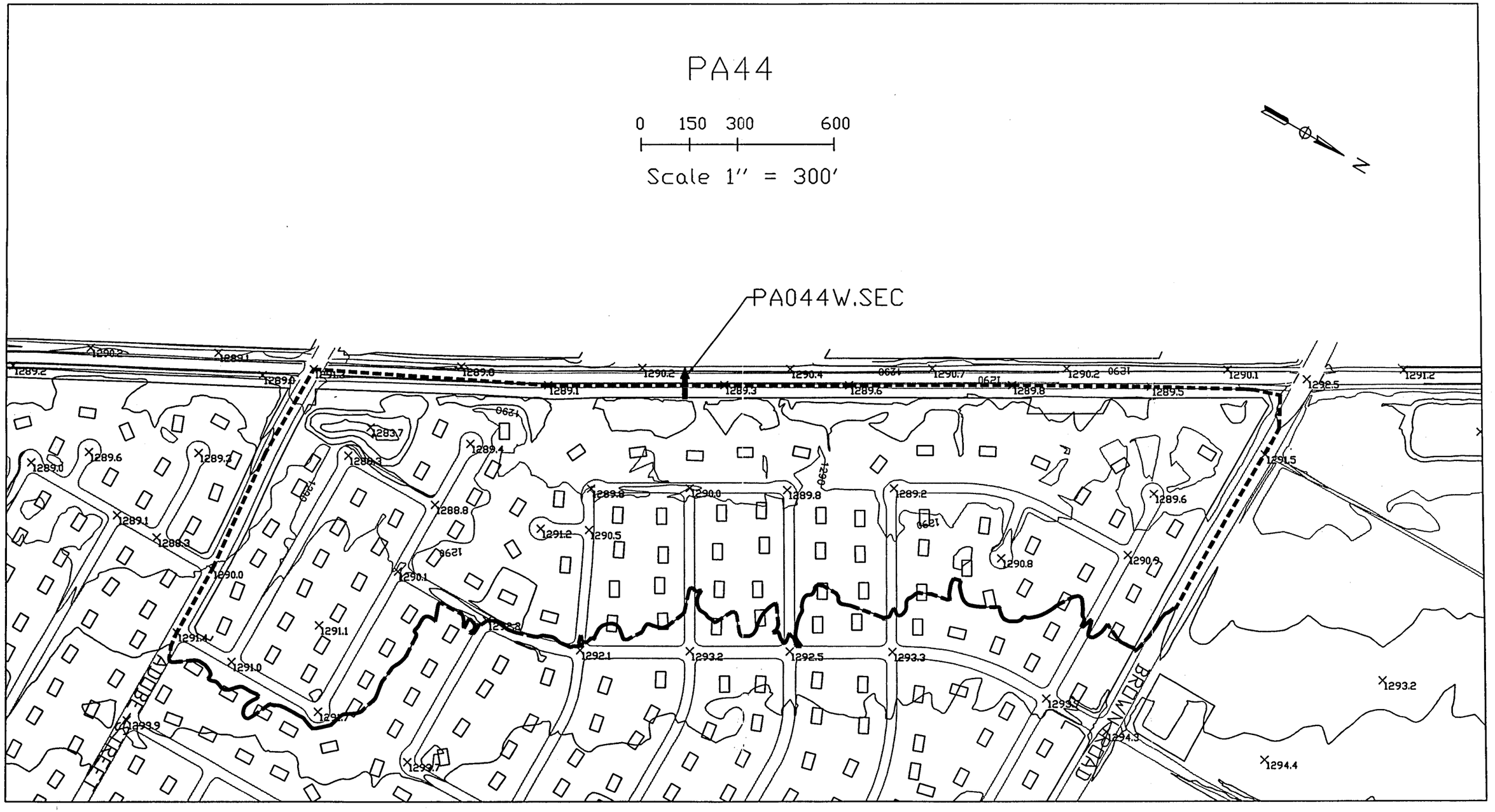
Ponding Area PA44

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Weir Flow Computation Sheet

PA44

0 150 300 600

Scale 1" = 300'



PRIMATECH
ENGINEERS & CONSULTANTS

Subject:	Eastern Canal North FDS	By:	F. Braileanu
	Composite Storage Volume Computations	Checked:	W. Haas
	Ponding Areas	Project No.:	FCD98-36

Ponding/Reservior I.D. **PA44**

Weir Coefficient = 2.7

Min Weir Crest Elevation = 1289.30 ft

						Capacity on North-East Side of Canal				
Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1283.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1284.00	0.16	0.08	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
1286.00	0.65	0.41	0.81	0.83	0.00	0.00	0.00	0.00	0.00	0.00
1288.00	4.71	2.68	5.36	6.19	0.00	0.00	0.00	0.00	0.00	0.00
1288.50	9.62	7.17	3.58	9.78	0.00	0.00	0.00	0.00	0.00	0.00
1289.10	15.68	12.65	7.59	17.37	0.00	0.00	0.00	0.00	0.00	0.00
1289.30	16.82	16.25	3.25	20.61	68.20	0.00	0.00	0.00	0.00	68.20
1289.60	19.16	17.99	5.40	26.01	595.60	0.00	0.00	0.00	0.00	595.60

NOTES:
- The flow could overtop Eastern Canal.
- For the flow that runs South out of the ponding area, the Normal Depth approach was considered.
- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

North of Adobe Street, flow that overtops Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 8
Bank Stations.....Left: 100.00 .....Right: 3089.08
Encroatchment Stations.....Left: 100.00 .....Right: 3089.08
Elevation.....Max: 1292.00 .....Min: 1289.10

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1290.00	100.00	2	1289.10	802.04	3	1289.30	1351.24
4	1289.60	1738.24	5	1289.80	2245.04	6	1289.50	2677.00
7	1290.00	2949.48	8	1292.00	3089.08			

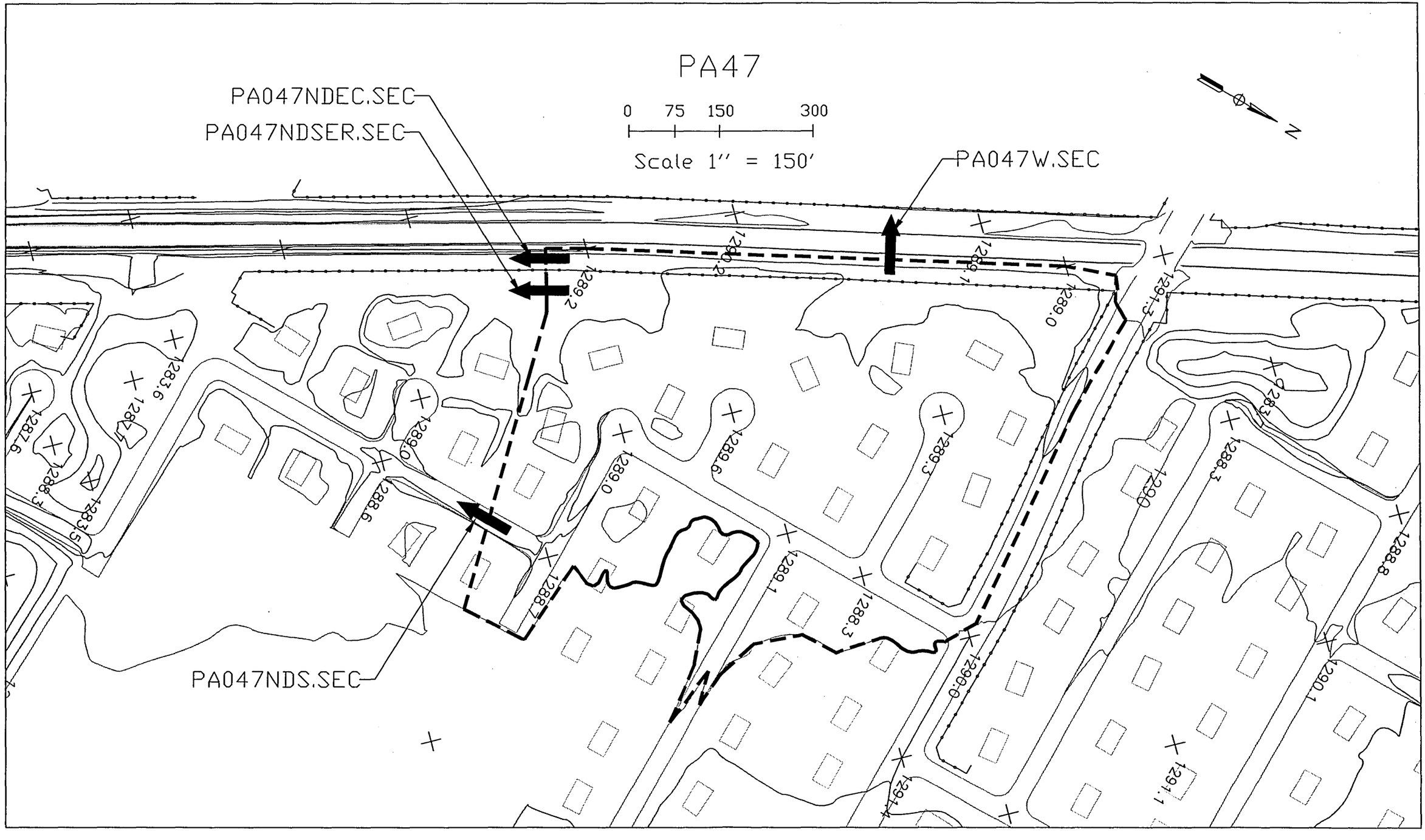
COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1289.10	0.00	0.00	0.00	0.00
1289.30	68.20	0.20	705.30	70.60
1289.60	595.60	0.50	1326.20	375.20
1289.80	1307.50	0.70	1989.10	706.80
1290.00	2368.60	0.90	2145.00	1120.20

NOTES:

Ponding Area PA47

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Uniform Flow Computation Sheets
- Weir Flow Computation Sheet


PA47
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Scale 1'' = 150'
N
PA047NDEC.SEC
PA047NDSER.SEC
PA047W.SEC
PA047NDS.SEC
1290.2
1289.2
1289.1
1289.0
1291.3
1283.6
1287.6
1288.5
1283.5
1289.0
1288.6
1289.0
1289.6
1289.3
1288.3
1290
1288.8
1288.1
1289.1
1288.3
1296.0
1290.1
1291.1
1291.4

PRIMATECH
ENGINEERS & CONSULTANTS

Subject:	Eastern Canal North FDS	By:	F. Braileanu
	Composite Storage Volume Computations	Checked:	W. Haas
	Ponding Areas	Project No.:	FCD98-36

Ponding/Reservior I.D. **PA47**

Weir Coefficient = 2.6

Min Weir Crest Elevation = 1289.00

						Capacity on North-East Side of Canal				
Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1287.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1287.50	1.28	0.64	0.32	0.32	0.00	0.13	0.00	0.00	0.13	0.13
1288.00	2.05	1.67	0.83	1.15	0.00	1.39	0.00	0.00	1.39	1.39
1288.80	6.02	4.03	3.23	4.38	0.00	41.19	29.36	0.00	70.55	70.55
1289.00	7.01	6.51	1.30	5.68	0.00	58.15	55.30	0.00	113.45	113.45
1289.20	8.00	7.50	1.50	7.18	21.64	77.68	82.28	0.00	159.96	181.60
1290.00	11.97	9.98	7.99	15.17	2323.08	177.58	228.60	0.00	406.18	2729.26

NOTES:

- The flow could overtop Eastern Canal.

- For the flow that runs South out of the ponding area, the Normal Depth approach was considered.
- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	6/22/00

Uniform Flow Computation

LOCATION/DESCRIPTION:

- South of Adobe Street, flow parallel to Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	7	Bed Slope:	1.00E-04		
Bank Stations.....Left:	1288.00	.....Right:	1287.80		
Encroatchment Stations.....Left:	1289.20	.....Right:	1293.00		
Elevation.....Max:	1293.00	.....Min:	1287.00		
Manning's n.....Left OB:	0.03	....Channel:	0.03	..Right OB:	0.03

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1289.20	10.00	2	1289.20	15.00	3	1288.00	19.50
4	1287.00	22.50	5	1287.80	24.50	6	1287.80	45.50
7	1293.00	45.50						

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Mean Velocity (fps)	Depth (ft)	Hydraulic Radius (ft)	Area (ft^2)	Top Water (ft)	Froude Number	Energy Gradeline (ft)
1287.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1287.00
1287.50	0.13	0.19	0.50	0.24	0.69	2.75	0.07	1287.50
1288.00	1.39	0.20	1.00	0.26	6.90	25.99	0.07	1288.00
1288.80	13.83	0.48	1.80	0.95	28.89	30.41	0.08	1288.80
1289.00	18.43	0.53	2.00	1.11	34.76	31.39	0.09	1289.00
1289.20	23.57	0.58	2.20	1.26	40.79	30.49	0.09	1289.21
1290.00	50.25	0.73	3.00	1.78	69.18	35.49	0.09	1290.01
1290.80	86.77	0.89	3.80	2.41	97.58	35.50	0.09	1290.81

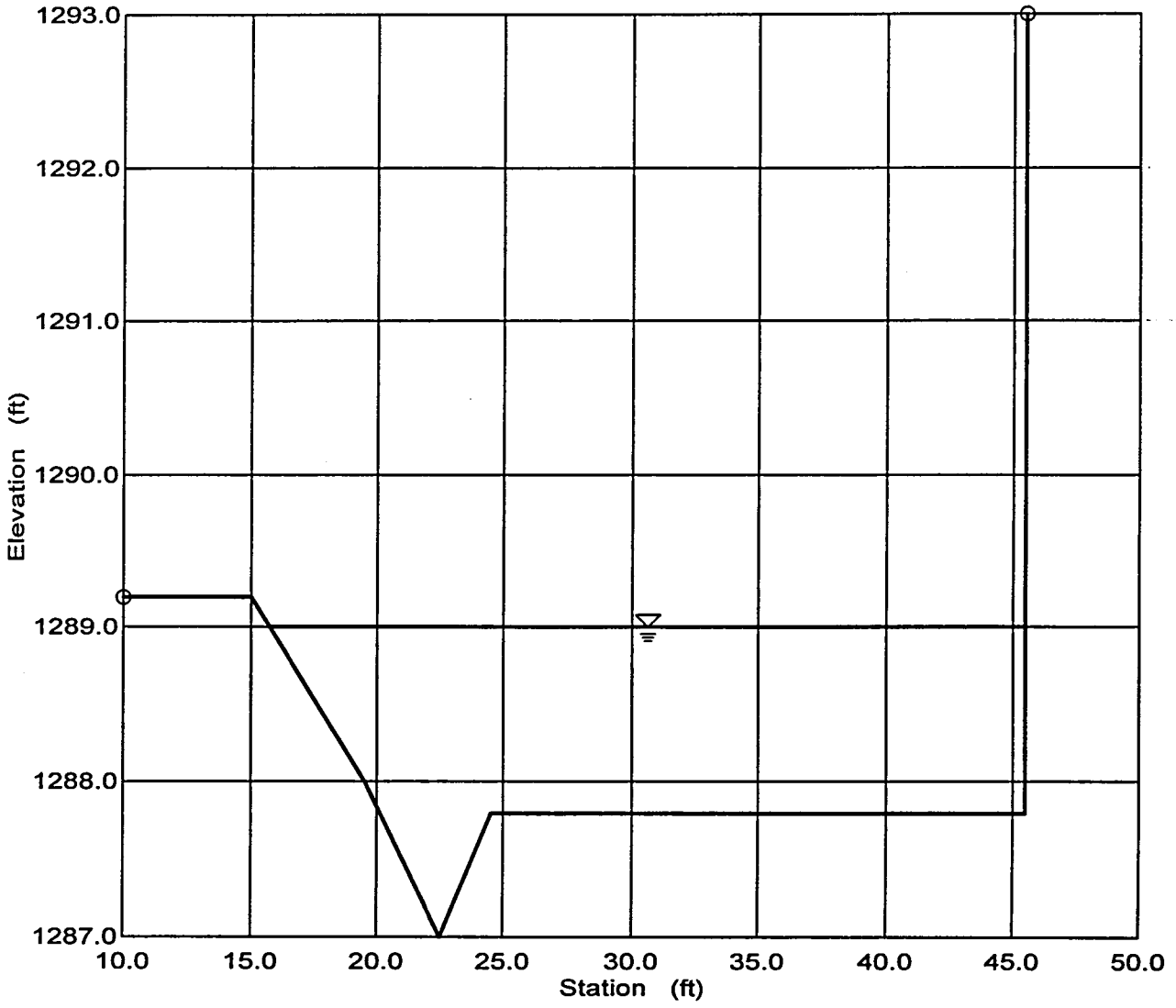
NOTES:

- This is Normal Depth Flow that occurs along Eastern Canal, west of the block wall.

PA047NDEC.SEC
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\pa047nde.fm2
Worksheet	PA47 ND FLOW ALONG EC
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.030	
Channel Slope	0.000100	ft/ft
Water Surface Elevation	1,289.00	ft
Discharge	18.43	cfs



PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	6/22/00

Uniform Flow Computation

LOCATION/DESCRIPTION:

- South of Adobe Street, flow parallel to Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	5	Bed Slope:	1.00E-04		
Bank Stations.....Left:	1287.50	.....Right:	1287.50		
Encroatchment Stations.....Left:	1293.00	.....Right:	1289.00		
Elevation.....Max:	1293.00	.....Min:	1287.50		
Manning's n.....Left OB:	0.03	....Channel:	0.025	..Right OB:	0.025

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1293.00	10.00	2	1287.50	10.00	3	1287.50	88.00
4	1288.00	90.00	5	1289.00	95.00			

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Mean Velocity (fps)	Depth (ft)	Hydraulic Radius (ft)	Area (ft^2)	Top Water (ft)	Froude Number	Energy Gradeline (ft)
1287.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1287.00
1287.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1287.50
1288.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	1288.00
1288.80	27.36	0.42	1.30	0.77	65.60	84.00	0.08	1288.80
1289.00	39.72	0.48	1.50	0.96	82.50	85.00	0.09	1289.00
1289.20	54.11	0.54	1.70	1.15	99.50	85.00	0.09	1289.20
1290.00	127.33	0.76	2.50	1.90	167.50	85.00	0.10	1290.01
1290.80	221.99	0.94	3.30	2.63	235.50	85.00	0.10	1290.81

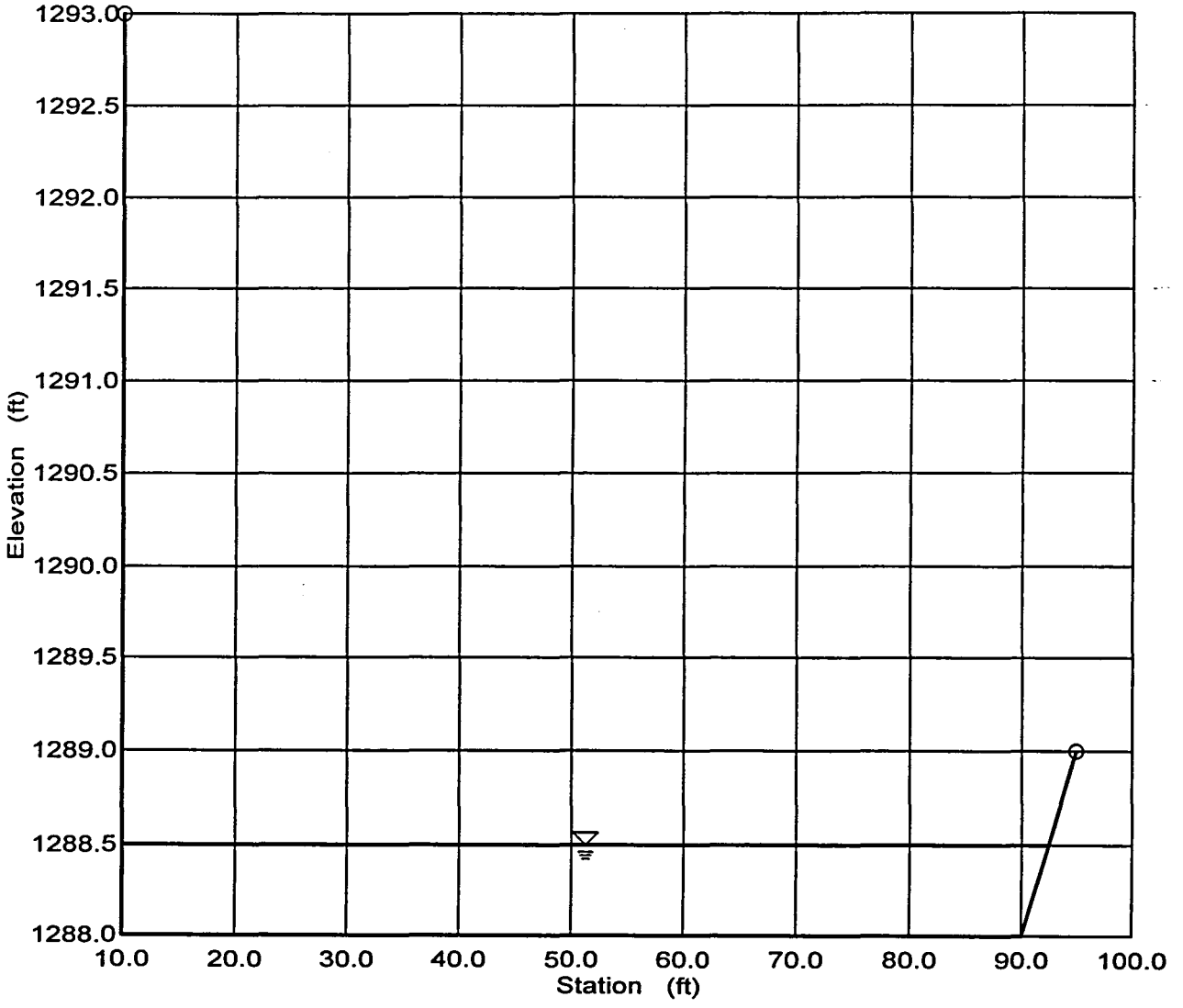
NOTES:

- This is Normal Depth Flow that occurs along Eastern Canal, east of the block wall

PA047NDSER.SEC
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\pa047nde.fm2
Worksheet	PA47 ND FLOW ALONG EC <RESIDENTIAL AREA>
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.030	
Channel Slope	0.000100	ft/ft
Water Surface Elevation	1,288.50	ft
Discharge	12.49	cfs



PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	6/22/00

Uniform Flow Computation

LOCATION/DESCRIPTION:

South of Adobe Street, flow along a residential Street

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	9	Bed Slope:	3.97E-04		
Bank Stations.....Left:	1288.56	.....Right:	1288.56		
Encroatchment Stations.....Left:	1288.62	.....Right:	1288.62		
Elevation.....Max:	1288.62	.....Min:	1288.00		
Manning's n.....Left OB:	0.030	....Channel:	0.015	..Right OB:	0.030

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1288.62	50.00	2	1288.56	54.00	3	1288.50	58.00
4	1288.00	58.00	5	1288.34	75.00	6	1288.00	92.00
7	1288.50	92.00	8	1288.56	96.00	7	1288.62	100.00

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Mean Velocity (fps)	Depth (ft)	Hydraulic Radius (ft)	Area (ft^2)	Top Water (ft)	Froude Number	Energy Gradeline (ft)
1288.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1288.00
1288.80	29.36	1.16	0.80	0.49	25.26	50.00	0.29	1288.82
1289.00	55.30	1.57	1.00	0.68	35.26	50.00	0.33	1289.04
1289.20	82.28	1.82	1.20	0.87	45.26	50.00	0.34	1289.25
1290.00	228.60	2.68	2.00	1.58	85.26	50.00	0.36	1290.11
1290.80	427.42	3.41	2.80	2.26	125.26	50.00	0.38	1290.98

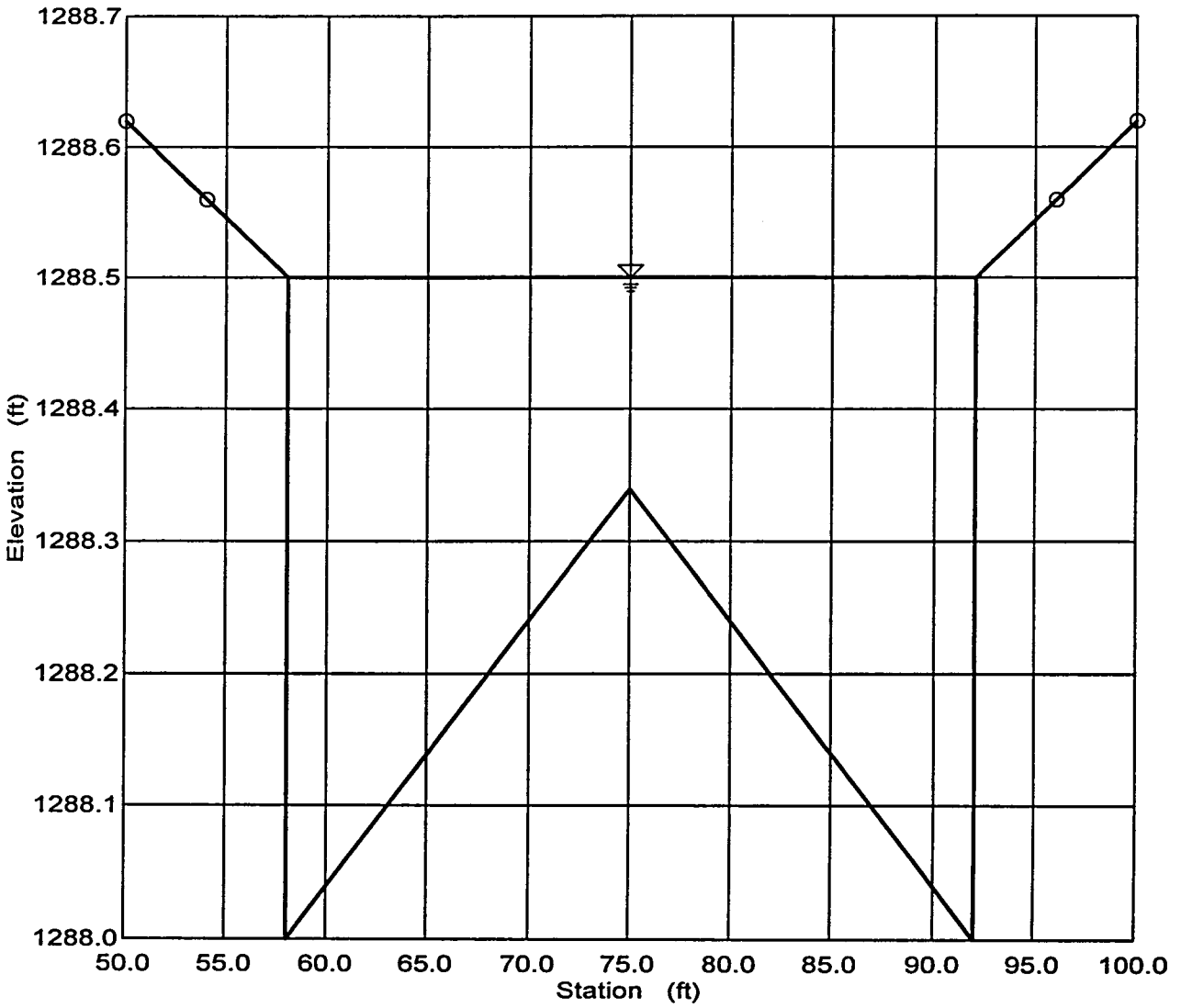
NOTES:

- This is Normal Depth Flow that occurs along N Helms St.
- A typical residential street cross section is used.

PA047NDS.SEC
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\pa047nde.fm2
Worksheet	PA47 ND FLOW ALONG N Helms Street
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.015	
Channel Slope	0.000424	ft/ft
Water Surface Elevation	1,288.50	ft
Discharge	10.72	cfs



PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	5/18/99

Weir Flow Computation

LOCATION/DESCRIPTION:

South of Adobe street, flow that could overtop Eastern Canal.

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 4

Bank Stations.....Left: 0.00 .....Right: 937.32

Encroatchment Stations.....Left: 0.00 .....Right: 937.32

Elevation.....Max: 1290.00 .....Min: 1289.00

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1290.00	10.00	2	1289.00	93.07	3	1289.20	873.49
4	1289.20	937.32						

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1289.00	0.00	0.00	0.00	0.00
1289.20	21.64	0.20	93.07	10.97
1290.00	2323.08	1.00	893.49	794.98
1290.80	5610.13	1.80	893.49	1536.84

NOTES:

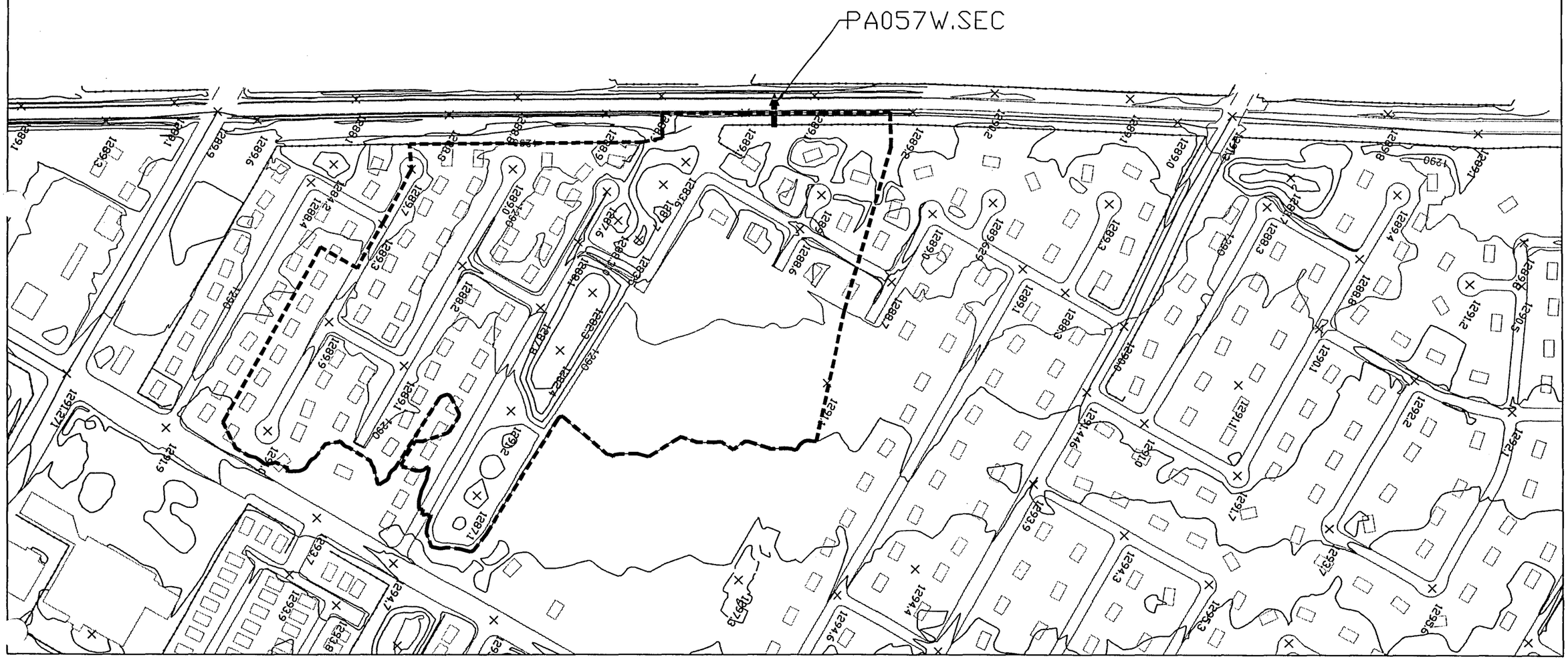
Ponding Area PA57

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Weir Flow Computation Sheet

PA57

0 150 300 600

Scale 1'' = 300'



PRIMATECH
ENGINEERS & CONSULTANTS

Subject: **Eastern Canal North FDS**
Composite Storage Volume Computations
Ponding Areas

By: **F. Braileanu**
Checked: **W. Haas**
Project No.: **FCD98-36**

Ponding/Reservior I.D. **PA57**

Weir Coefficient = 2.6
Min Weir Crest Elevation = 1289.00

Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Capacity on North-East Side of Canal: Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1282.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1283.50	0.53	0.27	0.32	0.32	0.00	0.00	0.00	0.00	0.00	0.00
1283.60	0.58	0.55	0.06	0.37	0.00	0.00	0.00	0.00	0.00	0.00
1284.00	0.75	0.66	0.27	0.64	0.00	0.00	0.00	0.00	0.00	0.00
1286.00	1.64	1.19	2.39	3.03	0.00	0.00	0.00	0.00	0.00	0.00
1288.00	6.87	4.25	8.51	11.54	0.00	0.00	0.00	0.00	0.00	0.00
1288.80	11.88	9.38	7.50	19.04	0.00	0.00	0.00	0.00	0.00	0.00
1288.90	12.51	12.20	1.22	20.26	0.00	0.00	0.00	0.00	0.00	0.00
1289.00	13.14	12.82	1.28	21.54	0.00	0.00	0.00	0.00	0.00	0.00
1289.10	13.76	13.45	1.34	22.88	22.28	0.00	0.00	0.00	0.00	22.28
1290.00	19.40	16.58	14.92	37.81	1750.82	0.00	0.00	0.00	0.00	1750.82

NOTES: The flow may overtop the Eastern Canal.
For the flow that runs South out of the ponding area, the Normal Depth approach was considered.

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	5/18/99

Weir Flow Computation

LOCATION/DESCRIPTION:

South of Adobe street, flow that could overtop Eastern Canal.

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 7

Bank Stations.....Left: 100.00 .....Right: 775.30

Encroatchment Stations.....Left: 100.00 .....Right: 775.30

Elevation.....Max: 1289.10 .....Min: 1289.00

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1289.00	100.00	2	1289.10	440.20	3	1289.00	775.30

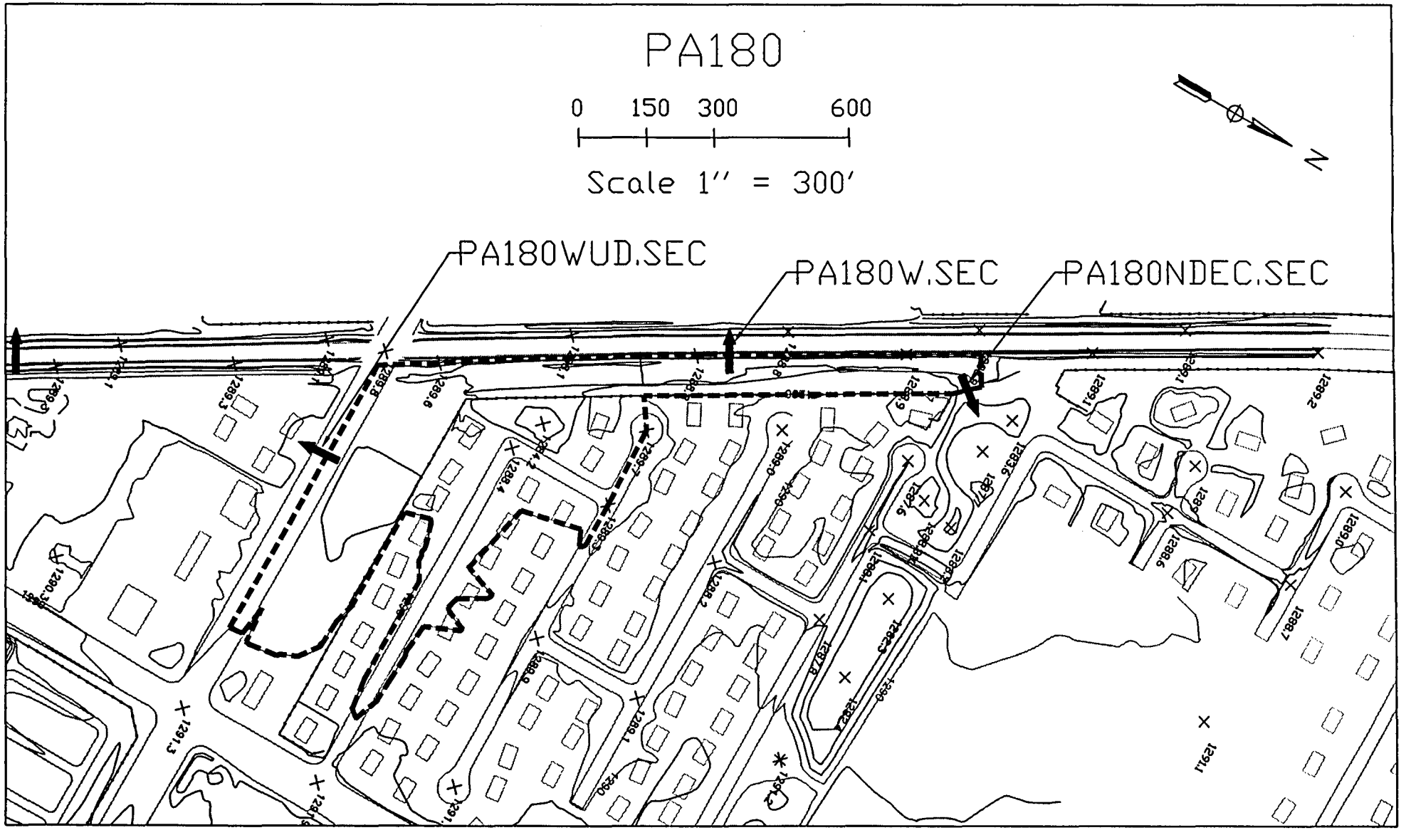
COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1289.00	0.00	0.00	0.00	0.00
1289.10	22.28	0.10	675.30	33.77
1289.60	771.25	0.60	675.30	371.42
1290.00	1750.82	1.00	675.30	641.54

NOTES:

Ponding Area PA180

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Uniform Flow Computation Sheet
- Weir Flow Computation Sheets
- Culvert Flow Computation Sheet
- Supporting Nomograph for Culvert Flow Computation Sheet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PA180WUD.SEC
PA180W.SEC
PA180NDEC.SEC

PRIMATECH
ENGINEERS & CONSULTANTS

Subject:	Eastern Canal North FDS	By:	F. Braileanu
	Composite Storage Volume Computations	Checked:	W. Haas
	Ponding Areas	Project No.:	FCD98-36

Ponding/Reservior I.D. **PA180**

Weir Coefficient = 2.6

Min Weir Crest Elevation = 1288.80

						Capacity on North-East Side of Canal				
Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Weir Flow Diverted to PA181 [cfs]	Estimated Surface Flow Along the Canal [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1284.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1286.00	0.15	0.08	0.13	0.13	0.00	0.00	0.00	10.10	0.00	10.10
1287.00	1.29	0.72	0.72	0.85	0.00	0.00	0.00	18.40	0.00	18.40
1288.00	2.42	1.86	1.86	2.71	0.00	0.00	63.19	26.80	63.19	89.99
1288.80	5.15	3.79	3.03	5.74	0.00	0.00	178.99	32.00	178.99	210.99
1289.00	5.83	5.49	1.10	6.84	87.69	0.00	214.00	33.20	214.00	334.89
1289.60	7.88	6.85	4.11	10.95	1407.51	267.31	333.69	37.60	333.69	2046.11
1290.00	9.24	8.56	3.42	14.37	3106.02	889.50	423.13	41.20	423.13	4459.85

NOTES: The flow may overtop the Eastern Canal.
For the flow that runs South out of the ponding area, the Normal Depth approach was considered.
The culvert was not included in the stage/discharge relationships because by-passes PA181 and discharges into PA64

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	6/22/00

Uniform Flow Computation

LOCATION/DESCRIPTION:

Open Flow between PA180 and PA57 next to Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points: Bed Slope: 1.00E-03

Bank Stations.....Left: 100.00 .....Right: 148.50

Encroatchment Stations.....Left: 100.00 .....Right: 148.50

Elevation.....Max: 1288.00 .....Min: 1287.00

Manning's n.....Left OB: 0.03 .Channel: 0.03 ..Right OB: 0.03

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1288.00	100.00	2	1287.00	105.00	3	1287.00	1043.50
4	1288.00	148.50						

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Mean Velocity (fps)	Depth (ft)	Hydraulic Radius (ft)	Area (ft^2)	Top Water (ft)	Froude Number	Energy Gradeline (ft)
1287.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1287.00
1287.20	4.16	0.53	0.20	0.19	7.90	40.50	0.21	1287.20
1287.40	13.32	0.82	0.40	0.38	16.20	42.50	0.23	1287.41
1287.60	26.44	1.06	0.60	0.56	24.90	44.50	0.25	1287.62
1287.80	43.12	1.27	0.80	0.73	34.00	46.50	0.26	1287.83
1288.00	63.19	1.45	1.00	0.89	43.50	48.50	0.27	1288.03
1288.80	178.99	2.17	1.80	1.64	82.30	48.50	0.29	1288.87
1289.00	214.00	2.33	2.00	1.81	92.00	48.50	0.30	1289.08
1289.60	333.69	2.76	2.60	2.33	121.10	48.50	0.31	1289.72
1290.00	423.13	3.01	3.00	2.67	140.50	48.50	0.31	1290.14

NOTES:

PA180NDEC.SEC
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\pa180.fm2
Worksheet	OPEN FLOW FROMPA180 TO PA57
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.001000	ft/ft
Water Surface Elevation	1,287.60	ft

Elevation range: 1,287.00 ft to 1,288.00 ft.

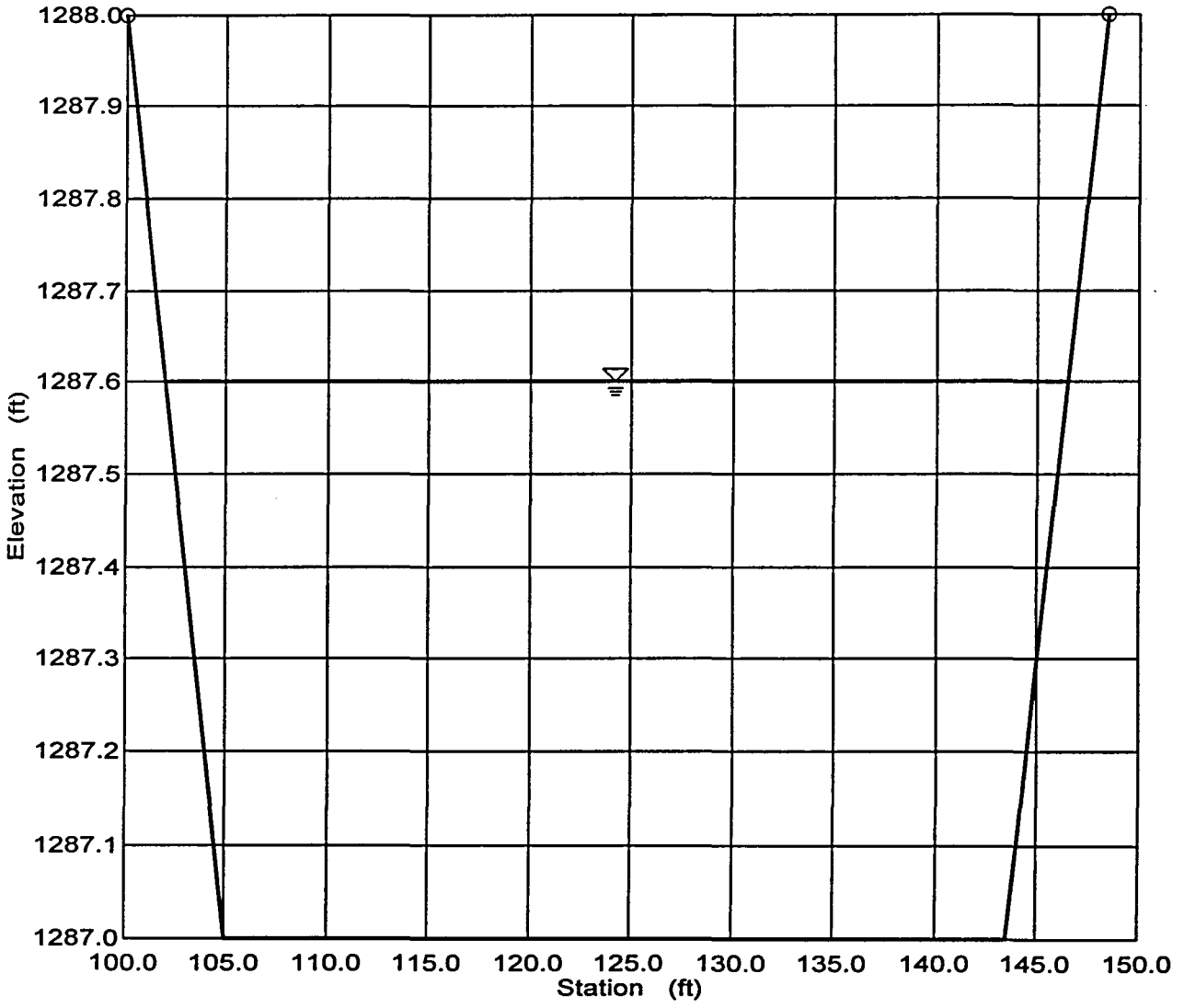
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
100.00	1,288.00	100.00	148.50	0.030
105.00	1,287.00			
143.50	1,287.00			
148.50	1,288.00			

Results		
Wtd. Mannings Coefficient	0.030	
Discharge	26.44	cfs
Flow Area	24.90	ft²
Wetted Perimeter	44.62	ft
Top Width	44.50	ft
Height	0.60	ft
Critical Depth	1,287.24	ft
Critical Slope	0.021286	ft/ft
Velocity	1.06	ft/s
Velocity Head	0.02	ft
Specific Energy	1,287.62	ft
Froude Number	0.25	
Flow is subcritical.		

PA180NDEC.SEC
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\pa180.fm2
Worksheet	OPEN FLOW FROMPA180 TO PA57
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.030	
Channel Slope	0.001000	ft/ft
Water Surface Elevation	1,287.60	ft
Discharge	26.44	cfs



PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	5/18/99

Weir Flow Computation

LOCATION/DESCRIPTION:

Flow that could overtop University Drive.

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 3

Bank Stations.....Left: 100.00 .....Right: 762.98

Encroatchment Stations.....Left: 100.00 .....Right: 762.98

Elevation.....Max: 1290.00 .....Min: 1289.00

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1289.60	100.00	2	1289.00	441.49	3	1290.00	762.98

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1289.00	0.00	0.00	0.00	0.00
1289.60	267.31	0.60	530.38	159.12
1290.00	889.50	1.00	662.98	397.79

NOTES:

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	5/18/99

Weir Flow Computation

LOCATION/DESCRIPTION:

North of University Drive, flow that could overtop Eastern Canal.

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 3

Bank Stations.....Left: 100.00 .....Right: 1436.75

Encroatchment Stations.....Left: 100.00 .....Right: 1436.75

Elevation.....Max: 1289.60 .....Min: 1288.80

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1289.60	100.00	2	1289.60	235.45	3	1288.80	804.90
4	1288.90	1270.15	5	1289.00	1436.75			

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1288.80	0.00	0.00	0.00	0.00
1288.90	14.26	0.10	465.25	23.26
1289.00	87.69	0.20	745.74	91.78
1289.60	1407.51	0.80	1201.30	685.01
1290.00	3106.02	1.20	1336.65	1219.59

NOTES:

Subject:	Eastern Canal North FDS	By:	F. Braileanu
	Composite Storage Volume Computation	Checked:	D. Dust
	Ponding Areas	Project No.:	FCD98-36

Ponding/Reservoir I.D. **PA180**

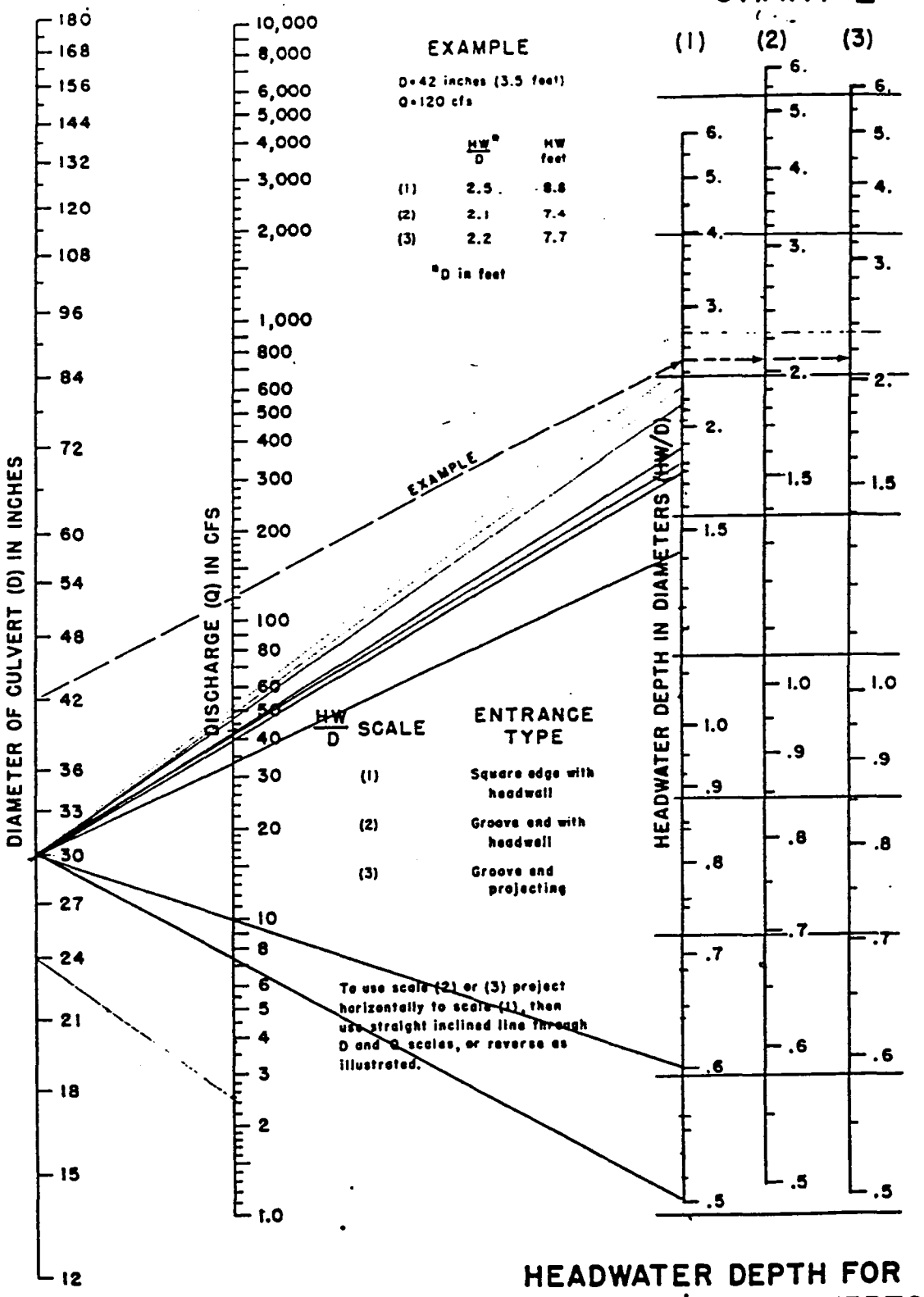
Culvert Type: 30-inch RCP

Bottom Elevation at Culvert Inlet (ft)	Water Surface Elevation (ft)	Headwater (ft)	Headwater-Culvert Diameter Ratio	Discharge (cfs)
1284.43	1285.68	1.25	0.50	7.40
1284.43	1286.00	1.57	0.63	10.10
1284.43	1288.00	3.57	1.43	26.80
1284.43	1288.80	4.37	1.75	32.00
1284.43	1289.00	4.57	1.83	33.20
1284.43	1289.20	4.77	1.91	34.40
1284.43	1289.60	5.17	2.07	37.60
1284.43	1289.80	5.37	2.15	39.20
1284.43	1290.00	5.57	2.23	41.20

NOTE:

The discharge was calculated using nomographs for RCP culverts with inlet control.
The culvert discharges south of Val Vista Drive

CHART 2



HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

HEADWATER SCALES 2&3
REVISED MAY 1964

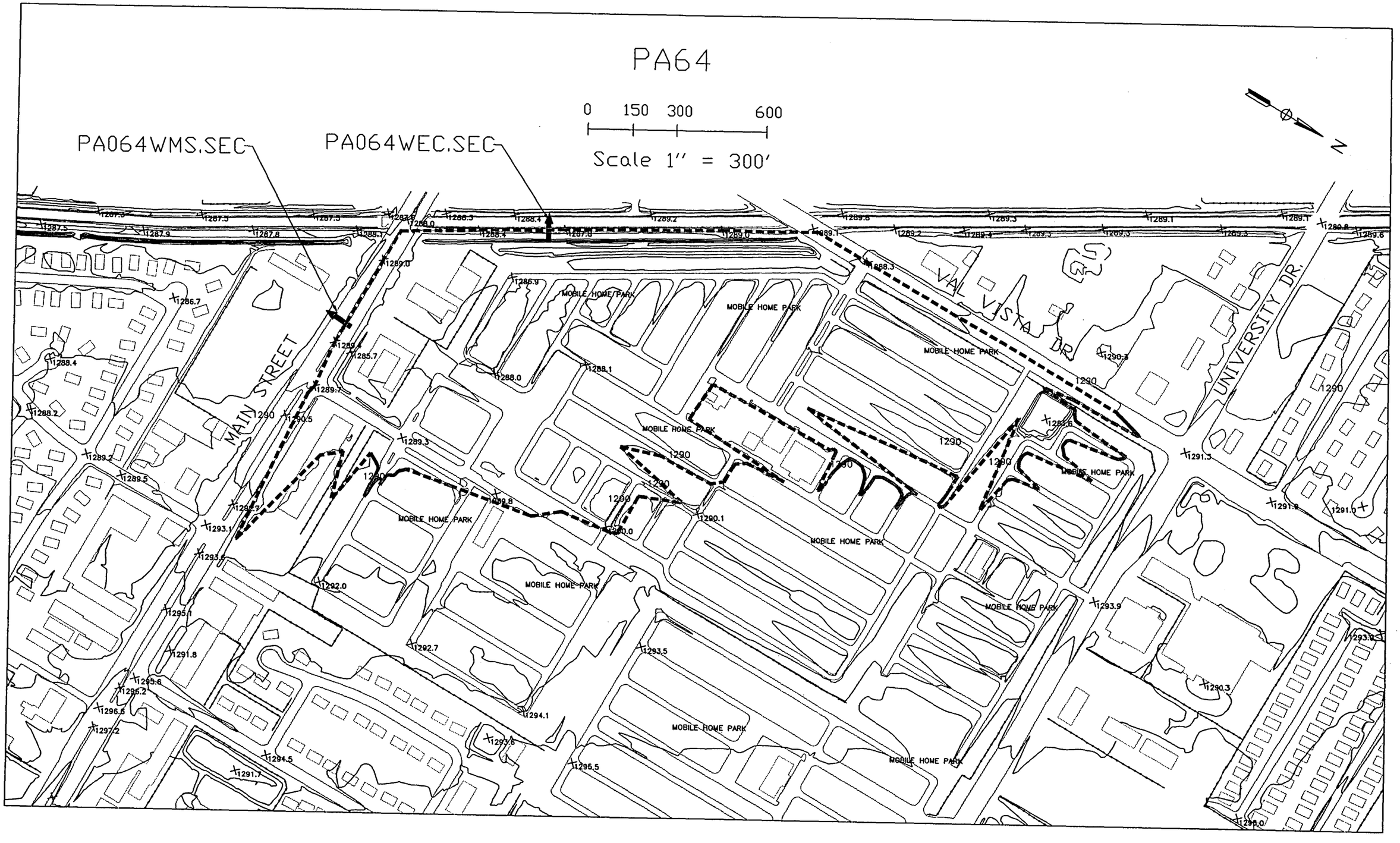
BUREAU OF PUBLIC ROADS JAN. 1963

RCP

Ponding Area PA64

- Map showing the Limits of the Ponding Area (dashed line),
- Summary Table
- Weir Flow Computation Sheets
- Culvert Flow Computation Sheet
- Supporting Nomograph for Culvert Flow Computation Sheet

PA64


0 150 300 600
Scale 1" = 300'
N
PA064WMS.SEC
PA064WEC.SEC
MAIN STREET
VAL VISTA DR.
UNIVERSITY DR.
MOBILE HOME PARK

PRIMATECH
ENGINEERS & CONSULTANTS

Subject:	Eastern Canal North FDS	By:	F. Braileanu
	Composite Storage Volume Computations	Checked:	W. Haas
	Ponding Areas	Project No.:	FCD98-36

Ponding/Reservoir I.D. **PA64**

Weir Coefficient = 2.7

Min Weir Crest Elevation = 1287.80 ft

						Capacity on North-East Side of Canal				
Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1283.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1284.00	0.32	0.16	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00
1286.00	1.17	0.74	1.49	1.50	0.00	0.00	0.00	16.00	16.00	16.00
1287.80	9.00	5.08	9.15	10.65	0.00	0.00	0.00	36.00	36.00	36.00
1288.00	9.87	9.43	1.89	12.54	17.80	0.00	0.00	37.50	37.50	55.30
1288.40	15.94	12.90	5.16	17.70	343.90	17.80	0.00	40.00	57.80	401.70
1289.00	25.05	20.50	12.30	30.00	1897.40	176.20	0.00	45.00	221.20	2118.60
1289.10	26.57	25.81	2.58	32.58	2276.10	225.90	0.00	46.00	271.90	2548.00
1289.40	31.12	28.85	8.65	41.23	3688.50	481.90	0.00	47.00	528.90	4217.40

NOTES:
- The flow may overtop Eastern Canal and Main Street. The weir coefficient and Min. weir crest elevation given above were used for the flow that overtops the Canal.
- For the flow that overtops Main Street, a weir coefficient of 2.8 and a minimum weir crest elevation of 1288.00 ft were considered.
- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

Between Val Vista Drive and Main Street, flow that overtops Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 5

Bank Stations.....Left: 100.00 .....Right: 1461.90

Encroatchment Stations.....Left: 100.00 .....Right: 1461.90

Elevation.....Max: 1289.10 .....Min: 1287.80

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1288.00	100.00	2	1288.40	341.53	3	1287.80	630.88
4	1289.00	1159.75	5	1289.10	1461.90			

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1288.00	17.80	0.20	184.60	18.50
1288.40	343.90	0.60	795.30	214.40
1289.00	1897.40	1.20	1059.80	770.90
1289.10	2276.10	1.30	1361.90	892.00
1289.40	3688.50	1.60	1361.90	1300.60
1289.50	4227.00	1.70	1361.90	1436.80

NOTES:

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

Between Val Vista Drive and Main Street, flow that overlops Main Street

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 7

Bank Stations.....Left: 100.00 .....Right: 1135.90

Encroatchment Stations.....Left: 100.00 .....Right: 1135.90

Elevation.....Max: 1292.00 .....Min: 1288.00

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1292.00	100.00	2	1290.50	354.85	3	1290.00	460.88
4	1289.70	492.66	5	1289.40	656.88	6	1289.00	978.55
7	1288.00	1135.86						

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1288.40	17.80	0.40	62.90	12.60
1289.00	176.20	1.00	157.30	78.70
1289.10	225.90	1.10	237.70	98.40
1289.40	481.90	1.40	479.00	205.90
1289.70	946.60	1.70	643.20	374.20

NOTES:

Subject:	**Eastern Canal North FDS**	By:	**F. Braileanu**
	Composite Storage Volume Computations	Checked:	**D. Dust**
	Ponding Areas	Project No.:	**FCD98-36**

Ponding/Reservoir I.D. **PA64**

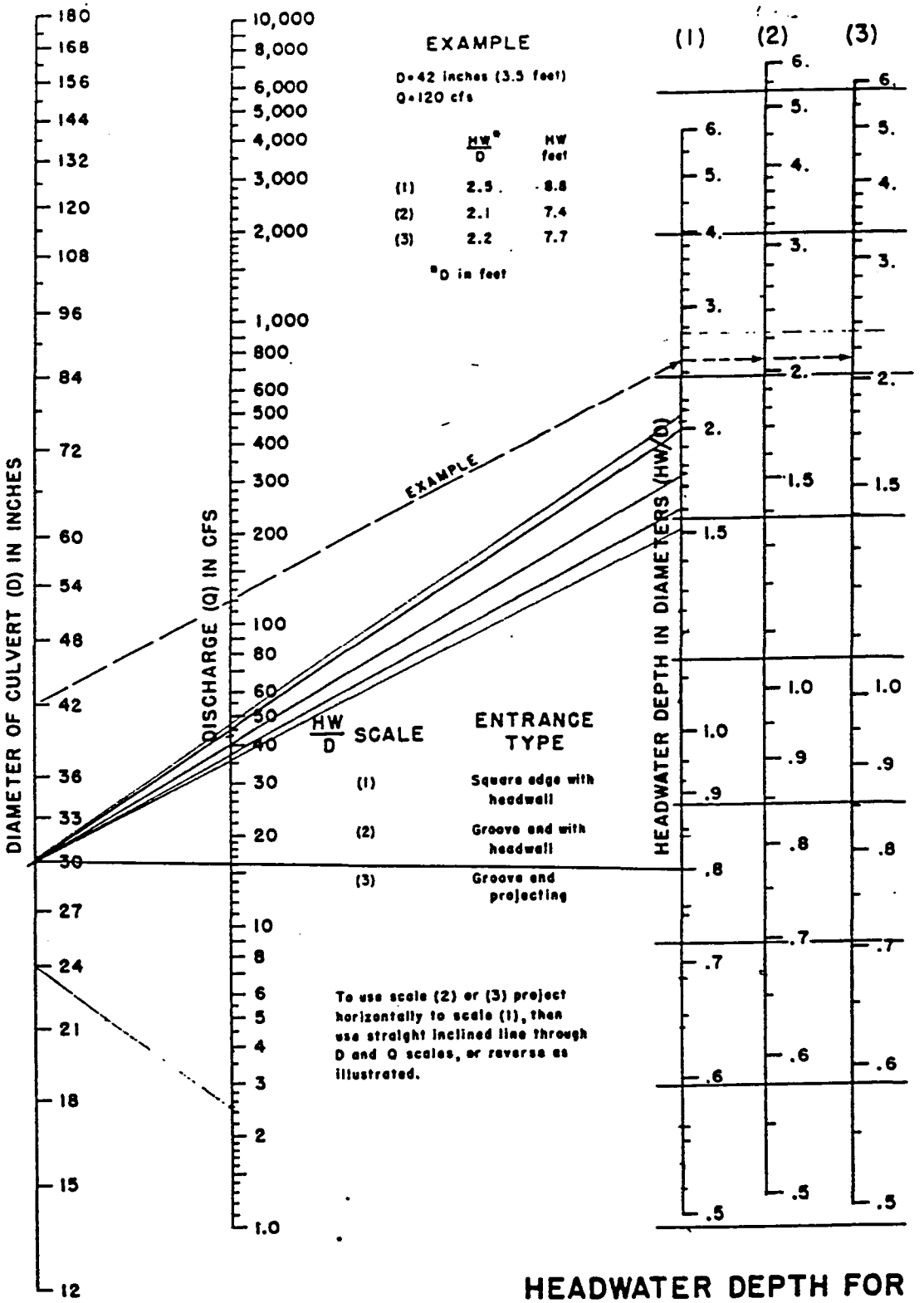
Culverts Type: 30-inch RCP

Bottom Elevation at Culvert Inlet (ft)	Water Surface Elevation (ft)	Headwater (ft)	Headwater-Culvert Diameter Ratio	Discharge (cfs)
1284.00	1284.00	0.00	0.00	0.00
1284.00	1286.00	2.00	0.80	16.00
1284.00	1287.80	3.80	1.52	36.00
1284.00	1288.00	4.00	1.60	37.50
1284.00	1288.40	4.40	1.76	40.00
1284.00	1289.00	5.00	2.00	45.00
1284.00	1289.10	5.10	2.04	46.00
1284.00	1289.40	5.40	2.16	47.00

NOTE:

The discharge was calculated using nomographs for RCP culverts with inlet control.

CHART 2



HEADWATER SCALES 2&3
REVISED MAY 1964

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

BUREAU OF PUBLIC ROADS JAN. 1963

RCP

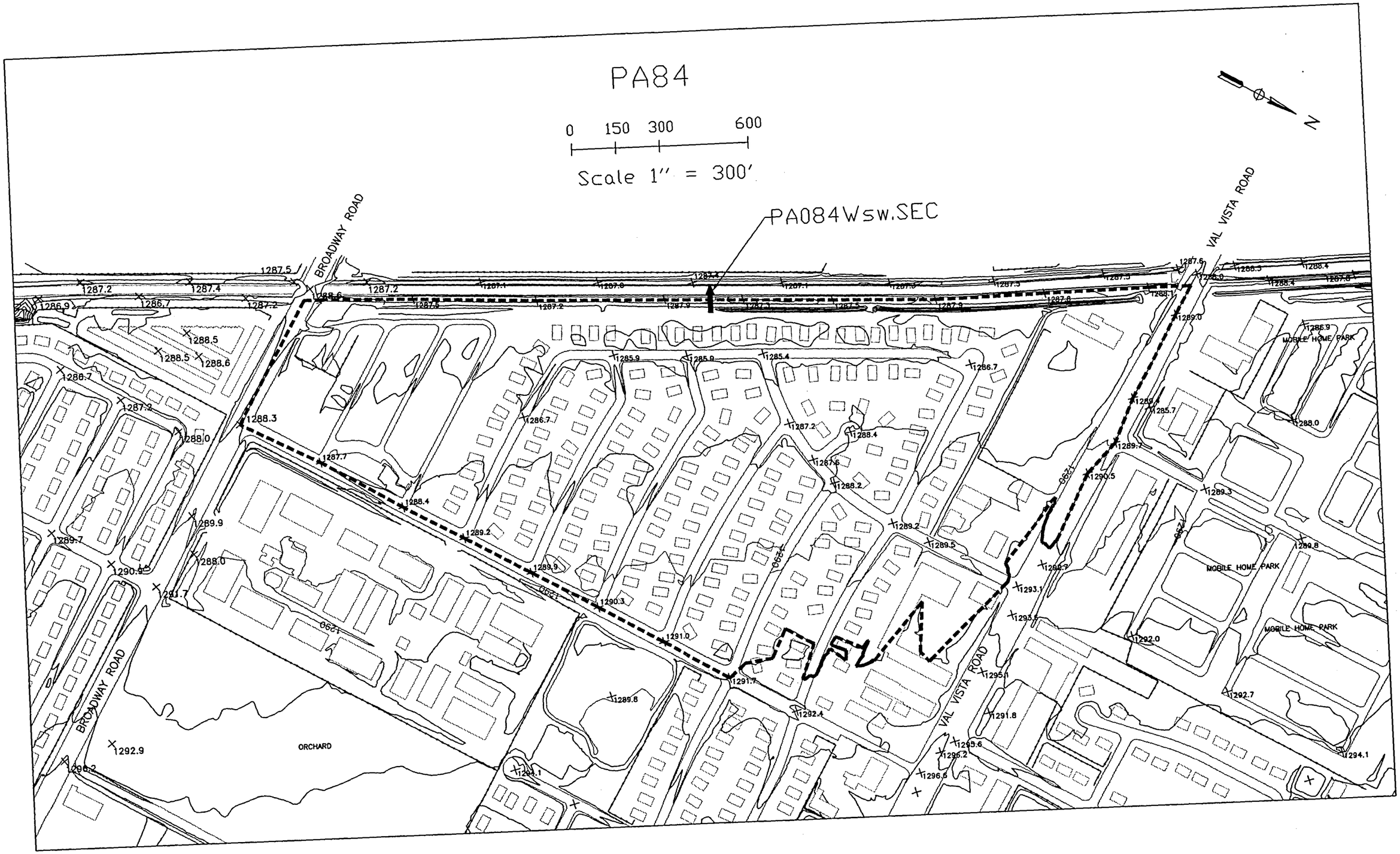
Ponding Area PA84

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Weir Flow Computation Sheet
- Culvert Flow Computation Sheet
- Supporting Nomographs for Culvert Flow Computation Sheet

PA84

0 150 300 600

Scale 1" = 300'



PRIMATECH
ENGINEERS & CONSULTANTS

Subject:	Eastern Canal North FDS	By:	F. Braileanu
	Composite Storage Volume Computations	Checked:	A. Tang
	Ponding Areas	Project No.:	FCD98-36

Ponding/Reservoir I.D. **PA84**

Weir Coefficient = 2.7

Min Weir Crest Elevation = 1287.20

Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Capacity on North-East Side of Canal: Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1279.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1281.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.00	39.00	39.00
1282.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.80	85.80	85.80
1284.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	193.44	193.44	193.44
1286.00	9.63	4.81	9.63	9.63	0.00	0.00	0.00	297.96	297.96	297.96
1287.20	25.68	17.65	21.18	30.81	0.00	0.00	0.00	360.36	360.36	360.36
1287.30	27.03	26.36	2.64	33.45	6.90	0.00	0.00	365.04	365.04	371.94
1287.50	29.73	28.38	5.68	39.12	145.20	0.00	0.00	368.16	368.16	513.36
1287.70	32.43	31.08	6.22	45.34	571.30	0.00	0.00	372.84	372.84	944.14
1287.80	33.78	33.10	3.31	48.65	905.50	0.00	0.00	375.96	375.96	1281.46

NOTES:

- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*

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Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

North of Broadway Road, flow that overtops Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 11

Bank Stations.....Left: 100.00 .....Right: 30520.80

Encroatchment Stations.....Left: 100.00 .....Right: 3052.80

Elevation.....Max: 1288.60 .....Min: 1287.20

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1288.60	100.00	2	1288.00	157.46	3	1287.50	465.09
4	1287.20	882.49	5	1287.90	1318.80	6	1287.30	1585.52
7	1287.50	1888.81	8	1287.90	2236.31	9	1287.8	2605.32
10	1288.10	2956.04	11	1288.00	3052.78			

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1287.30	6.90	0.10	201.60	10.10
1287.50	145.20	0.30	996.60	129.90
1287.70	571.30	0.50	1506.80	380.20
1287.80	905.50	0.60	1762.20	543.80
1287.90	1343.60	0.70	2502.30	756.90
1288.00	1916.40	0.80	2679.70	1016.00

NOTES:

Subject:	Eastern Canal North FDS	By:	F. Braileanu
	Composite Storage Volume Computations	Checked:	A. Tang
	Ponding Areas	Project No.:	FCD98-36

Ponding/Reservoir I.D. **PA84**

Culverts Type: 1 x 54-inch RCP

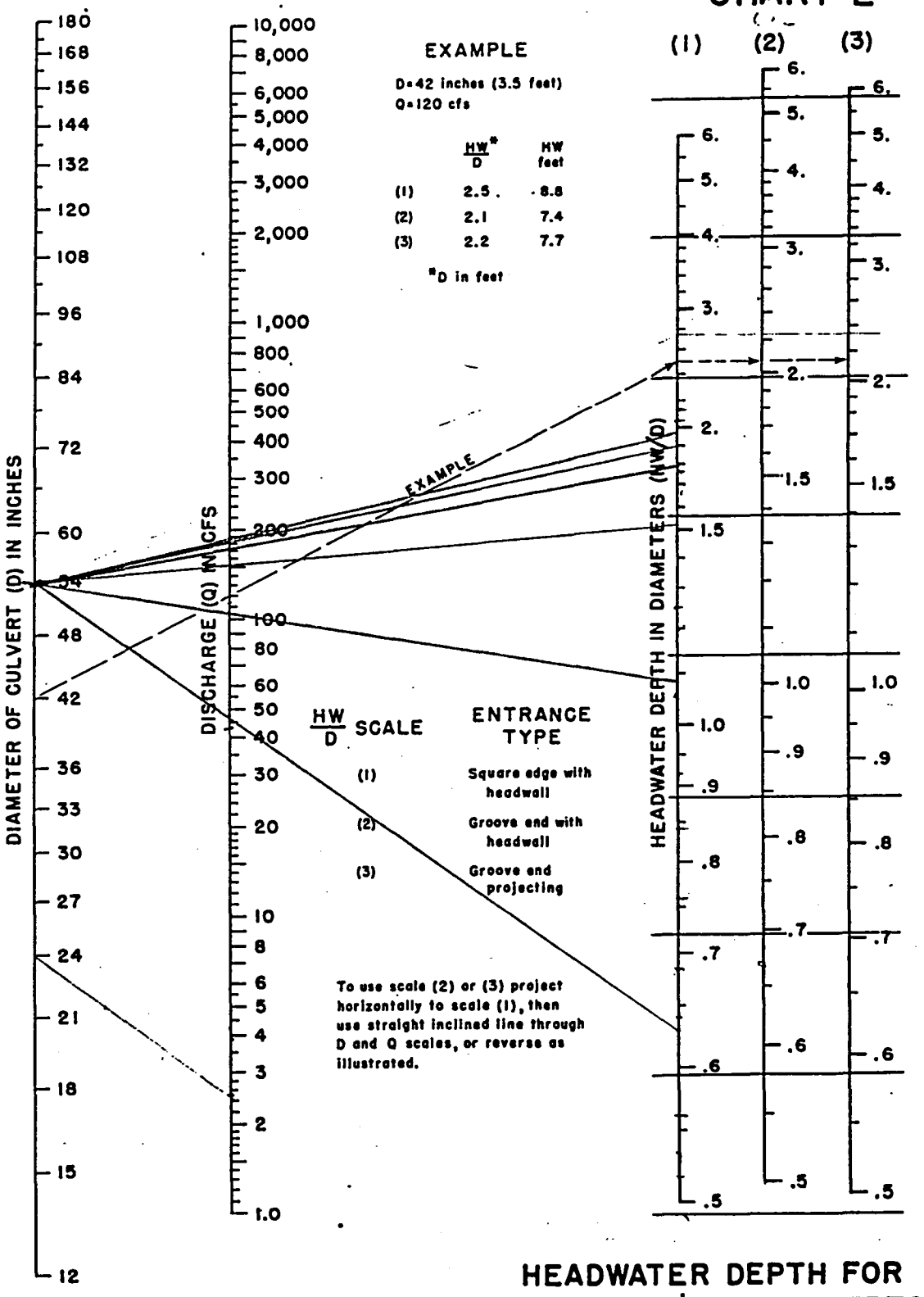
1 x 72-inch RCP

Bottom Elevation at Culvert Inlet (ft)	Water Surface Elevation (ft)	Headwater for 54" culvert (ft)	Headwater-Culvert Diameter Ratio	Discharge (cfs)
1279.15	1279.15	0.00	0.00	0
1279.15	1281.00	1.85	0.41	16
1279.15	1282.00	2.85	0.63	36
1279.15	1284.00	4.85	1.08	81
1279.15	1286.00	6.85	1.52	119
1279.15	1287.20	8.05	1.79	134
1279.15	1287.30	8.15	1.81	137
1279.15	1287.50	8.35	1.86	139
1279.15	1287.70	8.55	1.90	142
1279.15	1287.80	8.65	1.92	144
1279.15	1287.90	8.75	1.94	145
1279.15	1288.00	8.85	1.97	148

Bottom Elevation at Culvert Inlet (ft)	Water Surface Elevation (ft)	Headwater for 72" culvert (ft)	Headwater-Culvert Diameter Ratio	Discharge (cfs)	Total Discharge (cfs)
1279.15	1279.15	0.00	0.00	0	0
1279.15	1281.00	1.85	0.31	23	39
1279.15	1282.00	2.85	0.47	50	86
1279.15	1284.00	4.85	0.81	112	193
1279.15	1286.00	6.85	1.14	179	298
1279.15	1287.20	8.05	1.34	226	360
1279.15	1287.30	8.15	1.36	228	365
1279.15	1287.50	8.35	1.39	229	368
1279.15	1287.70	8.55	1.42	231	373
1279.15	1287.80	8.65	1.44	232	376
1279.15	1287.90	8.75	1.46	234	379
1279.15	1288.00	8.85	1.47	236	384

54" RCP

CHART 2



HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

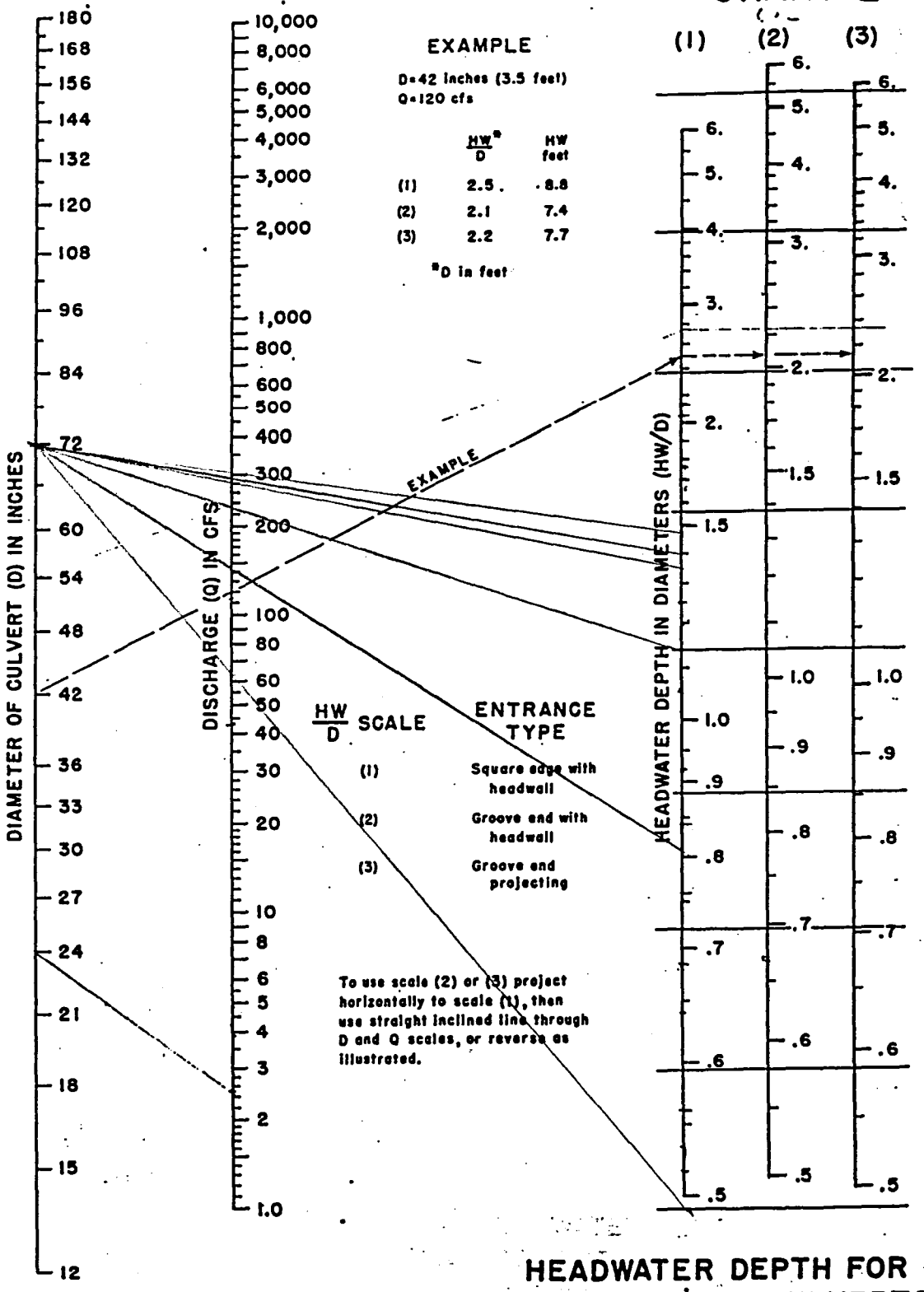
HEADWATER SCALES 2&3
REVISED MAY 1964

BUREAU OF PUBLIC ROADS JAN. 1963

RCP

72" RCP

CHART 2



HEADWATER SCALES 2&3
REVISED MAY 1964

BUREAU OF PUBLIC ROADS JAN. 1963

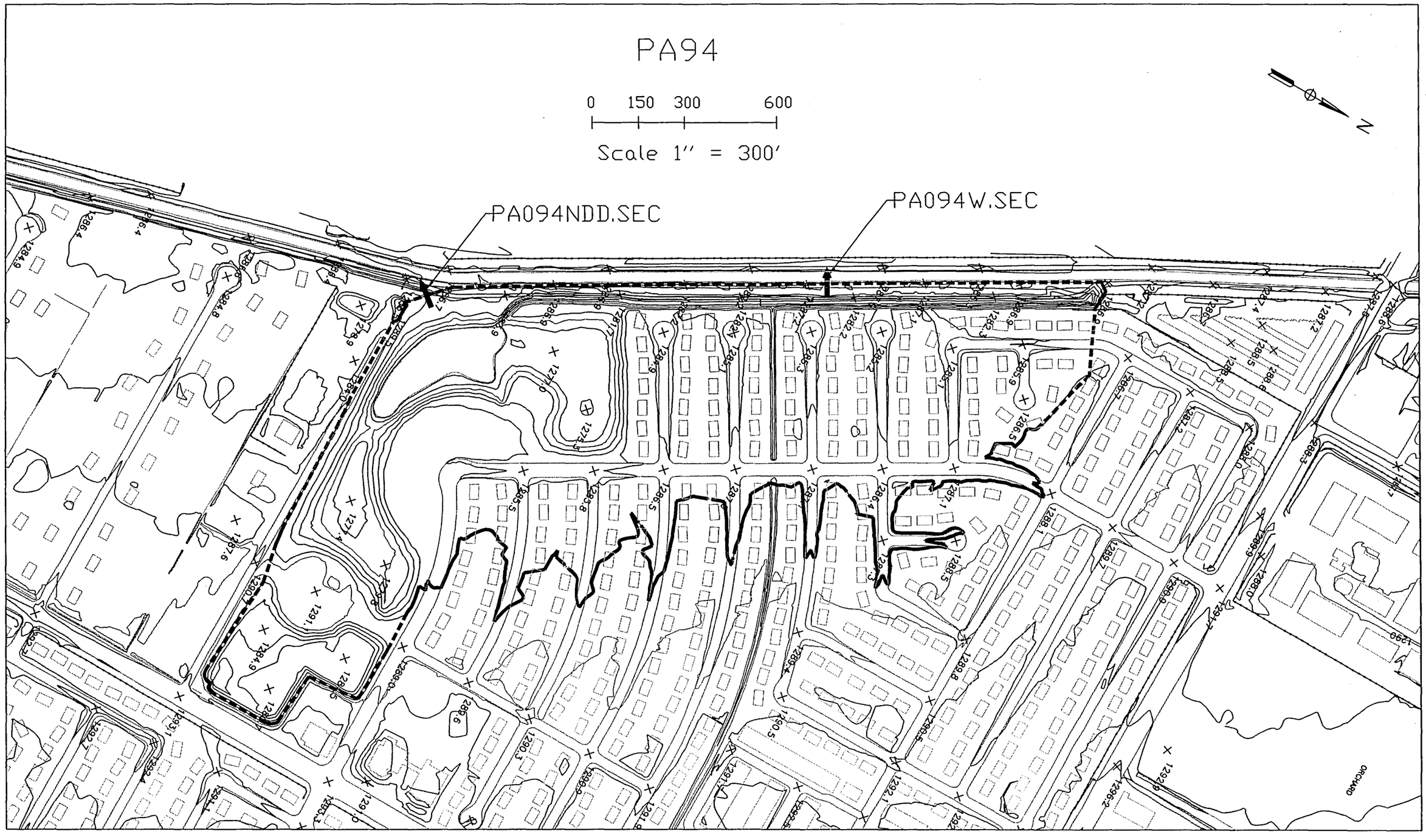
HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

RCP

Ponding Area PA94

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Uniform Flow Computation Sheet
- Weir Flow Computation Sheet

PA94



PRIMATECH
ENGINEERS & CONSULTANTS

Subject: **Eastern Canal North FDS**
Composite Storage Volume Computations
Ponding Areas

By: **F. Braileanu**
Checked: **W. Haas**
Project No.: **FCD98-36**

Ponding/Reservoir I.D. **PA094**

Weir Coefficient = 2.7
Min Weir Crest Elevation = 1285.50

Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Capacity on North-East Side of Canal: Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1275.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1275.30	1.48	0.74	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00
1276.00	1.51	1.50	1.05	1.08	0.00	0.00	0.00	0.00	0.00	0.00
1278.00	4.64	3.08	6.15	7.23	0.00	0.00	0.00	0.00	0.00	0.00
1280.00	6.95	5.80	11.59	18.82	0.00	0.00	0.00	0.00	0.00	0.00
1282.00	10.43	8.69	17.38	36.20	0.00	0.00	0.00	0.00	0.00	0.00
1284.00	14.01	12.22	24.44	60.64	0.00	4.57	0.00	0.00	4.57	4.57
1285.50	19.77	16.89	25.34	85.98	0.00	45.03	0.00	0.00	45.03	45.03
1286.00	21.69	20.73	10.37	96.34	628.39	86.79	0.00	0.00	86.79	715.18
1286.90	33.17	27.43	24.69	121.03	3492.00	205.04	0.00	0.00	205.04	3697.04
1287.10	35.72	34.45	6.89	127.92	5025.69	236.37	0.00	0.00	236.37	5262.06
1287.20	37.00	36.36	3.64	131.56	5845.33	252.67	0.00	0.00	252.67	6098.00

NOTES:
-The flow may overtop Eastern Canal.
- For the flow that runs South out of the ponding area, the Normal Depth approach was considered.
- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	6/22/00

Weir Flow Computation

LOCATION/DESCRIPTION:

South of Broadway Road, flow that may overtop Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 15

Bank Stations.....Left: 0.00 .....Right: 1216.30

Encroatchment Stations.....Left: 0.00 .....Right: 1216.30

Elevation.....Max: 1287.20 .....Min: 1285.50

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1285.50	0.00	2	1285.50	137.15	3	1286.00	234.72
4	1286.00	476.78	5	1286.90	488.34	6	1286.00	547.15
7	1285.50	705.72	8	1286.00	864.28	9	1287.20	915.82
10	1286.00	963.90	11	1285.50	987.90	12	1286.00	1011.90
13	1286.00	1057.67	14	1285.50	1161.54	15	1286.00	1216.32
16	1287.20	1320.66	17	1287.10	1699.87	18	1286.90	2011.00
20	1286.90	2295.07						

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1285.50	0.00	0.00	0.00	0.00
1286.00	628.39	0.50	1294.50	223.90
1286.90	3492.00	1.40	1478.28	1230.90
1287.10	5025.69	1.60	1763.85	1471.63
1287.20	5845.33	1.70	1906.63	1592.00

NOTES:

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Uniform Flow Computation

LOCATION/DESCRIPTION:

South of Broadway Road, Surface flow along the left bank of Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points:	5	Bed Slope:	2.00E-04		
Bank Stations.....Left:	12.80	.....Right:	25.70		
Encroatchment Stations.....Left:	0.00	.....Right:	25.70		
Elevation.....Max:	1284.00	.....Min:	1282.00		
Manning's n.....Left OB:	0.03	....Channel:	0.017	..Right OB:	0.03

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1286.00	29.00	2	1284.00	100.00	3	1283.00	106.00
4	1282.00	109.00	5	1283.00	112.00	6	1284.00	118.00
7	1285.50	186.00						

COMPUTED PARAMETERS:

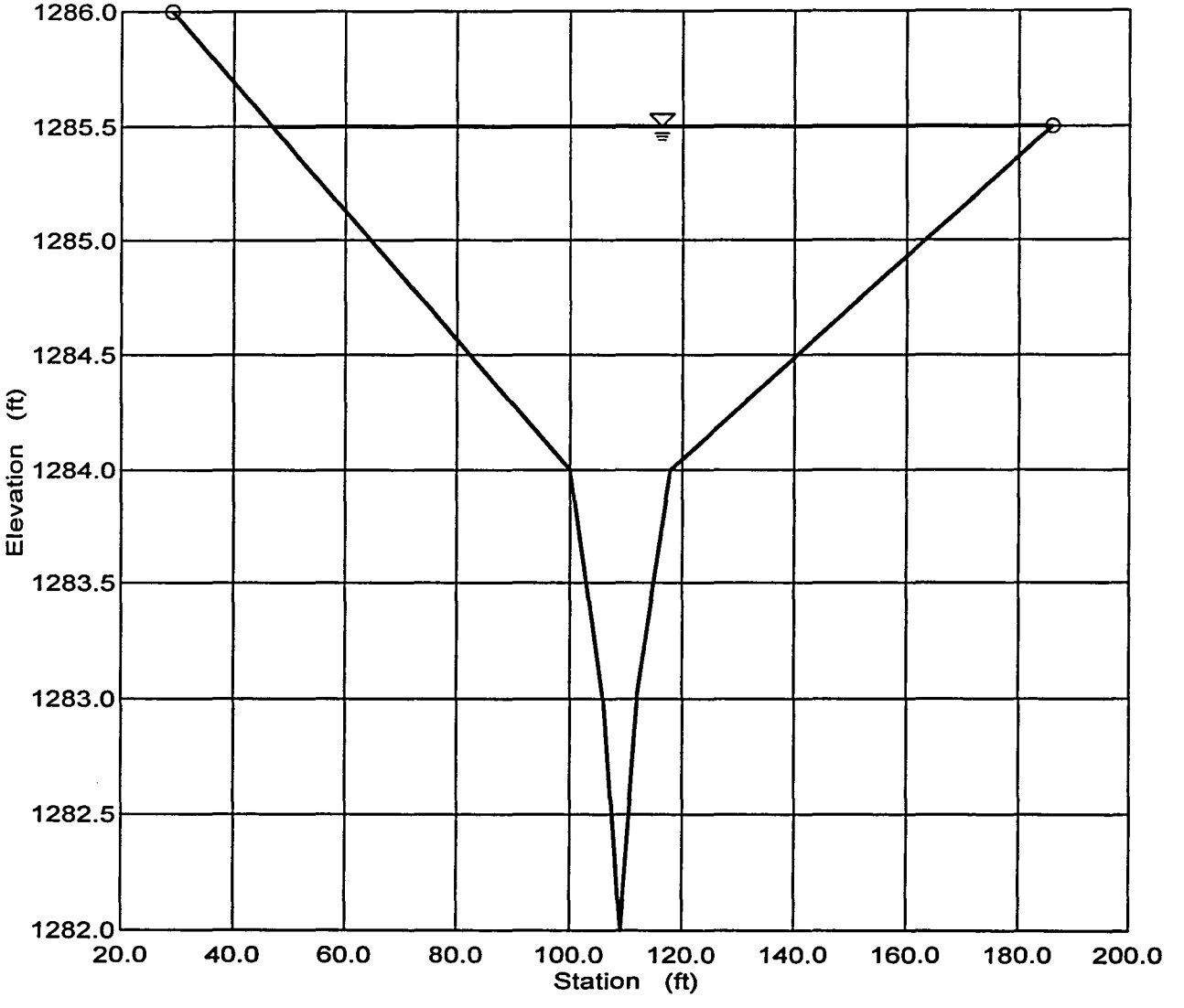
Water Elevation (ft)	Discharge (cfs)	Mean Velocity (fps)	ne	ALPHA	Area (ft^2)	Top Water (ft)	Froude Number
1282.00	0.00	0.00	0.030	1.00	0.00	0.00	0.00
1284.00	4.57	0.30	0.030	1.00	15.00	18.00	0.06
1285.50	45.03	0.34	0.030	1.00	132.94	139.25	0.06
1286.00	86.79	0.42	0.030	1.00	207.00	157.00	0.06
1286.90	205.04	0.59	0.030	1.00	348.30	157.00	0.07
1287.10	236.37	0.62	0.030	1.00	379.70	157.00	0.07
1287.20	252.67	0.64	0.030	1.00	395.40	157.00	0.07

NOTES:

PA094NDD.SEC
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\pa97.fm2
Worksheet	OPEN FLOW OUT OF PA94
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.030	
Channel Slope	0.000050	ft/ft
Water Surface Elevation	1,285.50	ft
Discharge	45.03	cfs



RATING TABLE FOR PA094NDD.SEC
Rating Table for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\pa97.fm2
Worksheet	OPEN FLOW OUT OF PA94
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Constant Data	
Channel Slope	0.000050 ft/ft

Input Data			
	Minimum	Maximum	Increment
Water Surface Elevation	1,282.00	1,287.20	0.10 ft

Rating Table

Water Surface Elevation (ft)	Wtd. Mannings Coefficient	Discharge (cfs)	Velocity (ft/s)
1,282.00	0.030	0.00	0.00
1,282.10	0.030	0.14e-2	0.05
1,282.20	0.030	0.01	0.07
1,282.30	0.030	0.03	0.10
1,282.40	0.030	0.06	0.12
1,282.50	0.030	0.10	0.13
1,282.60	0.030	0.16	0.15
1,282.70	0.030	0.25	0.17
1,282.80	0.030	0.35	0.18
1,282.90	0.030	0.48	0.20
1,283.00	0.030	0.64	0.21
1,283.10	0.030	0.79	0.22
1,283.20	0.030	0.99	0.22
1,283.30	0.030	1.23	0.23
1,283.40	0.030	1.53	0.24
1,283.50	0.030	1.88	0.25
1,283.60	0.030	2.29	0.26
1,283.70	0.030	2.76	0.27
1,283.80	0.030	3.29	0.28
1,283.90	0.030	3.89	0.29
1,284.00	0.030	4.57	0.30
1,284.10	0.030	4.51	0.26
1,284.20	0.030	4.94	0.24
1,284.30	0.030	5.74	0.24
1,284.40	0.030	6.85	0.24
1,284.50	0.030	8.30	0.24

RATING TABLE FOR PA094NDD.SEC
Rating Table for Irregular Channel

Rating Table			
Water Surface Elevation (ft)	Wtd. Mannings Coefficient	Discharge (cfs)	Velocity (ft/s)
1,284.60	0.030	10.08	0.25
1,284.70	0.030	12.22	0.26
1,284.80	0.030	14.74	0.27
1,284.90	0.030	17.66	0.28
1,285.00	0.030	21.02	0.29
1,285.10	0.030	24.82	0.30
1,285.20	0.030	29.10	0.31
1,285.30	0.030	33.88	0.32
1,285.40	0.030	39.18	0.33
1,285.50	0.030	45.03	0.34
1,285.60	0.030	52.36	0.36
1,285.70	0.030	60.20	0.37
1,285.80	0.030	68.55	0.39
1,285.90	0.030	77.41	0.40
1,286.00	0.030	86.79	0.42
1,286.10	0.030	97.95	0.44
1,286.20	0.030	109.64	0.46
1,286.30	0.030	121.83	0.48
1,286.40	0.030	134.52	0.50
1,286.50	0.030	147.70	0.52
1,286.60	0.030	161.35	0.54
1,286.70	0.030	175.46	0.55
1,286.80	0.030	190.03	0.57
1,286.90	0.030	205.04	0.59
1,287.00	0.030	220.49	0.61
1,287.10	0.030	236.37	0.62
1,287.20	0.030	252.67	0.64

PA094NDD.SEC
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\pa97.fm2
Worksheet	OPEN FLOW OUT OF PA94
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.000050	ft/ft
Water Surface Elevation	1,285.50	ft

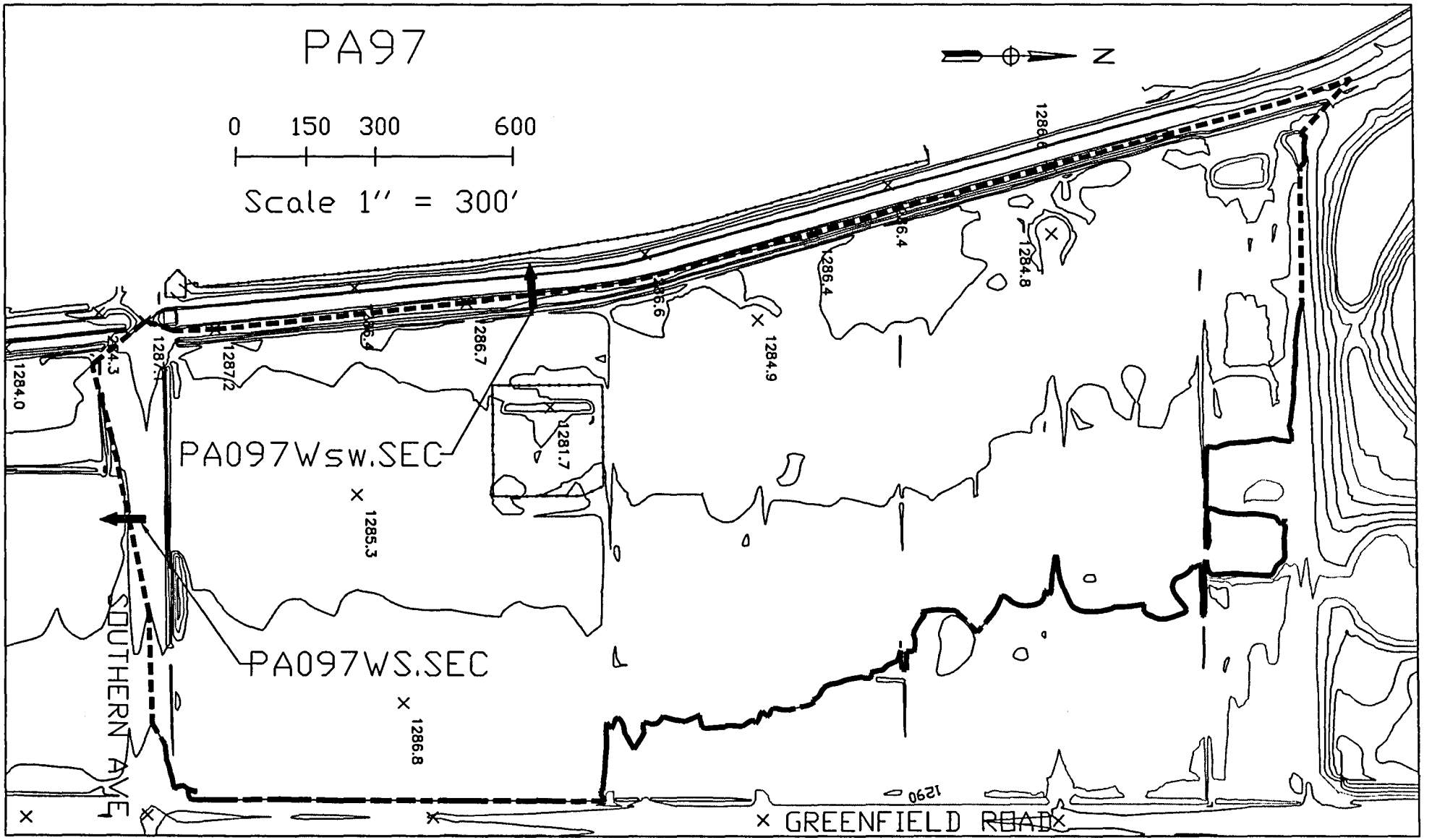
Elevation range: 1,282.00 ft to 1,286.00 ft.

Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
29.00	1,286.00	29.00	186.00	0.030
100.00	1,284.00			
106.00	1,283.00			
109.00	1,282.00			
112.00	1,283.00			
118.00	1,284.00			
186.00	1,285.50			

Results		
Wtd. Mannings Coefficient	0.030	
Discharge	45.03	cfs
Flow Area	132.94	ft²
Wetted Perimeter	139.78	ft
Top Width	139.25	ft
Height	3.50	ft
Critical Depth	1,283.66	ft
Critical Slope	0.015479	ft/ft
Velocity	0.34	ft/s
Velocity Head	0.18e-2	ft
Specific Energy	1,285.50	ft
Froude Number	0.06	
Flow is subcritical.		

Ponding Area PA97

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Weir Flow Computation Sheets
- Culvert Flow Computation Sheet
- Supporting Nomograph for Culvert Flow Computation Sheet


PA97
N
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Scale 1'' = 300'
1286.9
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1286.4
1286.6
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1286.4
1287.2
1287.1
1284.3
1284.0
1281.7
PA097Wsw.SEC
1285.3
PA097WS.SEC
1286.8
1290
GREENFIELD ROAD
SOUTHERN AVE

PRIMATECH
ENGINEERS & CONSULTANTS

Subject:	**Eastern Canal North FDS**	By:	**F. Braileanu**
	Composite Storage Volume Computations	Checked:	**W. Haas**
	Ponding Areas	Project No.:	**FCD98-36**

Ponding/Reservoir I.D. **PA97**

Weir Coefficient = 2.7

Min Weir Crest Elevation = 1286.40

Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Capacity on North-East Side of Canal: Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area (north and west) [cfs]
1279.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1280.00	0.12	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00
1282.00	0.65	0.39	0.77	0.83	0.00	0.00	0.00	0.00	0.00	0.00
1283.00	1.63	1.14	1.14	1.97	0.00	0.00	0.00	0.00	0.00	0.00
1284.00	8.31	4.48	8.96	9.79	0.00	0.00	0.00	15.20	15.20	15.20
1286.00	33.61	20.96	41.92	51.71	0.00	0.00	0.00	26.30	26.30	26.30
1286.40	39.31	36.46	14.58	66.29	0.00	433.62	0.00	27.80	461.42	461.42
1286.50	40.73	40.02	4.00	70.30	17.36	619.37	0.00	29.00	648.37	665.73
1286.60	41.73	41.23	4.12	74.42	97.71	823.70	0.00	29.70	853.40	951.12
1286.70	42.73	42.23	4.22	78.64	248.42	1015.00	0.00	30.50	1045.50	1293.92
1287.10	46.45	44.59	17.84	96.48	911.44	2176.00	0.00	32.00	2208.00	3119.44

NOTES:
- The flow may overtop Eastern Canal and Southern Avenue. The weir coefficient and Min. weir crest elevation given above were used for the flow that overtops the Canal.
- For the flow that overtops Southern Avenue, a weir coefficient of 2.65 and a minimum weir crest elevation of 1286.10 ft were considered.
- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

North of Southern Avenue, flow that overtops Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 5

Bank Stations.....Left: 100.00 .....Right: 1262.80

Encroatchment Stations.....Left: 100.00 .....Right: 1262.80

Elevation.....Max: 1287.20 .....Min: 1286.50

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1287.10	100.00	2	1287.20	218.53	3	1286.70	765.05
4	1286.40	1539.17	5	1286.60	2077.75	6	1286.90	2761.11

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1286.40	0.00	0.00	0.00	0.00
1286.50	17.36	0.10	527.33	26.37
1286.60	97.71	0.20	1054.65	105.46
1286.70	248.42	0.30	1540.48	235.22
1286.90	911.44	0.50	2043.46	593.61
1287.10	2020.45	0.70	2542.56	1050.01
1287.20	2733.36	0.80	2761.11	1307.95

NOTES:

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	6/2/00

Weir Flow Computation

LOCATION/DESCRIPTION:

North of Southern Avenue, flow that overtops Southern Avenue

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 6

Bank Stations.....Left: 100.00 .....Right: 1180.00

Encroatchment Stations.....Left: 100.00 .....Right: 1180.00

Elevation.....Max: 1288.00 .....Min: 1286.00

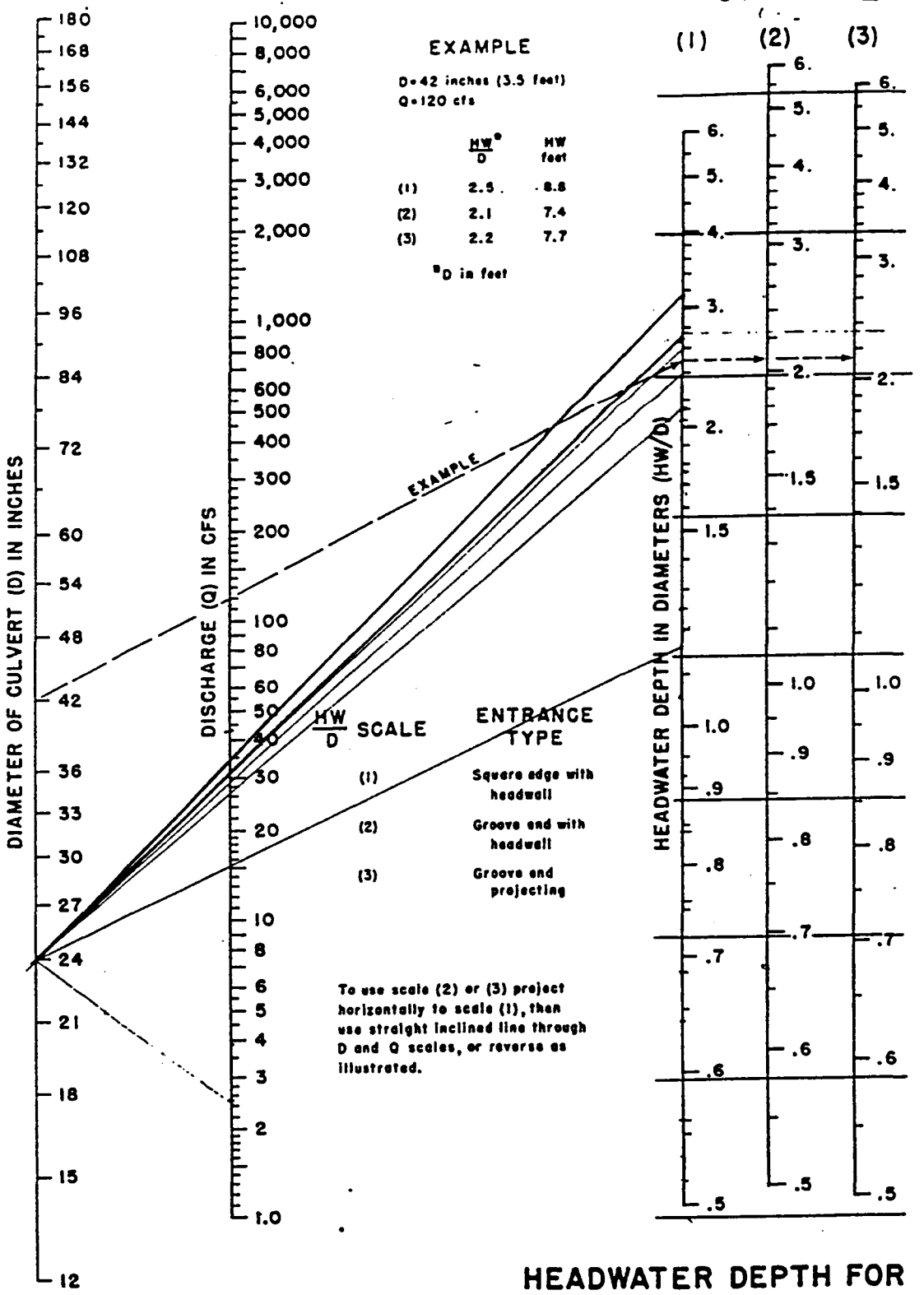
No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1288.00	100.00	2	1286.00	389.00	3	1286.00	684.00
4	1286.00	863.00	5	1286.00	942.00	6	1287.10	1180.00

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1286.00	0.00	0.00	553.70	0.00
1286.40	433.62	0.40	697.37	261.64
1286.50	619.37	0.50	733.45	321.62
1286.60	823.70	0.60	769.54	396.77
1286.70	1015.00	0.70	805.60	475.50
1287.10	2176.00	1.10	949.90	826.60
1287.20	2528.90	1.20	964.40	922.30
1288.00	6132.50	2.00	1080.00	1740.10

NOTES:

CHART 2



HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

HEADWATER SCALES 2&3
REVISED MAY 1964

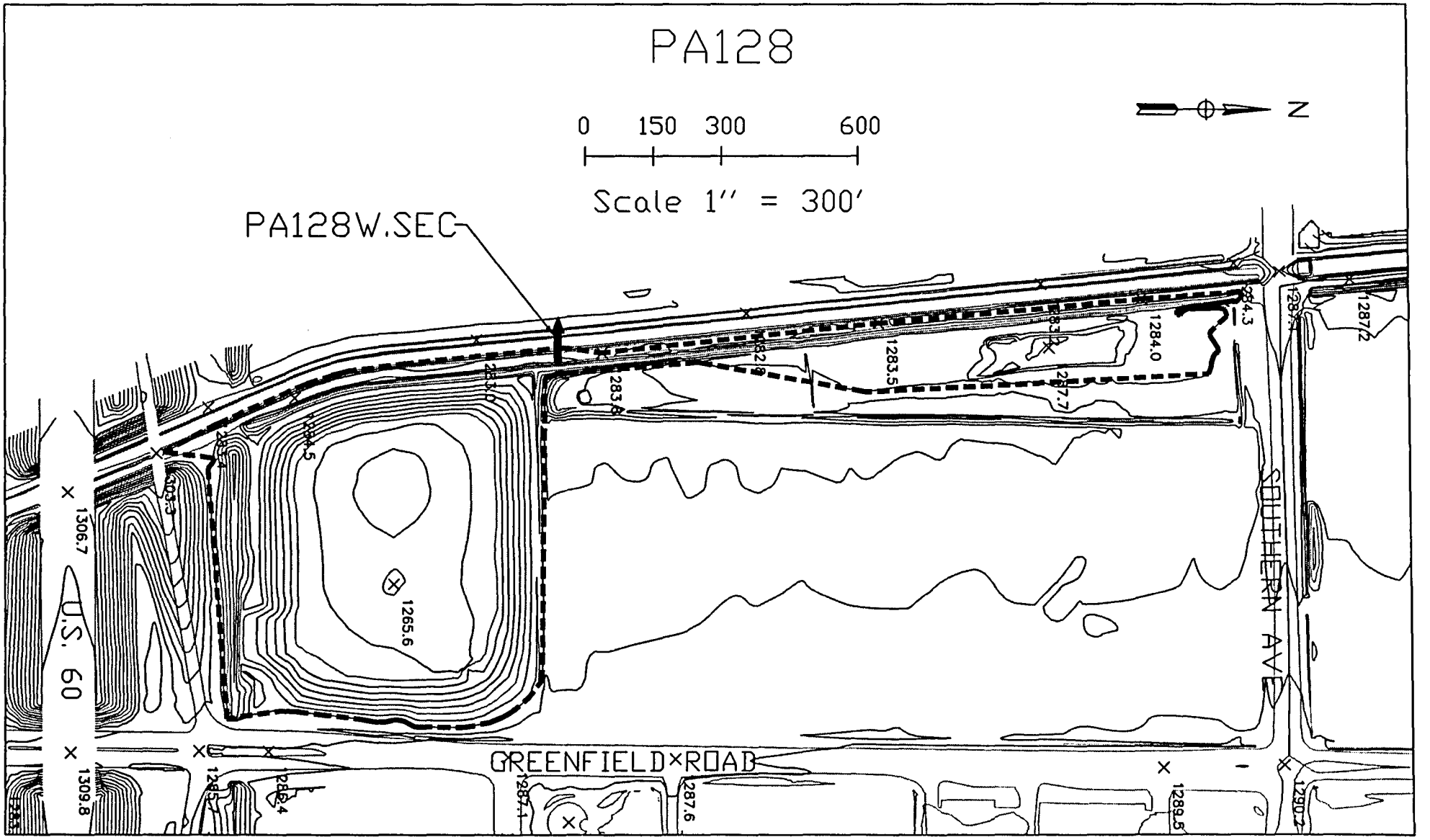
BUREAU OF PUBLIC ROADS JAN. 1963

RCF

Ponding Area PA128

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Weir Flow Computation Sheet
- Culvert Flow Computation Sheet
- Supporting Nomograph for Culvert Flow Computation Sheet

PA128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PA128W.SEC
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1284.3
1284.0
1283.5
1287.7
1283.8
1282.9
1283.2
1284.5
1265.6
1303.3
1306.7
U.S. 60
1309.8
GREENFIELD ROAD
1287.1
1287.6
1289.5

PRIMATECH
ENGINEERS & CONSULTANTS

Subject: **Eastern Canal North FDS**
Composite Storage Volume Computations
Ponding Areas

By: **F. Bralleanu**
Checked: **D.Dust**
Project No.: **FCD98-36**

Ponding/Reservoir I.D. **PA128**

Weir Coefficient = 2.7
Min Weir Crest Elevation = 1283.50

Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Capacity on North-East Side of Canal: Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]*	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1265.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1266.00	0.58	0.29	0.12	0.12	0.00	0.00	0.00	0.00	0.00	0.00
1268.00	3.41	1.99	3.99	4.10	0.00	0.00	0.00	0.00	0.00	0.00
1270.00	5.09	4.25	17.00	21.10	0.00	0.00	0.00	0.00	0.00	0.00
1272.00	5.93	5.51	11.02	32.12	0.00	0.00	0.00	0.00	0.00	0.00
1274.00	6.76	6.34	12.69	44.81	0.00	0.00	0.00	0.00	0.00	0.00
1276.00	8.30	7.53	15.05	59.86	0.00	0.00	0.00	0.00	0.00	0.00
1278.00	9.21	8.75	17.51	77.37	0.00	0.00	0.00	0.00	0.00	0.00
1280.00	10.53	9.87	19.74	97.12	0.00	0.00	0.00	0.00	0.00	0.00
1282.00	12.15	11.34	22.69	119.80	0.00	0.00	0.00	0.00	0.00	0.00
1282.90	12.42	12.29	11.06	130.86	0.00	0.00	0.00	0.00	0.00	0.00
1283.00	12.45	12.44	1.24	132.10	0.00	0.00	0.00	0.00	0.00	0.00
1283.50	12.48	12.47	6.23	138.34	0.00	0.00	0.00	0.00	0.00	0.00
1283.60	12.48	12.48	1.25	139.59	10.90	0.00	0.00	0.00	0.00	10.90
1283.70	12.48	12.48	1.25	140.83	61.60	0.00	0.00	0.00	0.00	61.60

NOTES:

- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*

*An existing culvert conveys flows captured by an earthen swale adjacent to the canal. This culvert is accounted for in diversion DCHAN.

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

North of Superstition Freeway, flow that overtops Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 4
Bank Stations.....Left: 0.00 .....Right: 1868.90
Encroatchment Stations.....Left: 0.00 .....Right: 1868.90
Elevation.....Max: 1284.50 .....Min: 1283.50

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1284.00	0.00	2	1283.50	578.17	3	1283.80	1188.60
4	1284.50	1868.85						

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1283.50	0.00	0.00	0.00	0.00
1283.60	10.90	0.10	319.00	15.90
1283.70	61.60	0.20	638.10	63.80
1283.80	170.00	0.30	957.50	143.60
1283.90	345.20	0.40	1170.20	250.00
1284.00	588.70	0.50	1383.00	377.60

NOTES:

Subject:	Eastern Canal North FDS	By:	F. Braileanu
	Composite Storage Volume Computations	Checked:	D. Dust
	Ponding Areas	Project No.:	FCD98-36

Ponding/Reservoir I.D. **PA128**

Culvert Type: 48-inch RCP

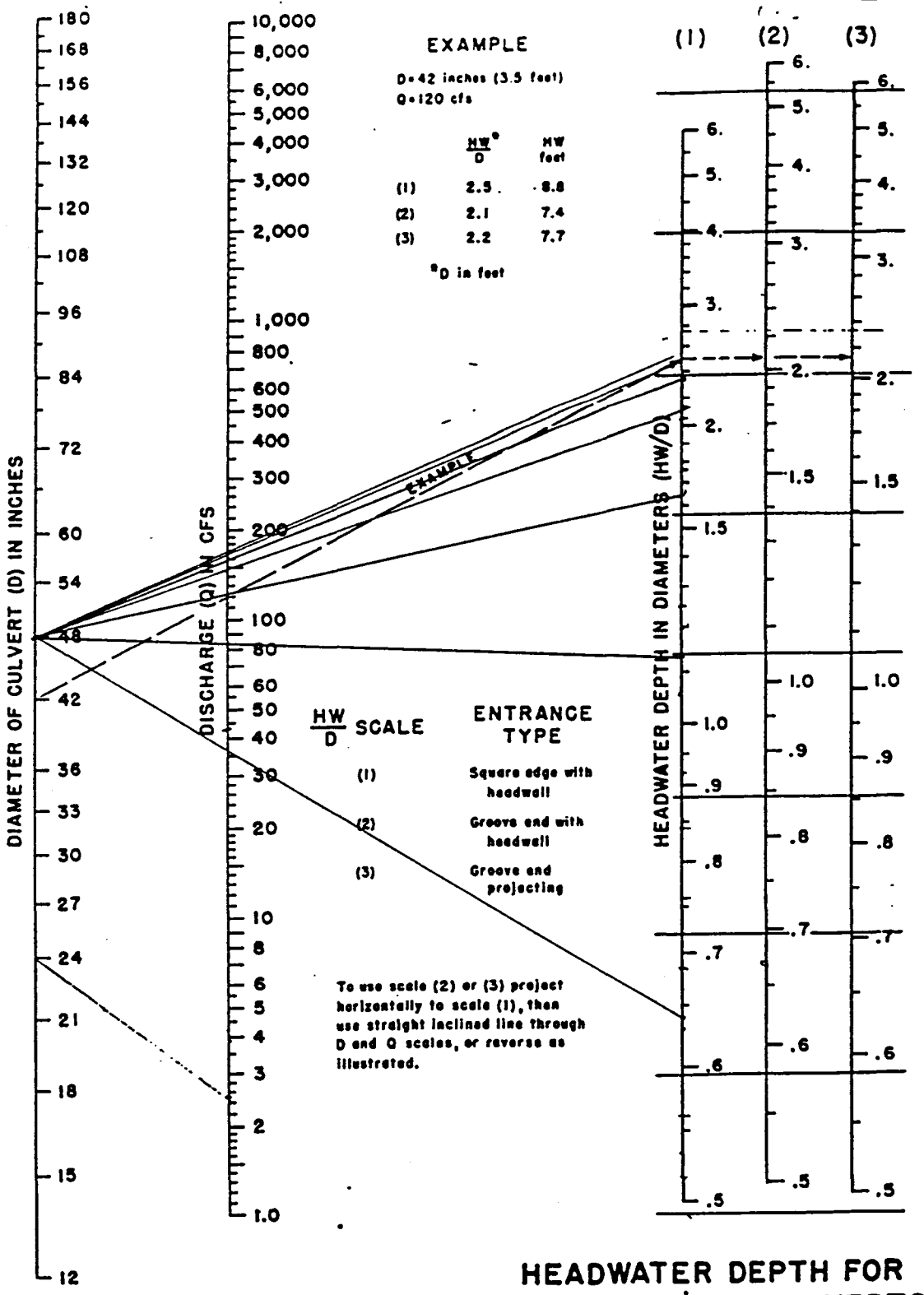
Bottom Elevation at Culvert Inlet (ft)	Water Surface Elevation (ft)	Headwater (ft)	Headwater-Culvert Diameter Ratio	Discharge (cfs)
1278.00	1278.50	0.50	0.13	0.00
1278.00	1280.50	2.50	0.63	36.00
1278.00	1282.50	4.50	1.13	82.00*
1278.00	1284.50	6.50	1.63	122.00

NOTES:

The discharge was calculated using nomographs for RCP culverts with inlet control.

*Assumed capacity of channel/culvert

CHART 2



HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

HEADWATER SCALES 2&3
REVISED MAY 1964

BUREAU OF PUBLIC ROADS JAN. 1963

RCF

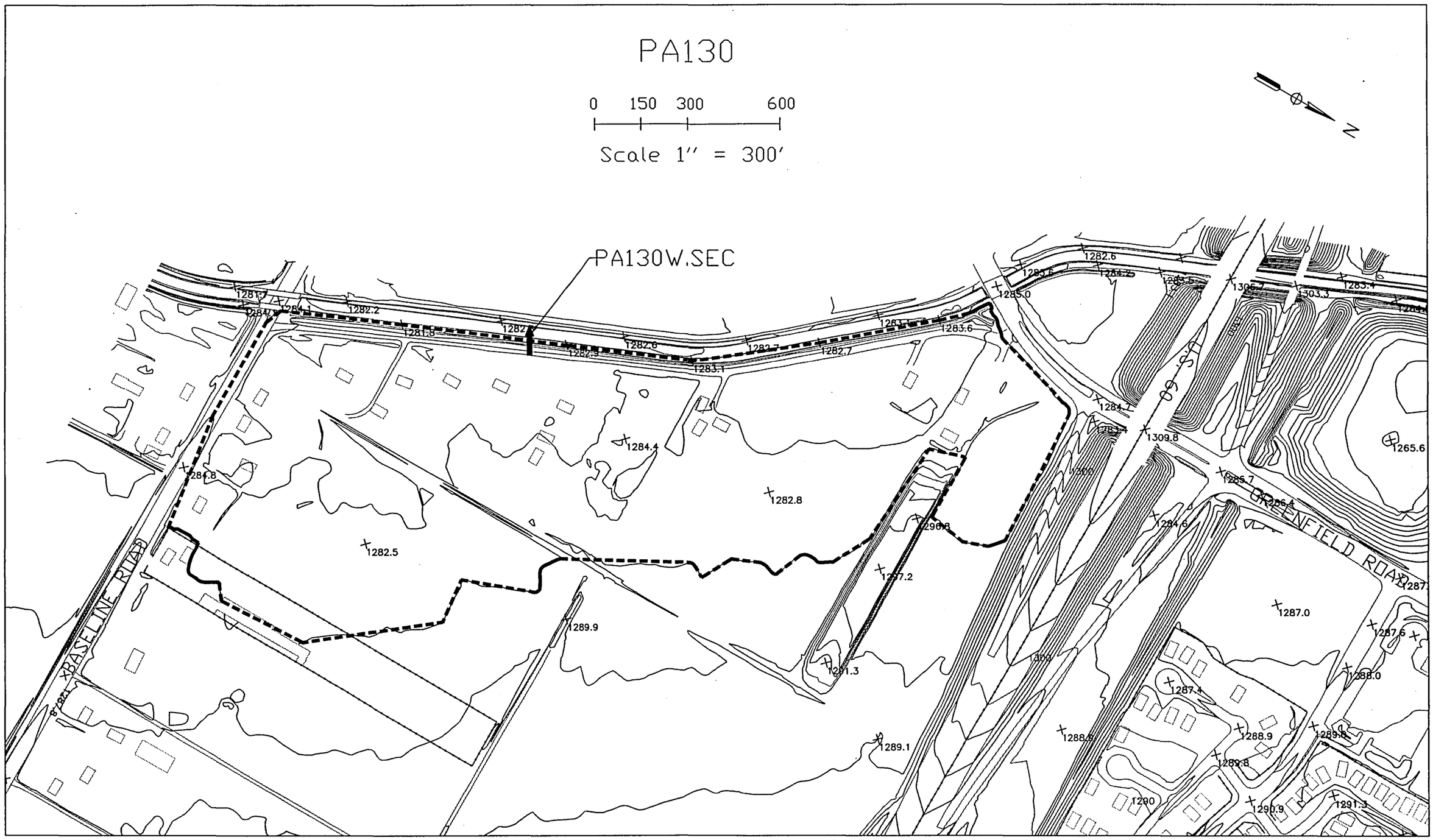
Ponding Area PA130

- Map showing the Limits of the Ponding Area (dashed line)
- Summary Table
- Weir Flow Computation Sheet
- Culvert Flow Computation Sheet
- Supporting Nomograph for Culvert Flow Computation Sheet

PA130

0 150 300 600

Scale 1" = 300'



PRIMATECH
ENGINEERS & CONSULTANTS

Subject: **Eastern Canal North FDS**
Composite Storage Volume Computations
Ponding Areas

By: **F. Braileanu**
Checked: **W. Haas**
Project No.: **FCD98-36**

Ponding/Reservoir I.D. **PA130**

Weir Coefficient = 2.7
Min Weir Crest Elevation = 1281.80

Contour Elevation [ft] SE	Area [ac]	Average Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]	Flow Overtopping the Canal [cfs]	Capacity on North-East Side of Canal: Estimated Surface Flow Along the Canal [cfs]	Estimated Street Flow [cfs]	Estimated Capacity of Culvert Parallel to Canal [cfs]	Total Flow Along the Canal [cfs]	Total Flow Leaving the Ponding Area [cfs]
1276.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1278.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.80	47.80	47.80
1280.00	0.64	0.32	0.64	0.64	0.00	0.00	0.00	143.00	143.00	143.00
1281.80	13.64	7.14	12.85	13.49	0.00	0.00	0.00	217.00	217.00	217.00
1282.00	18.88	16.26	3.25	16.75	31.10	0.00	0.00	224.00	224.00	255.10
1282.70	28.72	23.80	16.66	33.41	857.70	0.00	0.00	250.00	250.00	1107.70
1283.10	34.35	31.53	12.61	46.02	1339.10	0.00	0.00	260.00	260.00	1599.10
1283.60	41.38	37.86	18.93	64.95	5144.90	0.00	0.00	276.00	276.00	5420.90

NOTES:
- The drainage capacity of culvert was neglected to evaluate the impact of a clogged culvert.
- *Estimated Surface Flow Along the Canal* represents one or more surface flows parallel to Eastern Canal that leave the ponding area, one or more weir flows that could overtop the South limit of ponding area, or a combination of the two flow types.
- *Estimated Street Flow* stems for any surface flow that occurs along North-South streets which was not included in *Estimated Surface Flow Along the Canal*
-Only 50 percent capacity was used for the culvert, to account for a full downstream channel.

PRIMATECH
ENGINEERS & CONSULTANTS

Project:	Eastern Canal North FDS		
Project No.	FCD 98-36		
Sheet No.	1	of	1
Calculated by:	FB	Date	2/25/99

Weir Flow Computation

LOCATION/DESCRIPTION:

Between Greenfield Road and Baseline Road, flow that overtops Eastern Canal

CROSS SECTION PARAMETERS:

No. of Cross Section Points: 9
Bank Stations.....Left: 100.00 .....Right: 2365.70
Encroatchment Stations.....Left: 100.00 .....Right: 2365.70
Elevation.....Max: 1284.10 .....Min: 1281.80

No	Elevation	Station	No	Elevation	Station	No	Elevation	Station
1	1284.10	100.00	2	1282.00	332.75	3	1281.80	496.51
4	1282.00	654.38	5	1282.90	1032.88	6	1283.10	1444.76
7	1282.70	1859.73	8	1283.60	2256.24	9	1284.00	2365.70

COMPUTED PARAMETERS:

Water Elevation (ft)	Discharge (cfs)	Depth (ft)	Top Water (ft)	Area (ft^2)
1281.80	0.00	0.00	0.00	0.00
1282.00	31.10	0.20	321.60	32.20
1282.70	857.70	0.90	693.60	387.50
1282.90	1339.10	1.10	1095.60	566.40
1283.60	5144.90	1.80	2100.80	1839.90

NOTES:

Subject:	Eastern Canal North FDS	By:	F. Braileanu
	Composite Storage Volume Computations	Checked:	D. Dust
	Ponding Areas	Project No.:	FCD98-36

Ponding/Reservoir I.D. **PA130**

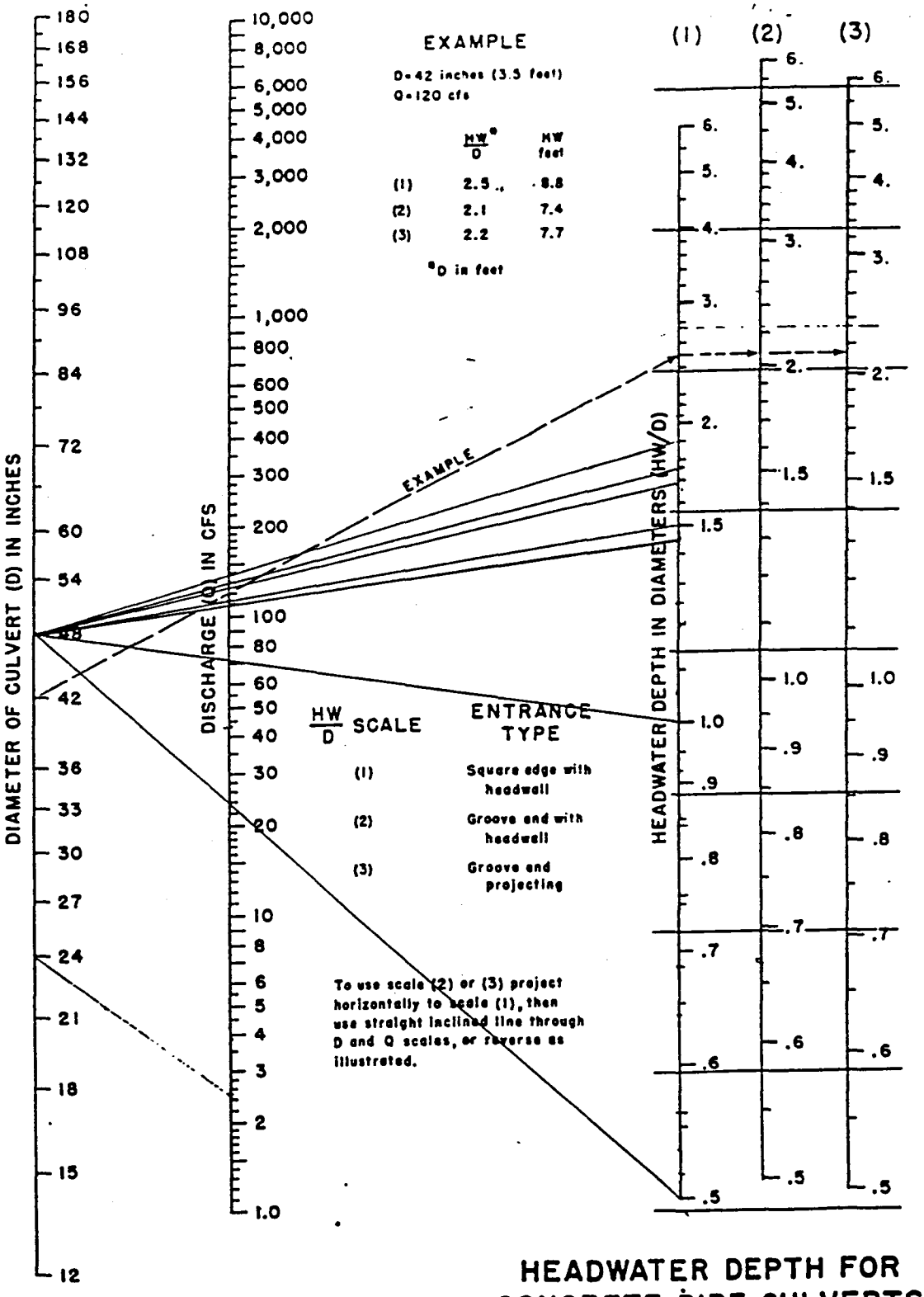
Culvert Type: 2 x 48-inch RCP

Bottom Elevation at Culvert Inlet (ft)	Water Surface Elevation (ft)	Headwater (ft)	Headwater-Culvert Diameter Ratio	Discharge for One Culvert (cfs)	Total Discharge (cfs)
1276.00	1276.00	0.00	0.00	0.00	0.00
1276.00	1278.00	2.00	0.50	23.90	47.80
1276.00	1280.00	4.00	1.00	71.50	143.00
1276.00	1281.80	5.80	1.45	108.50	217.00
1276.00	1282.00	6.00	1.50	112.00	224.00
1276.00	1282.70	6.70	1.68	125.00	250.00
1276.00	1283.10	7.10	1.77	130.00	260.00
1276.00	1283.60	7.60	1.90	138.00	276.00

NOTE:

The discharge was calculated using nomographs for RCP culverts with inlet control.

CHART 2



HEADWATER SCALES 2&3
REVISED MAY 1964

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

BUREAU OF PUBLIC ROADS JAN. 1963

R-F

Appendix D.5

Flow Splits and Diversions Data

D.5.1 Retention Basin Diversions

D.5.2 Street Intersection Diversions

D.5.3 Storm Drain Diversions

D.5.4 Post-Hydraulics, HEC-2 – based Flow Diversions

Appendix D.5.1

Retention Basin Diversions

- Composite Storage Volume Computations
- Supporting Maps

Subject:	**Eastern Canal North FDS**	By:	**F. Braileanu**
	Composite Storage Volume Computations	Checked:	**D. Dust**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **0B163**

Retention Basin	Contour Elevation* [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
Tract 1	5.00	0.16	0.00	0.00
	8.50	0.30	0.79	0.79
Tract 2	5.30	0.18	0.00	0.00
	8.80	0.32	0.86	0.86
Tract A	1309.20	0.64	0.00	0.00
	1312.70	1.07	2.96	2.96
Tract E	-	-	-	1.60
Tract F	-	-	-	1.30
RB468	5.00	0.97	0.00	0.00
	8.50	1.44	4.19	4.19
Total Volume				**11.70**

Retention Basin I.D. **0B164**

Retention Basin	Contour Elevation* [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
Tract B	2.00	0.24	0.00	0.00
	5.50	0.47	1.21	1.21
Tract C	6.10	0.17	0.00	0.00
	9.60	0.30	0.81	0.81
Total Volume				**2.01**

Retention Basin I.D. **0B165**

Retention Basin	Contour Elevation* [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
Retention Basin A	2.00	0.355	0.00	0.00
	5.50	0.539	1.55	1.55
Retention Basin B	2.00	0.022	0.00	0.00
	5.50	0.064	0.14	0.14
Retention Basin C	1295.50	0.40	0.00	0.00
	1299.25	0.73	2.10	2.10
Tract B, Retention 1	94.50	0.12	0.00	0.00
	97.50	0.18	0.45	0.45
Total Volume				**4.24**

Retention Basin I.D. **0B166**

Retention Basin	Contour Elevation* [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
Tract A	92.00	1.34	0.00	0.00
	95.50	1.51	4.98	4.98
RB478	5.00	0.76	0.00	0.00
	8.50	0.96	3.00	3.00
Total Volume				**7.98**

* Elevation is given with respect to a local datum.

Subject:	**Eastern Canal North FDS**	By:	**RHF, FB**
	Composite Storage Volume Computations	Checked:	**WVH**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **1B4**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1294.00	0.00	0.00	0.00
	1296.00	0.73	0.49	0.49
	1298.00	1.07	1.79	2.28
BASIN 2	1300.70	0.00	0.00	0.00
	1302.00	0.09	0.04	0.04
	1304.00	0.17	0.26	0.29
BASIN 3	1303.40	0.00	0.00	0.00
	1304.00	0.09	0.02	0.02
	1306.00	0.18	0.26	0.28
Total Volume				**2.85**

Retention Basin I.D. **1B5**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1297.30	0.00	0.00	0.00
	1298.00	0.72	0.17	0.17
	1300.00	3.20	3.63	3.79
	1302.00	3.79	6.98	10.77
	1304.00	4.44	8.22	19.00
Total Volume				**19.00**

Retention Basin I.D. **1B153**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1294.60	0.00	0.00	0.00
	1296.00	0.72	0.34	0.34
	1298.00	0.94	1.66	2.00
Total Volume				**2.00**

Retention Basin I.D. **1B11**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1300.77	0.00	0.00	0.00
	1302.00	0.12	0.05	0.05
	1304.00	0.20	0.32	0.37
BASIN 2	1301.00	0.00	0.00	0.00
	1302.00	0.21	0.07	0.07
	1304.00	0.29	0.49	0.56
Total Volume				**0.93**

Retention Basin I.D. **1B12**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1311.80	0.00	0.00	0.00
	1312.00	0.51	0.03	0.03
	1314.00	1.21	1.67	1.70
	1316.00	1.21	2.42	4.12
Total Volume				**4.12**

Retention Basin I.D. **1B151**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1326.00	0.68	0.00	0.00
	1328.00	0.12	0.72	0.72
	1330.00	0.20	0.32	1.04
BASIN 2	1325.45	0.00	0.00	0.00
	1326.00	0.05	0.01	0.01
	1328.00	0.25	0.27	0.28
Total Volume				**1.32**

Subject:	**Eastern Canal North FDS**	By:	**RHF, FB**
	Composite Storage Volume Computations	Checked:	**WVH**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **1B13**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1308.50	0.00	0.00	0.00
	1310.00	1.83	0.92	0.92
	1312.00	3.28	5.04	5.95
BASIN 2	1309.50	0.00	0.00	0.00
	1310.00	0.76	0.13	0.13
	1312.00	0.99	1.74	1.87
BASIN 3	1312.00	4.27	0.00	0.00
	1314.00	7.20	11.34	11.34
Total Volume				**19.17**

Retention Basin I.D. **1B16**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1332.50	0.00	0.00	0.00
	1334.00	0.49	0.25	0.25
	1336.00	0.74	1.22	1.47
Total Volume				**1.47**

Retention Basin I.D. **1B18**

Retention Basin	Contour Elevation* [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
OSR1	2.00	2.00	0.00	0.00
	2.50	2.00	1.00	1.00
OSR2	2.00	4.12	0.00	0.00
	2.50	4.12	2.06	2.06
OSR3	2.00	7.18	0.00	0.00
	2.50	7.18	3.59	3.59
OSR4	2.00	3.48	0.00	0.00
	2.50	3.48	1.74	1.74
Total Volume				**8.39**

Retention Basin I.D. **1B20**

Retention Basin	Contour Elevation* [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
1B20	1319.55	0.00	0.00	0.00
	1320.00	1.21	0.18	0.18
	1322.00	1.63	2.82	3.00
	1324.00	2.33	3.93	6.93
Total Volume				**6.93**

* Elevation is given with respect to a local datum.

Subject:	**Eastern Canal North FDS**	By:	**RHF, FB**
	Composite Storage Volume Computations	Checked:	**WVH**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **1B21**

Retention Basin	Contour Elevation* [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
Unit One Basin	1308.20	0.74	0.00	0.00
	1311.50	1.27	3.28	3.28
Unit Two Basin	1303.70	0.18	0.00	0.00
	1307.00	0.37	0.89	0.89
Unit Three Basin	1299.70	1.17	0.00	0.00
	1303.00	1.69	4.68	4.68
Total Volume				**8.84**

Retention Basin I.D. **1B27**

Retention Basin	Contour Elevation* [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
Tract M	88.70	3.22	0.00	0.00
	89.00	3.32	0.98	0.98
	90.00	3.64	3.48	4.46
	91.00	3.96	3.80	8.27
	92.00	4.29	4.13	12.39
	92.60	4.49	2.64	15.03
	93.00	4.49	1.798	16.83
On Lot			1.240	1.24
Total Volume				**18.07**

* Elevation is given with respect to a local datum.

** Includes the design volume, only. Once the Water Surface Elevation reaches 1291.00 ft, the water starts spilling over the weir that connects Tract N "North" Retention Basin to Tract N "South".

Subject:	**Eastern Canal North FDS**	By:	**RHF, FB**
	Composite Storage Volume Computations	Checked:	**WVH, DD**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **2B31**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1306.00	0.17	0.00	0.00
	1308.00	0.24	0.41	0.41
BASIN 2	1300.00	0.08	0.00	0.00
	1302.00	0.11	0.19	0.19
	1304.00	0.22	0.33	0.52
Total Volume				**0.93**

Retention Basin I.D. **2B38**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1332.00	0.41	0.00	0.00
	1334.00	0.98	1.35	1.35
	1336.00	1.32	2.30	3.65
Total Volume				**3.65**

Retention Basin I.D. **2B39**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1319.75	0.00	0.00	0.00
	1320.00	0.38	0.03	0.03
	1322.00	2.21	2.33	2.36
Total Volume				**2.36**

Retention Basin I.D. **2B155**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1296.70	0.00	0.00	0.00
	1298.00	0.28	0.12	0.12
	1300.00	0.42	0.70	0.82
BASIN 2	1293.70	0.00	0.00	0.00
	1294.00	0.47	0.05	0.05
	1296.00	1.06	1.49	1.53
Total Volume				**2.35**

Retention Basin I.D. **2B53**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1318.90	0.00	0.00	0.00
	1320.00	1.18	0.43	0.43
t B, Retentio	1322.00	1.51	2.68	3.11
BASIN 2	1318.00	0.20	0.00	0.00
	1320.00	1.72	1.67	1.67
Total Volume				**4.78**

Retention Basin I.D. **2B54**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1328.00	1.15	0.00	0.00
	1330.00	1.86	2.98	2.98
Total Volume				**2.98**

Subject:	**Eastern Canal North FDS**	By:	**RHF, FB**
	Composite Storage Volume Computations	Checked:	**WVH, DD**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **2B55**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1317.60	0.00	0.00	0.00
	1318.00	0.05	0.01	0.01
	1320.00	0.15	0.19	0.20
BASIN 2	1310.90	0.00	0.00	0.00
	1312.00	1.17	0.43	0.43
	1314.00	1.82	2.97	3.39
Total Volume				**3.59**

Subject:	**Eastern Canal North FDS**	By:	**RHF, FB**
	Composite Storage Volume Computations	Checked:	**WVH, DD**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **3B49**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1292.00	0.26	0.00	0.00
	1294.00	2.22	2.16	2.16
	1295.00	2.66	2.43	4.60
Total Volume				**4.60**

Retention Basin I.D. **3B59**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1327.30	0.00	0.00	0.00
	1328.00	0.32	0.07	0.07
	1330.00	0.52	0.83	0.90
BASIN 2	1326.00	0.81	0.00	0.00
	1328.00	1.22	2.02	2.02
BASIN 3	1320.00	0.09	0.00	0.00
	1322.00	0.51	0.55	0.55
	1323.00	0.81	0.66	1.20
Total Volume				**4.12**

Retention Basin I.D. **3B61**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1294.20	0.00	0.00	0.00
	1296.00	0.06	0.04	0.04
BASIN 2	1294.00	0.00	0.00	0.00
	1296.00	0.04	0.02	0.02
	1298.00	0.07	0.11	0.13
BASIN 3	1298.00	0.22	0.00	0.00
	1300.00	0.34	0.55	0.55
Total Volume				**0.72**

Retention Basin I.D. **3B62**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1283.60	0.00	0.00	0.00
	1284.00	0.30	0.04	0.04
	1286.00	0.38	0.68	0.72
	1288.00	0.46	0.84	1.56
Total Volume				**1.56**

Retention Basin I.D. **3B65**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1294.40	0.00	0.00	0.00
	1296.00	0.58	0.31	0.31
	1296.30	0.59	0.18	0.49
Total Volume				**0.49**

Retention Basin I.D. **3B66**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1291.70	0.00	0.00	0.00
	1292.00	0.42	0.04	0.04
	1294.00	0.81	1.21	1.25
	1294.60	0.85	0.50	1.75
Total Volume				**1.75**

Subject:	**Eastern Canal North FDS**	By:	**RHF, FB**
	Composite Storage Volume Computations	Checked:	**WVH, DD**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **3B69**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 2	1288.00	0.18	0.00	0.00
	1290.00	1.98	1.83	1.83
	1290.30	3.25	0.78	2.61
Total Volume				**2.61**

Retention Basin I.D. **3B70**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1316.00	0.19	0.00	0.00
	1318.00	1.11	1.17	1.17
BASIN 2	1312.00	0.17	0.00	0.00
	1314.00	0.53	0.66	0.66
	1316.00	0.75	1.27	1.93
BASIN 3	1312.00	0.06	0.00	0.00
	1314.00	0.41	0.41	0.41
BASIN 4	1307.00	0.00	0.00	0.00
	1308.00	0.64	0.21	0.21
	1310.00	1.34	1.94	2.16
BASIN 5	1304.00	0.00	0.00	0.00
	1306.00	1.25	0.83	0.83
	1308.00	1.61	2.86	3.69
Total Volume				**9.37**

Retention Basin I.D. **3B71**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1300.00	0.04	0.00	0.00
	1302.00	0.36	0.34	0.34
	1304.00	0.49	0.85	1.19
BASIN 2	1300.00	0.03	0.00	0.00
	1302.00	0.31	0.30	0.30
	1304.00	0.50	0.80	1.10
Total Volume				**2.28**

Retention Basin I.D. **3B74**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1302.00	0.29	0.00	0.00
	1304.00	0.54	0.82	0.82
Total Volume				**0.82**

Subject:	**Eastern Canal North FDS**	By:	**RHF, FB**
	Composite Storage Volume Computations	Checked:	**WVH, DD**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **3B77**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1308.00	1.54	0.00	0.00
	1310.00	1.90	3.43	3.43
	1312.00	2.00	3.89	7.32
	1314.00	2.10	4.09	11.42
	1315.00	2.15	2.12	13.54
Total Volume				**13.54**

Retention Basin I.D. **3B80**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1328.00	0.25	0.00	0.00
	1330.00	1.03	1.19	1.19
	1331.00	1.65	1.33	2.52
Total Volume				**2.52**

Retention Basin I.D. **3B82**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1304.80	0.00	0.00	0.00
	1306.00	0.50	0.20	0.20
	1308.00	1.46	1.87	2.07
BASIN 2	1305.70	0.00	0.00	0.00
	1306.00	0.43	0.04	0.04
	1308.00	0.98	1.37	1.41
Total Volume				**3.48**

Subject:	**Eastern Canal North FDS**	By:	**RHF, FB**
	Composite Storage Volume Computations	Checked:	**WVH, DD**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **4B89**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1308.70	0.00	0.00	0.00
	1310.00	0.85	0.37	0.37
	1312.00	1.14	1.99	2.36
	1314.00	1.39	2.53	4.89
	1315.00	1.45	1.42	6.31
Total Volume				**6.31**

Retention Basin I.D. **4B91**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1327.90	0.00	0.00	0.00
	1328.00	0.76	0.03	0.03
	1330.00	1.59	2.30	2.32
	1331.00	1.65	1.62	3.94
Total Volume				**3.94**

Retention Basin I.D. **4B99**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1296.00	0.05	0.00	0.00
	1298.00	1.09	0.92	0.92
	1300.00	1.70	2.77	3.70
Total Volume				**3.70**

Retention Basin I.D. **4B106**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
AREA 1	1312.00	1.25	0.00	0.00
	1312.50	1.88	0.78	1.55
AREA 2	1310.00	0.35	0.00	1.55
	1312.00	2.62	2.62	6.78
	1312.50	4.44	1.75	10.27
Total Volume				**11.82**

Retention Basin I.D. **4B107**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1302.00	0.00	0.00	0.00
	1304.00	0.32	0.23	0.23
	1306.00	1.52	1.69	1.91
	1308.00	3.79	5.14	7.05
Total Volume				**7.05**

Retention Basin I.D. **4B108**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1302.00	0.64	0.00	0.00
	1304.00	1.06	1.68	1.68
	1306.00	2.51	3.47	5.15
BASIN 2	1302.00	0.69	0.00	0.00
	1304.00	1.03	1.70	1.70
Total Volume				**6.85**

Subject:	**Eastern Canal North FDS**	By:	**RHF, FB**
	Composite Storage Volume Computations	Checked:	**WVH, DD**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **4B110**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1313.80	0.00	0.00	0.00
	1314.00	0.59	0.04	0.04
	1316.00	0.78	1.36	1.40
	1318.00	0.95	1.72	3.12
BASIN 2	1314.00	0.01	0.00	0.00
	1316.00	0.19	0.16	0.16
	1318.00	0.25	0.43	0.60
Total Volume				**3.72**

Retention Basin I.D. **4B111**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1313.30	0.00	0.00	0.00
	1314.00	0.19	0.05	0.05
	1316.00	0.40	0.58	0.63
BASIN 2	1314.00	0.99	0.00	0.00
	1316.00	1.95	2.89	2.89
Total Volume				**3.52**

Retention Basin I.D. **4B114**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1318.00	0.03	0.00	0.00
	1320.00	1.73	1.33	1.33
	1322.00	2.27	3.99	5.32
Total Volume				**5.32**

Retention Basin I.D. **4B116**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1318.00	1.66	0.00	0.00
	1320.00	3.36	4.91	4.91
	1322.00	4.58	7.90	12.82
	1322.30	4.58	1.37	14.19
Total Volume				**14.19**

Retention Basin I.D. **4B104**

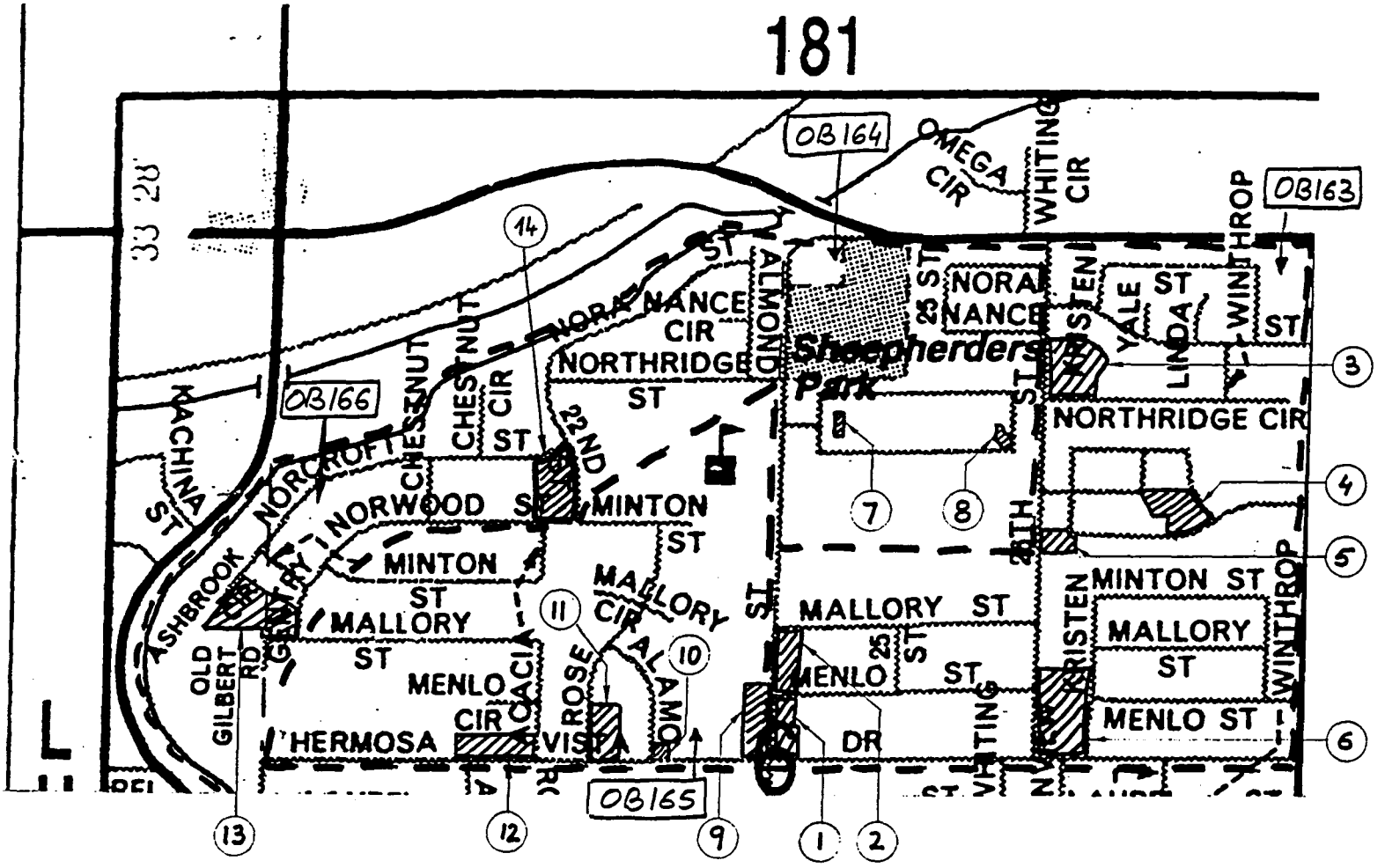
Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
BASIN 1	1291.00	0.03	0.00	0.00
	1292.00	0.64	0.27	0.27
	1294.00	1.02	1.64	1.91
Total Volume				**1.91**

Subject:	**Eastern Canal North FDS**	By:	**RHF, FB**
	Composite Storage Volume Computations	Checked:	**WVH, DD**
	Retention Basins	Project No.:	**FCD98-36**

Retention Basin I.D. **5B131**

Retention Basin	Contour Elevation [ft]	Area [ac]	Incremental Vol [acft]	Cumulative Vol [acft]
	1288.70	0.00	0.00	0.00
	1290.00	0.30	0.13	0.13
	1292.00	0.52	0.81	0.95
Total Volume				**0.95**

Retention Basins Location in the Eastern Canal North Area, Between Hermosa Vista Dr. and McDowell Rd



Legend

- - Subbasin Delineation

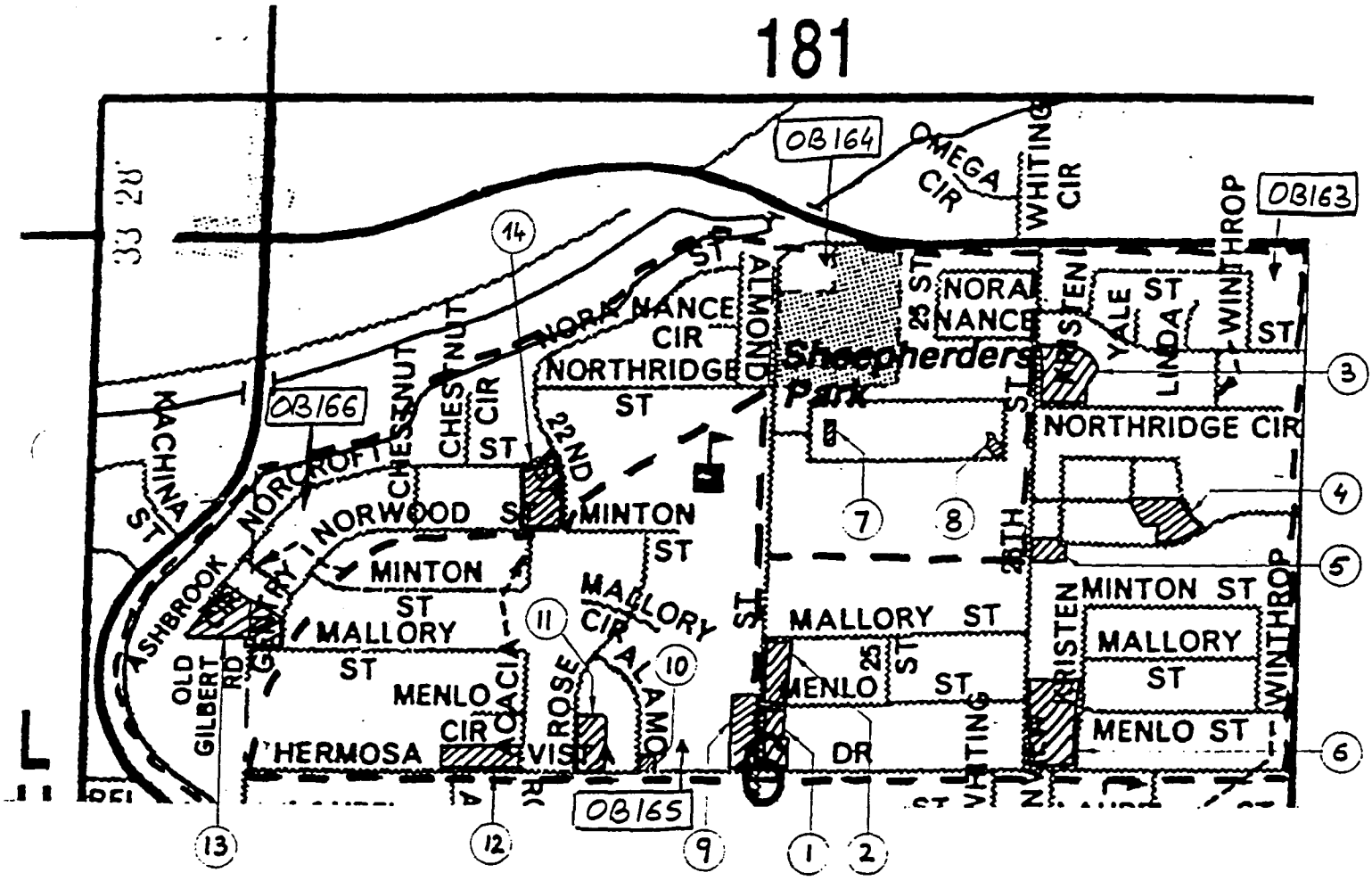
Retention Basin

(1) Retention Basin Label

Retention Basin Identification Table

Label	Subbasin	Retention Basin
1	163	0B163 – Tract 1
2		0B163 – Tract 2
3		0B163 – Tract A
4		0B163 – Tract E
5		0B163 – Tract F
6		0B163 – RB468
7	164	0B164 – Tract B
8		0B164 – Tract C
9	165	0B165 – Retention Basin A
10		0B165 – Retention Basin B
11		0B165 – Retention Basin C
12		0B165 – Tract B, Retention #1
13	166	0B166 – Tract 1
13		0B166 – RB478

Retention Basins Location in the Eastern Canal North Area, Between Hermosa Vista Dr. and McDowell Rd



Legend

- - Subbasin Delineation

Retention Basin

(1) Retention Basin Label

Retention Basin Identification Table

Label	Subbasin	Retention Basin
1	163	0B163 – Tract 1
2		0B163 – Tract 2
3		0B163 – Tract A
4		0B163 – Tract E
5		0B163 – Tract F
6		0B163 – RB468
7	164	0B164 – Tract B
8		0B164 – Tract C
9	165	0B165 – Retention Basin A
10		0B165 – Retention Basin B
11		0B165 – Retention Basin C
12		0B165 – Tract B, Retention #1
13	166	0B166 – Tract 1
14		0B166 – RB478

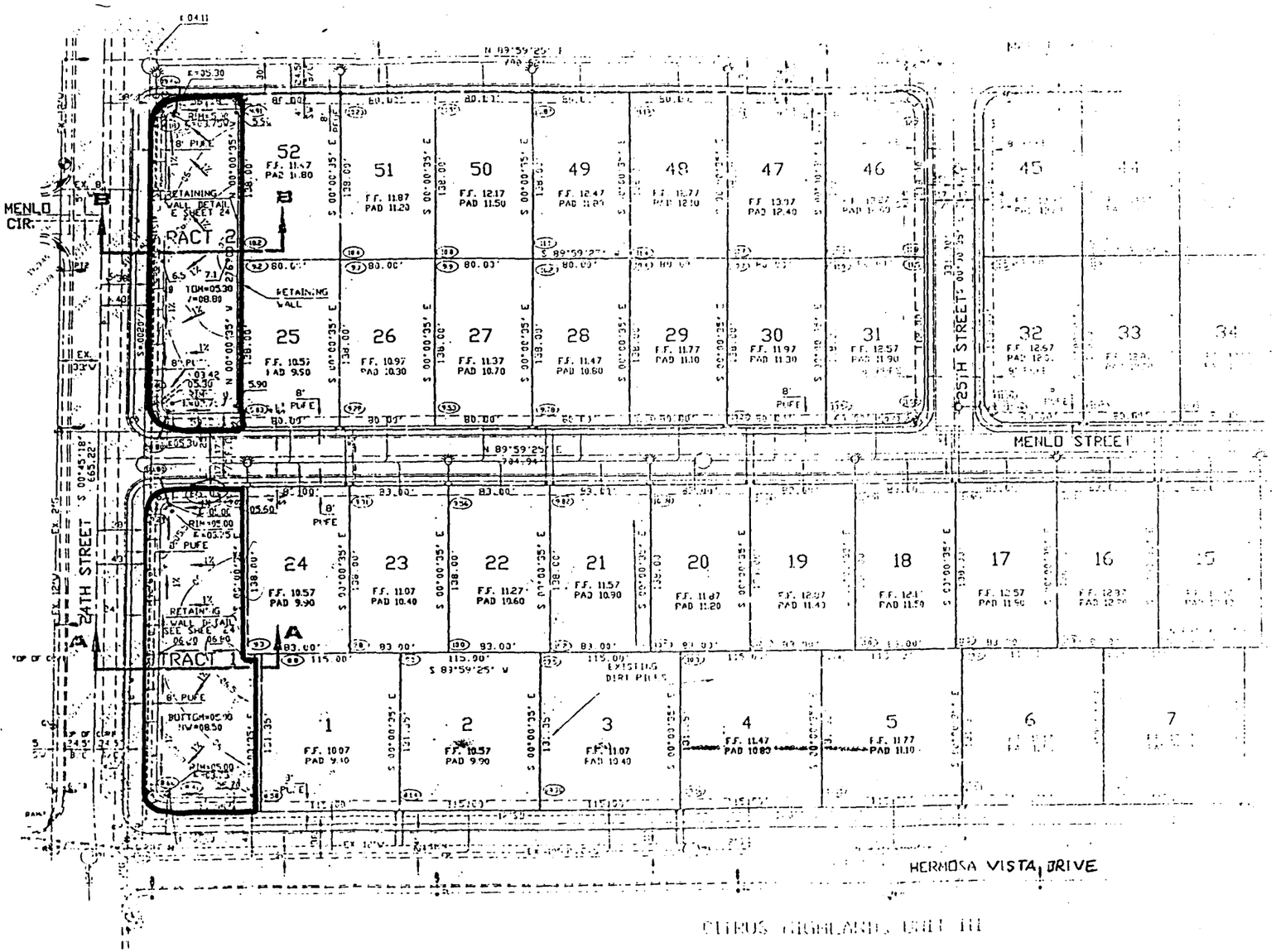
OB 163

HERMI

A PORTION OF SECTION

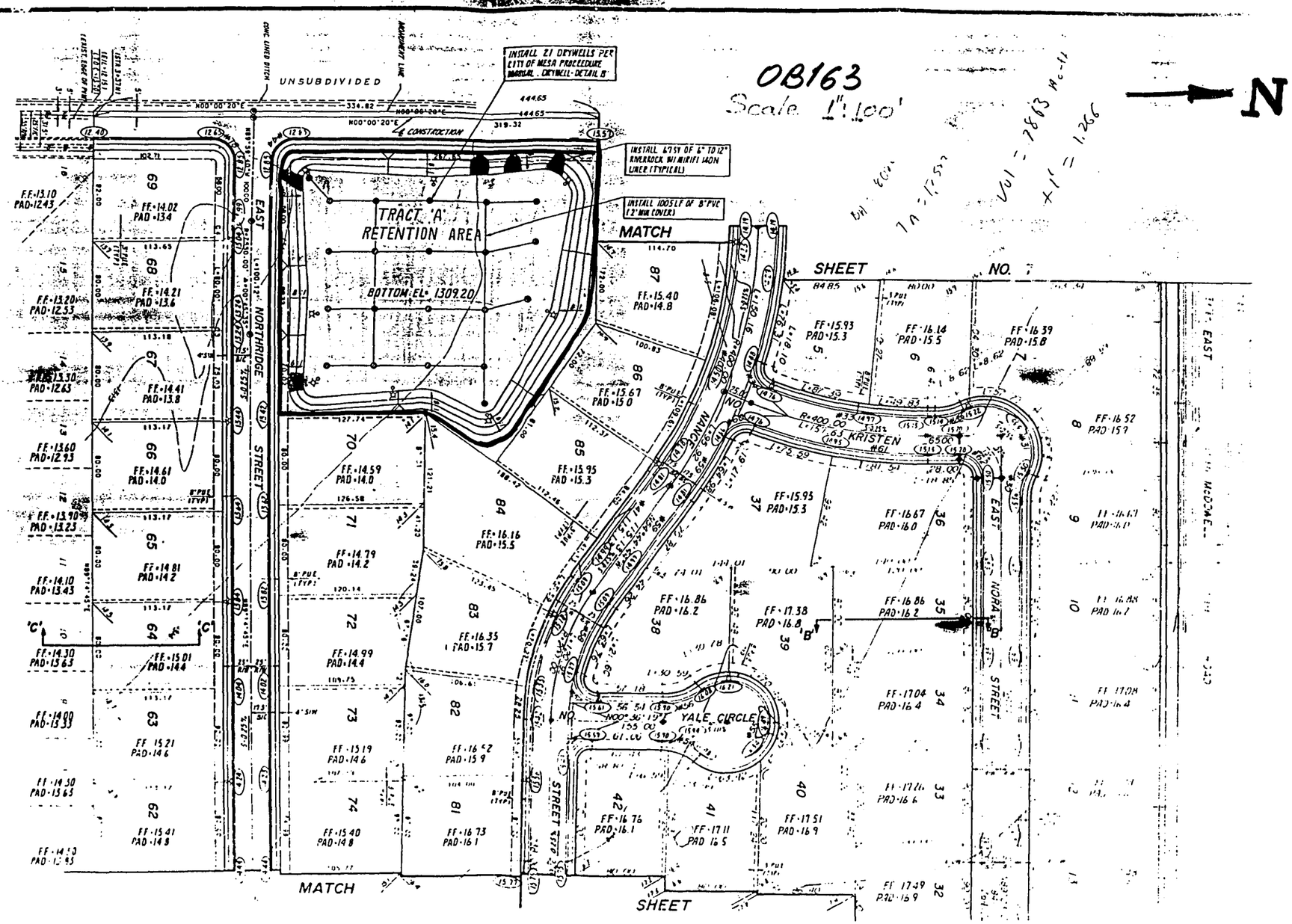
OF THE GILA AND SA

MARICOPA COUNTY,



Scale 1" : 100'

AS-BUILT


OB163
Scale 1"=100'
N
UNSUBDIVIDED
INSTALL 21 DRYWELLS PER CITY OF MESA PROCEEDURE MANUAL, DRYWELL-DETAIL B
INSTALL 475Y OF 6" TO 12" RIVERROCK WI MIRIFI MON LINER (TYPICAL)
INSTALL 1005LF OF 8" PVC (2' MIN COVER)
TRACT 'A' RETENTION AREA
BOTTOM EL. 1309.20
MATCH
SHEET
NO. 7
EAST NORTHRIDGE STREET
KRISTEN
YALE CIRCLE
NORA
EAST MEDOWE
CONC LINED DITCH
NORTHRIDGE LINE
℄ CONSTRUCTION
Vol = 7863 W.C.-ft
+1' = 1.266

[illegible]DERA DE LA MESA

A PORTION OF THE NE1/4 OF SECTION 6, T-1-N, R-6-E, OF THE G. & S.R.B.&M.

[illegible] N. LINDSAY RD.

CITY OF MESA
GENERAL NOTES

[illegible] and materials shall conform to the current Maricopa [illegible] Specifications and Details as amended by the City [illegible] and are subject to removal and replacement at [illegible] expense.

[illegible] tractor shall notify the City of Mesa Inspection Department [illegible] 24 hours in advance of any construction. [illegible] shall comply with the provisions for traffic control [illegible] as per City of Mesa "Traffic Barricading Manual". [illegible] tor is responsible for verifying locations of all existing [illegible]. Call Blue Stake 263-1182, [illegible] working days prior [illegible] ating.

[illegible] tor shall arrange for any irrigation clean-ups required. [illegible] tractor and developer shall be responsible for coordinating [illegible] tions for driveways to avoid conflict with utilities services. [illegible] tractor, engineer and/or developer, shall be responsible [illegible] coordination the relocation of all utilities, power poles, [illegible]

[illegible] line tests will be complete so that no old lines will be [illegible] in the test.

[illegible] tion Staking will be performed by Alliance Engineering Employees. [illegible] tractor shall obtain any and all permits required unless [illegible] w advised and arrange for permit [illegible] by Mesa. [illegible] tractor certified that he had contacted all interested utility [illegible] s and had transferred all existing and/or proposed [illegible] lines and related information onto these plans and that [illegible] has correctly plotted the existing [illegible] and required right-of-way [illegible] sewer lines.

[illegible] tor is advised that an encroachment permit [illegible] required by the Maricopa County Health Department. It [illegible] the Contractor's responsibility to obtain this permit [illegible] ly with it's requirements.

[illegible] ns, covers, valve boxes, manholes, etc. shall be adjusted [illegible] h grade, prior to placing of asphalt concrete surface [illegible] y the Contractor as per Details 270 & 272.

[illegible] material adjacent to the City of Mesa gas pipe shall be [illegible] material injurious to the pipe or coating, then injurious [illegible] e has been encountered, pad the pipe with at least 6 inches [illegible] material (3/8 inch and smaller screenings). Screenings [illegible] than 3/8 inches are considered injurious material to the [illegible] coating.

[illegible] mesa gas and services are exposed, contact the City of [illegible] 834-2754 for inspection of the exposed pipe and coating [illegible] backfilling of the trench.

[illegible] truction notes enclosed in dashed boxes shall be completed [illegible] City of Mesa Utility Construction Group.

[illegible] tractor shall comply with all requirements as indicated [illegible] Detail M-58 for trenching for the water line [illegible] 6 mm is to be installed in the sewer trench.

[illegible] MESA UTILITY CONSTRUCTION COORDINATOR (DELBERT GANTT) AT [illegible] SCHEDULING AND COORDINATION FOR THE INSTALLATION OF THE MATERIAL [illegible] GAS MAINS.

NOTES TO CONTRACTOR

[illegible] be responsible for locating underground [illegible] and structures in advance of construction [illegible] possible precautions to avoid damage to [illegible] will not guarantee any [illegible] those omitted.

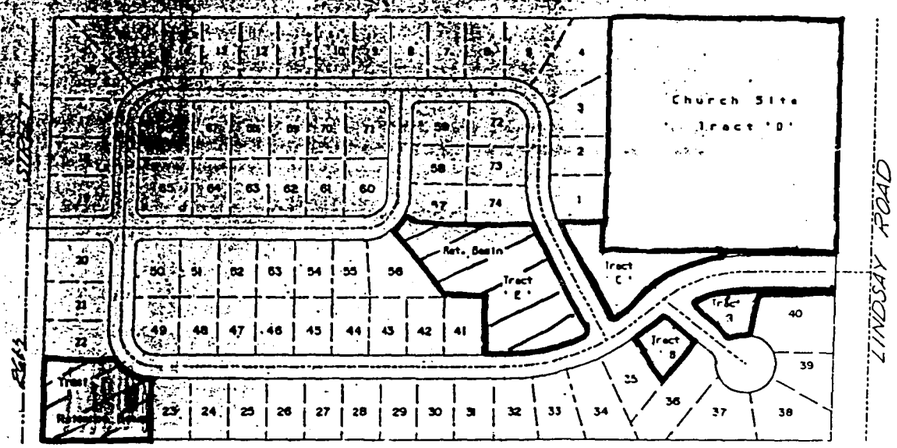
[illegible] Engineering Inspection [illegible] of any construction [illegible] City of Mesa, Arizona

[illegible] Contractor will [illegible] materials or grades necessary [illegible]

[illegible] to obtain an [illegible] Approved plans furnished [illegible]

OB 163

Maricopa County Health Dept.



The engineer certifies that he has contacted all interested utility companies and has transferred all existing and/or proposed utility lines and related information onto these plans and that he has also correctly plotted all existing and required right-of-way and easement lines.

The contractor shall be required to install a night tie-in for any new water lines that will affect existing service sufficient to warrant the same in the opinion of the City of Mesa Inspector.

The contractor and the developer shall be responsible for coordinating the locations of driveways to avoid conflict with utility services, and approved by the City of Mesa.

Water line tests will be completed so that no old lines will be included in the test.

All sewer and water stationing is approximate only.

When gas mains and services are exposed, contact the City of Mesa at 834-2754 for inspection of exposed pipe and coating prior to backfilling of the trench.

Backfill material adjacent to City of Mesa gas pipes shall be free from material injurious to the pipe or coating. When injurious materials are encountered, pad the pipe with at least 6" of fine (3/8" and smaller screenings) material 3/8" and larger screenings are considered injurious material to the pipe and coating.

CURB & SIDEWALK SUBGRADE

Do not compact exposed firm subgrade soils where cuts are required. Any cavious loose soils or required native material should be compacted to 85-90% of maximum dry density as determined in accordance with ASTM D-698. Compact above optimum moisture content. Concrete should be poured with subgrade thoroughly moistened above the optimum moisture content to a minimum of 6". Provide partway grading behind sidewalk and/or curb as soon as possible to prevent infiltration of water.

SPECIAL NOTES

All [illegible] utilities in conflict with these plans shall [illegible]

ALTERNATE SEWER LINE MATERIALS

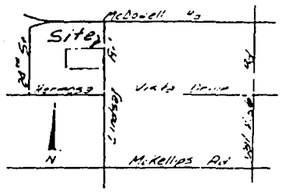
In addition to vitrified clay pipe (V.C.P.) the sewer lines in this project may be constructed of A.B.S. truss pipe or P.V.C. sewer pipe. The pipes must meet applicable standard specifications and other standards and guidelines established by the City of Mesa engineering department. The contractor is required to obtain and be familiar with the special construction requirements and guidelines of City of Mesa. All solid wall P.V.C. to be SDR 35.

SUBDIVIDER

ROZZL ESTATES
1017 S. CENTER
MESA, AZ 85202
PH. (602) 833-7113

SEWER – PVC
WATER – ACP

	QUANTITY	
PAVEMENT		
3 1/2" A.C./10" ABC	[illegible]	
Pavement Removal	[illegible]	
2" A.C./6" ABC	[illegible]	
5' Sidewalk	[illegible]	
6" Vertical Curb & Gutter	[illegible]	
1 - Driveway (Ref 2-A-Mod)	[illegible]	
WATER		
8" ACP	[illegible]	
6" ACP	2070	L.F.
8" V.B. & C. Type 'C'	5	each
6" V.B. & C. Type 'C'	6	each
Fire Hydrant Complete	4	each
90° Bend	2	each
45° Bend	1	each
8" x 8" x 6" Tee	2	each
6" x 6" x 6" Tee	1	each
8" x 6" x 8" x 6" Cross	1	each
6" Tapped Cap/2" I.P. Corp. Stop	1	each
Service with 5/8" meter	74	each
Service with 2" meter	1	each
Service with 1½" meter	1	each
SEWER		
8" P.V.C.	2953	L.F.
Manholes	9	each
Cleanout	3	each
4" Services	74	each
8" Services	1	each



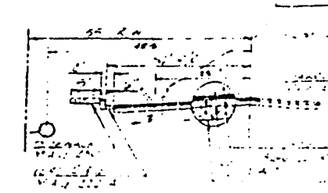
VICINITY MAP

INDEX

Cover Sheet	1
Utility Plan	2
Grade & Drainage Plan	3
Street Light Detail Sheet	4-5
Details	6-7
Details	8-9

GAS SYSTEM QUANTITIES

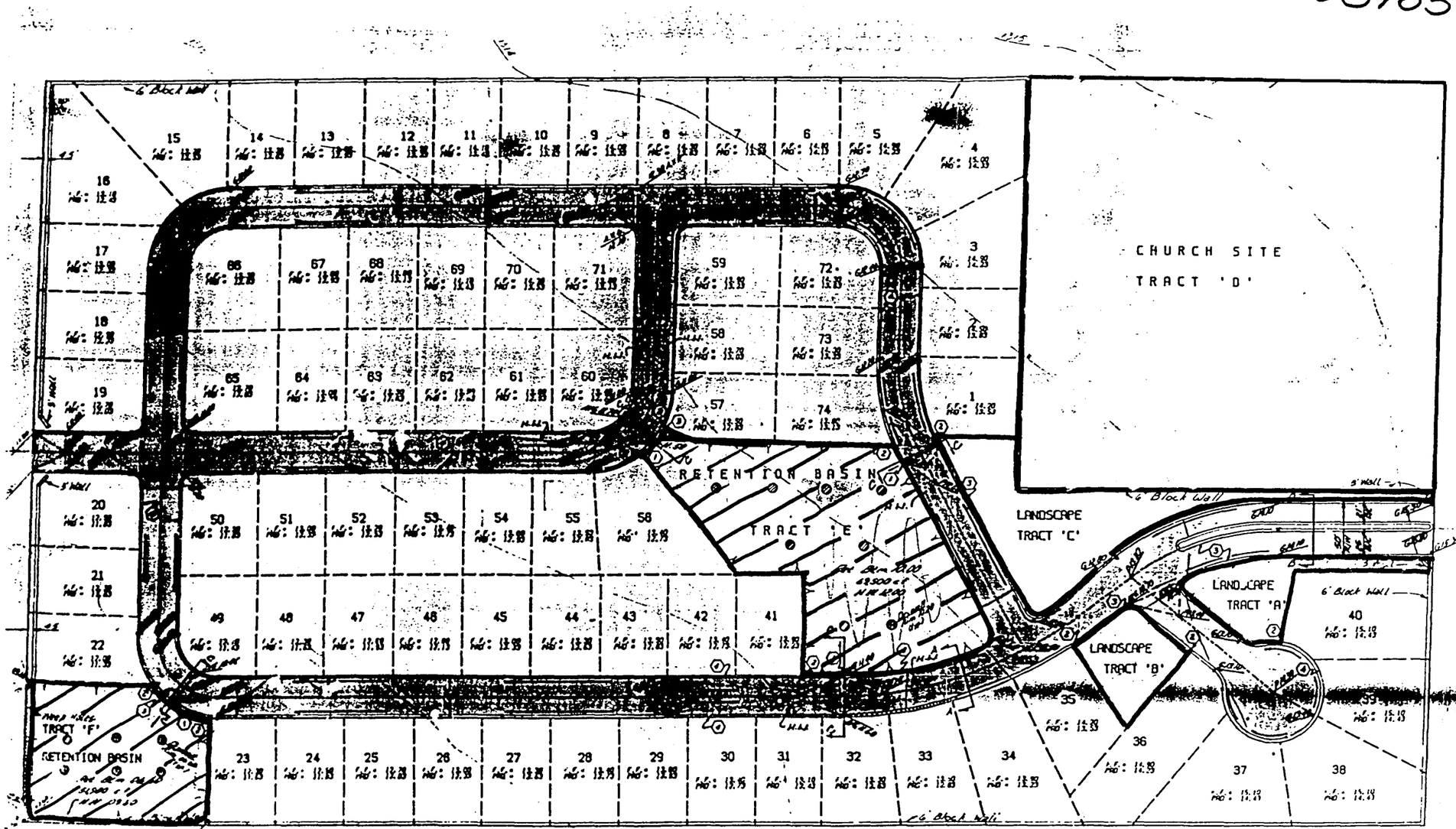
ITEM	QUANTITY	UNIT
2" PE 2306 GAS PIPE	[illegible]	[illegible]
1½" PE 2306 GAS PIPE	[illegible]	[illegible]
TRACER WIRE	[illegible]	[illegible]
2" PE 2306 GAS VALVE	[illegible]	[illegible]
VALVE MARKER COMPLETE	[illegible]	[illegible]
2" PE 2306 TEE	[illegible]	[illegible]
2" x 2" PE 2306 TAPPING TEE	[illegible]	[illegible]
2" x 2" PE 2306 ELL	[illegible]	[illegible]
2" PE 2306 CAP	[illegible]	[illegible]
2" x 1½" PE 2306 SERV. [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]



MADERA DE LA MESA

A PORTION OF THE NE 1/4 OF SEC. 6, T-1-N, R-6-E, OF THE G.&S.R.B.&M.

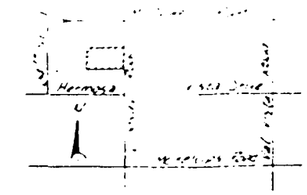
08/63



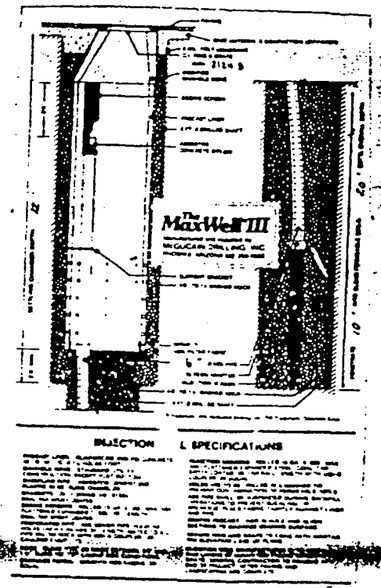
Vol = 56580 ft³

1.3 ac-ft

Vol = 1596 ac-ft



SUBDIVIDER
Rozel Estates
1017 S Center
Mesa, Arizona 85202
Ph (602) 833-7113

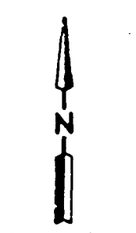


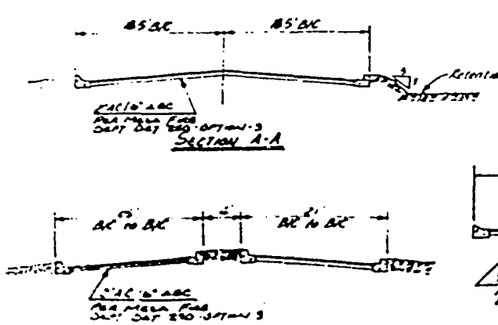
All drywells shown on this project shall be maintained by owners and are to be replaced by owners when they cease to drain the surface water in a 36-hour period. Regular maintenance of the drywell silting chamber is required to achieve the best operation of the drywell.

All drywells to be certified by a Registered Professional Engineer or Drilling Company installing drywells for drywell installation.

Registered Professional Engineer
or Drilling Company

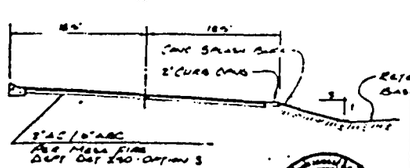
Date





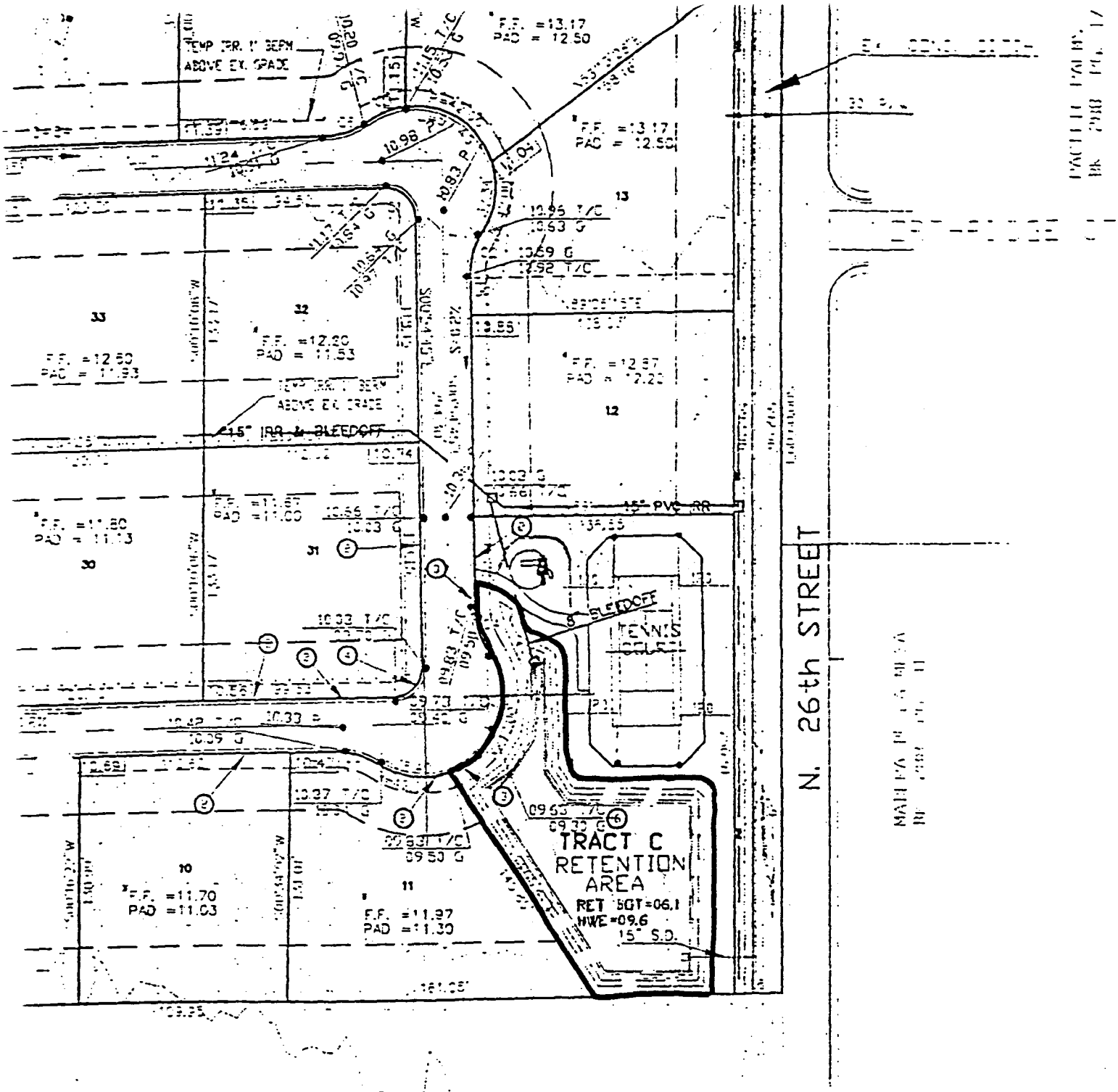
LEGEND

1. 24" Pipe Opening
2. Curb Transition
3. 4" C-G
4. 4" C-G



BENCH MARK

ALLEN CONSULTING ENGINEERS
2602 WEST BASELINE
SUITE 25
MESA, ARIZONA
PHONE (602)



OB164

TRACT C

Scale 1":200'

CONSTR

① INSTALL 2'

② INSTALL 4"

③ INSTALL 5'

④ INSTALL 4"

⑤ XX.XX GRADE

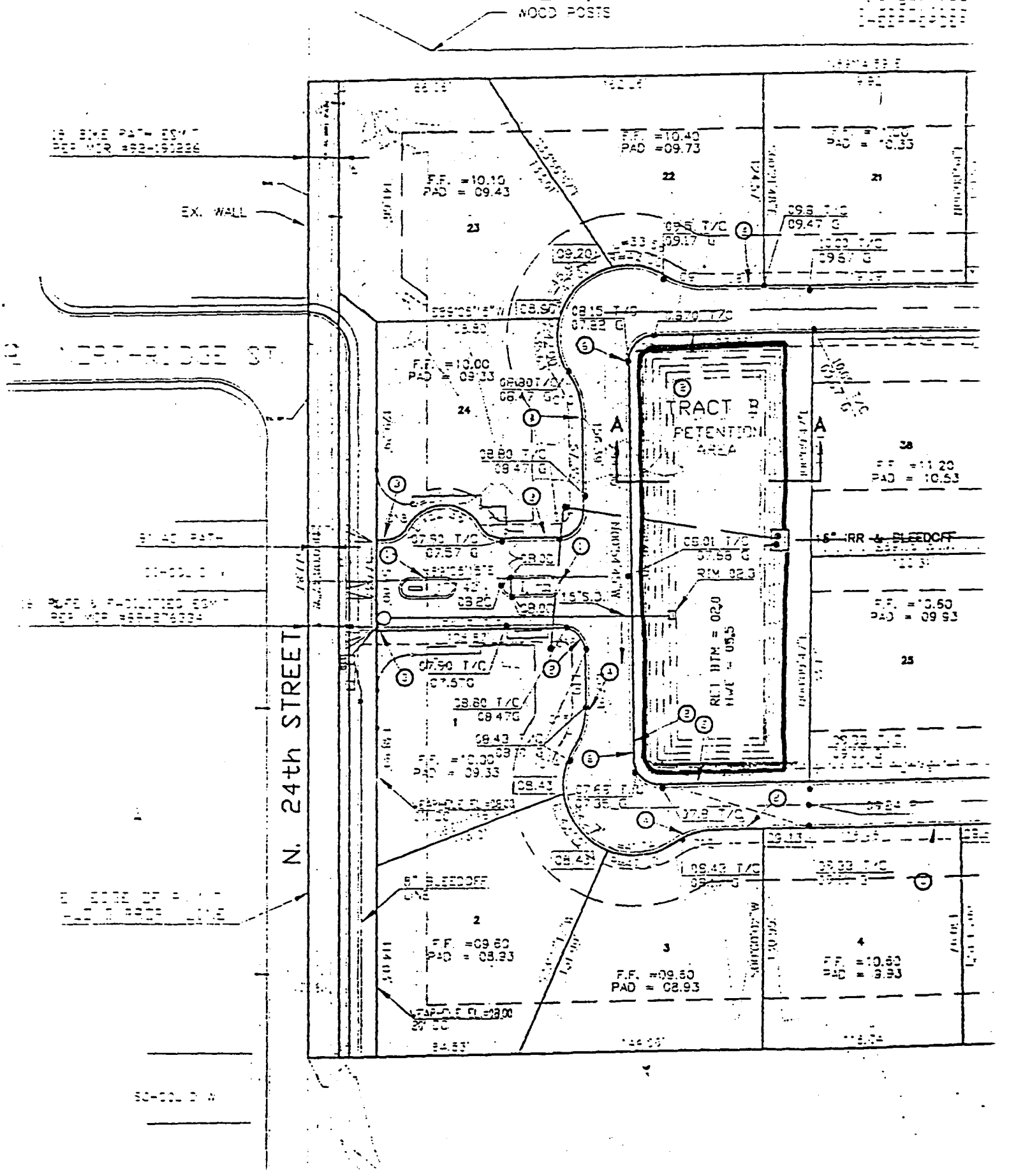
⑥ INSTALL 2'

LEGEND

OB164

TRACT B

Scale 1":200'



E MINTON ST

E MALLORY ST

E MENLO ST

E HERMOSA VISTA DR

N 26TH ST

N KRISTEN

N WINTHROP

WHITING

RB468
RETENTION BASIN

BOTTOM EL.=5.00

HW EL.=8.50

DW335–DW329
42'
PVC
12"
A37545

DW336–DW330
38'
PVC
12"
A37545

DW337–DW331
38'
PVC
12"
A37545

DW334–DW329
42'
PVC
12"
A37545

DW333–DW330
38'
PVC
12"
A37545

DW338–DW331
38'
PVC
12"
A37545

DW329–DW330
100'
PVC
12"
A37545

DW330–DW331
100'
PVC
12"
A37545

DW331–PS133
77'
PVC
12"
A37545

MH3579–MH2275
37'
RGRCP
24"
A37545

MH2276–MH2275
40'
RGRCP
21"
A37545

MH2275–HW1360
54'
RGRCP
27"
A37545

CB7176–HW1361
65'
RGRCP
18"
A37545

PS133–MH2191
1251.32'
PVC
6"
A37545

OB163

Scale 1"=100'

VISTA VIEW ESTATES

HERMOSA VIEWS

HERMOSA VISTA

CITY OF MESA GEOSYSTEM

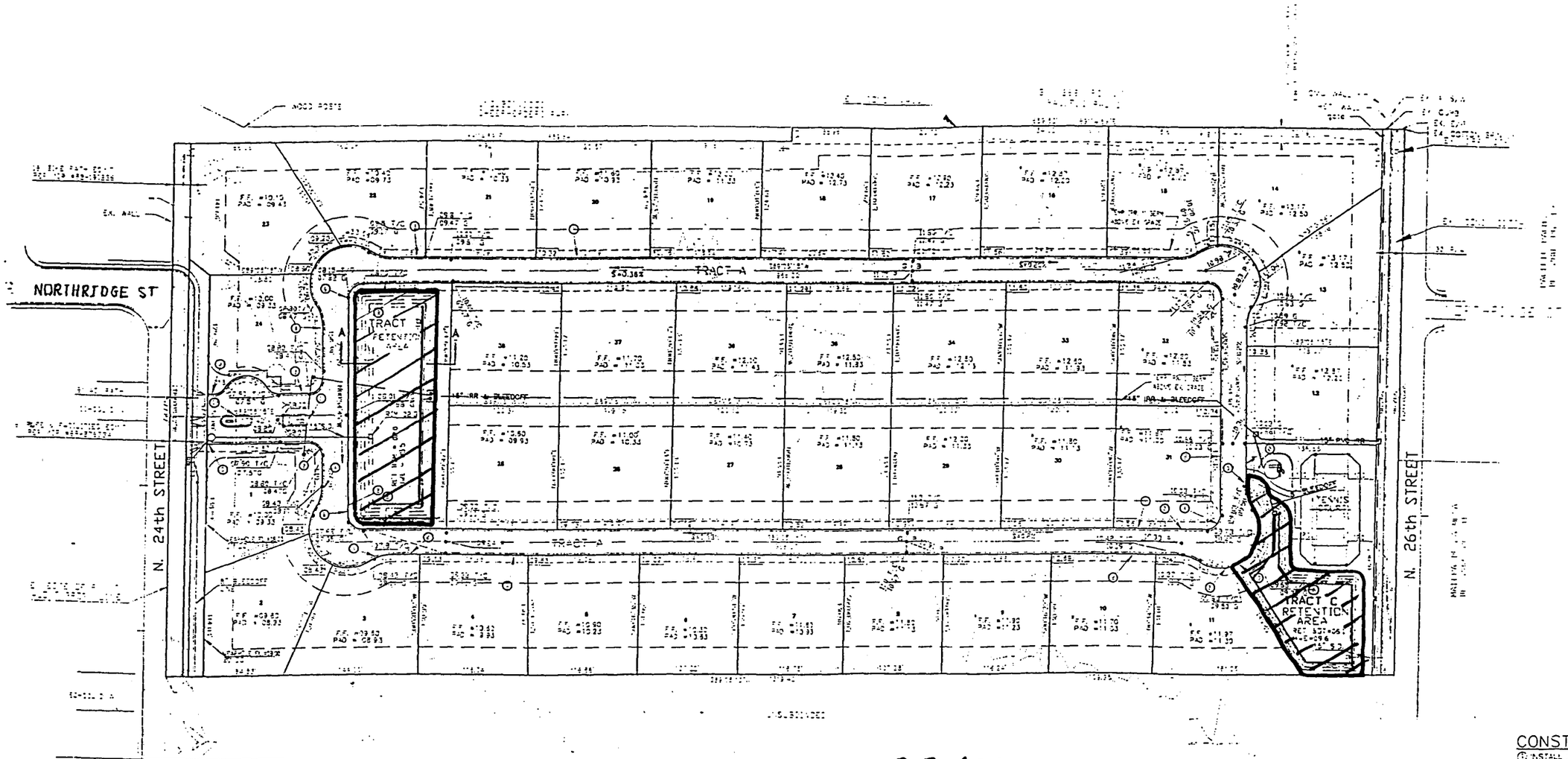
49–B

49–D

57–B

ESTATES AT NORTHRIDGE

A SUBDIVISION OF A PORTION OF THE NE 1/4 OF SEC. 6, T1N, R6E OF THE G&SRB&M, MARICOPA COUNTY, ARIZONA



OB164

CONSTRUCTION NOTES

1. INSTALL 2' RIBBON CURB PER MAG
2. INSTALL 4" ROLL CURB & GUTTER PER
3. INSTALL 5' CURB TRANSITION PER
4. INSTALL 4" ROLL CURB & GUTTER
5. XX.XX GRADE ELEV. ADJ. TO CURB
6. INSTALL 2' CURB OPENING

TYP. INTERIOR STREET
NTS

SEC A–A
NTS

REVERSE FLOW GUTTER
(MAG 220-C MOD)
NTS

NOTES:

1. ALL INTERIOR ROADS SHALL BE PER COM M-19.3 (SUBURBAN RANCH STREET SECTION) OWNED & MAINTAINED BY THE HOME OWNERS ASSOCIATION, AS DESIGNATED
2. SEWAGE & WATER SYSTEM ARE OPERATED BY CITY OF MESA
THIS PROJECT IS LOCATED WITHIN AN EXISTING ORCHARD

NOTE:

ALL FF ELEVATIONS SHOWN ARE MINIMUM PADS SHOULD BE SET A MINIMUM OF 6" ABOVE ADJACENT GRADING

LEGEND

CITRUS
NEW GRADE ELEVATION
TOP OF WALL ELEV. (6" MIN ABOVE GRADE)
EX. GRADE ELEVATION
BERM ELEVATION
XX.XX GRADE ELEVATION ADJACENT TO CURB
TEMPORARY 12" BERM

ACE ENGINEERING, INC.
161 E. 1st ST. # 5
MESA, ARIZONA 85201
PHONE (602) 834-1717
FAX (602) 834-0311

ESTATES AT NORTHRIDGE

GRADING PLAN

PRELIMINARY PLAT
FOR
"HERMOSA VISTAS"

A SUBDIVISION OF THE E 1/2 OF THE SE 1/4 OF THE NW 1/4 OF SECTION 6 T. 1N., R. 6E., OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

SCALE: 1" = 40'

Legend

- Street Right-of-Way Line
- Property Line
- Easement Line
- Building Set Back Line
- Subdivision Corner
- Exist AC Pavement
- Prop AC Pavement
- W — Water Line
- S — Sanitary Sewer Line
- T — Telephone Line
- Power Pole
- Light Pole
- Street Light
- Traffic Control Box
- Traffic Signal
- Traffic Sign
- Telephone Pedestal
- Electrical Transformer
- Cable Box
- Telephone Riser
- Tel. Manhole
- Sewer Manhole
- Water Valve
- Fire Hydrant
- Water Meter
- Citrus Tree

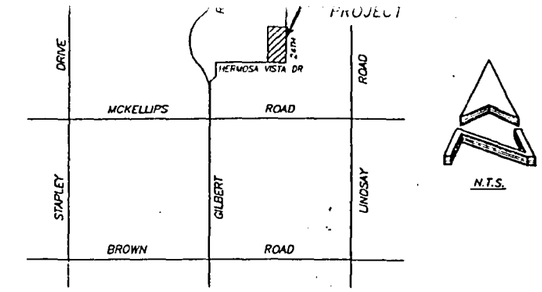
Notes:

1. THIS PROJECT IS IN A FEMA DESIGNATED FLOOD ZONE "X" PER F.I.R.M. MAP NO. 04013C2185E, SEPT. 4, 1991. ZONE "X" IS DEFINED AS "AREAS OF 500-YEAR FLOOD; AREAS OF 100 YEAR FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT..."
2. RETENTION BASINS SHALL BE GRADED AND ALL LANDSCAPING & IRRIGATION IMPROVEMENTS INSTALLED BY THE DEVELOPER. BASIN "A" SHALL BE DEDICATED TO THE PUBLIC FOR RECREATIONAL USE AND MAINTAINED BY THE CITY. BASIN "B" SHALL BE PRIVATE & MAINTAINED BY THE OWNER(S) OF TRACT "A"

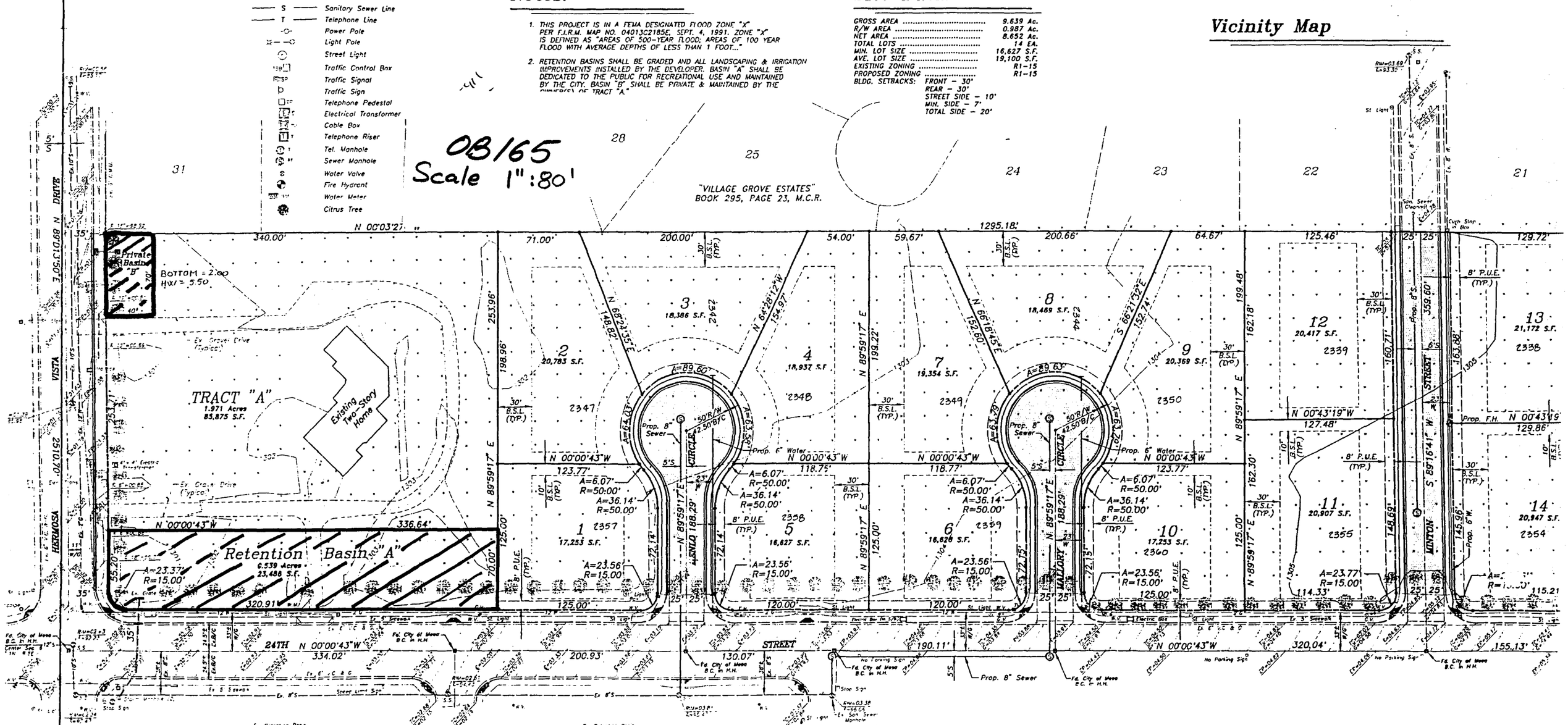
Site Data:

GROSS AREA	9.639 Ac.
R/W AREA	0.987 Ac.
NET AREA	8.652 Ac.
TOTAL LOTS	14 EA.
MIN. LOT SIZE	16,627 S.F.
AVE. LOT SIZE	19,100 S.F.
EXISTING ZONING	R1-15
PROPOSED ZONING	R1-15
BLDG. SETBACKS: FRONT	30'
REAR	30'
STREET SIDE	10'
MIN. SIDE	7'
TOTAL SIDE	20'

Vicinity Map



OB165
Scale 1":80'



Benchmark

CHISELED "⌑" ON T/C @ N.E. CORNER OF LINDSAY ROAD & HERMOSA VISTA
ELEVATION = 1311.57 (C.O.M. DATUM)

Owner/Developer

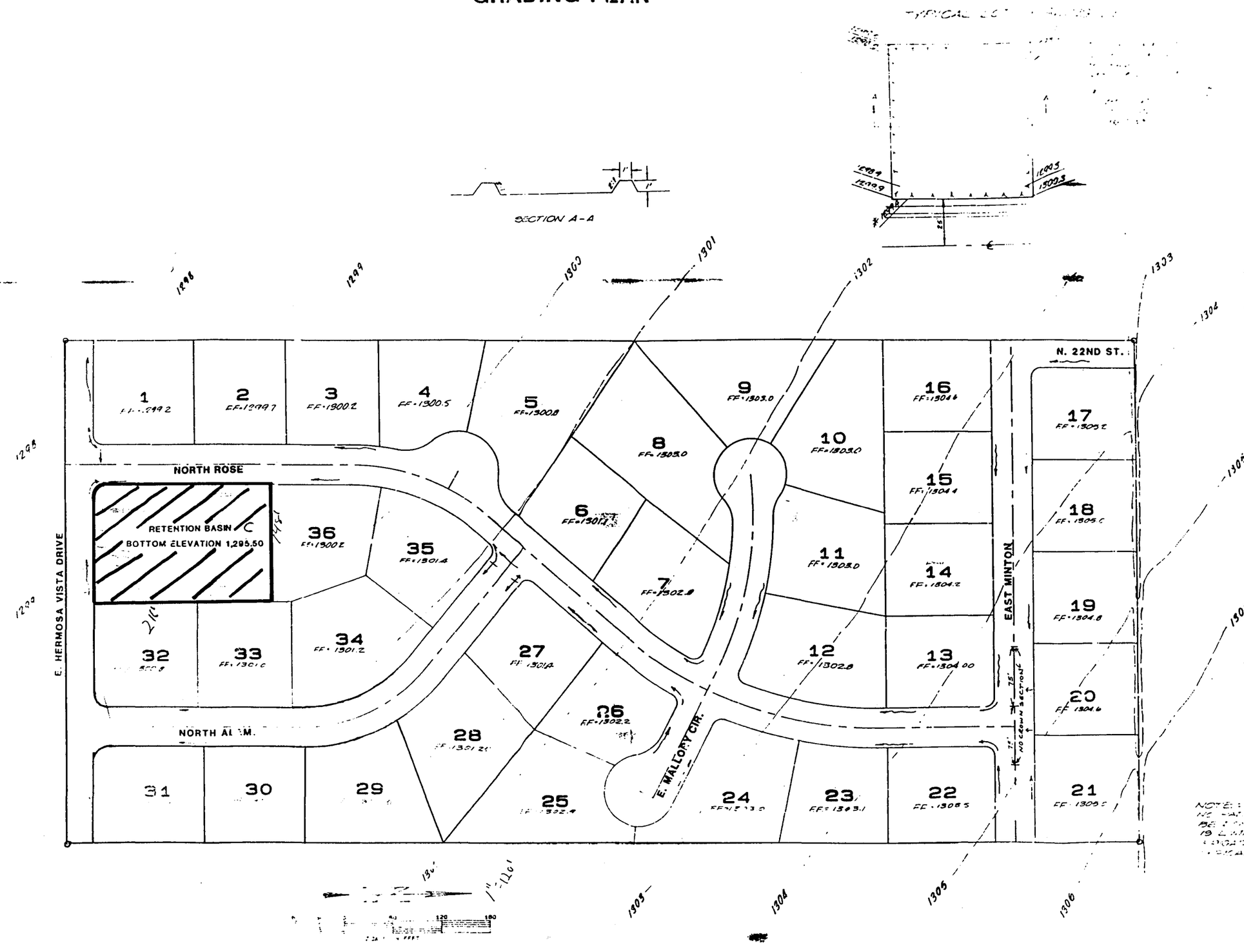
EAGLE ALLIANCE
2341 E. HERMOSA VISTA
MESA, AZ 85203
PH.# 649-1237
ATTN: RICH SEVEY

18884 WILLIAM H STANDAGE

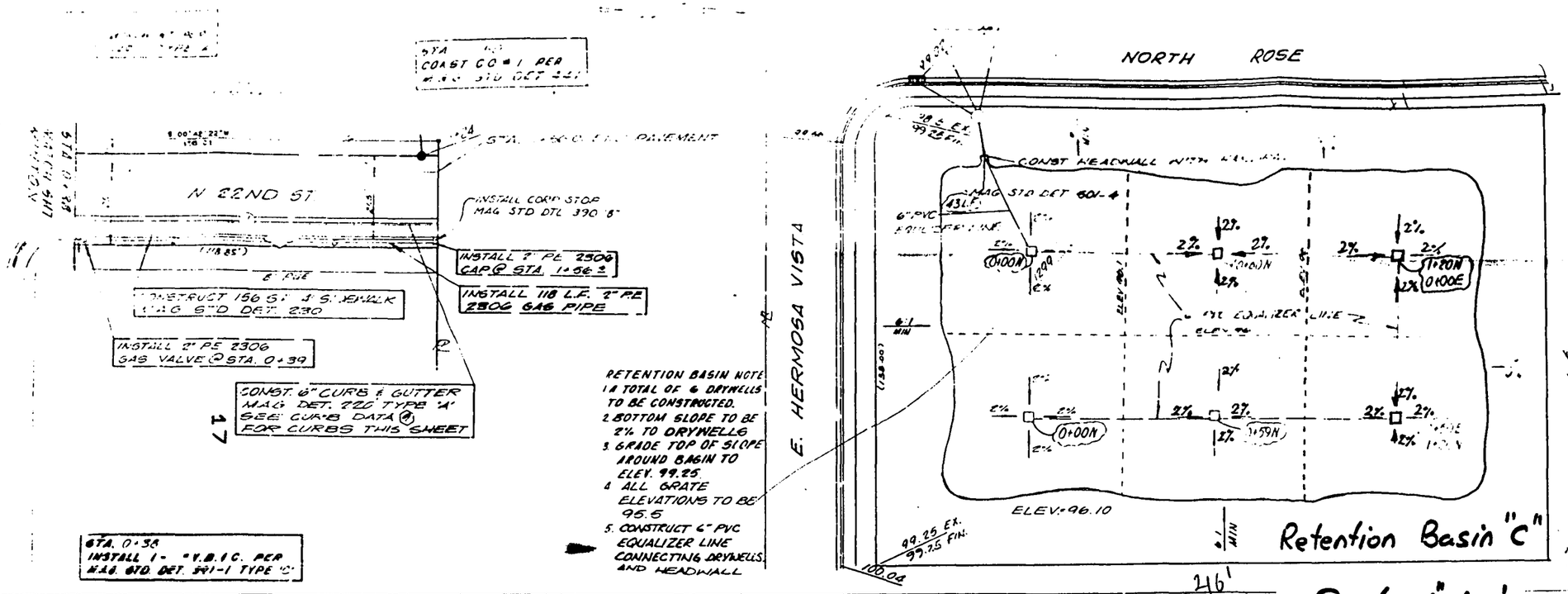
SHEET: 1
OF: 1
PROJECT No.: 960500
SCALE: 1"=40'

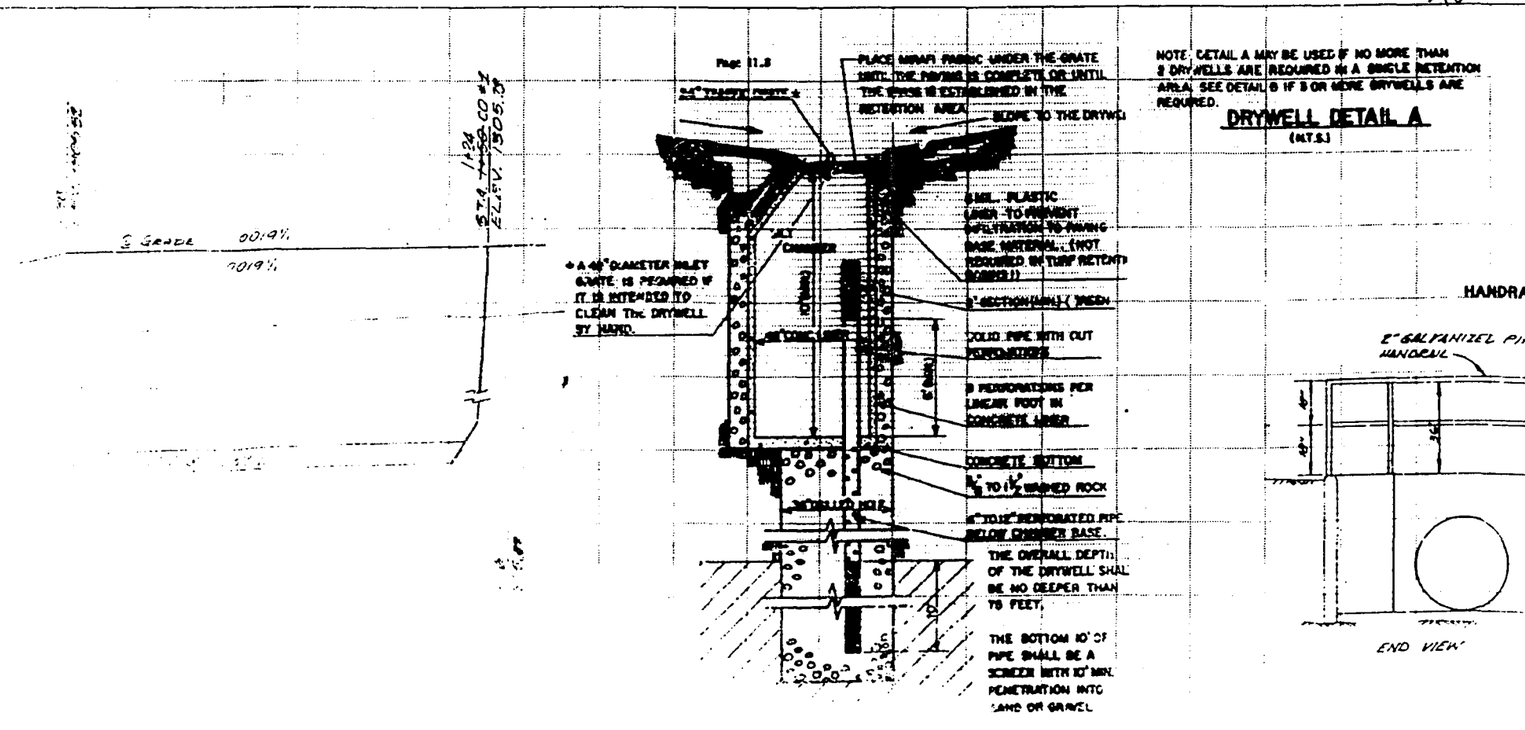
Standage & As
Consulting Er
1136 East Harmony Ave
Mesa, Arizona
(602) 892-80

GRADING PLAN



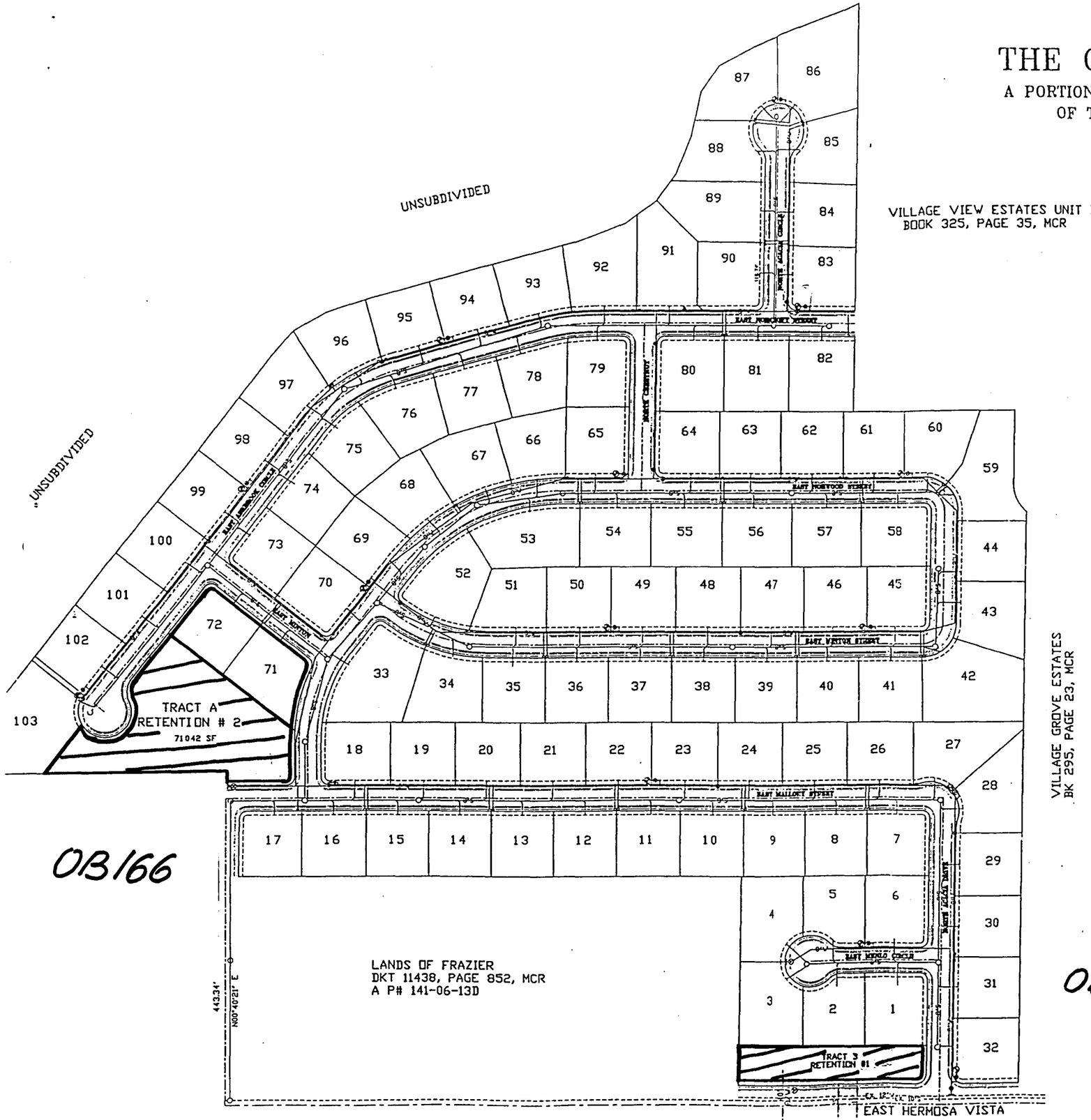
INSTALL WATER DATA





UTILITY PLAN
FOR
THE GROVES OF HERMOSA VISTA

A PORTION OF SECTION 8, TOWNSHIP 1 NORTH, RANGE 6 EAST
OF THE GILA AND SALT RIVER BASE AND MERIDIAN
MARICOPA COUNTY, ARIZONA

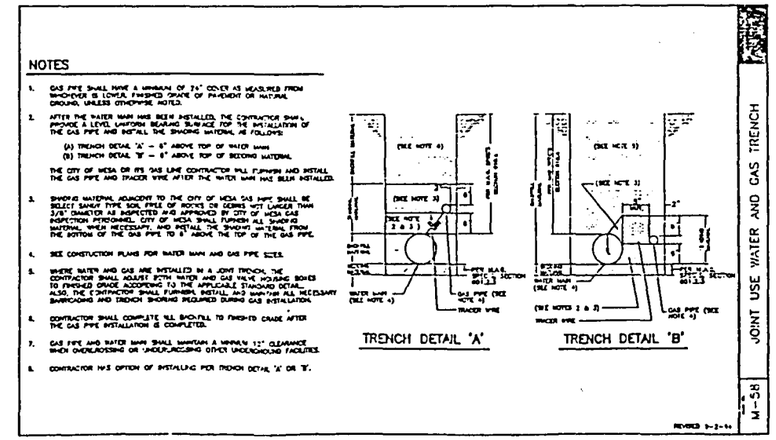


OB166

OB165

GAS SYSTEM QUANTITIES

NO.	ITEM	QUANTITY	UNIT
1.	2" P.E. GAS PIPE	8,726	L.F.
2.	2" P.E. GAS VALVE	3	EA.
3.	2" TAPPING TEE	2	EA.
4.	2" P.E. TEE	9	EA.
5.	2" P.E. CAP	5	EA.
6.	2" X 1/2" P.E. SERVICE SADDLE	51	EA.
7.	1/2" P.E. GAS PIPE	2,372	L.F.
8.	1/2" P.E. GAS CAP	51	EA.
9.	ANODE (ILB)	3	EA.
10.	VALVE HOUSING COMPLETE	3	EA.
11.	TRACER WIRE	11,158	L.F.
12.	4" X 2" P.E. REDUCER	3	EA.



REVISIONS	DATE
1	
2	
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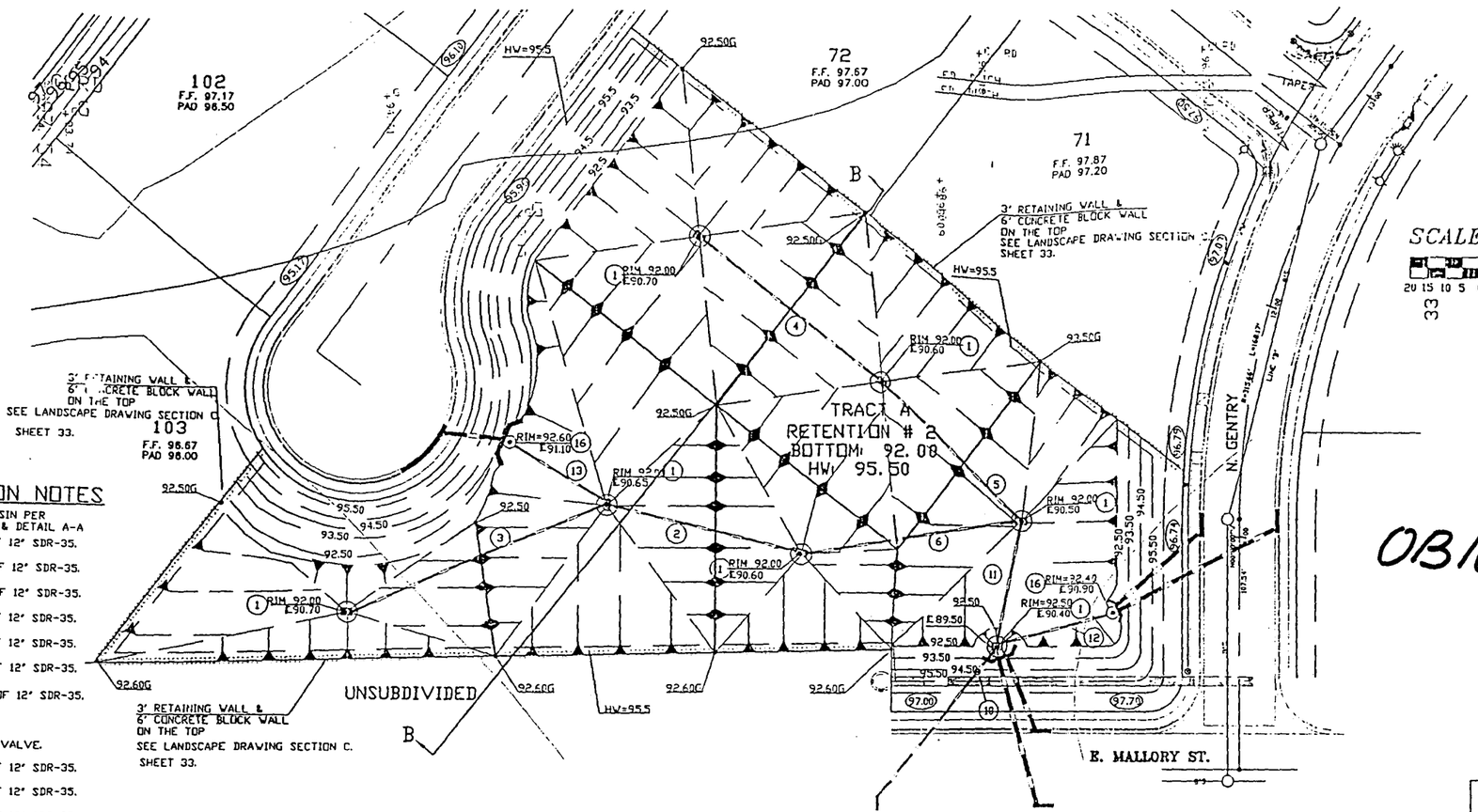
ALLEN CONSULTING ENGINEERS, INC.
266 WEST 3RD PLACE
MESA, ARIZONA 85201
PHONE (602) 844-1066

THE GROVES OF HERMOSA VISTA
TOWN AND COUNTRY DEVELOPMENT
UTILITY PLAN

A-62432



N

SCALE 1" = 40'

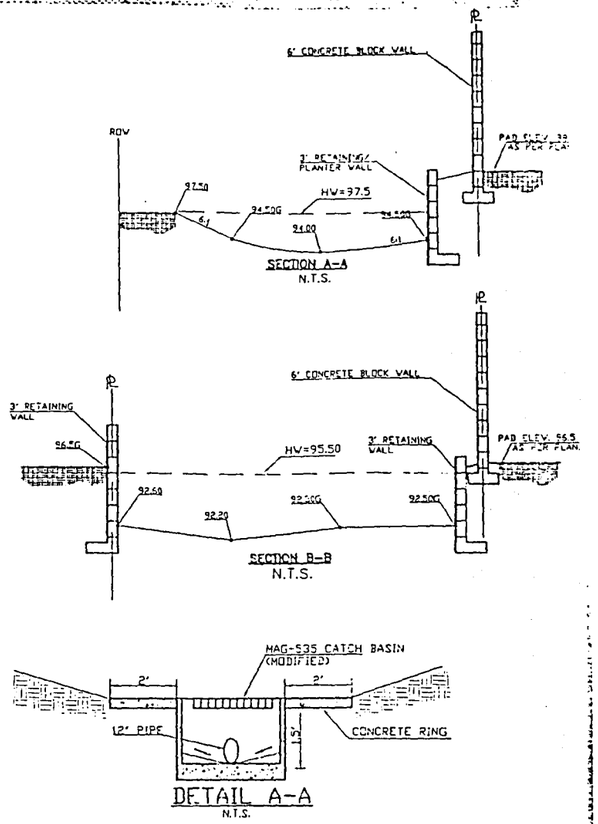
20 15 10 5 0 10 20 40

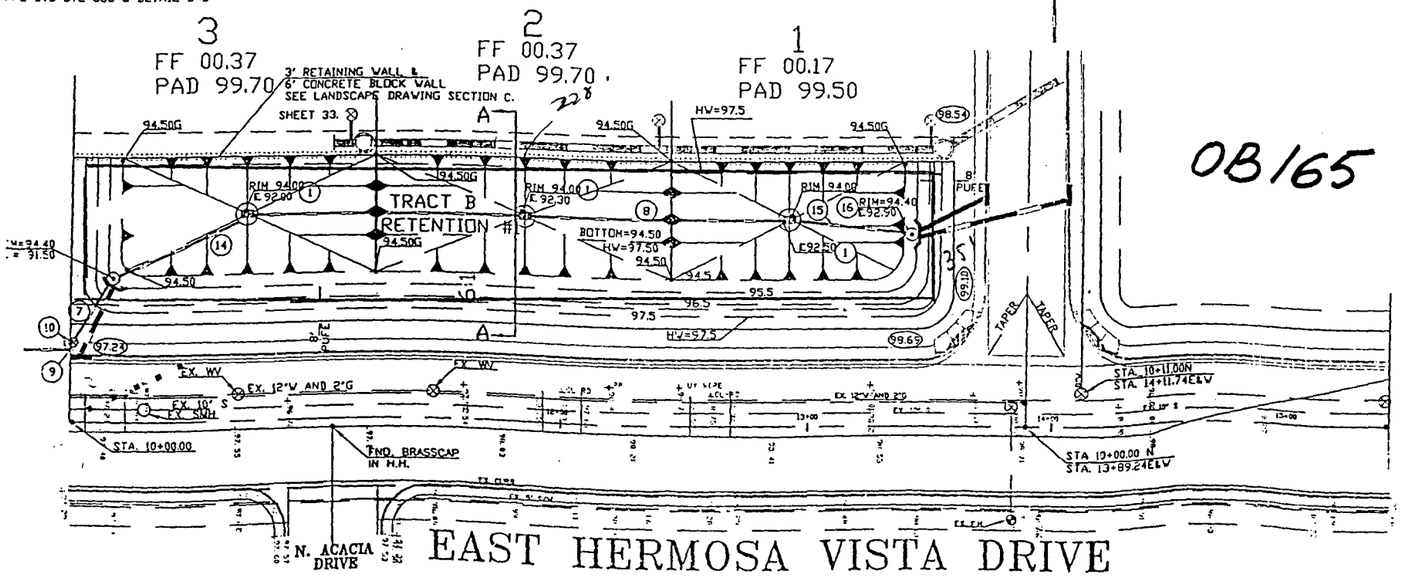
33

OB166

CONSTRUCTION NOTES

INSTALL CATCH BASIN PER MAG STD DTL 535 & DETAIL A-A
INSTALL 90 L.F. OF 12" SDR-35.
INSTALL 113 L.F. OF 12" SDR-35.
INSTALL 102 L.F. OF 12" SDR-35.
INSTALL 90 L.F. OF 12" SDR-35.
INSTALL 90 L.F. OF 12" SDR-35.
INSTALL 27 L.F. OF 12" SDR-35.
INSTALL 259 L.F. OF 12" SDR-35.
INSTALL 45° BEND.
IN 12" GATE VALVE.
INSTALL 57 L.F. OF 12" SDR-35.
INSTALL 48 L.F. OF 12" SDR-35.
INSTALL 44 L.F. OF 12" SDR-35.
INSTALL 53 L.F. OF 12" SDR-35.
INSTALL 44 L.F. OF 12" SDR-35.
INSTALL CATCH BASIN PER MAG STD DTL 535 & DETAIL B-B





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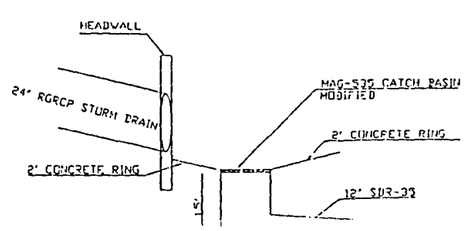

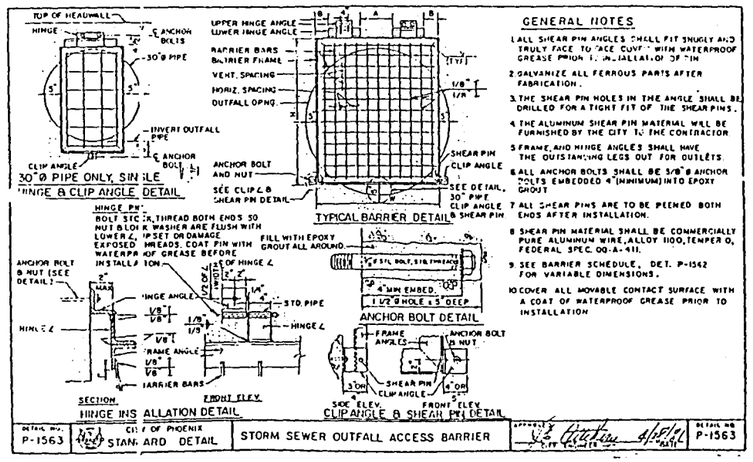

REVISIONS	DATE
1	
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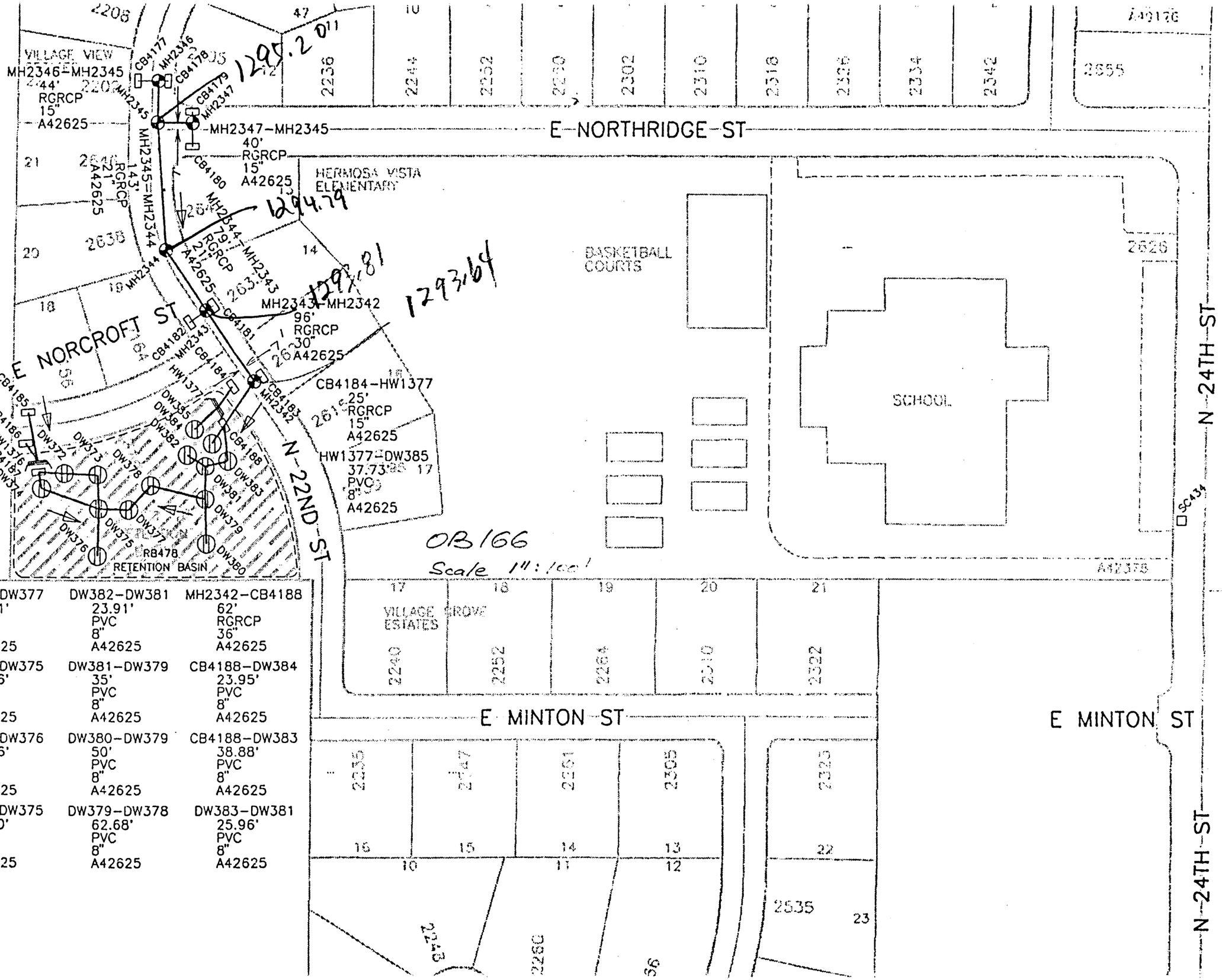
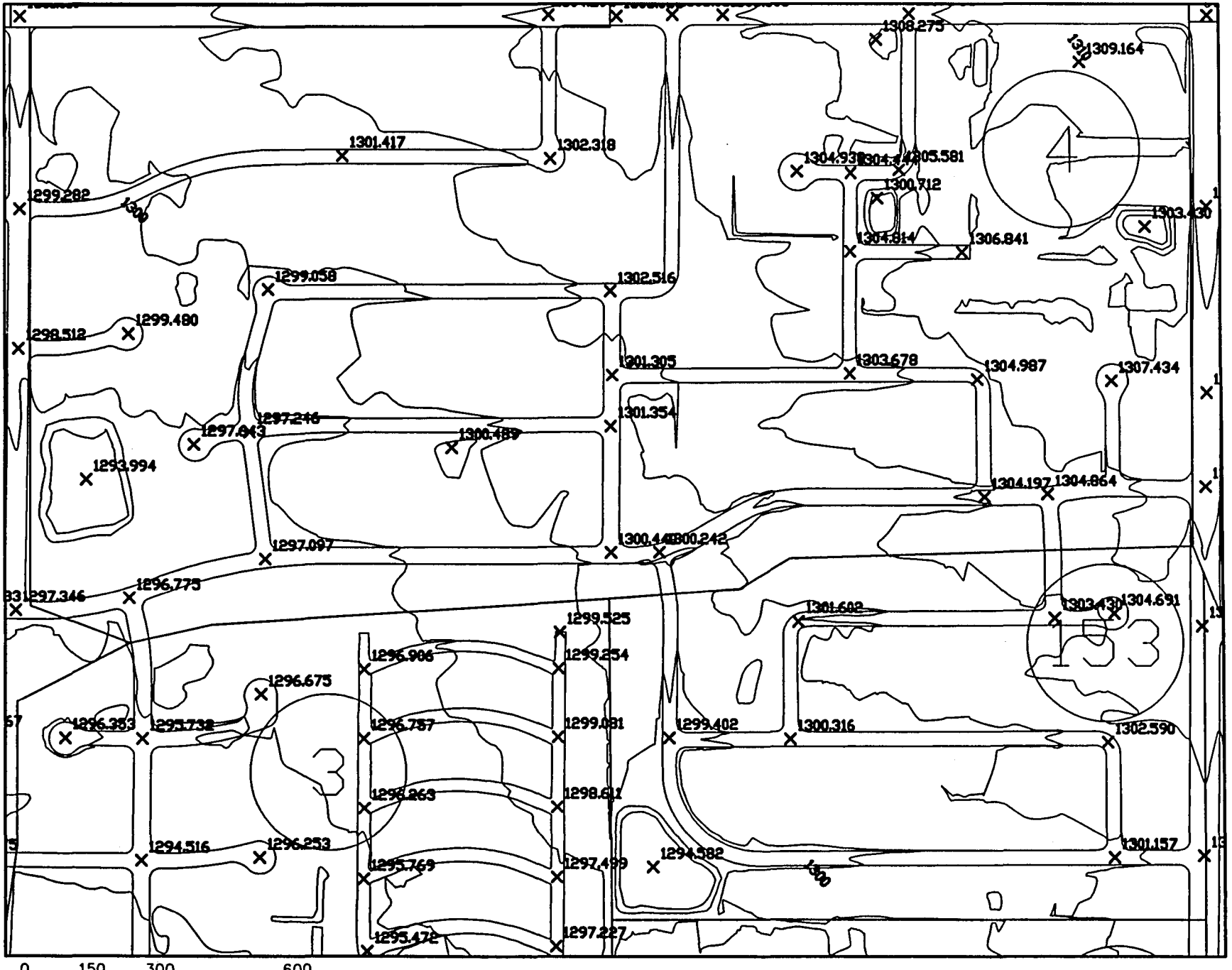
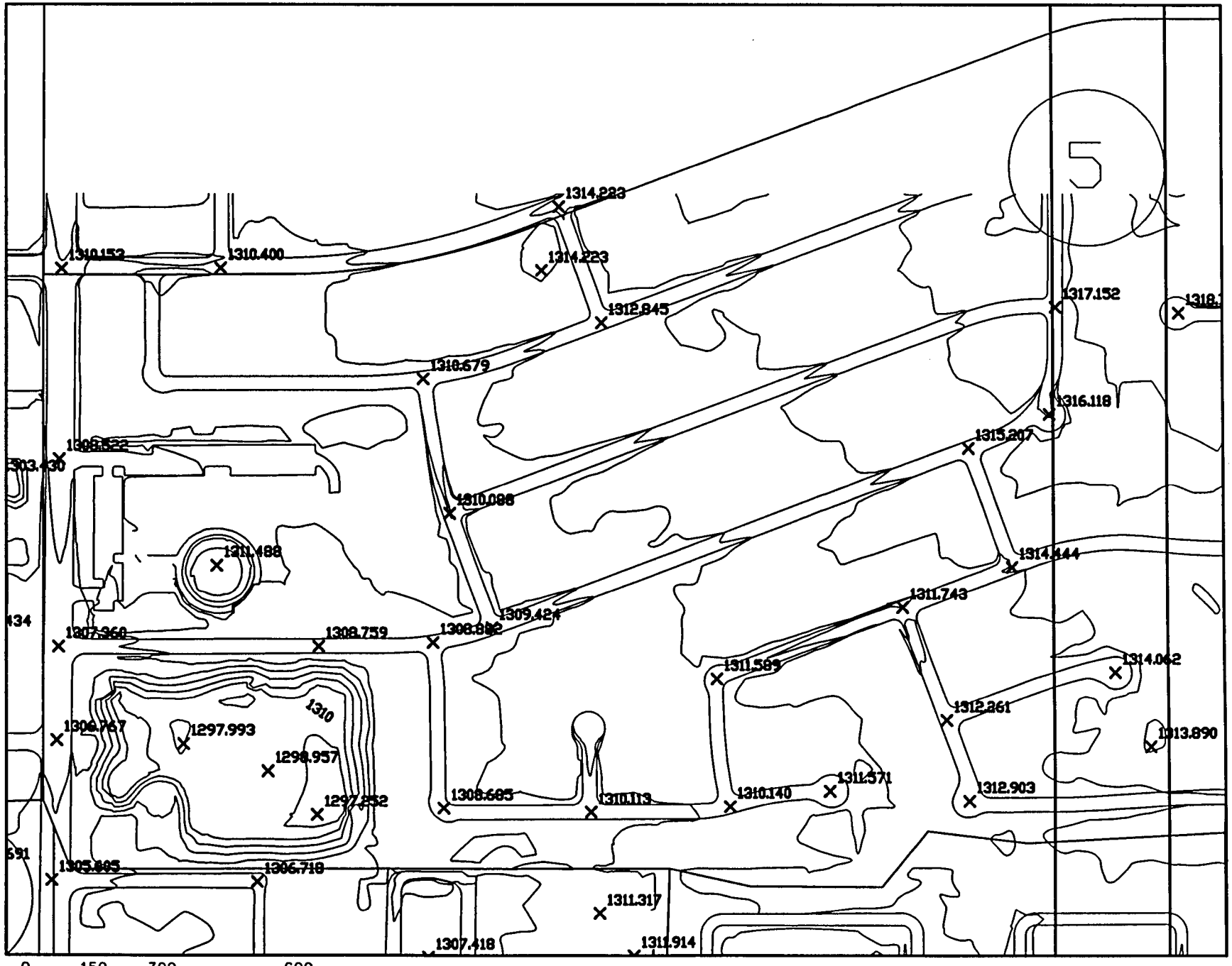
ALLEN CONSULTING ENGINEERS, INC.
266 WEST 3RD PLACE
MESA, ARIZONA 85201
PHONE (602) 844-1666

THE GROVES OF HERMOSA VISTA


E NORTHRIDGE ST
N 24TH ST
E NORCROFT ST
N 22ND ST
E MINTON ST
VILLAGE VIEW
HERMOSA VISTA ELEMENTARY
BASKETBALL COURTS
SCHOOL
VILLAGE GROVE ESTATES
RB478 RETENTION BASIN
MH2346-MH2345 44' RGRCP 15" A42625
MH2347-MH2345 40' RGRCP 15" A42625
MH2345-MH2344 143' RGRCP 21" A42625
MH2344-MH2343 79' RGRCP 21" A42625
MH2343-MH2342 96' RGRCP 30" A42625
CB4184-HW1377 25' RGRCP 15" A42625
HW1377-DW385 37.73' PVC 8" A42625
CB4185-HW1376 52' RGRCP 15" A42625
CB4186-HW1376 20' RGRCP 15" A42625
CB4187-DW372 28.76' PVC 8" A42625
DW378-DW377 36.11' PVC 8" A42625
DW382-DW381 23.91' PVC 8" A42625
MH2342-CB4188 62' RGRCP 36" A42625
DW372-DW373 37.37' PVC 8" A42625
DW377-DW375 34.06' PVC 8" A42625
DW381-DW379 35' PVC 8" A42625
CB4188-DW384 23.95' PVC 8" A42625
CB4187-DW374 18.58' PVC 8" A42625
DW375-DW376 51.46' PVC 8" A42625
DW380-DW379 50' PVC 8" A42625
CB4188-DW383 38.88' PVC 8" A42625
DW373-DW375 37.53' PVC 8" A42625
DW374-DW375 67.60' PVC 8" A42625
DW379-DW378 62.68' PVC 8" A42625
DW383-DW381 25.96' PVC 8" A42625
1295.2
1294.79
1293.81
1293.64
OB166
Scale 1" = 100'



SUB-BASIN 1B4 & 1B153



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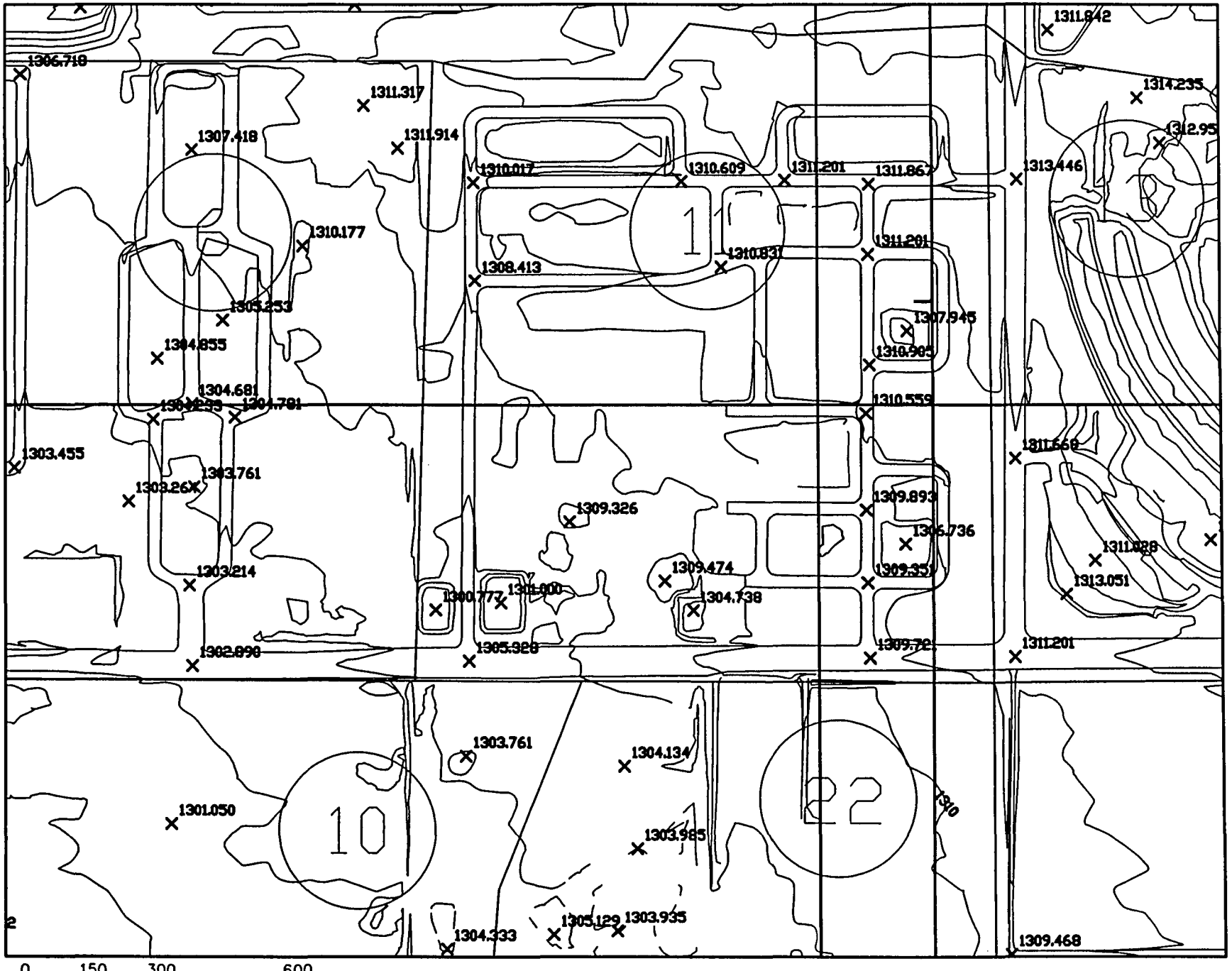
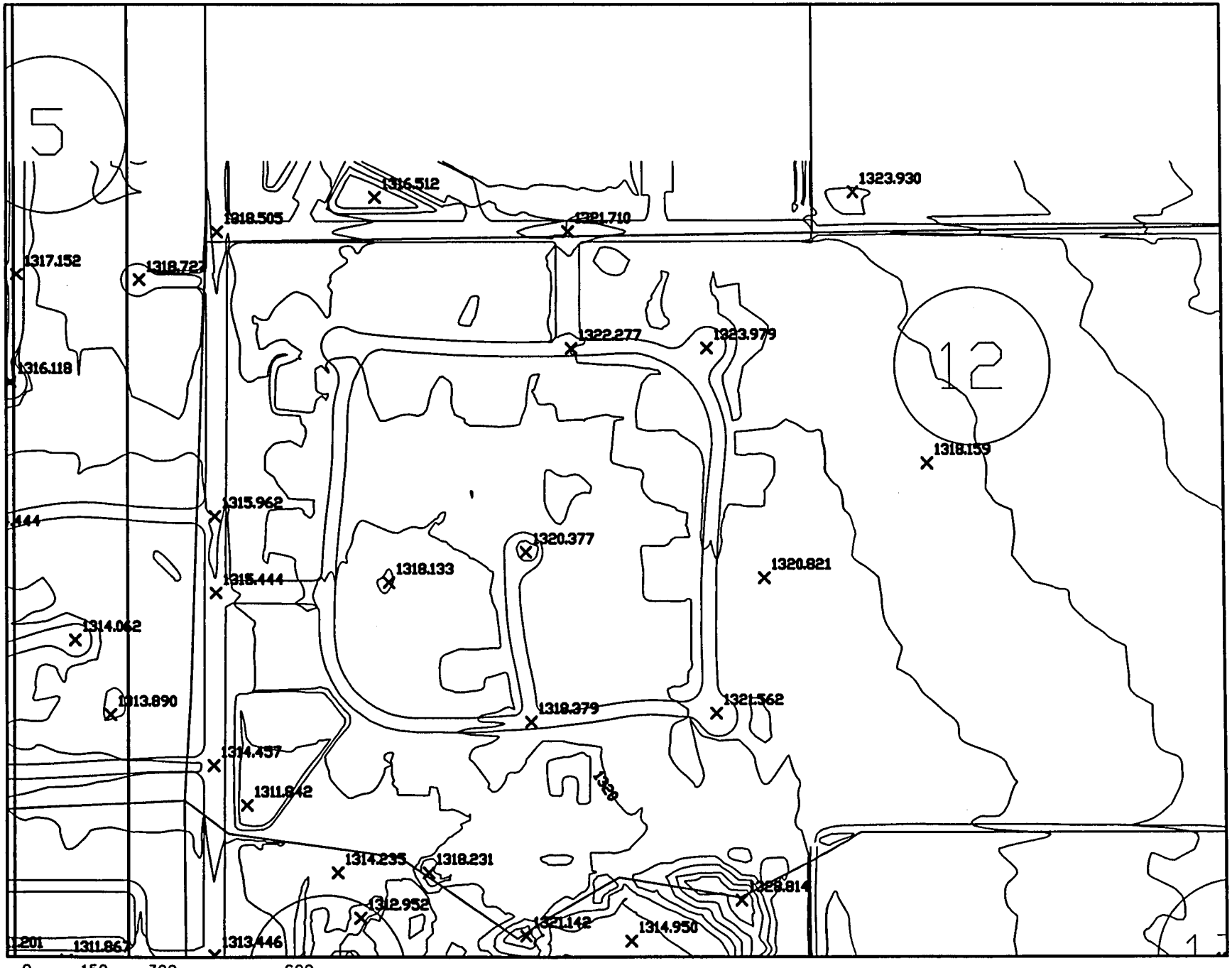


SUB-BASIN 1B11



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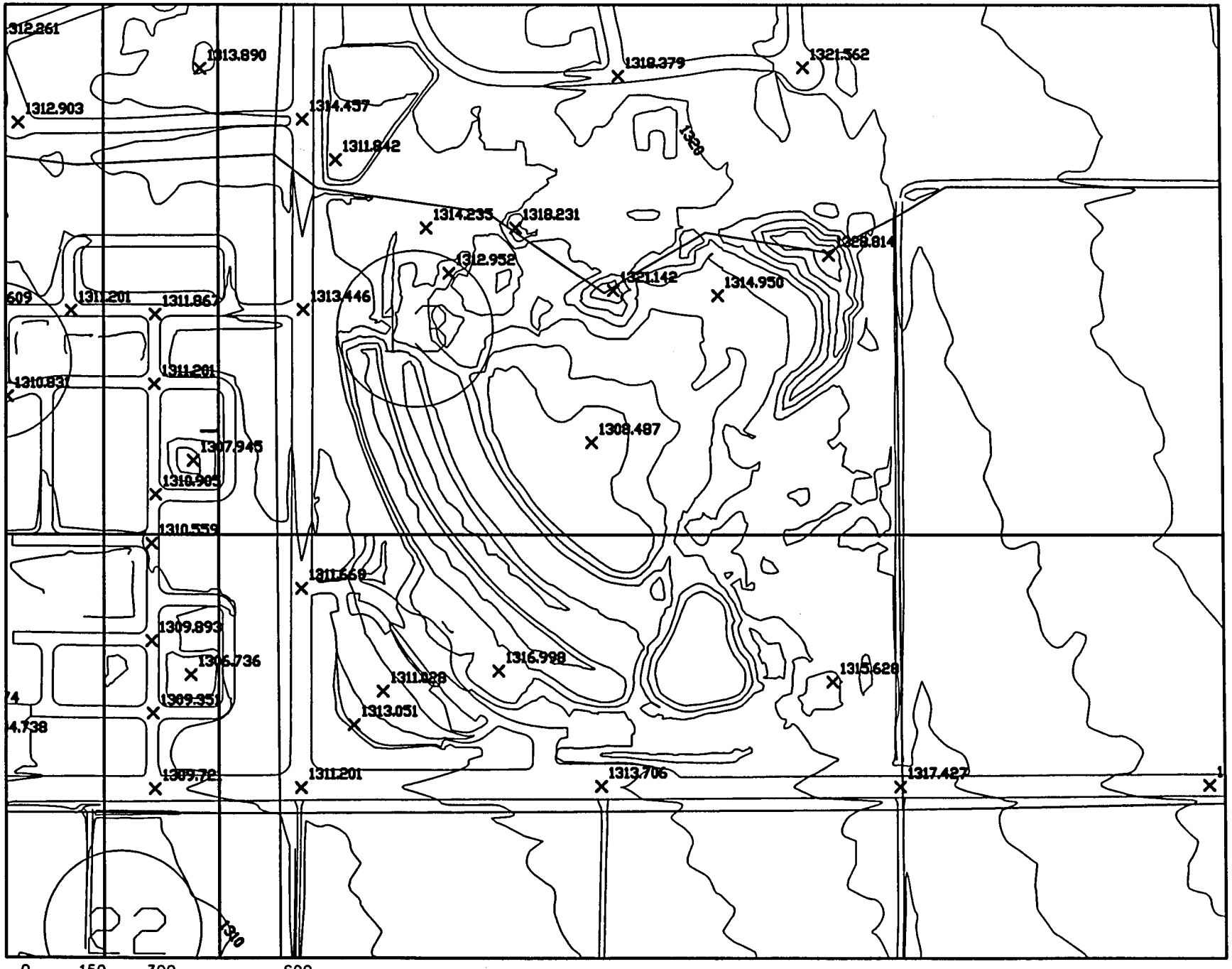

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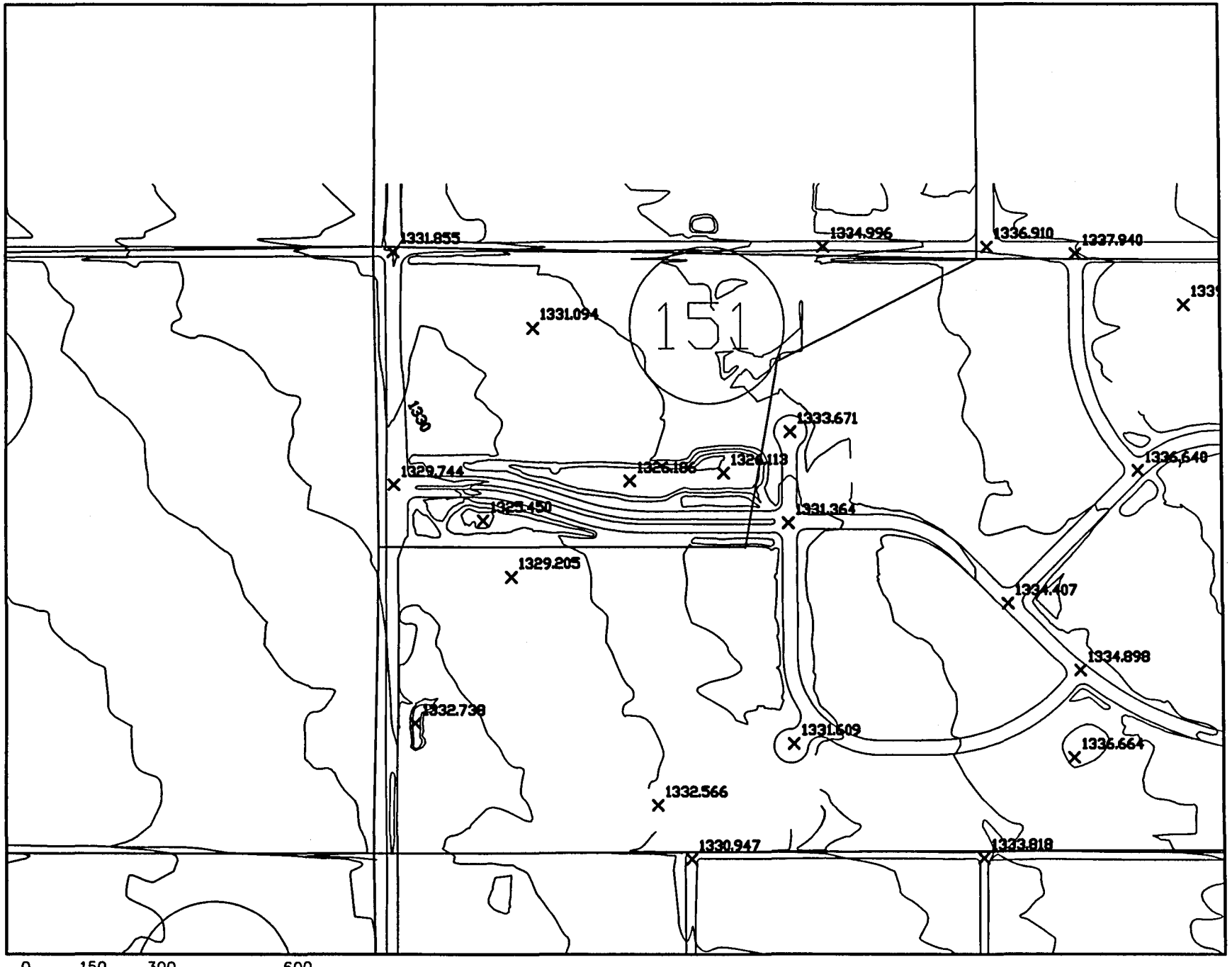
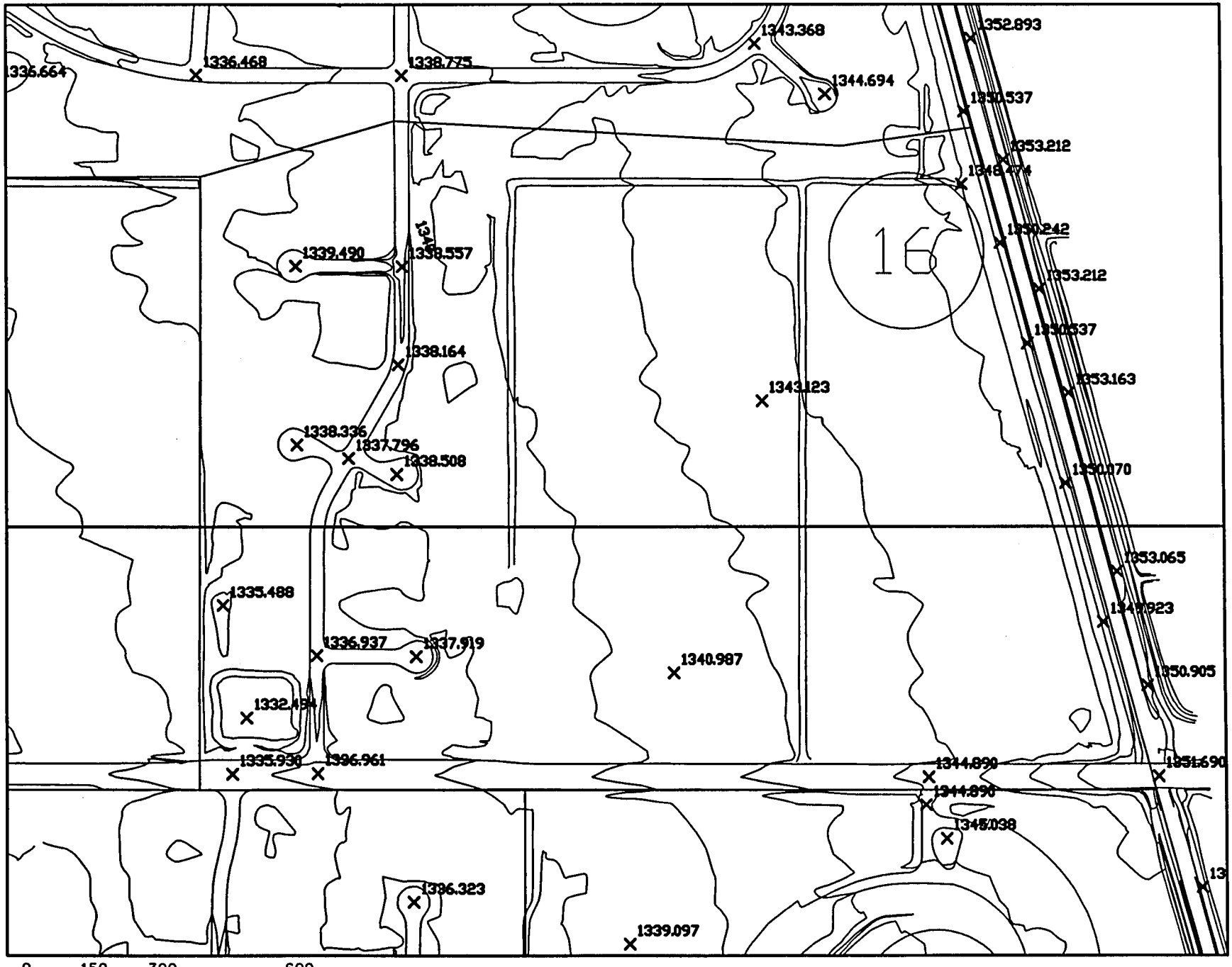


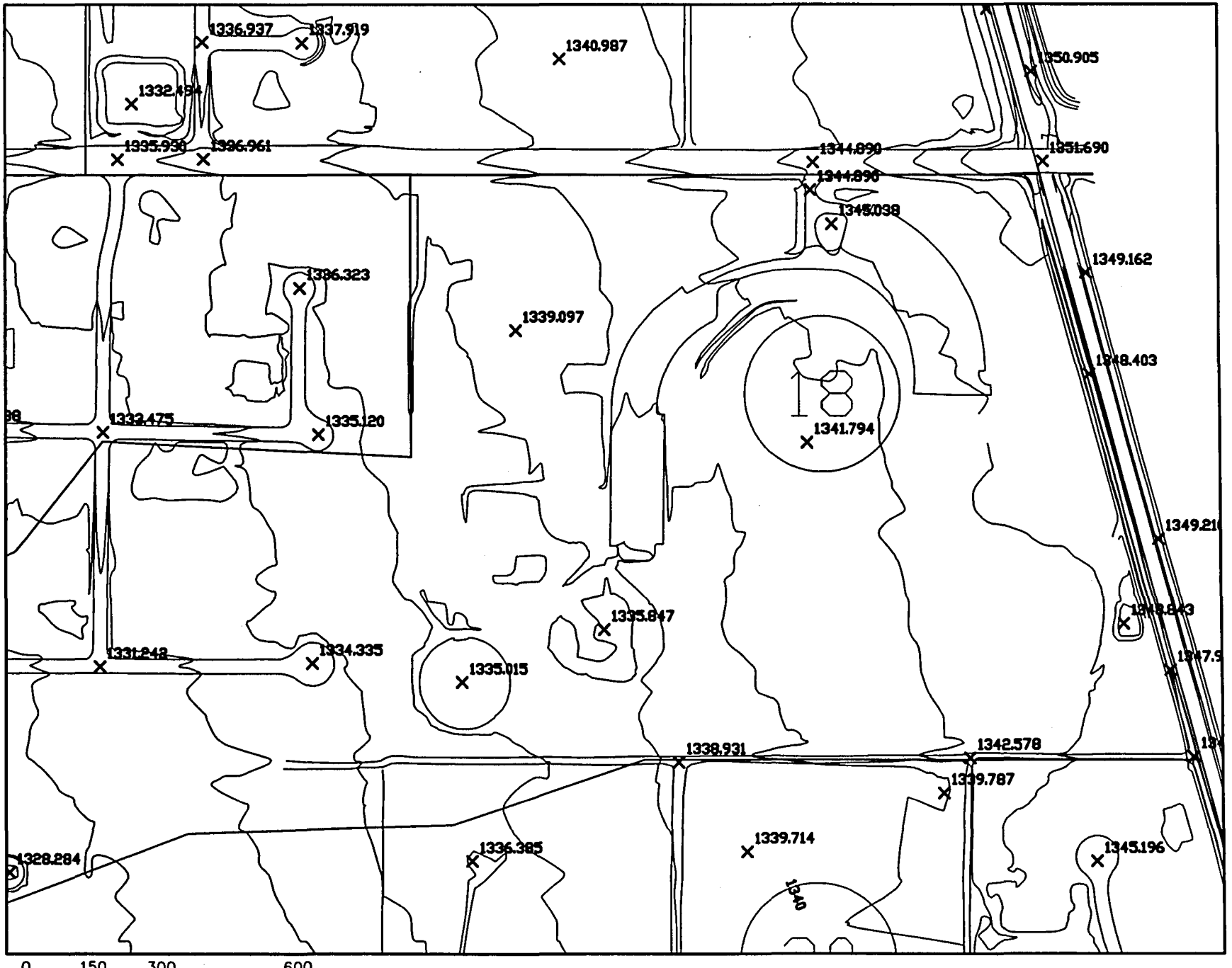
SUB-BASIN 1B151



0 150 300 600

Scale 1" = 300'

SUB-BASIN 1B16



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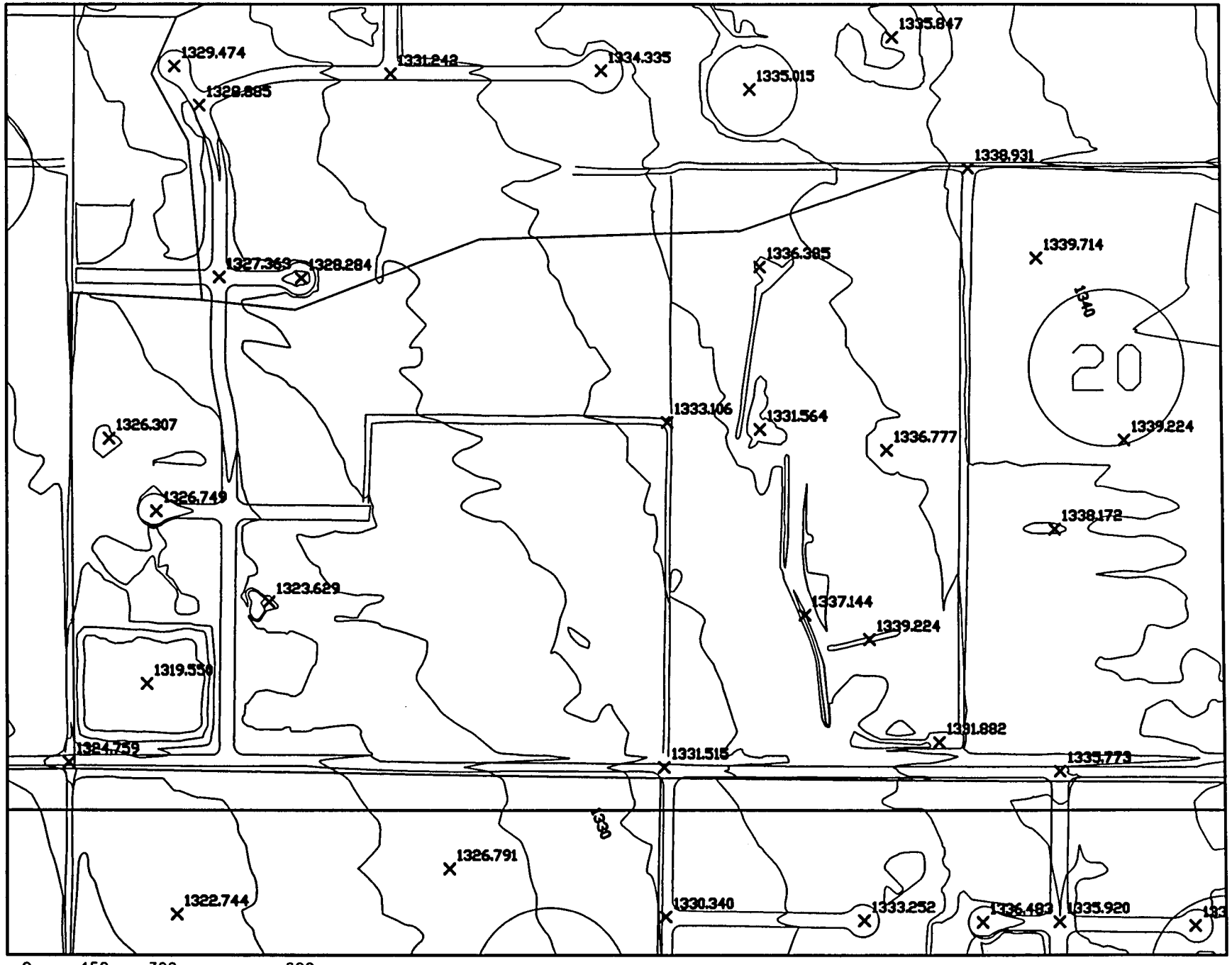
Scale 1" = 300'

SUB-BASIN 1B18



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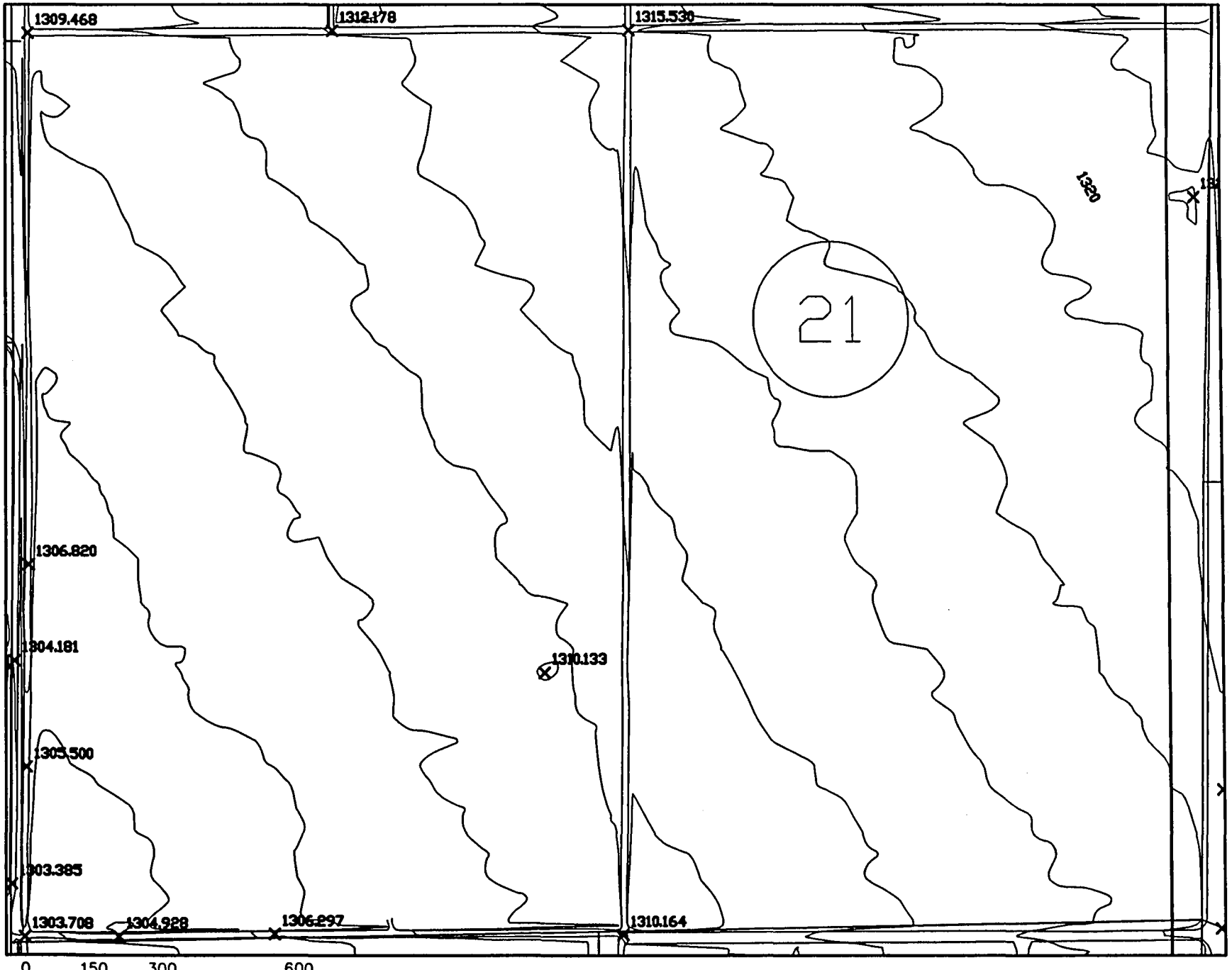
Scale 1" = 300'

SUB-BASIN 1B20



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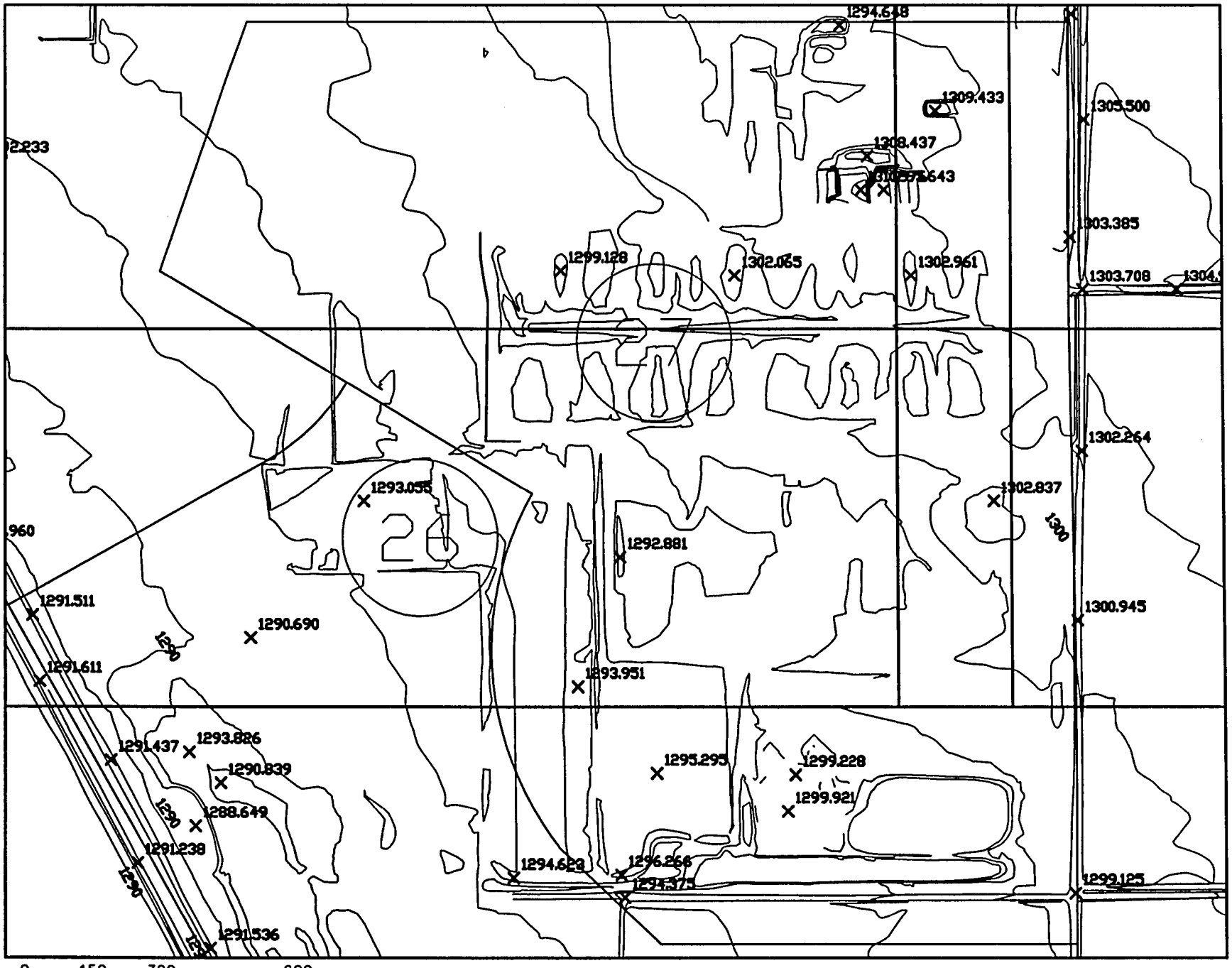

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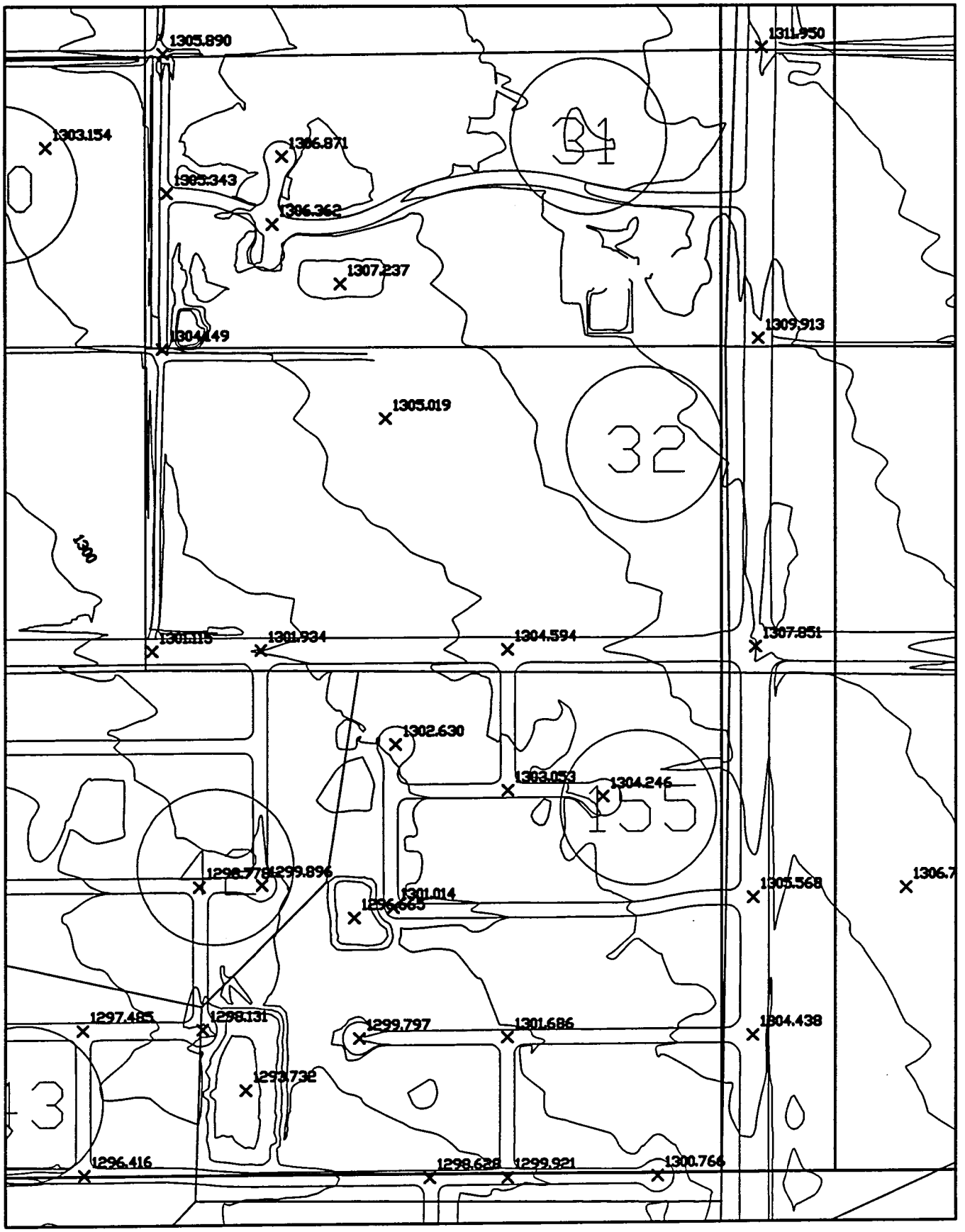

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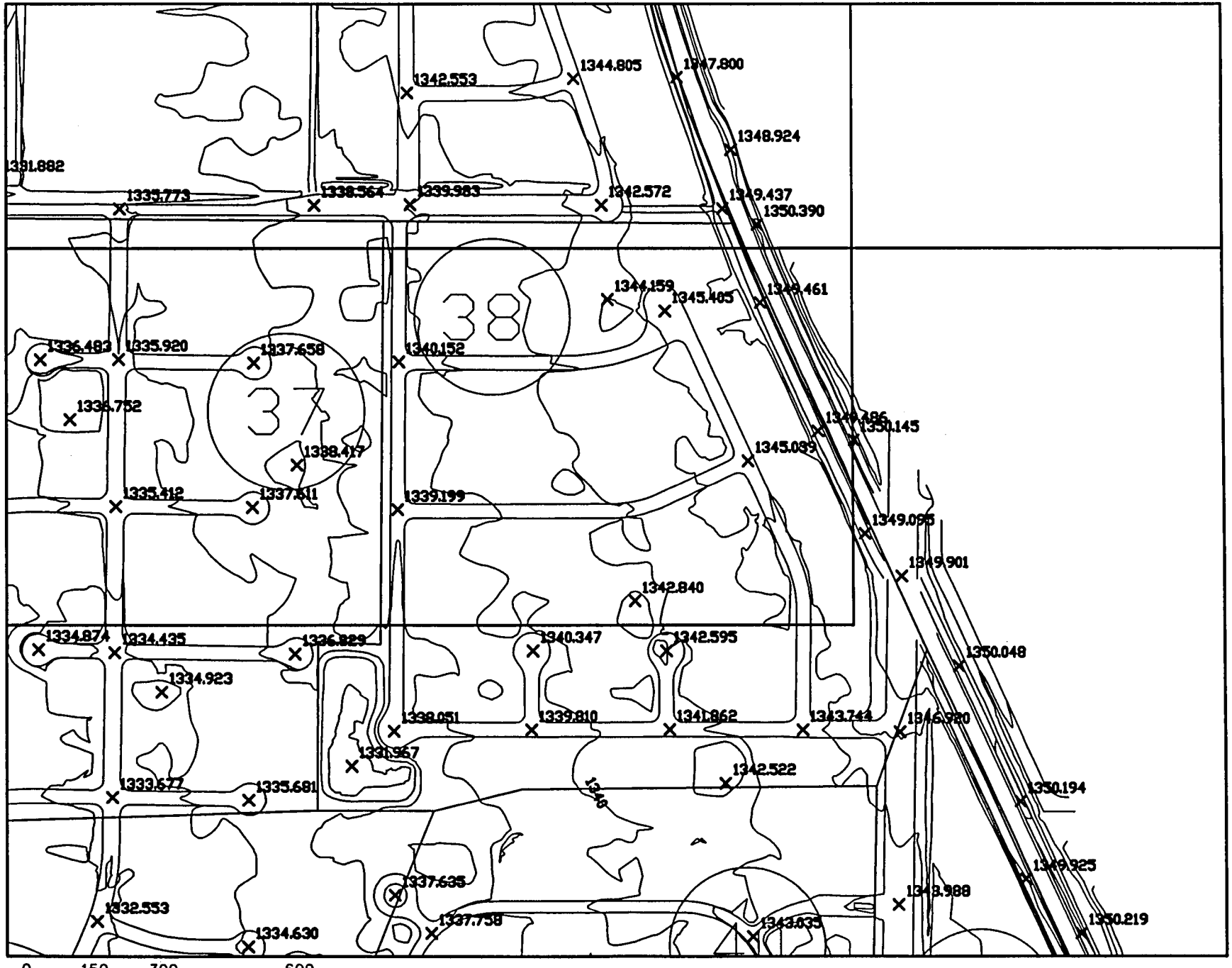
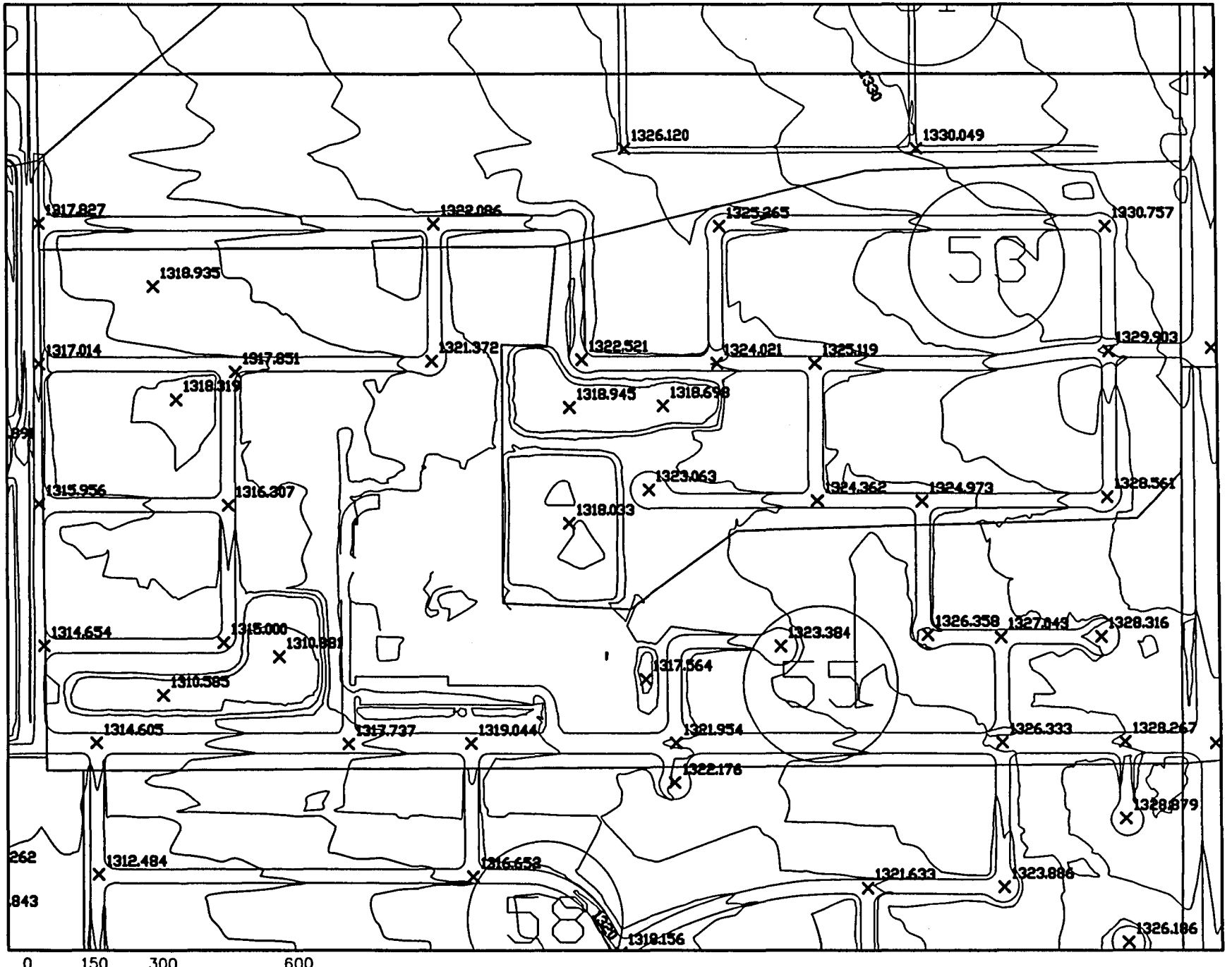
Scale 1" = 300'

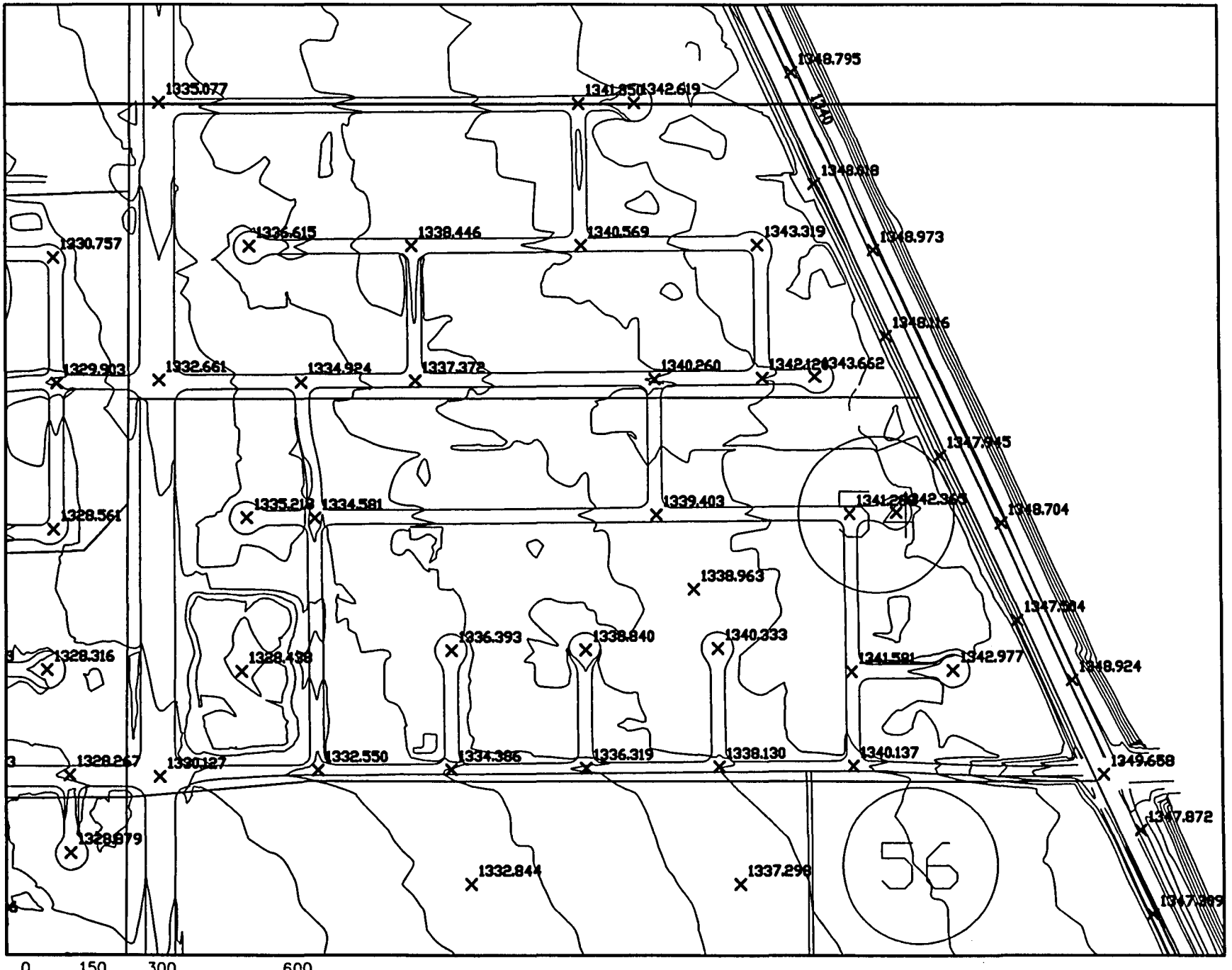
SUB-BASIN 2B31 & 2B155



SUB-BASIN 2B38



SUB-BASIN 2B53 & 2B55



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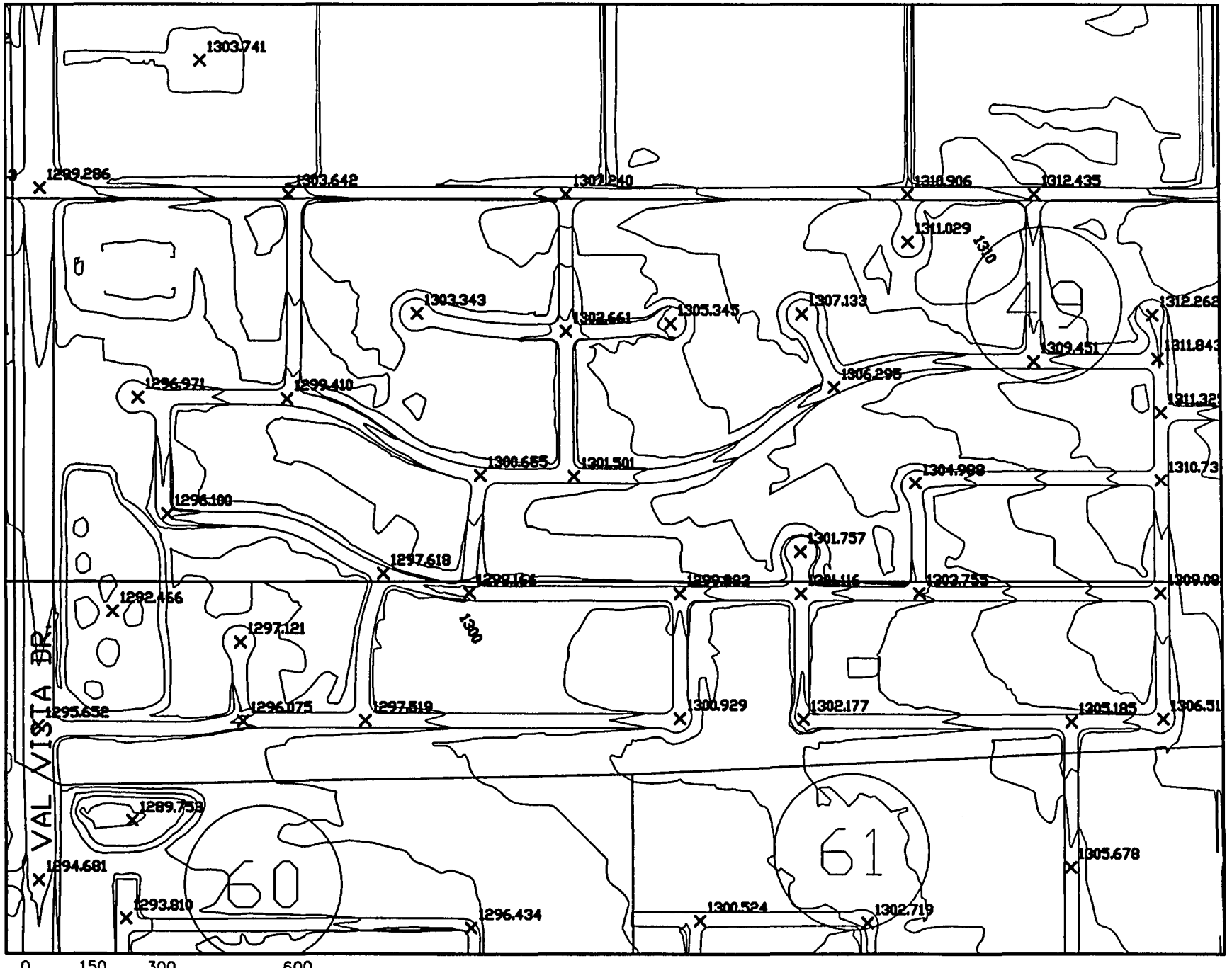
Scale 1" = 300'

SUB-BASIN 2B54



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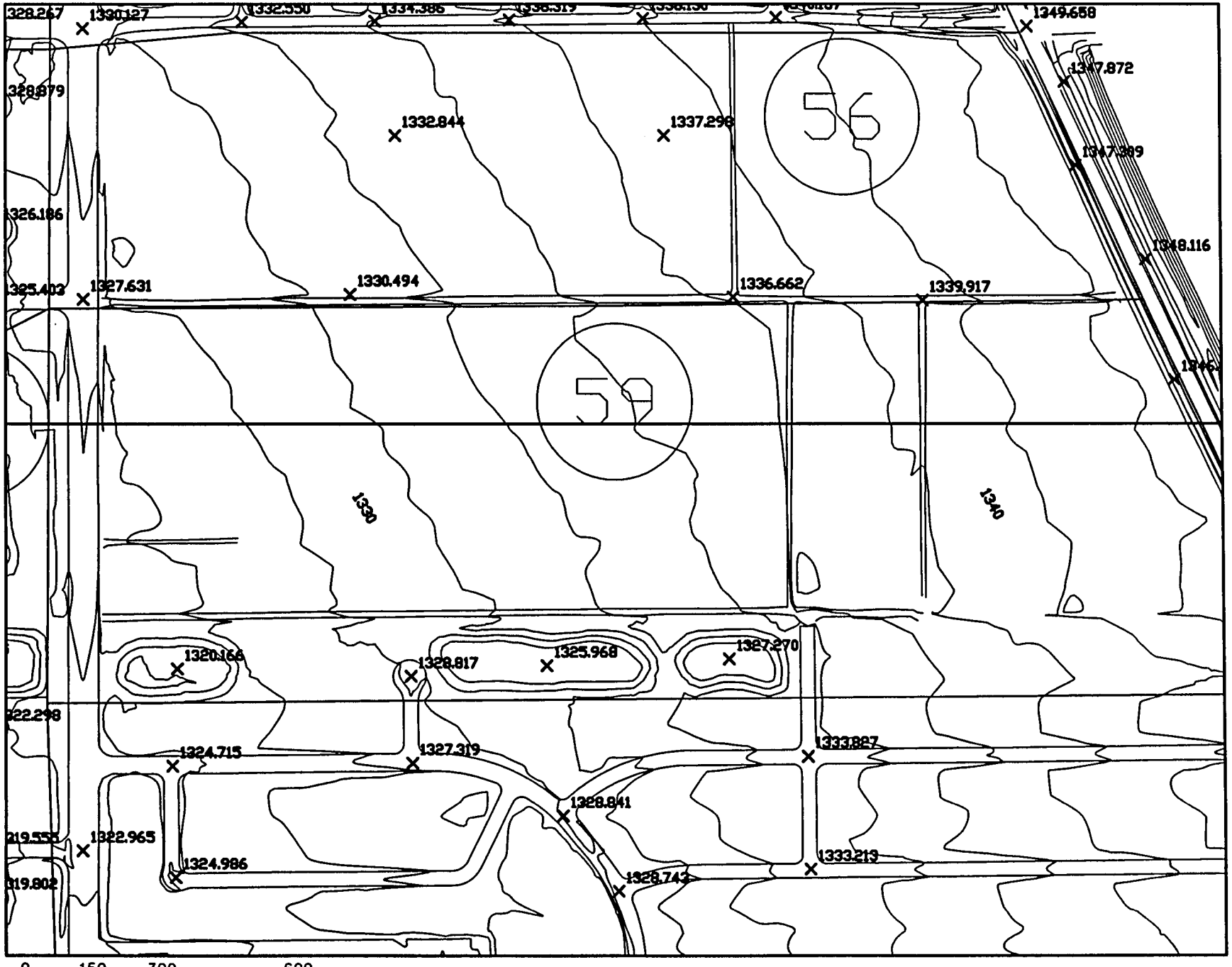
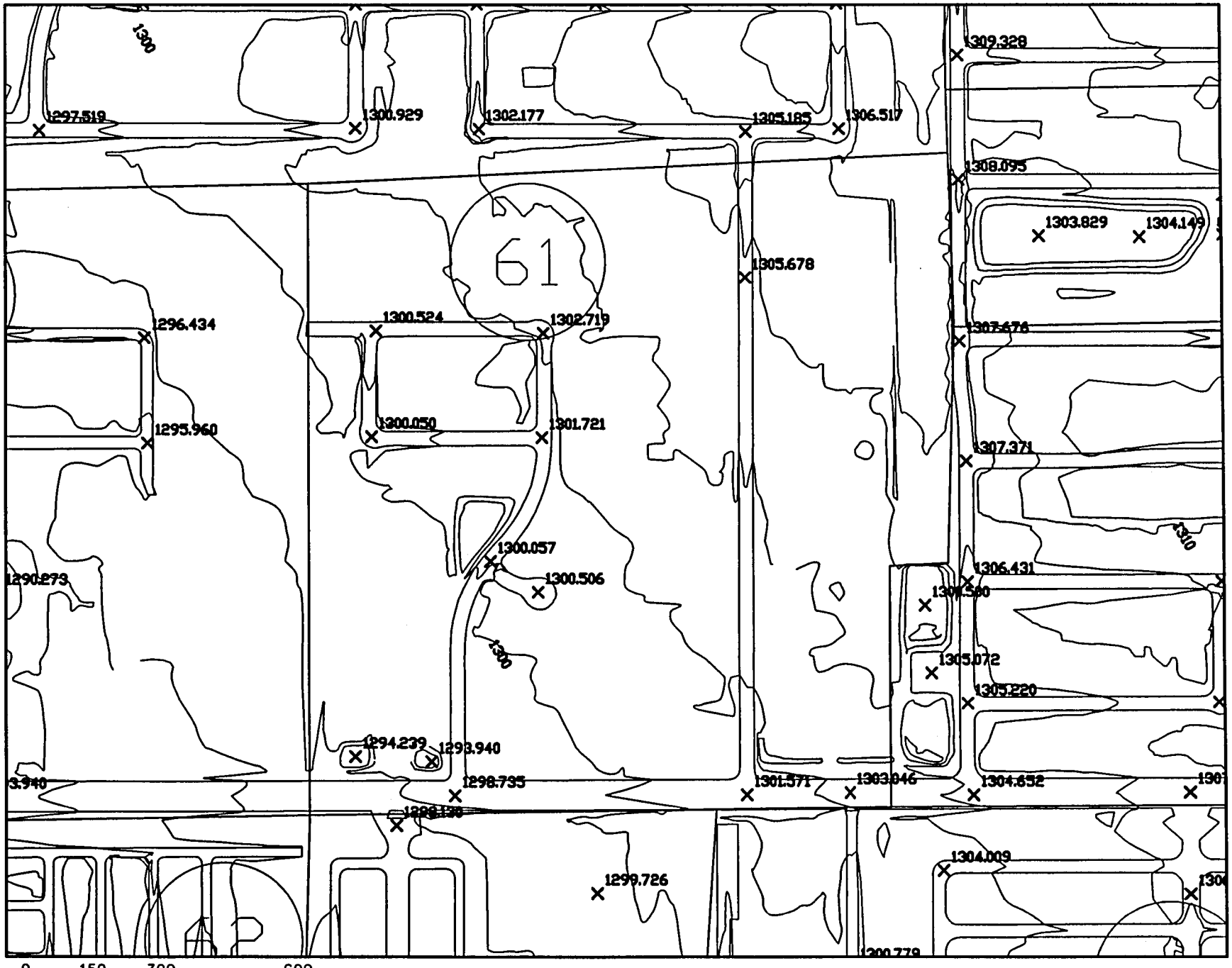
Scale 1" = 300'

SUB-BASIN 3B49



SUB-BASIN 3B59



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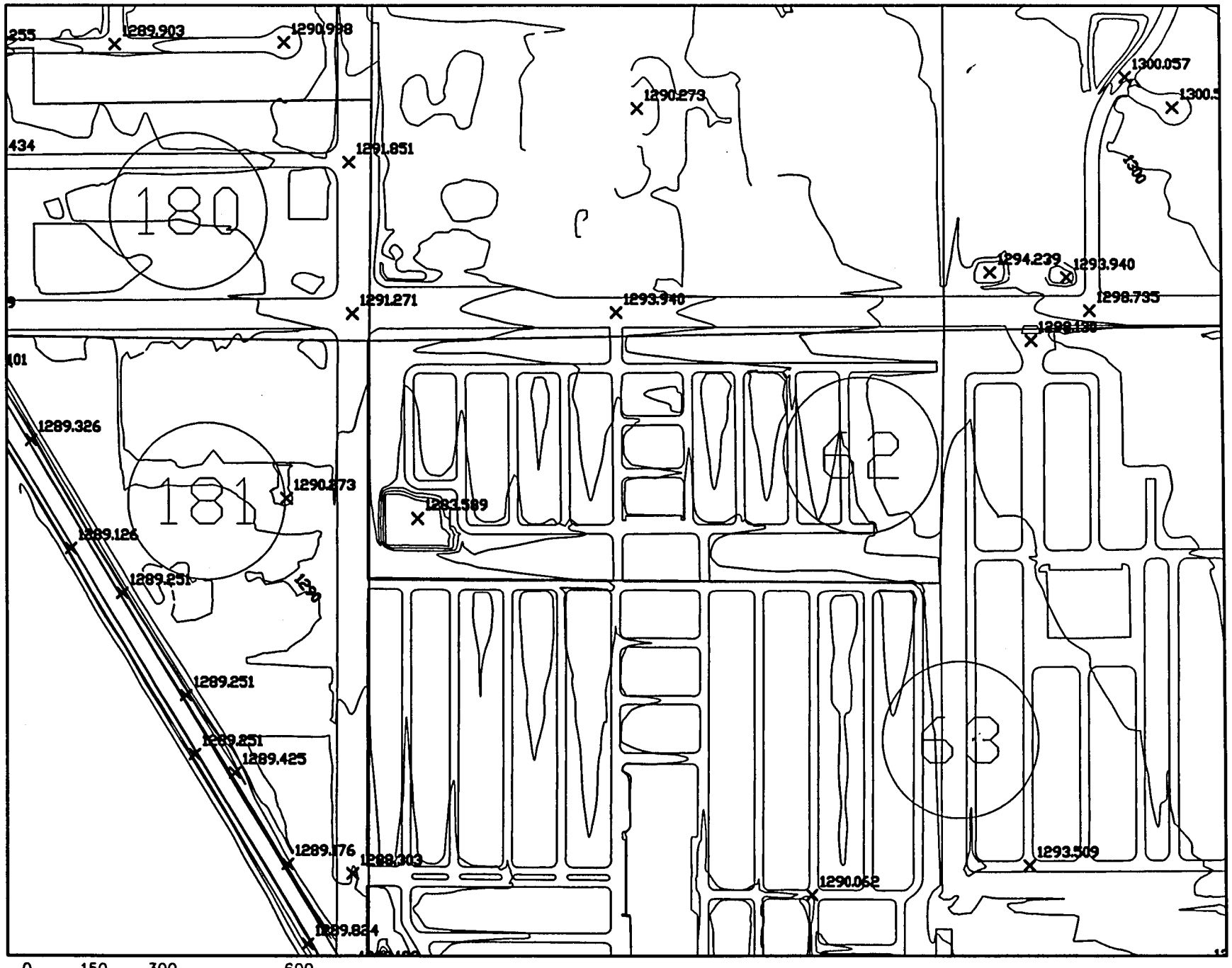
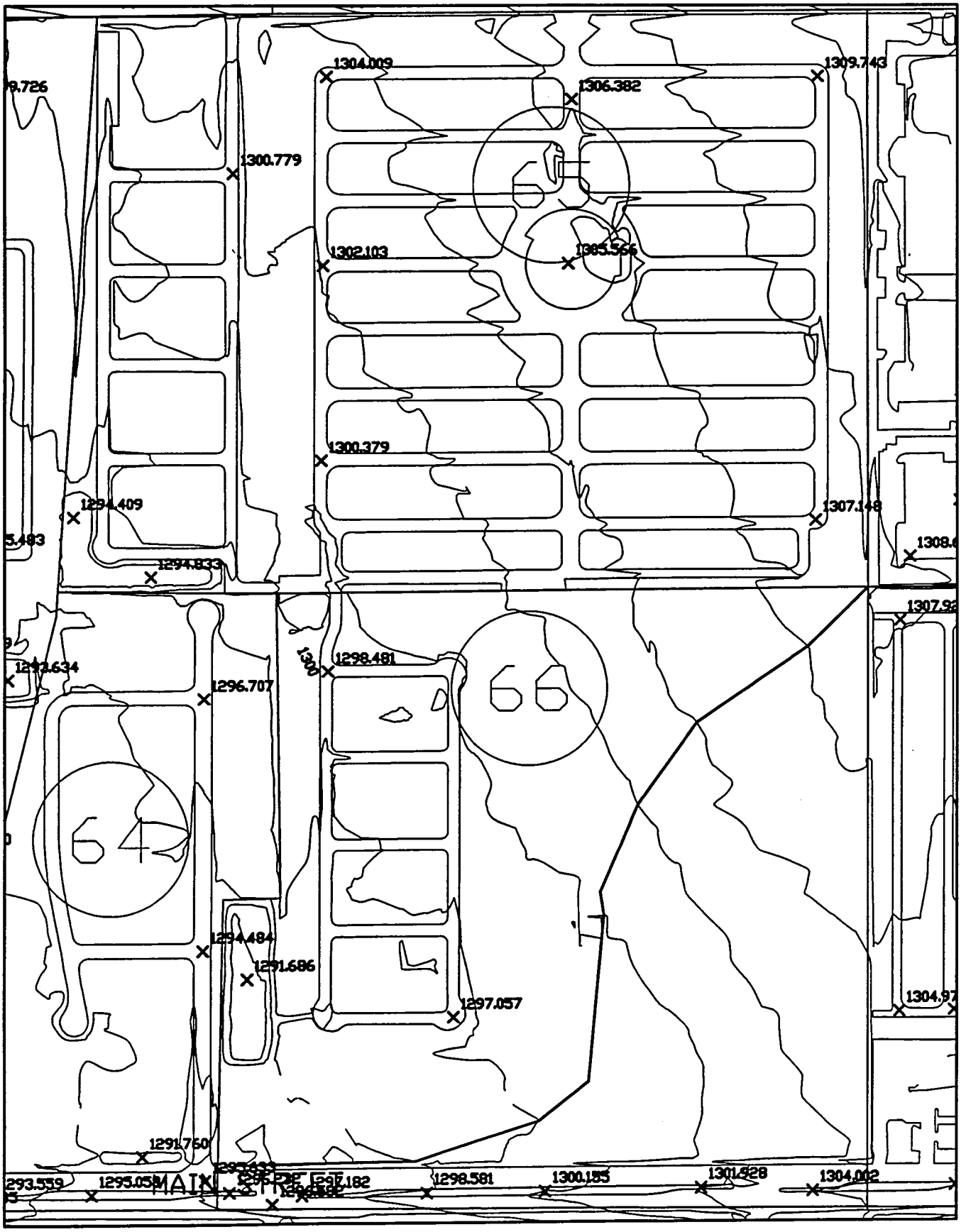
Scale 1" = 300'

SUB-BASIN 3B61



SUB-BASIN 3B62



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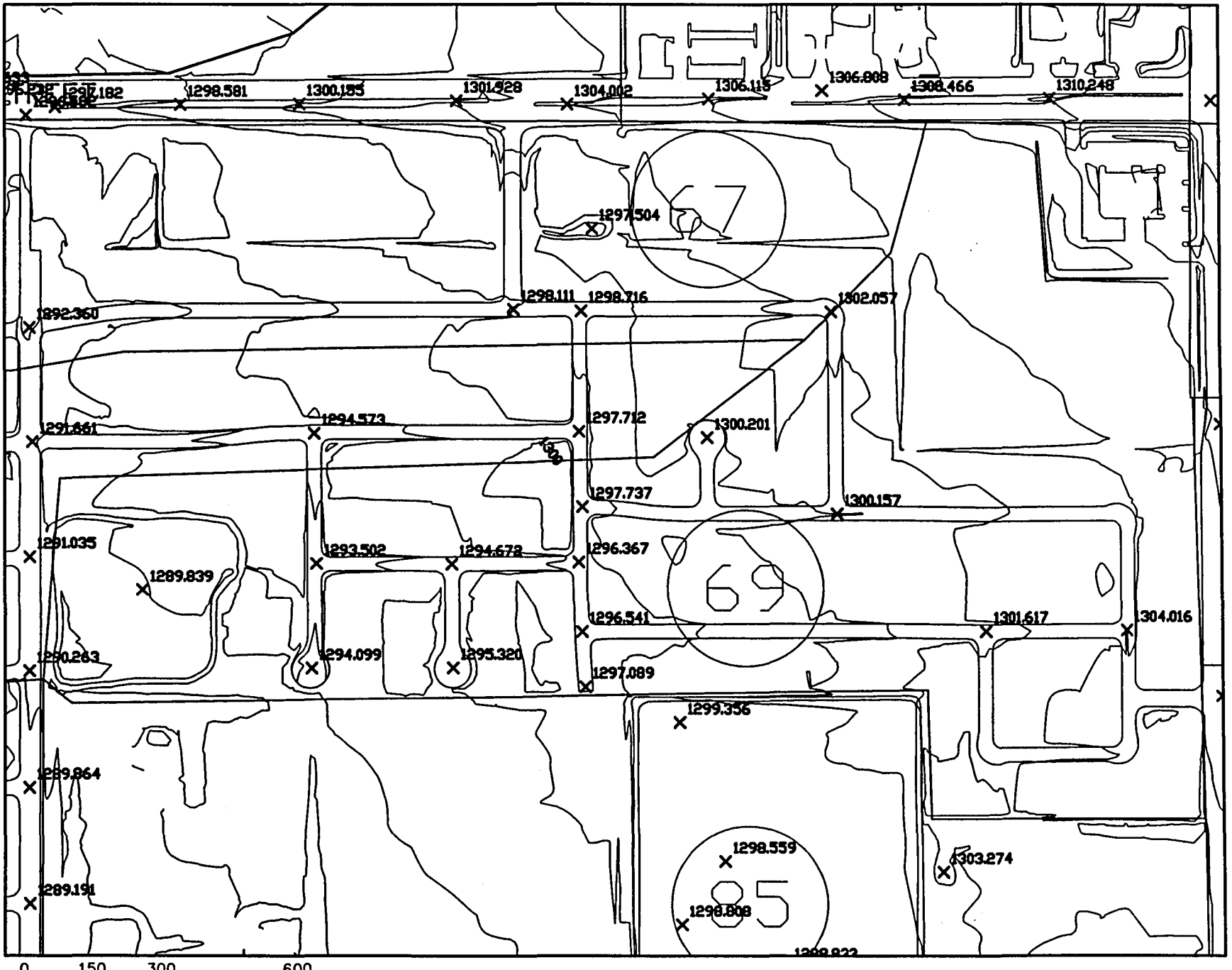
Scale 1" = 300'

SUB-BASIN 3B65 & 3B66



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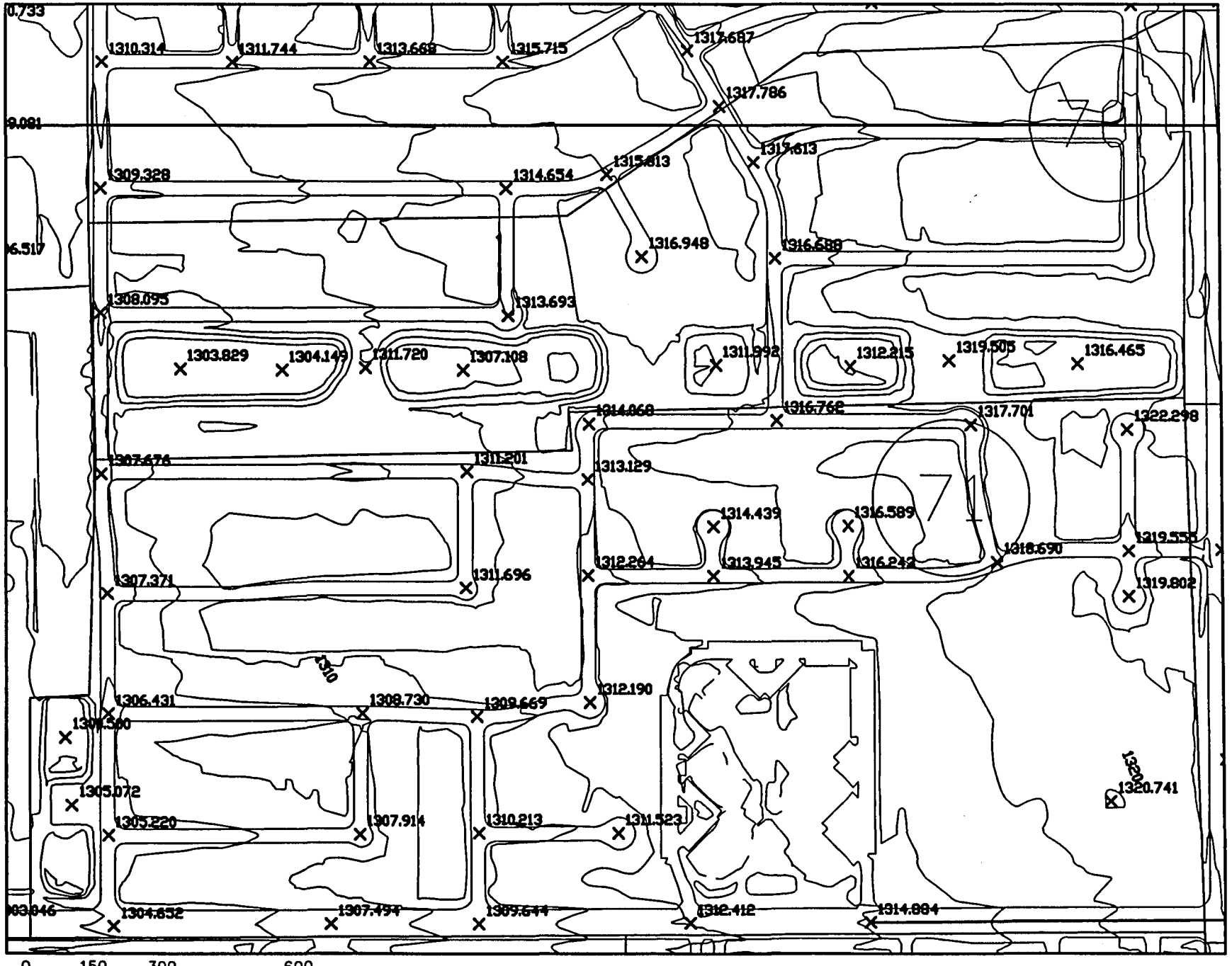
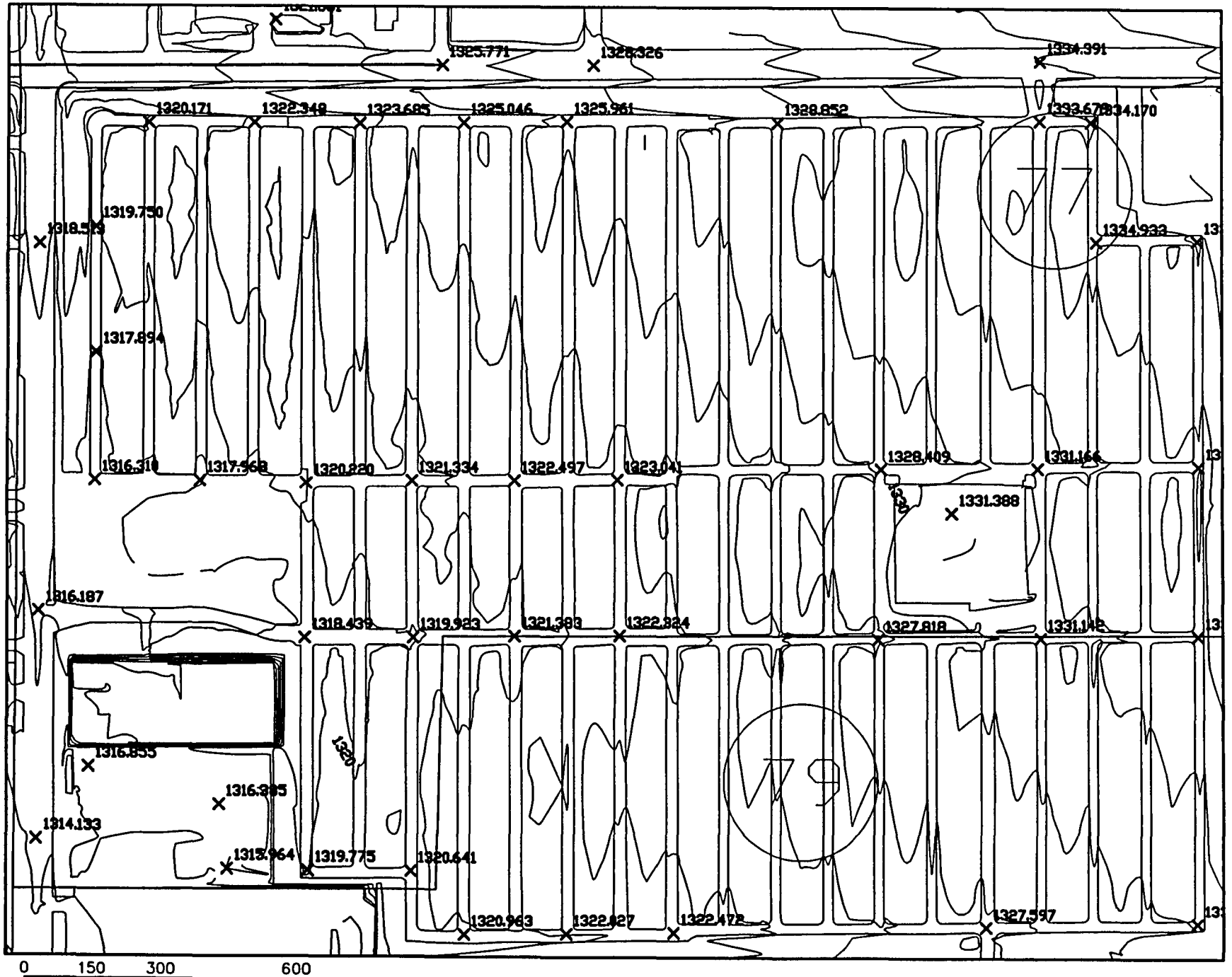
Scale 1" = 300'

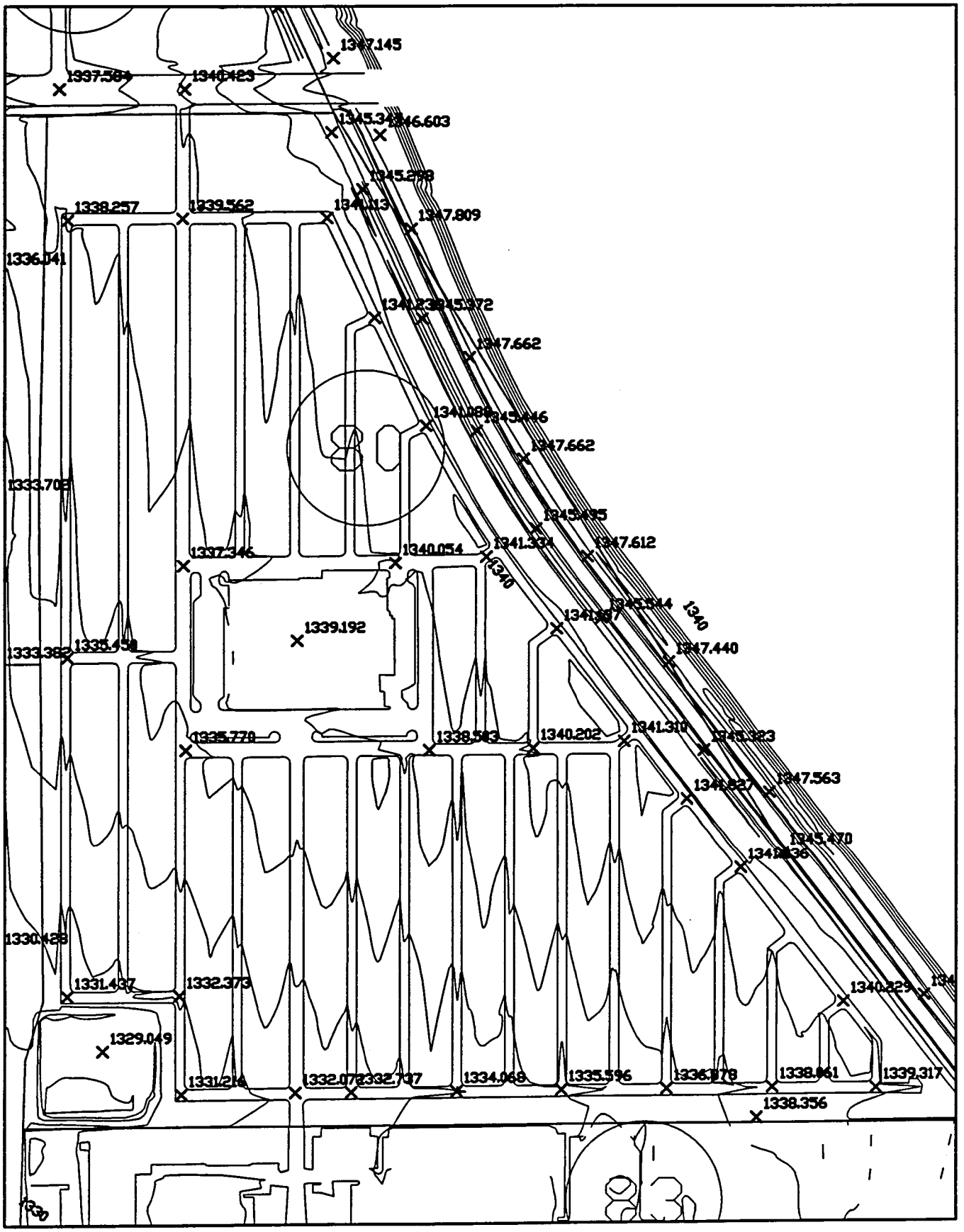
SUB-BASIN 3B69



SUB-BASIN 3B70 & 3B71



SUB-BASIN 3B77



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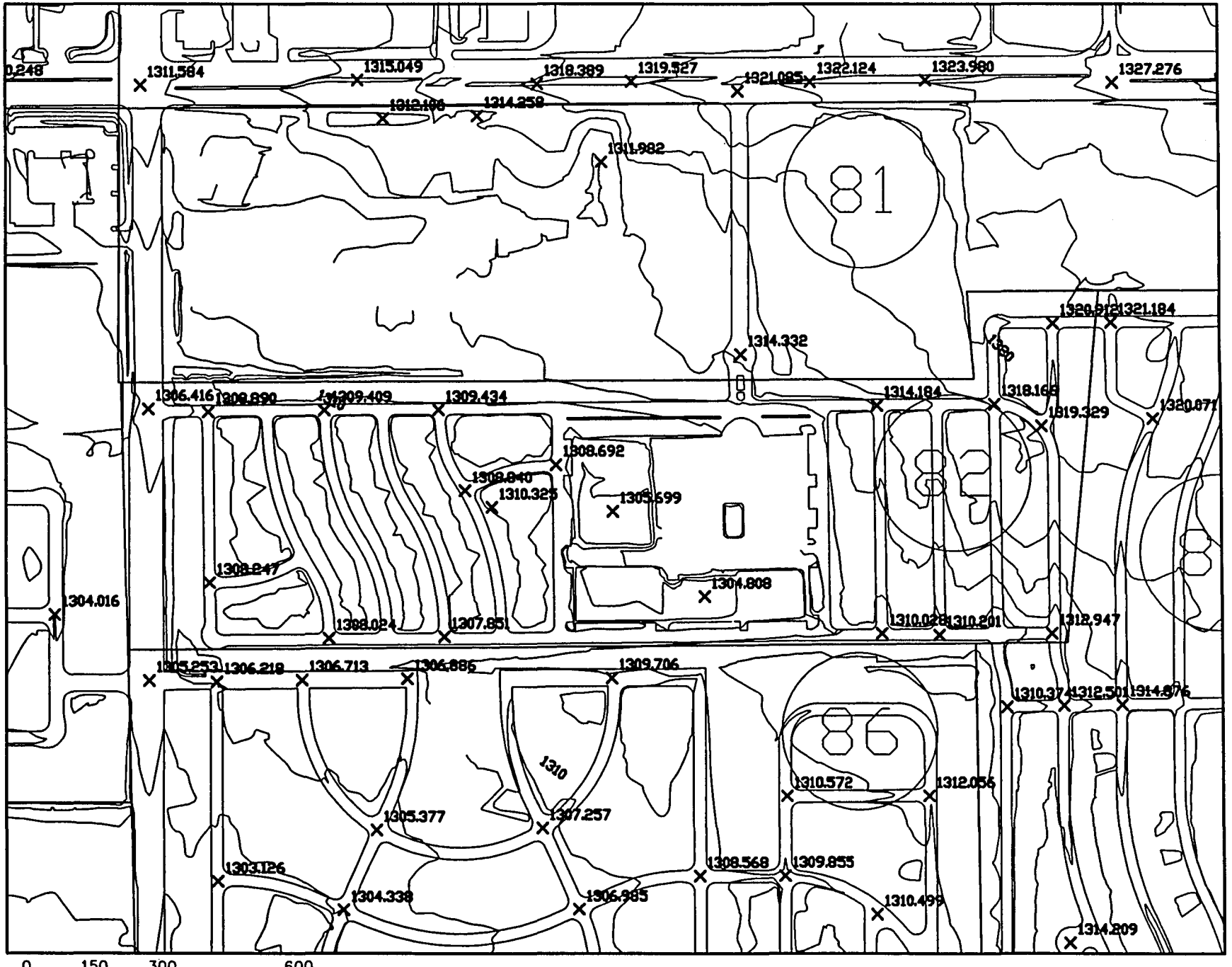
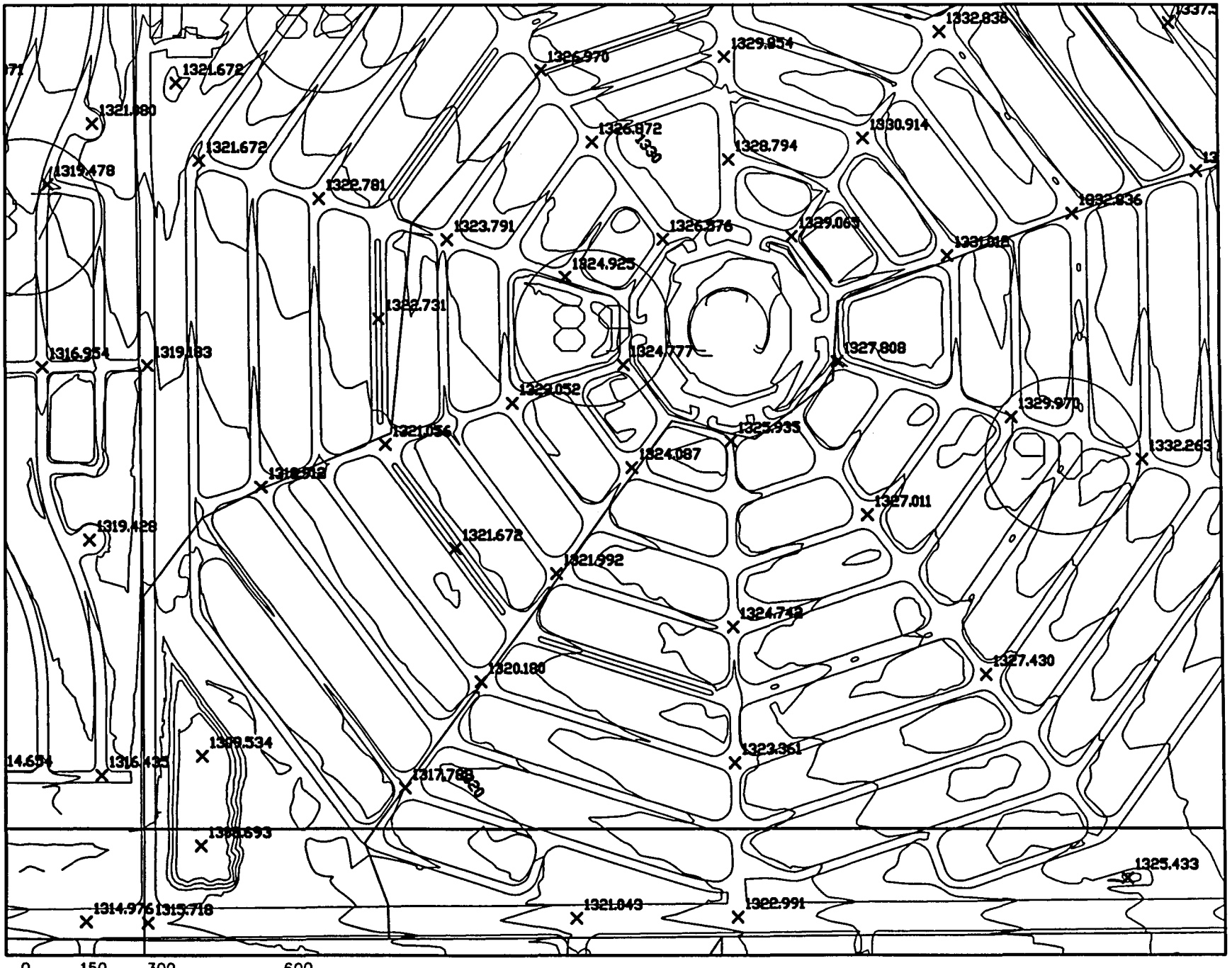
Scale 1" = 300'

SUB-BASIN 3B80



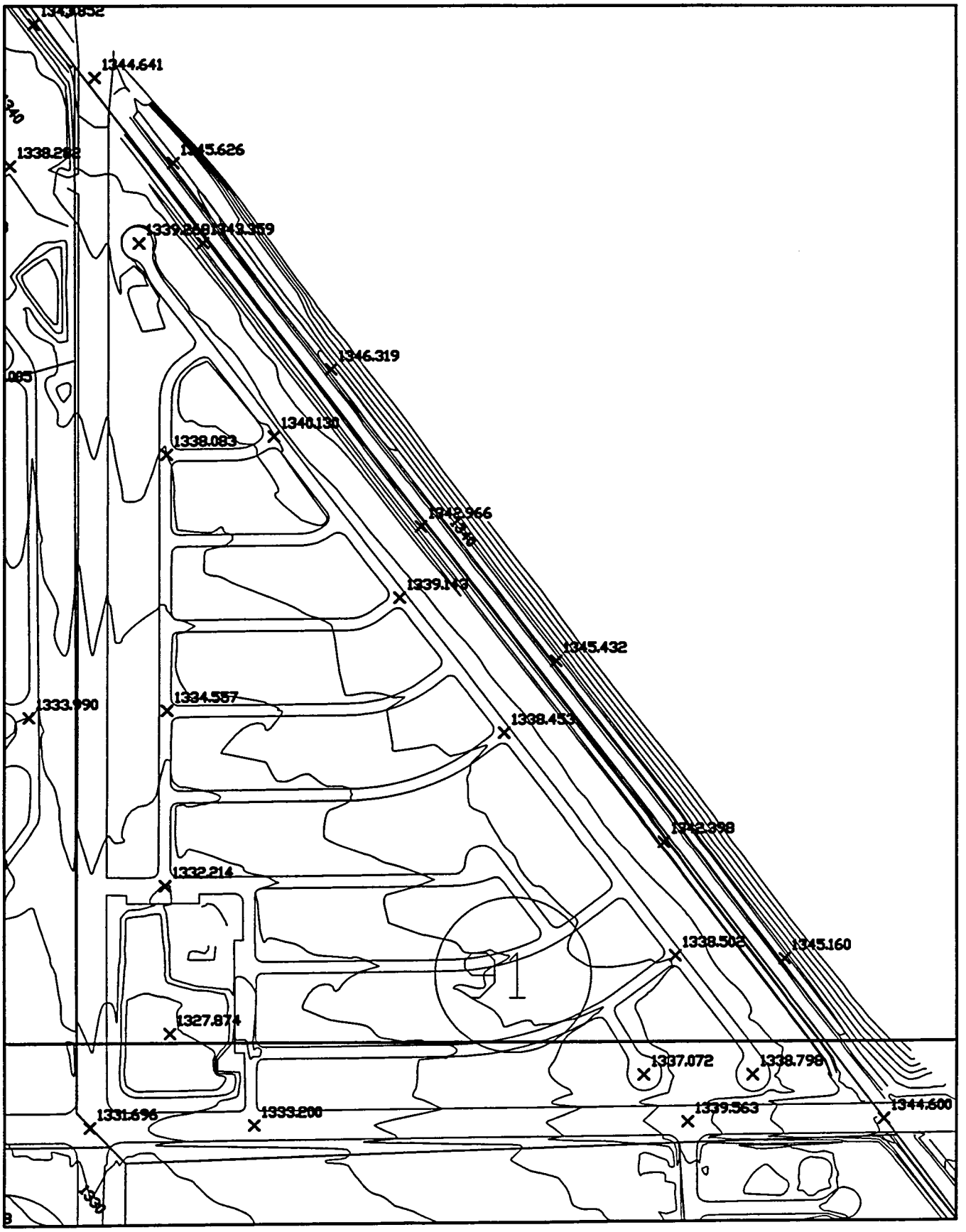
SUB-BASIN 3B82



0 150 300 600

Scale 1" = 300'

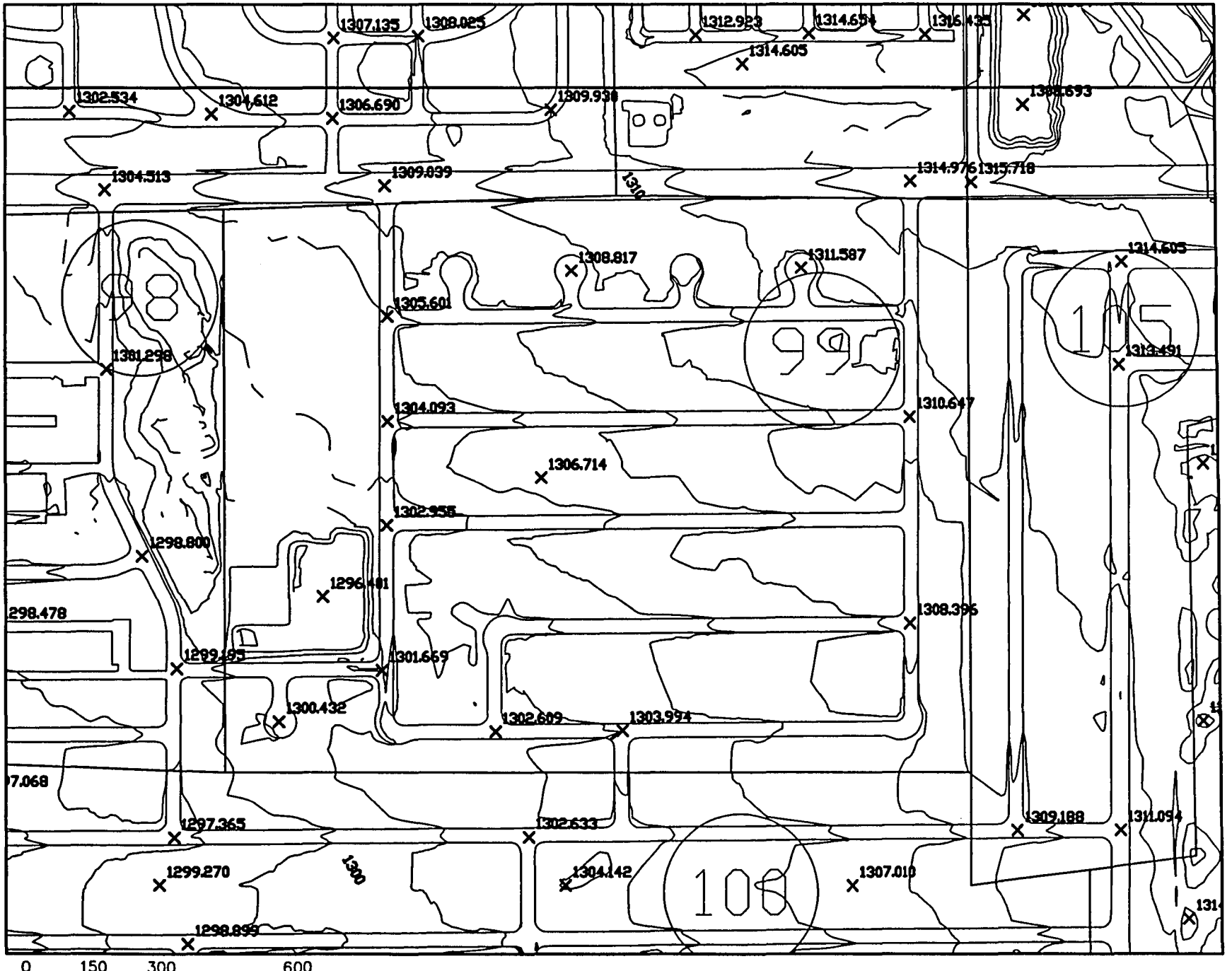
SUB-BASIN 4B89



0 150 300 600

Scale 1" = 300'

SUB-BASIN 4B91



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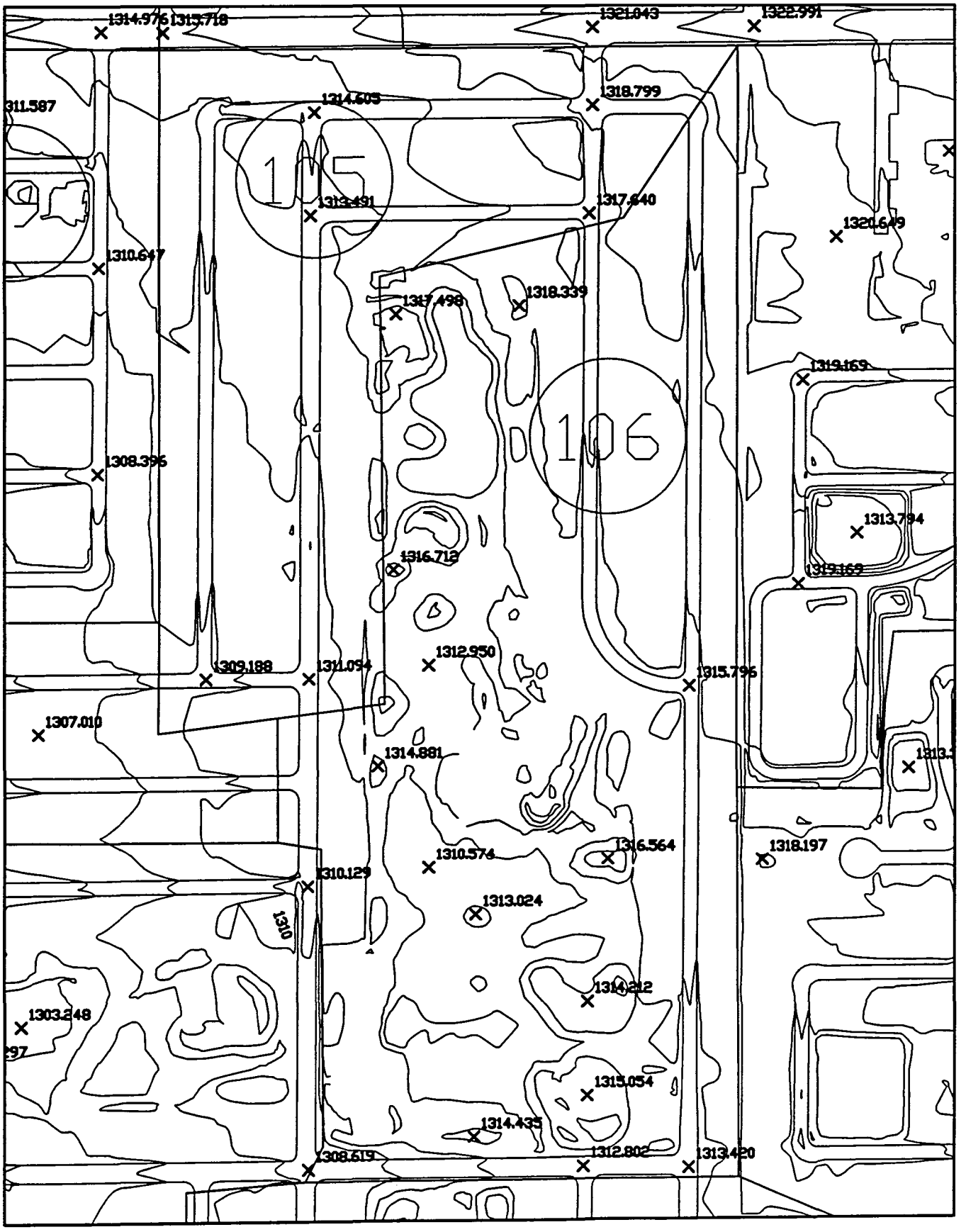
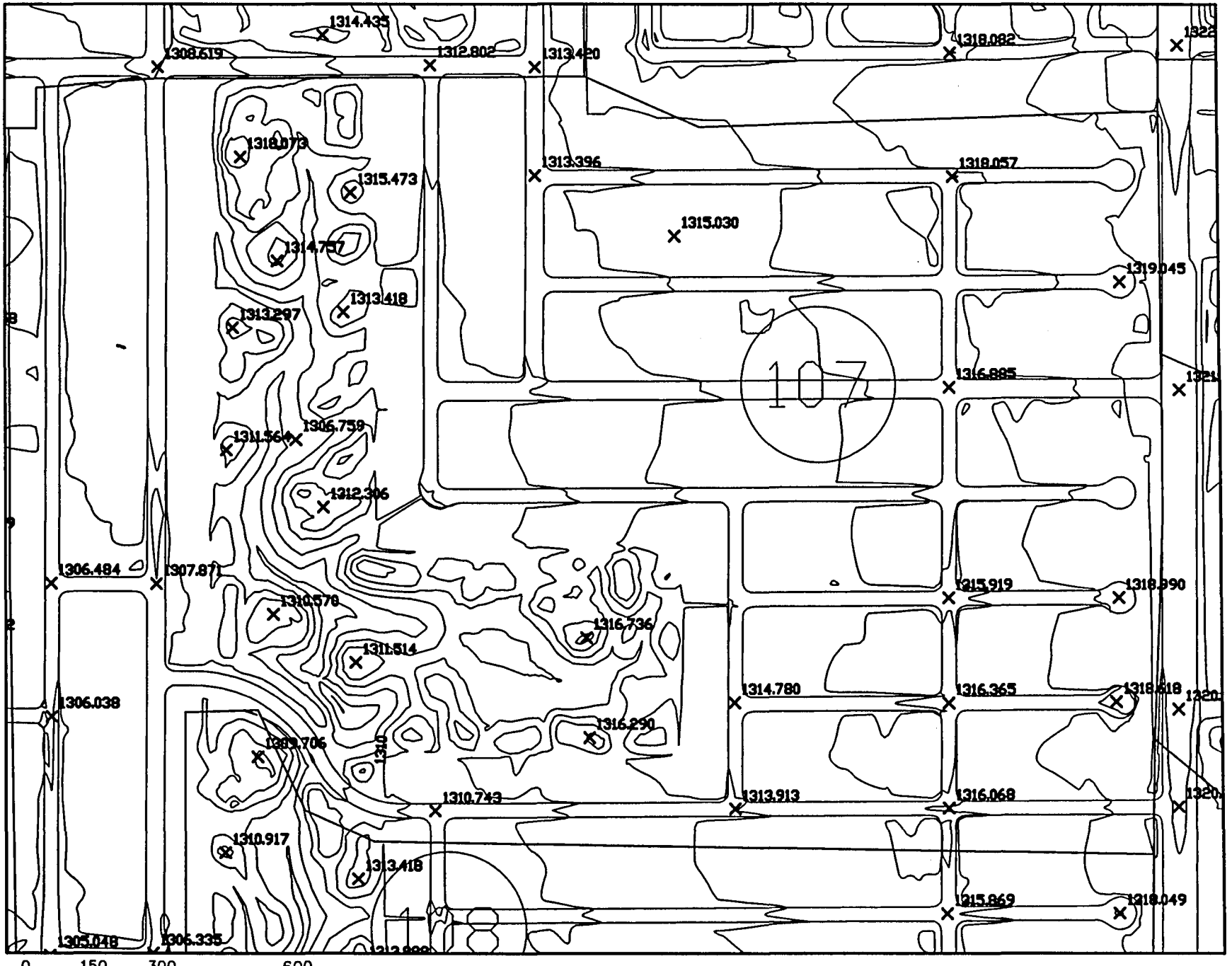


0 150 300 600

Scale 1" = 300'

SUB-BASIN 4B106



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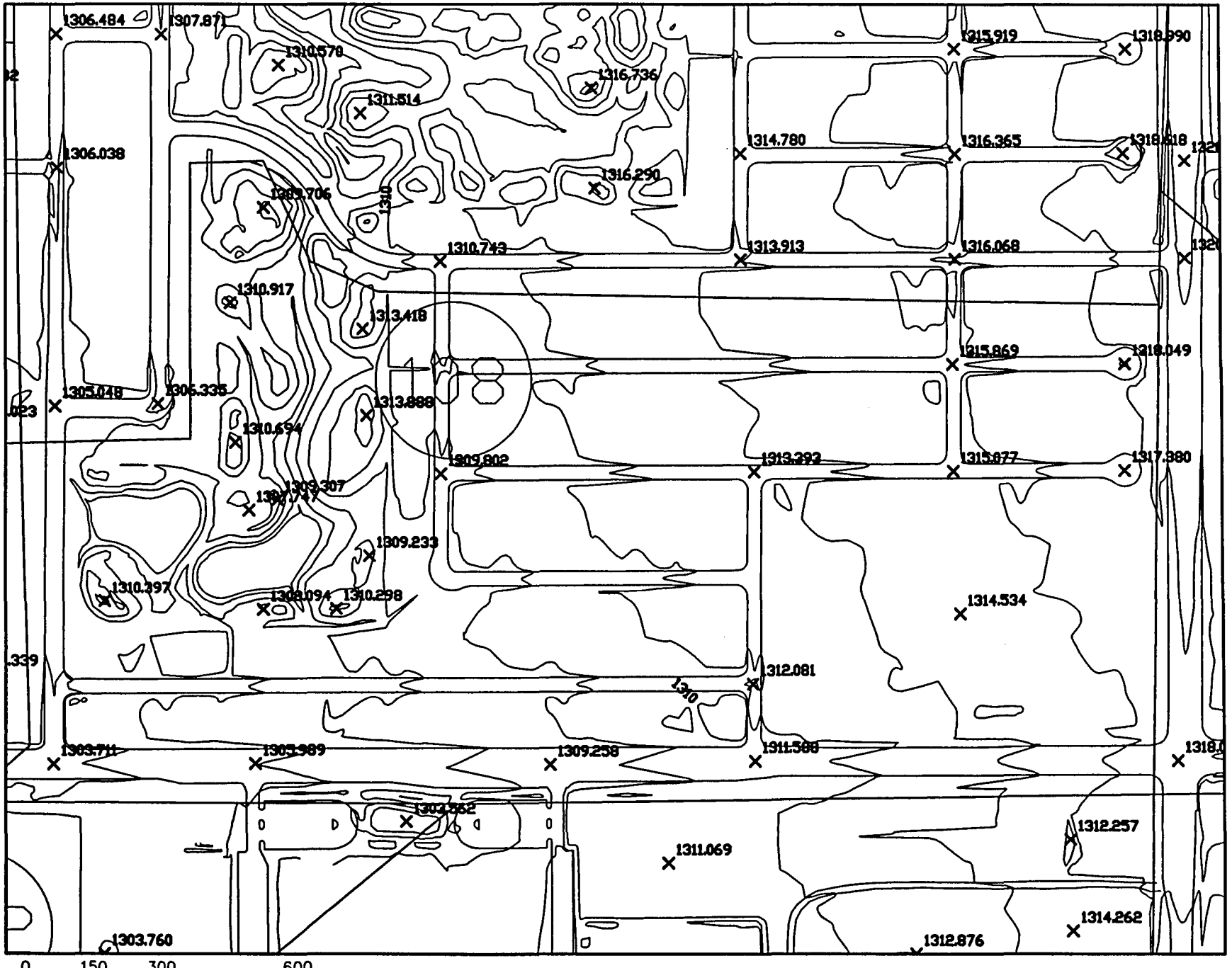
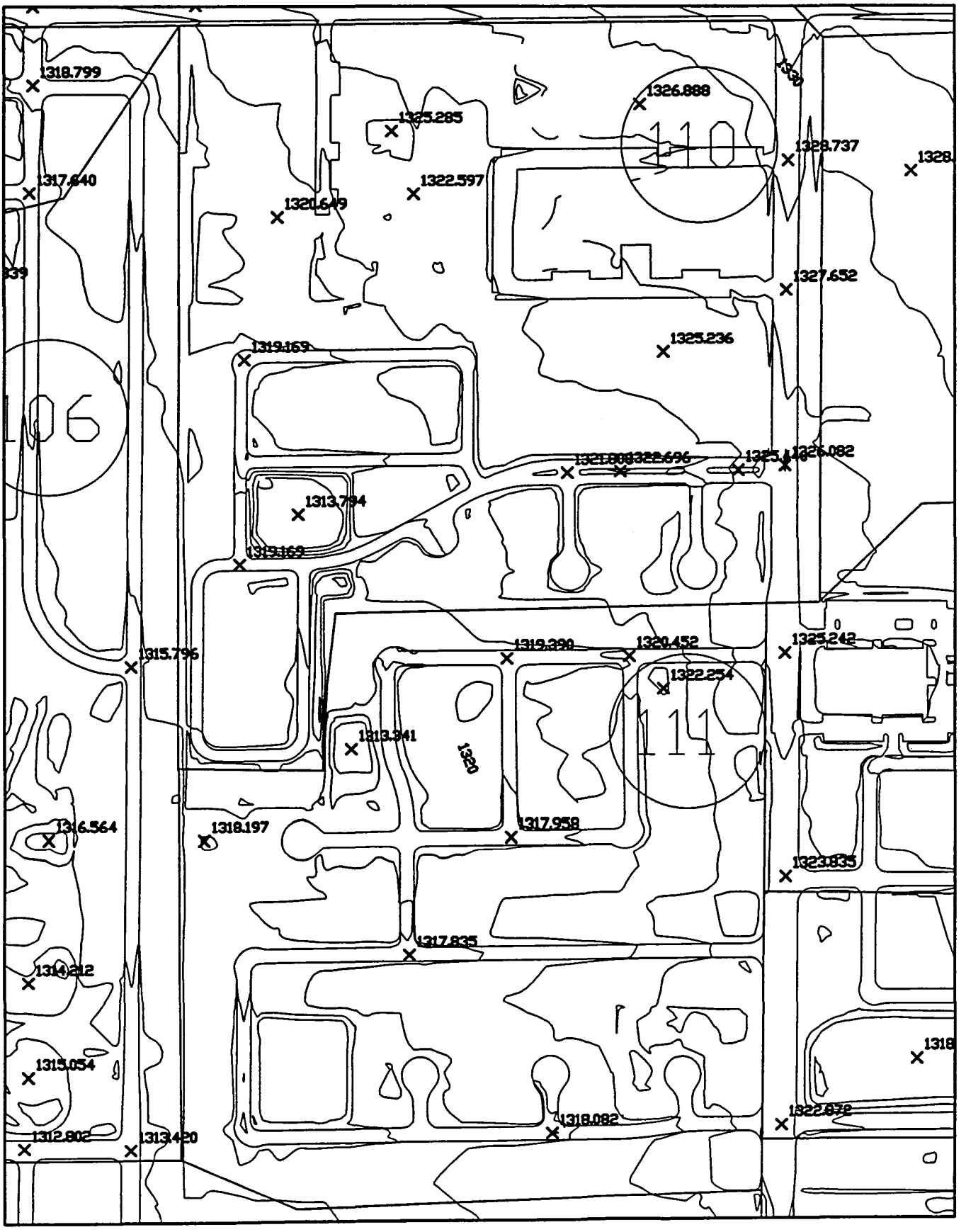


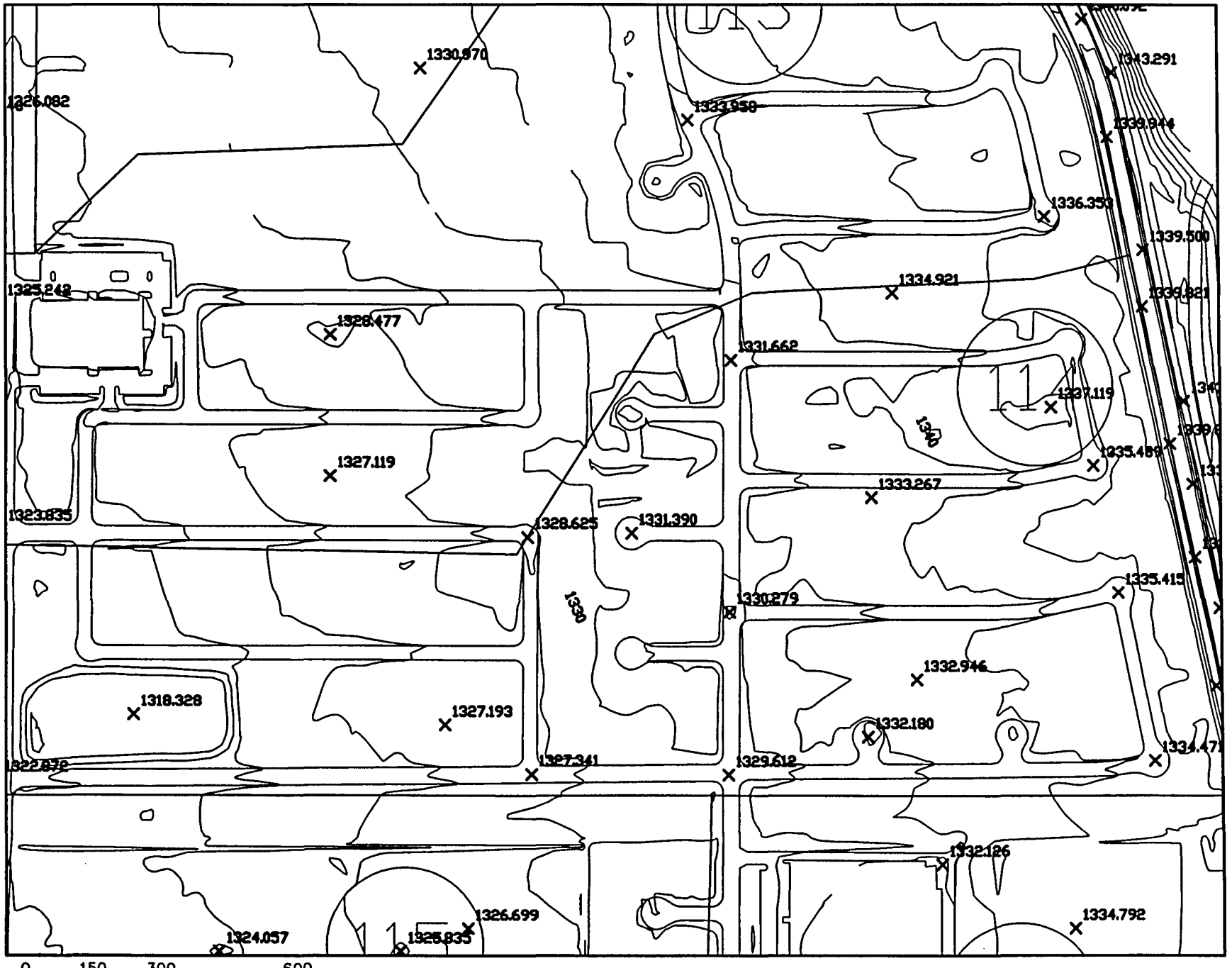
SUB-BASIN 4B108



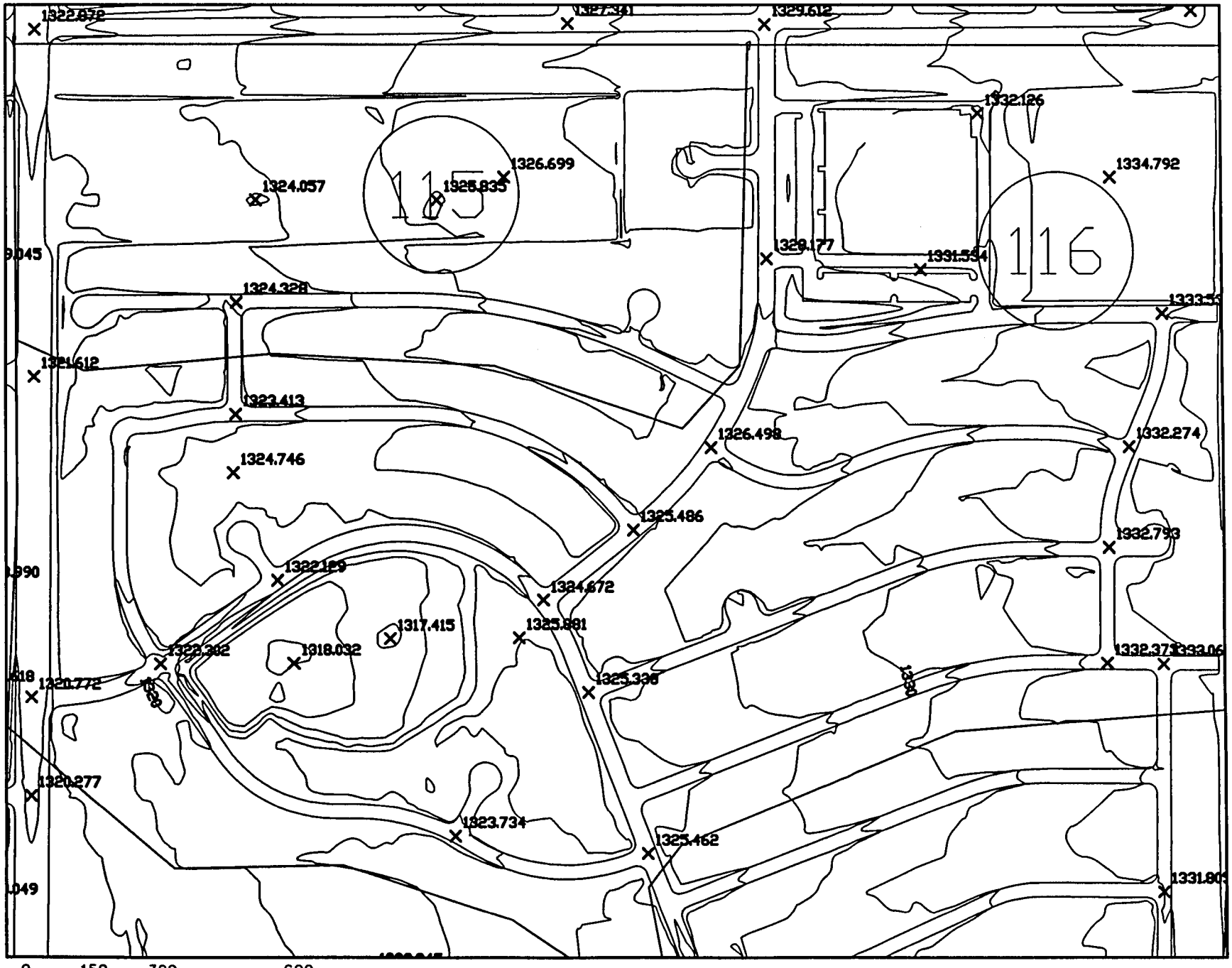
0 150 300 600

Scale 1" = 300'

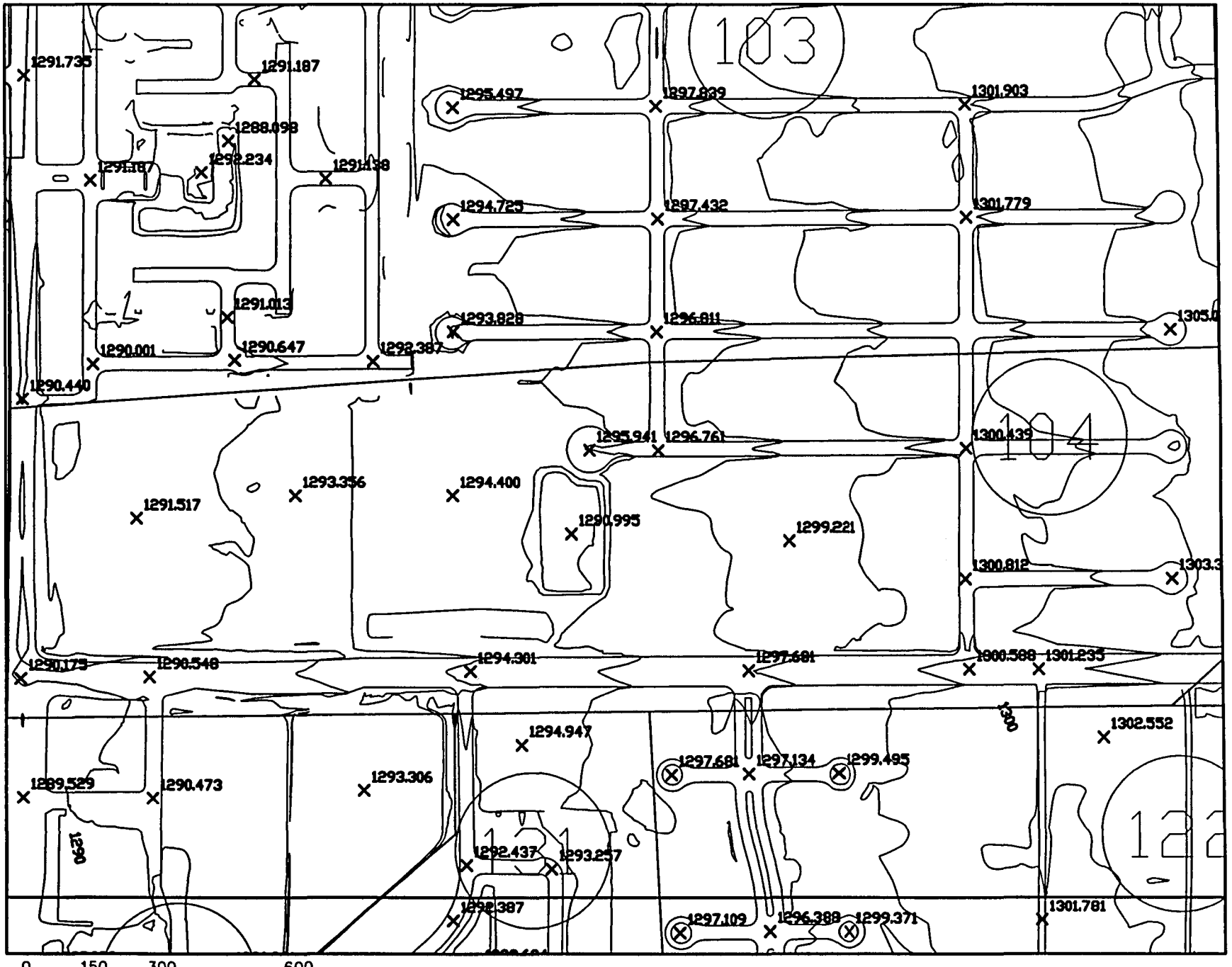
SUB-BASIN 4B110 & 4B111



SUB-BASIN 4B114



SUB-BASIN 4B116



SUB-BASIN 4B104

SUB-BASIN 4B131

Appendix D.5.2

Street Intersection Diversions

Street Intersection Diversions - Procedure

Flow diversions at street intersections were modeled based on the following assumptions:

1. Two streets meet at an intersection: they are perpendicular and follow the east-west direction and the north-south direction, respectively.
2. One of the streets has a well-defined crown that obstructs low flows (this street is to be mentioned from now on as the "major street"); for high flows, however, the crown may be overtopped and serves as a weir.
3. The flow arrives in the intersection from east and north and leaves the intersection towards west and south.

The diversion algorithm at a street intersection considers that the incoming flow (the "DI" cards) is controlled by the downstream capacity of "major street", the weir flow over the crown of the main street, and the storm drain capacities. If storm drains cross the intersection in both directions or in one direction only, the storm drain capacity(s) are added to the incoming flow.

Essentially, the flow in an intersection that has a major street can be separated into two different patterns:

1. Flow coming from north and east that together can be contained into the half-street capacity of the downstream section of "major street" and into the storm drains that run underneath, if they exist.
2. Flow coming from north and east that together can not be contained into the half-street capacity of the downstream section of major street and the storm drain capacities, and would overtop the crown of the major street. That will generate a weir flow, over a weir length, which is assumed to be equal to the right-of-way of the secondary street downstream the intersection. This weir flow would eventually combine with the other incoming flow from east and it will split following the major street and the other street. The relative ratios of right-of-way and slope of the two streets that separate from the intersection control the ratio of the flow split. For the major street, only half of the right-of-way is considered in this split-flow calculation.

The street diversion algorithm calculates both the inflows in the intersection (the "DI" cards), as well as the outflow along the secondary street (the "DQ" cards) that is defined by the diversion. The fraction of flow that is not diverted on the secondary street will follow the major street and it is not given explicitly.

The street diversion procedure is flexible, allowing the user to change the direction of the major street such that it would be easterly or northerly orientated.

The calculations are set in five Microsoft Excel spreadsheets. Four spreadsheets calculate street conveyance for each of the type of street that might be encountered at an intersection: residential, collector, major collector and arterial. The typical street conveyances are calculated for different stages that allow the development of a diversion curve (stage-discharge curve) on which the intersection diversion is based. The conveyance capacities are used in the main spreadsheet where the diversion curve is generated by introducing the particular parameters that define an intersection (orientation of the major street, street slopes near the intersection, street types) and according to the algorithm previously described. The inflow capacity and the outflow capacity are given in the format of six to eight number strings that can be directly imput in the HEC-1 model.

EASTERN CANAL NORTH FDS

Residential Street

		A (ft)	34		G (ft)	50			
		C (ft)	4		RO (ft)	4			
x	0	4	8	8.0001	25	41.9999	42	46	50
y	0.28	0.22	0.16	-0.34	0	-0.34	0.16	0.22	0.28

	1	2	3	4	5	6	7	8	9
x	0.00	4.00	8.00	8.00	25.00	42.00	42.00	46.00	50.00
y	1301.47	1301.41	1301.35	1300.85	1301.19	1300.85	1301.35	1301.41	1301.47

0	<-- Insert RIGHT BANK station HERE !
1301.19	<-- Insert CROWN elevation HERE !
500.00	<-- Insert LENGTH HERE !
1301.02	<-- Insert U/S ELEVATION HERE !
1299.16	<-- Insert D/S ELEVATION HERE !

x	y		x	y
0.00	0.22	1	0.00	1301.47
2.00	0.19	2	4.00	1301.41
4.00	0.16	3	8.00	1301.35
4.00	-0.34	4	8.00	1300.85
21.00	0.00	5	25.00	1301.19
38.00	-0.34	6	42.00	1300.85
38.00	0.16	7	42.00	1301.35
40.00	0.19	8	46.00	1301.41
42.00	0.22	9	50.00	1301.47

Slope 0.003722

							street	1/2 street
TOP curb elev. (ft)	1301.35	curb-crown	0.16	crown Conv	185.5	Crown Q (cfs)	11.3	5.7
TOP crown elev. (ft)	1301.19	curb-gutter	0.50	curb Conv K	556.5	Curb Q (cfs)	34.0	17.0
TOP ROW elev. (ft)	1301.47	sw-curb	0.06	SW Conv K	643.1	SW Q (cfs)	39.2	19.6
gutter elevation (ft)	1300.85	ROW-SW	0.06	ROW Conv K	692.4	Full Q (cfs)	42.2	21.1
TOP SW elev. (ft)	1301.41	SW-crown	0.22	.5 ft over full	3189.8	.5 ft over full	194.6	97.3
max flow depth (ft)	0.34	ROW-crown	0.28	1 ft over full	6936.1	1 ft over full	423.2	211.6
n1 (pavement)	0.0140	crown-gutter	0.34					
n2 (curb)	0.0150	ROW-gutter	0.62					
n3 (SD)	0.0160	SW-gutter	0.56					
n4 (overland)	0.0250							
n_c crown (composit)	0.0140							
n_c curb (composit)	0.0140							
n_c SW (composit)	0.0144							
n_c ROW (composit)	0.0163							
n_c .5 ft over (comp)	0.0165							
n_c 1 ft over (comp)	0.0167							

	crown elevation	curb elevation	SW elevation	ROW elevation	.5 ft over crown elevation	1 ft over crown elevation
P1 (pavement)	34.01	34.01	34.01	34.01	34.01	34.01
P2 (face curb)	0.68	1.00	1.00	1.00	1.00	1.00
P3 (SW)	0.00	0.00	8.00	8.00	8.00	8.00
P4 (ROW)	0.00	0.00	0.00	8.00	9.00	10.00
ΣP	34.69	35.01	43.02	51.02	52.02	53.02

	crown elevation	curb elevation	SW elevation	ROW elevation	.5 ft over crown elevation	1 ft over crown elevation	
A1	5.78	11.22	11.22	11.22	11.22	11.22	
A2	0.00	0.00	2.28	2.28	2.28	2.28	<-------
A3	0.00	0.00	0.00	2.76	2.76	2.76	<-------
A4	0.00	0.00	0.00	0.00	0.00	0.00	<-------
A5					25.00	50	
ΣA	5.78	11.22	13.50	16.26	41.26	66.26	

DO NOT TOUCH !
CUSTOM VALUES

EASTERN CANAL NORTH FDS

Collector Street

		A (ft)	46		G (ft)	76			
		C (ft)	5		RO (ft)	10			
x	0	10	15	15.0001	38	61	61	66	76
y	0.29	0.14	0.06	-0.44	0.00	-0.44	0.06	0.14	0.29

	ROW	SW			STREET			SW	ROW
	1	2	3	4	5	6	7	8	9
x	0.00	10.00	15.00	15.00	38.00	61.00	61.00	66.00	76.00
y	1301.46	1301.31	1301.23	1300.73	1301.19	1300.73	1301.23	1301.31	1301.46

0	<-- Insert RIGHT BANK station HERE
1301.19	<-- Insert CROWN elevation HERE !

x	y
0	0.29
10	0.14
15	0.06
15.0001	-0.44
38	0.00
61	-0.44
61	0.06
66	0.14
76	0.29

	x	y	
1	0	1301.46	
2	10	1301.31	
3	15	1301.23	
4	15.0001	1300.73	
5	38	1301.19	
6	60.9999	1300.73	
7	61	1301.23	
8	66	1301.31	
9	76	1301.46	

500.00	<-- Insert LENGTH HERE !
1301.02	<-- Insert U/S ELEVATION HERE !
1299.16	<-- Insert D/S ELEVATION HERE !

Slope 0.003722

							street	1/2 street
TOP curb elev. (ft)	1301.23	curb-crown	0.04	crown Conv	415.4	Crown Q (cfs)	25.3	12.7
TOP crown elev. (ft)	1301.19	curb-gutter	0.50	curb Conv K	541.9	Curb Q (cfs)	33.1	16.5
TOP ROW elev. (ft)	1301.46	sw-curb	0.08	SW Conv K	727.0	SW Q (cfs)	44.4	22.2
gutter elevation (ft)	1300.73	ROW-SW	0.15	ROW Conv K	1084.2	Full Q (cfs)	66.1	33.1
TOP SW elev. (ft)	1301.31	SW-crown	0.12	.5 ft over full	4768.0	.5 ft over full	290.9	145.4
max flow depth (ft)	0.46	ROW-crown	0.27	1 ft over full	10266.1	1 ft over full	626.3	313.2
n1 (pavement)	0.0140	crown-gutter	0.46					
n2 (curb)	0.0150	ROW-gutter	0.73					
n3 (SD)	0.0160	SW-gutter	0.58					
n4 (overland)	0.0250							
n_c crown (composit)	0.0140							
n_c curb (composit)	0.0140							
n_c SW (composit)	0.0144							
n_c ROW (composit)	0.0174							
n_c .5 ft over (comp)	0.0175							
n_c 1 ft over (comp)	0.0176							

	crown elevation	curb elevation	SW elevation	ROW elevation	.5 ft over crown elevation	1 ft over crown elevation
P1 (pavement)	46.01	46.01	46.01	46.01	46.01	46.01
P2 (face curb)	0.92	1.00	1.00	1.00	1.00	1.00
P3 (SW)	0.00	0.00	10.00	10.00	10.00	10.00
P4 (ROW)	0.00	0.00	0.00	20.00	21.00	22.00
ΣP	46.93	47.01	57.01	77.01	78.01	79.01

	crown elevation	curb elevation	SW elevation	ROW elevation	.5 ft over crown elevation	1 ft over crown elevation	
A1	10.58	12.42	12.42	12.42	12.42	12.42	
A2	0.00	0.00	3.83	3.83	3.83	3.83	<-------
A3	0.00	0.00	0.00	9.90	9.90	9.90	<-------
A4	0.00	0.00	0.00	0.00	0.00	0.00	<-------
A5					38.00	76	
ΣA	10.58	12.42	16.25	26.15	64.15	102.15	

DO NOT TOUCH !
CUSTOM VALUES

EASTERN CANAL NORTH FDS

Major Collector Street

		A (ft)		66		G (ft)		100	
		C (ft)		5		RO (ft)		12	
x	0	12	17	17	50	83	83	88	100
y	0.1	-0.09	-0.16	-0.66	0.00	-0.66	-0.16	-0.09	0.10

	1	2	3	4	5	6	7	8	9
x	0.00	12.00	17.00	17.00	50.00	83.00	83.00	88.00	100.00
y	1301.25	1301.07	1301.00	1300.50	1301.16	1300.50	1301.00	1301.07	1301.25

0	<-- Insert RIGHT BANK station H
1301.16	<-- Insert CROWN elevation HER

x	y		x	y
0	0.1	1	0.00	1301.25
12	-0.09	2	12.00	1301.07
17	-0.16	3	17.00	1301.00
17	-0.66	4	17.00	1300.50
50	0.00	5	50.00	1301.16
83	-0.66	6	83.00	1300.50
83	-0.16	7	83.00	1301.00
88	-0.09	8	88.00	1301.07
100	0.10	9	100.00	1301.25

430.00	<-- Insert LENGTH HERE !
1302.12	<-- Insert U/S ELEVATION HERE
1301.16	<-- Insert D/S ELEVATION HERE

Slope 0.002244

									street	1/2 street
TOP curb elev. (ft)	1301.00	curb-crown	-0.16	crown Conv	2592.1	Crown Q (cfs)	122.8	61.4
TOP crown elev. (ft)	1301.16	curb-gutter	0.50	curb Conv K	432.7	Curb Q (cfs)	20.5	10.2
TOP ROW elev. (ft)	1301.25	sw-curb	0.08	SW Conv K	640.2	SW Q (cfs)	30.3	15.2
gutter elevation (ft)	1300.50	ROW-SW	0.18	ROW Conv K	3039.1	ROW Q (cfs)	144.0	72.0
TOP SW elev. (ft)	1301.07	SW-crown	-0.09	.5 ft over full	7686.4	.5 ft over full	364.1	182.1
max flow depth (ft)	0.66	ROW-crown	0.10	1 ft over full	15546.7	1 ft over full	736.5	368.2
n1 (pavement)	0.0140	crown-gutter	0.66					
n2 (curb)	0.0150	ROW-gutter	0.76					
n3 (SD)	0.0160	SW-gutter	0.58					
n4 (overland)	0.0250							
n_c crown (composit)	0.0158							
n_c curb (composit)	0.0140							
n_c SW (composit)	0.0143							
n_c ROW (composit)	0.0171							
n_c .5 ft over (comp)	0.0172							
n_c 1 ft over (comp)	0.0173							

	crown elevation	curb elevation	SW elevation	ROW elevation	.5 ft over crown elevation	1 ft over crown elevation
P1 (pavement)	66.01	66.01	66.01	66.01	66.01	66.01
P2 (face curb)	1.00	1.00	1.00	1.00	1.00	1.00
P3 (SW)	10.00	0.00	10.00	10.00	10.00	10.00
P4 (ROW)	11.33	0.00	0.00	24.00	25.00	26.00
ΣP	88.34	67.01	77.01	101.01	102.01	103.01

	crown elevation	curb elevation	SW elevation	ROW elevation	.5 ft over crown elevation	1 ft over crown elevation	
A1	12.50	12.50	12.50	12.50	12.50	12.50	
A2	4.41	0.00	4.41	4.41	4.41	4.41	<-------
A3	27.09	0.00	0.00	36.59	27.09	27.09	<-------
A4	0.00	0.00	0.00	0.00	0.00	0.00	<-------
A5					50.00	100	
ΣA	44.00	12.50	16.91	53.49	94.00	144.00	

DO NOT TOUCH !
CUSTOM VALUES

EASTERN CANAL NORTH FDS

Arterial Street

		A (ft)	88		G (ft)	122			
		C (ft)	5		RO (ft)	12			
x	0	11	16	16	60	104	104	109	120
y	-0.29	-0.31	-0.38	-0.88	0.00	-0.88	-0.38	-0.31	-0.29

	1	2	3	4	5	6	7	8	9
x	0.00	12.00	17.00	17.00	61.00	105.00	105.00	110.00	122.00
y	1301.07	1300.89	1300.81	1300.31	1301.19	1300.31	1300.81	1300.89	1301.07

0	<-- insert RIGHT BANK station H	
1301.19	<-- insert CROWN elevation HER	
500.00	<-- insert LENGTH HERE I	
1301.02	<-- insert U/S ELEVATION HERE	
1299.16	<-- insert D/S ELEVATION HERE	
Slope	0.003722	

x	y		x	y
0.00	-0.29	1	0.00	1301.07
11.00	-0.31	2	12.00	1300.89
16.00	-0.38	3	17.00	1300.81
16.00	-0.88	4	17.00	1300.31
60.00	0.00	5	61.00	1301.19
104.00	-0.88	6	105.00	1300.31
104.00	-0.38	7	105.00	1300.81
109.00	-0.31	8	110.00	1300.89
120.00	-0.29	9	122.00	1301.07

							street	1/2 street
TOP curb elev. (ft)	1300.81	curb-crown	-0.38	crown Conv	3380.8	Crown Q (cfs)	206.3	103.1
TOP crown elev. (ft)	1301.19	curb-gutter	0.50	curb Conv K	358.2	Curb Q (cfs)	21.9	10.9
TOP ROW elev. (ft)	1301.07	sw-curb	0.08	SW Conv K	688.4	SW Q (cfs)	42.0	21.0
gutter elevation (ft)	1300.31	ROW-SW	0.18	ROW Conv K	2347.4	Full Q (cfs)	143.2	71.6
TOP SW elev. (ft)	1300.89	SW-crown	-0.31	.5 ft over full	11074.4	.5 ft over full	675.6	337.8
max flow depth (ft)	0.88	ROW-crown	-0.13	1 ft over full	21447.6	1 ft over full	1308.5	654.2
n1 (pavement)	0.0140	crown-gutter	0.88					
n2 (curb)	0.0150	ROW-gutter	0.76					
n3 (SD)	0.0160	SW-gutter	0.58					
n4 (overland)	0.0250							
n_c crown (composit)	0.0166							
n_c curb (composit)	0.0140							
n_c SW (composit)	0.0142							
n_c ROW (composit)	0.0166							
n_c .5 ft over (comp)	0.0167							
n_c 1 ft over (comp)	0.0167							

	crown elevation	curb elevation	SW elevation	ROW elevation	.5 ft over crown elevation	1 ft over crown elevation
P1 (pavement)	88.01	88.01	88.01	88.01	88.01	88.01
P2 (face curb)	1.00	1.00	1.00	1.00	1.00	1.00
P3 (SW)	10.00	0.00	10.00	10.00	10.00	10.00
P4 (ROW)	24.00	0.00	0.00	24.00	25.00	26.00
ΣP	123.01	89.01	99.01	123.01	124.01	125.01

	crown elevation	curb elevation	SW elevation	ROW elevation	.5 ft over crown elevation	1 ft over crown elevation	
A1	12.50	12.50	12.50	12.50	12.50	12.50	
A2	4.41	0.00	6.98	6.98	6.98	6.98	<-------
A3	29.16	0.00	0.00	29.16	29.16	29.16	<-------
A4	14.47	0.00	0.00	0.00	14.47	14.47	<-------
A5					61.00	122.00	
ΣA	60.54	12.50	19.48	48.64	124.10	185.10	

DO NOT TOUCH !
CUSTOM VALUES

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	E-W
E-W street	MR
N-S street	VD

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
BO = Broadway Road
HB = Huber Street
HR = Higley Road
HVR = Hermosa Vista Road
LR = Lindsay Road
MR = McKellips Road
ML = McLelan Road
MS = Main Street
UD = University Drive
VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	m	1327.53	1324.57	665	0.0045	0.66	-	-	-	-	-	-	-	-	-	-	-	-
		E-W	D/S	m	1324.57	1321.22	645	0.0052	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
			U/S	c	1326.00	1324.57	810	0.0018	0.46	-	-	-	-	-	-	-	-	-	-	-	-
CP10	DVDMR	N-S	D/S	m	1324.57	1321.49	660	0.0047	0.66	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over cfs	Weir Q 1.0 ft over cfs
-	-	-	-	-	-	E-W								-	-	-	-	-	-
-	-	-	-	-	-	186.8	31.2	46.1	219.0	553.9	1120.4	0		-	-	-	-	-	-
-	-	-	-	-	-	N-S								-	-	-	-	-	-
2592.1	432.7	640.2	3039.1	7686.4	15546.7	177.1	29.6	43.7	207.6	525.1	1062.0		10	0	0	0	28	103	290

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, (S^1/2) South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, R/WR, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios,CR, South (CR-S)
MR		0.00519		50		0.51		0.33		0.35	
	VD		0.00467		100		0.49		0.67		0.65

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	10.0	103.4	41.2	56.1	256.6	666.5	1420.4
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	93.4	15.6	23.1	109.5	277.0	560.2
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	5.4	8.0	47.3	131.1	293.6
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	10.0	10.0	20.2	25.1	99.7	258.5	566.6

INFLOW CAPACITY (DI), cfs					
0.0	10.0	103.4	256.6	666.5	1420.4

OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	10.0	10.0	99.7	258.5	566.6

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	E-W
E-W street	HVR
N-S street	VD

Curb height = 0.5 ft.

Conveyance, $K = (1.49/n)*(A1.67/P0.67)$ Capacity, $Q = K*S^{0.5}$

Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
BO = Broadway Road
HB = Huber Street
HR = Higley Road
HVR = Hermosa Vista Road
LR = Lindsay Road
MR = McKellips Road
ML = McLelan Road
MS = Main Street
UD = University Drive
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Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	m	1335.00	1331.86	955	0.0033	0.66	-	-	-	-	-	-	-	-	-	-	-	-
		E-W	D/S	m	1331.86	1326.00	955	0.0061	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
			U/S	m	1334.00	1331.86	400	0.0054	0.66	-	-	-	-	-	-	-	-	-	-	-	-
CP5	DVDHV	N-S	D/S	m	1331.86	1329.74	515	0.0041	0.66	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over cfs	Weir Q 1.0 ft over cfs
-	-	-	-	-	-	E-W								-	-	-	-	-	-
-	-	-	-	-	-	203.0	33.9	50.1	238.0	601.8	1217.3	0		-	-	-	-	-	-
-	-	-	-	-	-	N-S								-	-	-	-	-	-
2592.1	432.7	640.2	3039.1	7686.4	15546.7	166.0	27.7	41.0	194.6	492.1	995.4		0	0	0	0	28	103	290

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{½}/(S_w^{½}+S_s^{½})$	Slope Ratios,SR, South (SR-S) $S_s^{½}/(Sw^{½}+Ss^{½})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios, South (CR-S)
HVR		0.00613		50		0.55		0.33		0.38	
	VD		0.00410		100		0.45		0.67		0.62

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	0.0	101.5	33.9	50.1	265.5	704.4	1507.3
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	101.5	16.9	25.1	119.0	300.9	608.7
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	6.4	9.5	55.6	153.1	341.0
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	0.0	0.0	10.5	15.6	90.9	250.4	557.7

INFLOW CAPACITY (DI), cfs					
0.0	0.0	101.5	265.5	704.4	1507.3

OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	0.0	0.0	90.9	250.4	557.7

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	E-W
E-W street	BR
N-S street	GR

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
BO = Broadway Road
HB = Huber Street
HR = Higley Road
HVR = Hermosa Vista Road
LR = Lindsay Road
MR = McKellips Road
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MS = Main Street
UD = University Drive
VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	m	1349.60	1340.00	648.5	0.0148	0.66	-	-	-	-	-	-	-	-	-	-	-	-
		E-W	D/S	m	1340.00	1333.93	675.62	0.0090	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
			U/S	m	1343.98	1340.00	1111	0.0036	0.66	-	-	-	-	-	-	-	-	-	-	-	-
41	DBRGR	N-S	D/S	m	1340.00	1337.17	641.74	0.0044	0.66	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over cfs	Weir Q 1.0 ft over cfs
-	-	-	-	-	-				E-W					-	-	-	-	-	-
-	-	-	-	-	-	245.7	41.0	60.7	288.1	728.6	1473.6	0		-	-	-	-	-	-
-	-	-	-	-	-				N-S					-	-	-	-	-	-
2592.1	432.7	640.2	3039.1	7686.4	15546.7	172.1	28.7	42.5	201.8	510.4	1032.4		16	0	0	0	28	103	290

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, (S^1/2) South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, R/WR, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios,CR, South (CR-S)
BR		0.00898		50		0.59		0.33		0.42	
	GR		0.00441		100		0.41		0.67		0.58

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	16.0	138.8	57.0	76.7	331.6	847.1	1779.6
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	122.8	20.5	30.3	144.0	364.3	736.8
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	8.5	12.6	71.5	194.4	427.6
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	16.0	16.0	28.0	33.7	116.1	288.4	615.2

INFLOW CAPACITY (DI), cfs					
0.0	16.0	138.8	331.6	847.1	1779.6

OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	16.0	16.0	116.1	288.4	615.2

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	50
Weir Direction	E-W
E-W street	BR
N-S street	40

Curb height = 0.5 ft.

Conveyance, $K = (1.49/n)*(A1.67/P0.67)$ Capacity, $Q = K*S^{0.5}$

Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
BO = Broadway Road
HB = Huber Street
HR = Higley Road
HVR = Hermosa Vista Road
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Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
		E-W	U/S	m	1327.39	1322.80	750	0.0061	0.66	-	-	-	-	-	-	-	-	-	-	-	-
			D/S	m	1322.80	1307.85	2615	0.0057	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
		N-S	U/S	r	1395.94	1322.80	870	0.0841	0.34	-	-	-	-	-	-	-	-	-	-	-	-
CP24	DBR40		D/S	r	1322.80	1320.00	640	0.0044	0.34	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over cfs	Weir Q 1.0 ft over cfs
-	-	-	-	-	-	E-W								-	-	-	-	-	-
-	-	-	-	-	-	196.0	32.7	48.4	229.8	581.2	1175.5	10		-	-	-	-	-	-
-	-	-	-	-	-	N-S								-	-	-	-	-	-
2592.1	432.7	643.1	692.4	3189.8	6936.1	171.4	28.6	42.5	45.8	211.0	458.8		0	0	0	0	14	51	145

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, (S^1/2) South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, R/WR, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios,CR, South (CR-S)
BR		0.00572		50		0.53		0.50		0.53	
	40		0.00437		50		0.47		0.50		0.47

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	10.0	108.0	42.7	58.4	253.6	642.4	1330.5
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	98.0	16.4	24.2	114.9	290.6	587.8
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	8.7	12.9	68.6	182.3	390.8
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	0.0	0.0	7.6	11.3	45.8	159.5	341.9

INFLOW CAPACITY (DI), cfs					
0.0	10.0	108.0	253.6	642.4	1330.5

OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	0.0	0.0	45.8	159.5	341.9

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

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	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	E-W
E-W street	BR
N-S street	VD

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
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Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	m	1322.80	1307.85	2615	0.0057	0.66	-	-	-	-	-	-	-	-	-	-	-	-
		E-W	D/S	m	1307.85	1304.59	546	0.0060	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
			U/S	m	1309.91	1307.85	685	0.0030	0.66	-	-	-	-	-	-	-	-	-	-	-	-
CP27	DVDBR	N-S	D/S	m	1307.85	1305.57	560	0.0041	0.66	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over cfs	Weir Q 1.0 ft over cfs
-	-	-	-	-	-	E-W								-	-	-	-	-	-
-	-	-	-	-	-	200.3	33.4	49.5	234.8	593.9	1201.3	23		-	-	-	-	-	-
-	-	-	-	-	-	N-S								-	-	-	-	-	-
2592.1	432.7	640.2	3039.1	7686.4	15546.7	165.5	27.6	40.9	194.0	490.7	992.4		0	0	0	0	28	103	290

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios, South (CR-S)
BR		0.00597		50		0.55		0.33		0.38	
	VD		0.00407		100		0.45		0.67		0.62

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	23.0	123.1	56.4	72.5	285.4	719.5	1514.3
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	100.1	16.7	24.7	117.4	297.0	600.6
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	6.3	9.3	54.7	150.6	335.8
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	0.0	0.0	10.4	15.4	90.3	248.9	554.8

INFLOW CAPACITY (DI), cfs					
0.0	23.0	123.1	285.4	719.5	1514.3

OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	0.0	0.0	90.3	248.9	554.8

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	N-S
N-S street	VD
E-W street	HB

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
BO = Broadway Road
HB = Huber Street
HR = Higley Road
HVR = Hermosa Vista Road
LR = Lindsay Road
MR = McKellips Road
ML = McLelan Road
MS = Main Street
UD = University Drive
VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of N-S Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of N-S Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	m	1313.47	1311.95	665	0.0023	0.66	-	-	-	-	-	-	-	-	-	-	-	-
		N-S	D/S	m	1311.95	1309.91	645	0.0032	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
			U/S	r	1320.98	1311.95	1670	0.0054	0.34	-	-	-	-	-	-	-	-	-	-	-	-
CP25	DVDHB	E-W	D/S	r	1311.95	1305.89	1320	0.0046	0.34	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of E-W Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to South cfs	Storm Drain Capacity to West cfs	WEIR FLOW OVER N-S CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over cfs	Weir Q 1.0 ft over cfs
-	-	-	-	-	-	N-S								-	-	-	-	-	-
-	-	-	-	-	-	145.8	24.3	36.0	170.9	432.3	874.3	20		-	-	-	-	-	-
-	-	-	-	-	-	E-W								-	-	-	-	-	-
2592.1	432.7	643.1	692.4	3189.8	6936.1	175.6	29.3	43.6	46.9	216.1	470.0		0	0	0	0	28	103	290

INTERSECTION PARAMETERS: Location N-S Street	Location E-W Street	Street Slope, S, South ft/ft	Street Slope, S, West ft/ft	R/W Width South ft.	R/W Width West ft.	WEIR AND N-S FLOW ALONG WEST SIDE: Slope Ratios,SR, (S^1/2) South (SR-S) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, West (SR-W) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, South (R/WR-S) $W_w/(W_w+W_s)$	R/W Ratios, R/WR, West (R/WR-W) $W_s/(W_w+W_s)$	Composite Ratios,CR, South, 1/2 street (CR-S)	Composite Ratios,CR, West (CR-W)
VD		0.00316		50		0.45		0.50		0.45	
	HB		0.00459		50		0.55		0.50		0.55

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	20.0	92.9	44.3	56.0	218.5	554.8	1184.3
OUTFLOW CAPACITY TO SOUTH (EAST SIDE)	0.0	0.0	72.9	12.2	18.0	85.5	216.1	437.2
OUTFLOW CAPACITY TO SOUTH (WEST SIDE)	0.0	0.0	0.0	5.5	8.2	51.3	144.5	329.8
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO WEST (DQ)	0.0	0.0	0.0	6.6	9.8	46.9	174.1	397.4

INFLOW CAPACITY (DI), cfs					
0.0	20.0	92.9	218.5	554.8	1184.3

OUTFLOW CAPACITY TO WEST (DQ), cfs					
0.0	0.0	0.0	46.9	174.1	397.4

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	50
Weir Direction	N-S
N-S street	40
E-W street	HB

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, Q = $K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
BO = Broadway Road
HB = Huber Street
HR = Higley Road
HVR = Hermosa Vista Road
LR = Lindsay Road
MR = McKellips Road
ML = McLelan Road
MS = Main Street
UD = University Drive
VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of N-S Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of N-S Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	c	1328.76	1327.17	315	0.0050	0.46	-	-	-	-	-	-	-	-	-	-	-	-
		N-S	D/S	r	1327.17	1325.99	325	0.0036	0.34	92.7	278.3	321.6	346.2	1594.9	3468.1	92.7	278.3	321.6	346.2	1594.9	3468.1
			U/S	r	1333.68	1327.17	880	0.0074	0.34	-	-	-	-	-	-	-	-	-	-	-	-
CP22	DHU40	E-W	D/S	r	1327.17	1321.79	825	0.0065	0.34	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of E-W Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to South cfs	Storm Drain Capacity to West cfs	WEIR FLOW OVER N-S CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over cfs	Weir Q 1.0 ft over cfs
						N-S													
-	-	-	-	-	-									-	-	-	-	-	-
-	-	-	-	-	-	11.2	33.5	38.8	41.7	192.2	417.9	32		-	-	-	-	-	-
-	-	-	-	-	-	E-W								-	-	-	-	-	-
185.5	556.5	643.1	692.4	3189.8	6936.1	15.0	44.9	51.9	55.9	257.6	560.1		0	0	9	15	21	51	145

INTERSECTION PARAMETERS: Location N-S Street	Location E-W Street	Street Slope, S, South ft/ft	Street Slope, S, West ft/ft	R/W Width South ft.	R/W Width West ft.	WEIR AND N-S FLOW ALONG WEST SIDE: Slope Ratios,SR, (S^1/2) South (SR-S) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios, West (SR-W) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, South (R/WR-S) $W_w/(W_w+W_s)$	R/W Ratios, West (R/WR-W) $W_s/(W_w+W_s)$	Composite Ratios,CR, South, 1/2 street (CR-S)	Composite Ratios, West (CR-W)
40		0.00363		25		0.43		0.33		0.27	
	HB		0.00652		50		0.57		0.67		0.73

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	32.0	37.6	74.8	85.7	95.2	275.5	594.9
OUTFLOW CAPACITY TO SOUTH (EAST SIDE)	0.0	0.0	5.6	16.8	19.4	20.9	96.1	209.0
OUTFLOW CAPACITY TO SOUTH (WEST SIDE)	0.0	0.0	0.0	7.1	9.3	11.5	40.0	96.2
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO WEST (DQ)	0.0	0.0	0.0	19.0	25.0	30.8	107.3	257.8

INFLOW CAPACITY (DI), cfs							
0.0	32.0	37.6	74.8	85.7	95.2	275.5	594.9
OUTFLOW CAPACITY TO WEST (DQ), cfs							
		0.0	19.0	25.0	30.8	107.3	257.8

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	N-S
N-S street	VD
E-W street	ML

Curb height = 0.5 ft.

Conveyance, $K = (1.49/n)*(A1.67/P0.67)$ Capacity, $Q = K*S^{0.5}$

Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
BO = Broadway Road
HB = Huber Street
HR = Higley Road
HVR = Hermosa Vista Road
LR = Lindsay Road
MR = McKellips Road
ML = McLelan Road
MS = Main Street
UD = University Drive
VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of N-S Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of N-S Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	m	1321.49	1316.77	1980	0.0024	0.66	-	-	-	-	-	-	-	-	-	-	-	-
		N-S	D/S	m	1316.77	1313.47	650	0.0051	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
			U/S	r	1328.00	1316.77	1000	0.0112	0.34	-	-	-	-	-	-	-	-	-	-	-	-
CP32	DVDML	E-W	D/S	r	1316.77	1310.16	1330	0.0050	0.34	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of E-W Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to South cfs	Storm Drain Capacity to West cfs	WEIR FLOW OVER N-S CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over cfs	Weir Q 1.0 ft over cfs
-	-	-	-	-	-	N-S								-	-	-	-	-	-
-	-	-	-	-	-	184.7	30.8	45.6	216.5	547.7	1107.7	21		-	-	-	-	-	-
-	-	-	-	-	-	E-W								-	-	-	-	-	-
2592.1	432.7	643.1	692.4	3189.8	6936.1	182.7	30.5	45.3	48.8	224.9	489.0		0	0	0	0	28	103	290

INTERSECTION PARAMETERS: Location N-S Street	Location E-W Street	Street Slope, S, South ft/ft	Street Slope, S, West ft/ft	R/W Width South ft.	R/W Width West ft.	WEIR AND N-S FLOW ALONG WEST SIDE: Slope Ratios,SR, (S^1/2) South (SR-S) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios, West (SR-W) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, South (R/WR-S) $W_w/(W_w+W_s)$	R/W Ratios, West (R/WR-W) $W_s/(W_w+W_s)$	Composite Ratios,CR, South, 1/2 street (CR-S)	Composite Ratios, West (CR-W)
VD		0.00508		50		0.50		0.50		0.50	
	ML		0.00497		50		0.50		0.50		0.50

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	21.0	113.3	51.8	66.6	265.1	671.2	1418.7
OUTFLOW CAPACITY TO SOUTH (EAST SIDE)	0.0	0.0	92.3	15.4	22.8	108.3	273.8	553.9
OUTFLOW CAPACITY TO SOUTH (WEST SIDE)	0.0	0.0	0.0	7.7	11.5	68.3	189.2	424.2
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO WEST (DQ)	0.0	0.0	0.0	7.7	11.3	48.8	187.2	419.7

INFLOW CAPACITY (DI), cfs					
0.0	21.0	113.3	265.1	671.2	1418.7

OUTFLOW CAPACITY TO WEST (DQ), cfs					
0.0	0.0	0.0	48.8	187.2	419.7

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	E-W
E-W street	MR
N-S street	LR

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, Q = K*$S^{0.5}$

Weir Flow down side streets, Q=CL$h^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
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Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
		E-W	U/S	m	1302.89	1301.26	835	0.0020	0.66	-	-	-	-	-	-	-	-	-	-	-	-
			D/S	m	1301.26	1294.81	1430	0.0045	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
		N-S	U/S	m	1302.12	1301.26	430	0.0020	0.66	-	-	-	-	-	-	-	-	-	-	-	-
CP15	DMRLR		D/S	m	1301.26	1294.93	1320	0.0048	0.66	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over crown cfs	Weir Q 1.0 ft over crown cfs
-	-	-	-	-	-	E-W								-	-	-	-	-	-
-	-	-	-	-	-	174.1	29.1	43.0	204.1	516.3	1044.2	0		-	-	-	-	-	-
-	-	-	-	-	-	N-S								-	-	-	-	-	-
2592.1	432.7	640.2	3039.1	7686.4	15546.7	179.4	30.0	44.3	210.4	532.1	1076.3		27	0	0	0	28	103	290

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, (S^1/2) South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, R/WR, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios,CR, South (CR-S)
MR		0.00451		50		0.49		0.33		0.33	
	LR		0.00479		100		0.51		0.67		0.67

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	27.0	114.0	56.1	70.0	258.7	645.8	1361.2
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	87.0	14.5	21.5	102.1	258.1	522.1
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	4.7	7.0	42.3	117.8	265.3
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	27.0	27.0	30.0	41.5	114.3	269.9	573.8

INFLOW CAPACITY (DI), cfs					
0.0	27.0	114.0	258.7	645.8	1361.2

OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	27.0	27.0	114.3	269.9	573.8

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	70
Weir Direction	N-S
N-S street	GR
E-W street	AS

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
BO = Broadway Road
HB = Huber Street
HR = Higley Road
HVR = Hermosa Vista Road
LR = Lindsay Road
MR = McKellips Road
ML = McLelan Road
MS = Main Street
UD = University Drive
VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of N-S Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of N-S Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
		N-S	U/S	m	1332.90	1330.13	875.51	0.0032	0.66	-	-	-	-	-	-	-	-	-	-	-	-
			D/S	m	1330.13	1327.63	597.98	0.0042	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
		E-W	U/S	r	1332.55	1330.13	349.58	0.0069	0.34	-	-	-	-	-	-	-	-	-	-	-	-
2B54	DGRAS		D/S	c	1330.13	1328.27	198.55	0.0094	0.46	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of E-W Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to South cfs	Storm Drain Capacity to West cfs	WEIR FLOW OVER N-S CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over crown cfs	Weir Q 1.0 ft over crown cfs
-	-	-	-	-	-	N-S								-	-	-	-	-	-
-	-	-	-	-	-	167.5	28.0	41.4	196.4	496.6	1004.4	14		-	-	-	-	-	-
-	-	-	-	-	-	E-W								-	-	-	-	-	-
2592.1	432.7	727.0	1084.2	4768.0	10266.1	250.9	41.9	70.4	104.9	461.5	993.6		0	0	0	0	19	72	203

INTERSECTION PARAMETERS: Location N-S Street	Location E-W Street	Street Slope, S, South ft/ft	Street Slope, S, West ft/ft	R/W Width South ft.	R/W Width West ft.	WEIR AND N-S FLOW ALONG WEST SIDE: Slope Ratios,SR, (S^1/2) South (SR-S) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios, West (SR-W) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, South (R/WR-S) $W_w/(W_w+W_s)$	R/W Ratios, West (R/WR-W) $W_s/(W_w+W_s)$	Composite Ratios,CR, South, 1/2 street (CR-S)	Composite Ratios, West (CR-W)
GR		0.00417		50		0.40		0.42		0.32	
	AS		0.00937		70		0.60		0.58		0.68

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	14.0	97.7	42.0	55.4	229.6	582.4	1221.4
OUTFLOW CAPACITY TO SOUTH (EAST SIDE)	0.0	0.0	83.7	14.0	20.7	98.2	248.3	502.2
OUTFLOW CAPACITY TO SOUTH (WEST SIDE)	0.0	0.0	0.0	4.5	6.7	37.9	103.3	227.7
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO WEST (DQ)	0.0	0.0	0.0	9.5	14.0	79.5	216.7	477.5

INFLOW CAPACITY (DI), cfs					
0.0	14.0	97.7	229.6	582.4	1221.4
OUTFLOW CAPACITY TO WEST (DQ), cfs					
0.0	0.0	0.0	79.5	216.7	477.5

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	E-W
E-W street	UD
N-S street	GR

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
BO = Broadway Road
HB = Huber Street
HR = Higley Road
HVR = Hermosa Vista Road
LR = Lindsay Road
MR = McKellips Road
ML = McLelan Road
MS = Main Street
UD = University Drive
VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	m	1325.77	1320.00	836.02	0.0069	0.66	-	-	-	-	-	-	-	-	-	-	-	-
		E-W	D/S	m	1318.00	1314.88	510.75	0.0061	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
			U/S	m	1322.97	1321.73	462.44	0.0027	0.66	-	-	-	-	-	-	-	-	-	-	-	-
COM76	DUDGR	N-S	D/S	m	1318.51	1316.19	812.15	0.0029	0.66	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over crown cfs	Weir Q 1.0 ft over crown cfs
						E-W													
-	-	-	-	-	-									-	-	-	-	-	-
-	-	-	-	-	-	202.5	33.8	50.0	237.4	600.4	1214.3	0		-	-	-	-	-	-
-	-	-	-	-	-	N-S								-	-	-	-	-	-
2592.1	432.7	640.2	3039.1	7686.4	15546.7	138.7	23.2	34.3	162.6	411.3	832.0		20	0	0	0	28	103	290

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios, South (CR-S)
UD		0.00610		50		0.59		0.33		0.42	
	GR		0.00286		100		0.41		0.67		0.58

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	20.0	121.2	53.8	70.0	284.9	722.9	1524.3
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	101.2	16.9	25.0	118.7	300.2	607.2
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	7.1	10.5	61.7	169.9	378.5
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	20.0	20.0	23.2	34.3	104.5	252.8	538.7

INFLOW CAPACITY (DI), cfs					
0.0	20.0	121.2	284.9	722.9	1524.3

OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	20.0	20.0	104.5	252.8	538.7

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	70
Weir Direction	N-S
N-S street	VD
E-W street	AS

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
BO = Broadway Road
HB = Huber Street
HR = Higley Road
HVR = Hermosa Vista Road
LR = Lindsay Road
MR = McKellips Road
ML = McLelan Road
MS = Main Street
UD = University Drive
VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of N-S Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of N-S Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	m	1303.25	1299.29	1170.95	0.0034	0.66	-	-	-	-	-	-	-	-	-	-	-	-
		N-S	D/S	m	1299.29	1295.65	1190.02	0.0031	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
			U/S	r	1303.64	1299.29	550.81	0.0079	0.34	-	-	-	-	-	-	-	-	-	-	-	-
CP42	DVDAS	E-W	D/S	c	1299.29	1298.76	207.10	0.0025	0.46	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of E-W Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to South cfs	Storm Drain Capacity to West cfs	WEIR FLOW OVER N-S CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over crown cfs	Weir Q 1.0 ft over crown cfs
-	-	-	-	-	-	N-S								-	-	-	-	-	-
-	-	-	-	-	-	143.2	23.9	35.4	167.9	424.8	859.1	7		-	-	-	-	-	-
-	-	-	-	-	-	E-W								-	-	-	-	-	-
2592.1	432.7	727.0	1084.2	4768.0	10266.1	130.3	21.7	36.5	54.5	239.6	515.9		0	0	0	0	19	72	203

INTERSECTION PARAMETERS: Location N-S Street	Location E-W Street	Street Slope, S, South ft/ft	Street Slope, S, West ft/ft	R/W Width South ft.	R/W Width West ft.	WEIR AND N-S FLOW ALONG WEST SIDE: Slope Ratios,SR, (S^1/2) South (SR-S) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, (S^1/2) West (SR-W) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, South (R/WR-S) $W_w/(W_w+W_s)$	R/W Ratios, R/WR, West (R/WR-W) $W_s/(W_w+W_s)$	Composite Ratios,CR, South, 1/2 street (CR-S)	Composite Ratios,CR, West (CR-W)
VD		0.00305		50		0.52		0.42		0.44	
	AS		0.00253		70		0.48		0.58		0.56

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	7.0	78.6	30.9	42.4	194.2	503.5	1069.1
OUTFLOW CAPACITY TO SOUTH (EAST SIDE)	0.0	0.0	71.6	12.0	17.7	84.0	212.4	429.6
OUTFLOW CAPACITY TO SOUTH (WEST SIDE)	0.0	0.0	0.0	5.3	7.8	45.4	125.0	278.3
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO WEST (DQ)	0.0	0.0	0.0	6.7	9.9	54.5	159.1	354.3

INFLOW CAPACITY (DI), cfs					
0.0	7.0	78.6	194.2	503.5	1069.1

OUTFLOW CAPACITY TO WEST (DQ), cfs					
0.0	0.0	0.0	54.5	159.1	354.3

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):
Special Case (Main Street) : p=arterial with median

	R/W, ft.	PW, ft.	F, ft
p	122	100	6
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	E-W
E-W street	MS
N-S street	GR

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
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MS = Main Street
UD = University Drive
VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	p	1314.00	1311.58	332.05	0.0073	1.00	-	-	-	-	-	-	-	-	-	-	-	-
		E-W	D/S	p	1311.58	1310.00	341.64	0.0046	1.00	1943.3	153.8	324.0	632.3	6076.0	11507.5	1943.3	153.8	324.0	632.3	6076.0	11507.5
			U/S	m	1314.00	1312.00	467.75	0.0043	0.66	-	-	-	-	-	-	-	-	-	-	-	-
CP60	DMSGR	N-S	D/S	m	1310.00	1306.42	535.36	0.0067	0.66	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over crown cfs	Weir Q 1.0 ft over crown cfs
						E-W													
-	-	-	-	-	-									-	-	-	-	-	-
-	-	-	-	-	-	264.6	20.9	44.1	86.1	827.4	1567.1	0		-	-	-	-	-	-
-	-	-	-	-	-									-	-	-	-	-	-
						N-S													
3886.6	307.5	640.2	3039.1	7686.4	15546.7	318.0	25.2	52.4	248.7	628.9	1272.0		104	0	0	0	0	103	290

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios, South (CR-S)
MS		0.00464		61		0.45		0.38		0.34	
	GR		0.00669		100		0.55		0.62		0.66

	storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	104.0	236.3	124.9	148.1	190.1	1034.0	1961.1
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	132.3	10.5	22.1	43.1	413.7	783.6
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	3.5	7.4	14.5	173.8	361.5
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	104.0	104.0	25.2	52.4	132.6	446.4	816.1

0.0	104.0	124.9	148.1	236.3	190.1	1034.0	1961.1
0.0	104.0			190.1	236.3	1034.0	1961.1

INFLOW CAPACITY (DI), cfs					
0.0	104.0	190.1	236.3	1034.0	1961.1

OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	104.0	104.0	104.0	446.4	816.1

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	E-W
E-W street	BO
N-S street	GR

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets

40 = 40th Street	HVR = Hermosa Vista Road
AS = Adobe Street	LR = Lindsay Road
BR =Brown Road	MR = McKellips Road
BO = Broadway Road	ML = McLelan Road
GR = Greenfield Road	MS = Main Street
HB = Huber Street	UD = University Drive
HR = Higley Road	VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
		E-W	U/S	m	1304.51	1300.73	719.78	0.0053	0.66	-	-	-	-	-	-	-	-	-	-	-	-
			D/S	m	1300.73	1298.00	852.71	0.0032	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
		N-S	U/S	m	1302.00	1300.73	642.40	0.0020	0.66	-	-	-	-	-	-	-	-	-	-	-	-
COM86	DBOGR		D/S	m	1300.73	1297.91	634.68	0.0044	0.66	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over crown cfs	Weir Q 1.0 ft over crown cfs
-	-	-	-	-	-	E-W								-	-	-	-	-	-
-	-	-	-	-	-	146.6	24.5	36.2	171.8	434.6	879.0	0		-	-	-	-	-	-
-	-	-	-	-	-	N-S								-	-	-	-	-	-
2592.1	432.7	640.2	3039.1	7686.4	15546.7	172.7	28.8	42.7	202.5	512.1	1035.8		105	0	0	0	28	103	290

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios,CR, South (CR-S)
BO		0.00320		50		0.46		0.33		0.30	
	GR		0.00444		100		0.54		0.67		0.70

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	105.0	178.3	129.5	141.2	304.4	642.1	1274.0
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	73.3	12.2	18.1	85.9	217.3	439.5
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	3.6	5.4	33.8	95.3	217.3
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	105.0	105.0	28.8	42.7	184.7	329.5	617.2

INFLOW CAPACITY (DI), cfs					
0.0	105.0	178.3	304.4	642.1	1274.0

OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	105.0	105.0	184.7	329.5	617.2

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	E-W
E-W street	SA
N-S street	GR

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
BO = Broadway Road
HB = Huber Street
HR = Higley Road
HVR = Hermosa Vista Road
LR = Lindsay Road
MR = McKellips Road
ML = McLelan Road
MS = Main Street
UD = University Drive
VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	m	1290.55	1290.18	284.59	0.0013	0.66	-	-	-	-	-	-	-	-	-	-	-	-
		E-W	D/S	m	1290.18	1286.00	435.39	0.0096	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
			U/S	m	1290.44	1290.18	616.81	0.0004	0.66	-	-	-	-	-	-	-	-	-	-	-	-
COM104	DSAGR	N-S	D/S	m	1290.18	1289.53	262.68	0.0025	0.66	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over crown cfs	Weir Q 1.0 ft over crown cfs
-	-	-	-	-	-	E-W								-	-	-	-	-	-
-	-	-	-	-	-	253.8	42.4	62.7	297.6	752.7	1522.4	0		-	-	-	-	-	-
-	-	-	-	-	-	N-S								-	-	-	-	-	-
2592.1	432.7	640.2	3039.1	7686.4	15546.7	128.5	21.5	31.7	150.7	381.2	771.0		133	0	0	0	28	103	290

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios,CR, South (CR-S)
SA		0.00959		50		0.66		0.33		0.50	
	GR		0.00246		100		0.34		0.67		0.50

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	133.0	259.9	175.4	195.7	458.2	988.2	1945.4
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	126.9	21.2	31.3	148.8	376.3	761.2
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	10.5	15.6	87.6	237.9	522.2
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	133.0	133.0	133.0	133.0	133.0	133.0	133.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	133.0	133.0	21.5	31.7	150.7	374.0	662.0

INFLOW CAPACITY (DI), cfs					
0.0	133.0	259.9	458.2	988.2	1945.4

OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	133.0	133.0	150.7	374.0	662.0

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	100
Weir Direction	E-W
E-W street	BO
N-S street	HR

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
AS = Adobe Street
BR =Brown Road
GR = Greenfield Road
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LR = Lindsay Road
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MS = Main Street
UD = University Drive
VD = Val Vista Drive

Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	m	1333.20	1331.70	362.15	0.0042	0.66	-	-	-	-	-	-	-	-	-	-	-	-
		E-W	D/S	m	1331.70	1322.99	1307.53	0.0067	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
			U/S	m	1336.00	1332.00	881.82	0.0045	0.66	-	-	-	-	-	-	-	-	-	-	-	-
4B91	DBOHR	N-S	D/S	m	1330.00	1327.65	478.57	0.0049	0.66	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over crown cfs	Weir Q 1.0 ft over crown cfs
-	-	-	-	-	-	E-W								-	-	-	-	-	-
-	-	-	-	-	-	211.5	35.3	52.2	248.0	627.2	1268.5	0		-	-	-	-	-	-
-	-	-	-	-	-	N-S								-	-	-	-	-	-
2592.1	432.7	640.2	3039.1	7686.4	15546.7	181.6	30.3	44.9	213.0	538.6	1089.4		0	0	0	0	28	103	290

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios, South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios, South (CR-S)
BO		0.00666		50		0.54		0.33		0.37	
	HR		0.00491		100		0.46		0.67		0.63

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	0.0	105.7	35.3	52.2	275.5	729.7	1558.5
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	105.7	17.7	26.1	124.0	313.6	634.3
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	6.5	9.6	55.8	153.1	340.1
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	0.0	0.0	11.2	16.5	95.8	263.0	584.2

INFLOW CAPACITY (DI), cfs					
0.0	0.0	105.7	275.5	729.7	1558.5

OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	0.0	0.0	95.8	263.0	584.2

Subject **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	70
Weir Direction	E-W
E-W street	BE
N-S street	HR

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets
40 = 40th Street
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Node	Diversion South	Direction	Side	STREET FLOW: Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	Conveyance of D/S Upper side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	Conveyance of D/S Lower side of E-W Street: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
		E-W	U/S	m	1298.00	1295.50	720.98	0.0035	0.66	-	-	-	-	-	-	-	-	-	-	-	-
			D/S	m	1295.50	1292.40	694.78	0.0045	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
		N-S	U/S	c	1298.00	1295.50	530.84	0.0047	0.46	-	-	-	-	-	-	-	-	-	-	-	-
CP95	DBEHR		D/S	c	1294.00	1292.00	242.18	0.0083	0.46	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection: crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	STREET CAPACITIES D/S OF INTERSECTION: crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	Storm Drain Capacity to West cfs	Storm Drain Capacity to South cfs	WEIR FLOW OVER E-W CROWN: Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over crown cfs	Weir Q 1.0 ft over crown cfs
-	-	-	-	-	-	E-W								-	-	-	-	-	-
-	-	-	-	-	-	173.1	28.9	42.8	203.0	513.4	1038.5	0		-	-	-	-	-	-
-	-	-	-	-	-	N-S								-	-	-	-	-	-
2592.1	432.7	727.0	1084.2	4768.0	10266.1	235.6	39.3	66.1	98.5	433.3	932.9		0	0	0	0	19	72	203

INTERSECTION PARAMETERS: Location E-W Street	Location N-S Street	Street Slope, S, West ft/ft	Street Slope, S, South ft/ft	R/W Width West (half) ft.	R/W Width South ft.	WEIR AND E-W FLOW ALONG SOUTH SIDE: Slope Ratios,SR, (S^1/2) West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	Slope Ratios,SR, South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	R/W Ratios, R/WR, West (R/WR-W) $W_w/(W_w+W_s)$	R/W Ratios, South (R/WR-S) $W_s/(W_w+W_s)$	Composite Ratios,CR, West, 1/2 street (CR-W)	Composite Ratios, South (CR-S)
BE		0.00446		50		0.42		0.42		0.34	
	HR		0.00826		70		0.58		0.58		0.66

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	0.0	86.6	28.9	42.8	222.3	585.2	1241.5
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	86.6	14.5	21.4	101.5	256.7	519.2
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	5.0	7.4	41.6	113.1	248.6
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	0.0	0.0	9.5	14.0	79.2	215.4	473.6

INFLOW CAPACITY (DI), cfs					
0.0	0.0	86.6	222.3	585.2	1241.5
OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	0.0	0.0	79.2	215.4	473.6

EASTERN CANAL NORTH FDS

Subject: **Eastern Canal North - Analyses of Street Intersection Diversions**
Street Intersection Diversions

By: **F BRAILEANU**
Checked: **WV HAAS**

City of Mesa Street Widths (a = arterial (1 mi.), m = major collector, c = collector (½ mi.), r = residential):

	R/W, ft.	PW, ft.	F, ft
a	122	88	12
m	100	66	12
c	70	46	7
r	50	34	4

N-S street R/W (ft)	70
Weir Direction	E-W
E-W street	SA
N-S street	HR

Curb height = 0.5 ft.

Conveyance, K = (1.49/n)*(A1.67/P0.67)
Q = discharge, cfs
n = Manning's roughness
A = flow area, sq. ft.
P = wetted perimeter, ft.
S = longitudinal slope, ft/ft

Capacity, $Q = K*S^{0.5}$

Weir Flow down side streets, $Q=CLh^{1.5}$
C = 2.9
L = weir length, ft.
h = flow depth, ft.

Streets

40 = 40th Street	LR = Lindsay Road
AS = Adobe Street	MR = McKellips Road
BR =Brown Road	ML = McLelan Road
GR = Greenfield Road	MS = Main Street
BO = Broadway Road	SA = Southern Avenue
HB = Huber Street	UD = University Drive
HR = Higley Road	VD = Val Vista Drive
HVR = Hermosa Vista Road	

				STREET FLOW						Conveyance of D/S Upper side of E-W Street						Conveyance of D/S Lower side of E-W Street					
Node	Diversion South	Direction	Side	Street Type (a)	Top of Slope Elev., ft	Bottom of Slope Elev., ft.	Slope Length, ft.	Ave. Long. Slope, ft/ft	Top of Crown ft.	crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 ft over crown cfs	1.0 ft over crown cfs	crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs
			U/S	m	1323.51	1318.07	1329.02	0.0041	0.66	-	-	-	-	-	-	-	-	-	-	-	-
		E-W	D/S	m	1318.07	1311.59	937.97	0.0069	0.66	1296.0	216.4	320.1	1519.6	3843.2	7773.4	1296.0	216.4	320.1	1519.6	3843.2	7773.4
			U/S	m	1320.28	1318.07	1111.19	0.0020	0.66	-	-	-	-	-	-	-	-	-	-	-	-
CP81	DSAHR	N-S	D/S	c	1318.07	1309.01	1317.92	0.0069	0.46	-	-	-	-	-	-	-	-	-	-	-	-

Conveyance of N-S Street, D/S of the Intersection						STREET CAPACITIES D/S OF INTERSECTION						Storm Drain Capacity to West	Storm Drain Capacity to South	WEIR FLOW OVER E-W CROWN					
crown cfs	curb cfs	sidewalk cfs	ROW cfs	.5 over c. cfs	1. over c. cfs	crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over	cfs	cfs	Weir Q crown cfs	Weir Q curb cfs	Weir Q sidewalk cfs	Weir Q ROW cfs	Weir Q .5 ft over crown cfs	Weir Q 1.0 ft over crown cfs
						E-W													
-	-	-	-	-	-									-	-	-	-	-	-
-	-	-	-	-	-	215.4	36.0	53.2	252.6	638.9	1292.2	0		-	-	-	-	-	-
-	-	-	-	-	-									-	-	-	-	-	-
						N-S													
2592.1	432.7	727.0	1084.2	4768.0	10266.1	214.9	35.9	60.3	89.9	395.3	851.2		0	0	0	0	19	72	203

INTERSECTION PARAMETERS						WEIR AND E-W FLOW ALONG SOUTH SIDE					
Location		Street Slope, S,		R/W Width		Slope Ratios,SR, (S^1/2)		R/W Ratios, R/WR,		Composite Ratios,CR,	
E-W Street	N-S Street	West ft/ft	South ft/ft	West (half) ft.	South ft.	West (SR-W) $S_w^{1/2}/(S_w^{1/2}+S_s^{1/2})$	South (SR-S) $S_s^{1/2}/(Sw^{1/2}+Ss^{1/2})$	West (R/WR-W) $W_w/(W_w+W_s)$	South (R/WR-S) $W_s/(W_w+W_s)$	West, 1/2 street (CR-W)	South (CR-S)
SA		0.00691		50		0.50		0.42		0.42	
	HR		0.00687		70		0.50		0.58		0.58

		storm d.	1/2@crown	curb	sidewalk	ROW	.5 ft over	1.0 ft over
INFLOW CAPACITY (DI)	0.0	0.0	107.7	36.0	53.2	271.9	710.6	1495.2
OUTFLOW CAPACITY TO WEST (NORTH SIDE)	0.0	0.0	107.7	18.0	26.6	126.3	319.4	646.1
OUTFLOW CAPACITY TO WEST (SOUTH SIDE)	0.0	0.0	0.0	7.5	11.1	60.7	163.2	354.3
OUTFLOW CAPACITY TO WEST (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (STORM DRAIN)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OUTFLOW CAPACITY TO SOUTH (DQ)	0.0	0.0	0.0	10.5	15.5	84.8	228.0	494.8

INFLOW CAPACITY (DI), cfs					
0.0	0.0	107.7	271.9	710.6	1495.2
OUTFLOW CAPACITY TO SOUTH (DQ), cfs					
0.0	0.0	0.0	84.8	228.0	494.8

DBDHB1 - RCP33A @ Val Vista Dr
Worksheet for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\routings.fm2
Worksheet	RCP33A @ Val Vista Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.002297	ft/ft
Water Surface Elevation	1,313.57	ft

Elevation range: 1,312.81 ft to 1,313.57 ft.

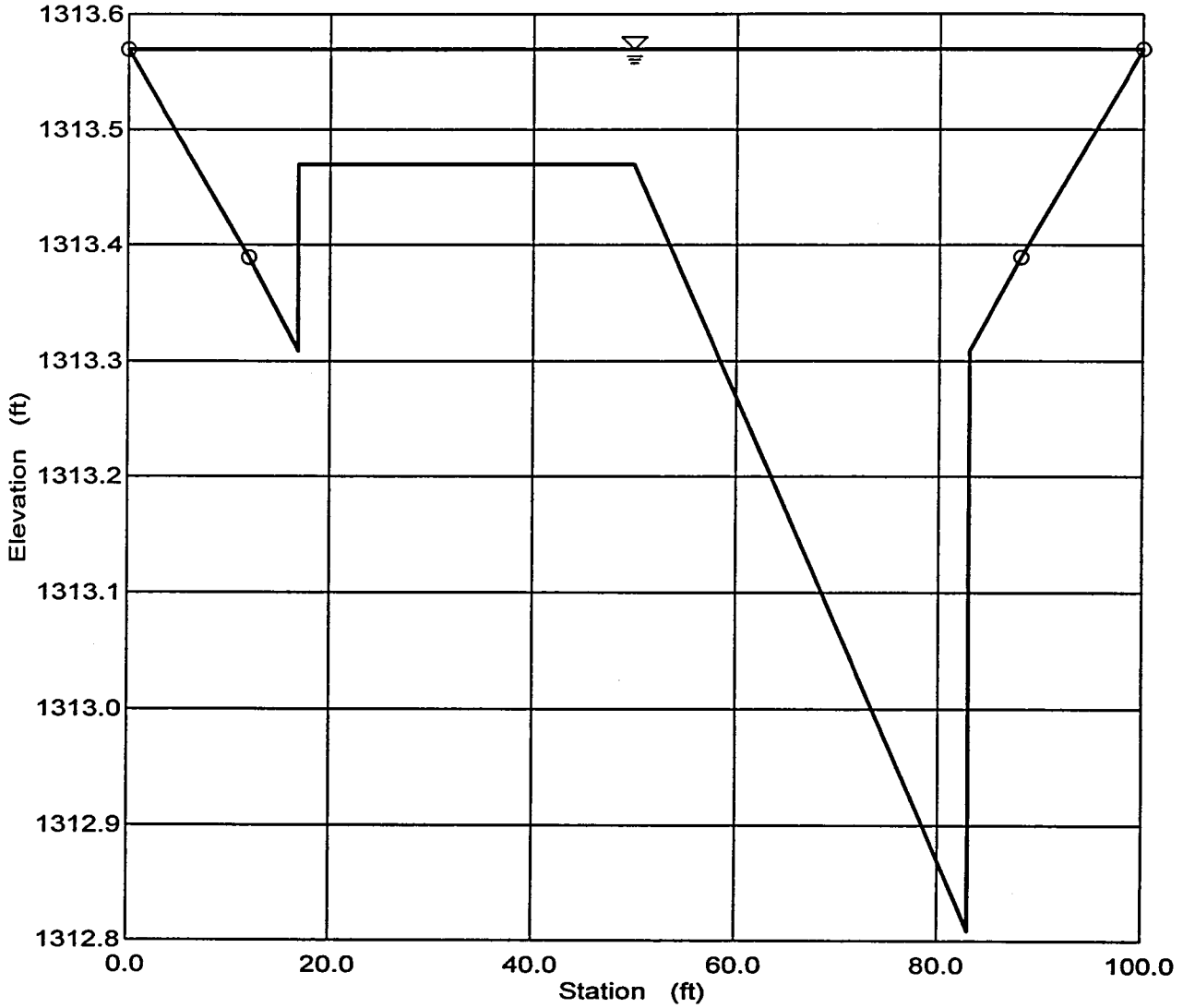
Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
0.00	1,313.57	0.00	12.00	0.020
12.00	1,313.39	12.00	88.00	0.016
17.00	1,313.31	88.00	100.00	0.020
17.00	1,313.47			
50.00	1,313.47			
83.00	1,312.81			
83.00	1,313.31			
88.00	1,313.39			
100.00	1,313.57			

Results		
Wtd. Mannings Coefficient	0.017	
Discharge	33.06	cfs
Flow Area	21.85	ft²
Wetted Perimeter	100.67	ft
Top Width	100.00	ft
Height	0.76	ft
Critical Depth	1,313.49	ft
Critical Slope	0.007476	ft/ft
Velocity	1.51	ft/s
Velocity Head	0.04	ft
Specific Energy	1,313.61	ft
Froude Number	0.57	
Flow is subcritical.		

DBDHB1 - RCP33A @ Val Vista Dr
Cross Section for Irregular Channel

Project Description	
Project File	d:\1prj\mfc015\flow master\routings.fm2
Worksheet	RCP33A @ Val Vista Dr
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Wtd. Mannings Coefficient	0.017	
Channel Slope	0.002297	ft/ft
Water Surface Elevation	1,313.57	ft
Discharge	33.06	cfs



Appendix D.5.3

Storm Drain Diversions

- Summary Table of Storm Drain Systems
- Supporting Quarter Section Maps

Storm Drain Diversion Data
Values for flow limiting pipe section

"n" value 0.013 | by: BH, FB | roject No.: FCD# 98-36

Map ID	HEC-1 ID	Return Area ID	Quarter Section Map ID	Street and Manholes	Pipe ID	U/S Manhole ID	D/S Manhole ID	U/S Invert Elevation (ft)	D/S Invert Elevation (ft)	Length (ft)	Pipe Diameter (in)	Velocity (for Q_{FULL}) (ft / s)	Q_{FULL} (ft^3 / s)	Q_{inter} (ft^3 / s)	ΣQ_{interc} (ft^3 / s)	$Q_{transport}$ (ft^3 / s)	Time Lag (5 min steps)
1	SD161	162	50C-58A	N. Lindsay Road (From Northridge St. to Norwood St)	A23314	MH2171	MH2172	1311.62	1309.85	643	36	5.0	35	17.8	17.8		
2				N. Lindsay Road (From Norwood St. to Mallory St)	A23314	MH2172	MH2176	1309.85	1307.07	571	42	7.3	70	24.0	41.8		
3				N. Lindsay Road (From Mallory St. to Hermosa Vista Dr.)	A23314	MH2176	MH2174	1307.07	1304.33	561	48	8.0	100	20.0	61.8		
4	SD162	5	50C-58A, 50D-58B	N. Lindsay Road (From Hermosa Vista Dr. to Lockwood St.)	A23314	MH2174	MH2195	1304.33	1300.90	897	54	7.6	122	31.1	92.9	92.9	1
5	SD5	153	58B	N Roca St.	A34848	MH2184	MH2185	1306.90	1305.18	266	24	5.8	18				
				E Lockwood St. (From Roca St. to 1B5)	A34848	MH2185	MH2186	1305.18	1304.57	29	30	12.1	59				
6				E Lockwood St. (From Roca St. to 1B5)	A34848	MH2186	MH2188	1304.57	1303.14	453	42	5.9	57		42.0	42.0	0
7				E Lakewood St. (From N Alba St. to N Los Alamos St), N Los Alamos (From Lakewood St. to Leonora St.) and N Los Alamos (From Lakewood St. to Leonora St.)	A37725	MH2183	MH2178	1308.79	1305.93	942	24	4.0	12	10.8	10.8		
8				N Los Alamos (From Lakewood st. to Leonora St.)	A34848	MH2178	MH2190	1305.93	1297.98	433	30	11.3	56	30.0	40.8	40.8	0
9	SD4	151	50D	N. Glenview (From Leonora St. to Kenwood St. and 1B153)	A18332	MH2292	MH2294	1296.80	1296.00	552	30	3.2	16	7.0	7.0	7.0	1
10	SD159	12	58A-58C	N 32nd ST. (From Menlo Cir. to Hermosa Vista Dr.)	A52290	MH2212	MH2207	1318.10	1315.15	804	8	2.1	1	1.0	1.0		
11		12	58C-58D	E Hermosa Vista Dr. (From N 34th St. to n 32th St.)	A52290	MH2209	MH2207	1319.70	1315.15	1263	12	2.7	2	2.0	2.0	3.0	2
12	SD12	13	58B-58D	N 32nd ST. (From Hermosa Vista Dr. to McKellips Rd.)	A39234, A44969	MH2207	MH2206	1315.15	1303.90	2706	15	3.4	4	3.0	3.0	3.0	2
13	SD13	6	58B-59A	E. McKellips (From 32nd St. to Lindsay Rd.)	A44639	MH2206	CN1026	1303.90	1288.67	2604	36	7.2	51	24.0	24.0	27.0	1
14	SD3	8	50D-51C	E. McKellips (From Eastern Canal to Lindsay Rd.)	A44639	MH2307-CN1113	MH2305	1289.30	1289.12	660	36	1.6	11	11.0	11.0		
								1289.30	1289.12	660	36	1.6	11	11.0	22.0	22.0	1
15			50D-51C	E. McKellips (From Eastern Canal to Lindsay Rd.)	A44639	MH2305	CN1096	1289.12	1288.67	1740	36	1.5	11	11.0	11.0		
	SD8							1289.12	1288.67	1740	36	1.5	11	11.0	22.0	22.0	2
16	DMRLR	10	51C-59A	Lindsay Rd. (From McKellips Rd. to Eastern Canal)	A44638	CN1095	MH2229	1288.67	1288.57	234	72	3.1	88	0.0	0.0	27.0	0
17	SD10	25	51C-59A	Lindsay Rd. (From McKellips Rd. to Eastern Canal)	A44639	MH2229	MH2233	1288.57	1284.11	1320	72	8.7	246	28.0	28.0	77.0	1
18	SD25	25	51C-59A	Lindsay Rd. (From McKellips Rd. to Eastern Canal)	A44639	MH2233	MH2245	1284.11	1283.16	3409	72	2.5	71	7.0	7.0	71.0	2
20	RSD15	151	66B	E. Leland Street	A31182	MH2140	MH2141	1330.55	1327.20	604	30	6.2	31	16.0	16.0	16.0	0
21	SD17 (1)	18	67A	From June Cir. to Juniper St.	A30812	CB3772	MH2109	-	-	500	24	5.0	16	8.4	8.4	8.4	0

Storm Drain Diversion Data
Values for flow limiting pipe section

"n" value 0.013 | by: BH, FB | roject No.: FCD# 98-36

Map ID	HEC-1 ID	Return Area ID	Quarter Section Map ID	Street and Manholes	Pipe ID	U/S Manhole ID	D/S Manhole ID	U/S Invert Elevation (ft)	D/S Invert Elevation (ft)	Length (ft)	Pipe Diameter (in)	Velocity (for Q_{FULL}) (ft / s)	Q_{FULL} (ft^3 / s)	Q_{inter} (ft^3 / s)	ΣQ_{interc} (ft^3 / s)	$Q_{transport}$ (ft^3 / s)	Time Lag (5 min steps)
42	76	59	76B	N. Quail St. (from E. Contessa St. to E Covina St.)	A14278	MH1748	MH1749	1330.05	1328.95	250	18	3.9	7	7.0	7.0		
43		59	76B	N. Quail St. (from E Covina St. to Ret Basin 3B59)	A14278	MH1749	OU660	1328.95	1328.00	191	24	5.1	16	7.0	14.0		0
44		59	76B	N. Quinn St. (from E. Caballero St. to E. Camino St.)	A14278	MH1756	MH1755	1325.04	1324.55	311	24	2.9	9	7.0	7.0		
45		59	76B	N. Quinn St. (from E. Camino St. to E. Covina St.)	A14278	MH1755	MH1752	1324.55	1322.28	518	36	6.2	44	10.5	17.5		0
46		59	76B	N. Contessa St. (@ E. Covina St., west)	A14278	CB3120	OU658	1320.36	1320.00	144	24	3.6	11	10.5	10.5	42.0	0
47	DUDGR	76	76B	N. Greenfield Rd. (from E. Des Moines St. to University Dr.)	A34202	MH1743	MH1739	1315.90	1308.85	926	24	6.3	20	31.0	20.0	20.0	0
48	71	70	68D	E Covina St. @ N Ogden St.	A18682	MH2098	HW1293	1312.20	1312.00	90	21	3.1	7	7.0	7.0		0
49		70	68D	N New Haven (from E Contessa St. to E Covina St.)	A21670	MH2099	MH2100	1308.40	1308.20	268	24	2.0	6	6.0	6.0		
50		70	68D	N New Haven (from E Covina St.to HW1294)	A21670	MH2100	HW1294	1308.20	1308.00	103	30	3.7	18	7.0	13.0		0
51		70	68D	E Covina St. @ 550lf west of N New Haven St.	A31706	MH2101	HW1296	1307.60	1307.50	118	27	2.3	9	7.0	7.0	27.0	0
52	SD71	61	68B-68D	E University Dr (from N Greenfield Rd to N Nassau St.)	A42411	MH2056	MH2057	1306.61	1304.79	622	24	3.9	12	8.0	8.0		
53		61	68B-68D	E University Dr (from N Greenfield Rd to N Nassau St.)	A42411	MH2057	MH2058	1304.79	1299.30	592	30	8.0	39	8.0	16.0		
54		61	68B-68D	E University Dr (from N Greenfield Rd to N Nassau St.)	A42411	MH2058	MH2023	1299.30	1296.33	603	36	6.6	47	8.0	24.0	24.0	1
55	SD61	60	68B-69A	E University Dr (from N Nassau St. to 1/4 mile west of N Nassau St.)	A42411	MH2023	MH2027	1296.33	1291.05	1019	36	6.8	48	16.0	16.0	16.0	1
57	DVDAS	49	60C-68A, 60D-68B	N Val Vista Dr. (from North of E Adobe St. to E Camino Cir.)	A46940	MH2068	MH2069	1282.50	1281.54	574	30	3.4	17	7.0	7.0	7.0	0
56	OUTA	OUT	68B-69A	E University Dr (from 1/4 mile west of N Nassau St. to N Val Vista Dr.)	A42411	MH2027	MH2033	1291.05	1277.68	1311	36	9.5	67	20.0	36.0		
58		OUT	60D-68B	N Val Vista Dr. (from North of E Camino Cir. To University Dr.)	A46940, A37790	MH2069	MH2033	1281.54	1277.68	2163	36	8.0	39	21.0	28.0	64.0	1
59	OUTB	OUT	61C-69A	N Val Vista Dr. (from University Dr. to Eastern Canal)	A20592	MH2033	MH2273	1277.68	1271.24	1329	48	8.0	100	16.0	16.0	16.0	0
60	OUTC	OUT	61C	Eastern Canal (from University Dr. to Val Vista Dr.)	A44639	MH2373	MH2273	1282.40	1271.24	4577	48	5.6	71	5.0	43.0	48.0	0
61	SD77	79	69C-77A	N. Greenfield Road (From University Dr. to Main St.)	A40339	MH1739	MH1848	1308.55	1292.55	2375	42	8.6	83	42.0	62.0	62	1
62	RCP83	79	77A-77B	E Main Street (from S 48th St. to 770' West of S 48th St.)	A41138	MH1856	MH1857	1322.42	1316.82	626	24	6.8	21	7.0	8.0		
63				48th St. to 617' east of Greenfield Rd.)	A41138	MH1857	MH1852	1322.42	1308.69	1230	30	8.8	43	21.0	28.0		
64				E Main Street (from 617' east of Greenfield Rd. to Greenfield Rd.)	A41138	MH1852	MH1848	1308.69	1292.57	617	36	15.3	108	14.0	42.0	42	0
65	DMSGR	86	69D-77B	N. Greenfield Road (From Main St. to Broadway Rd.)	A34202	MH1848	MH1953	1292.57	1289.54	783	54	7.7	122	0.0	104.0	104	0

Storm Drain Diversion Data
Values for flow limiting pipe section

"n" value 0.013 | by: BH, FB | roject No.: FCD# 98-36

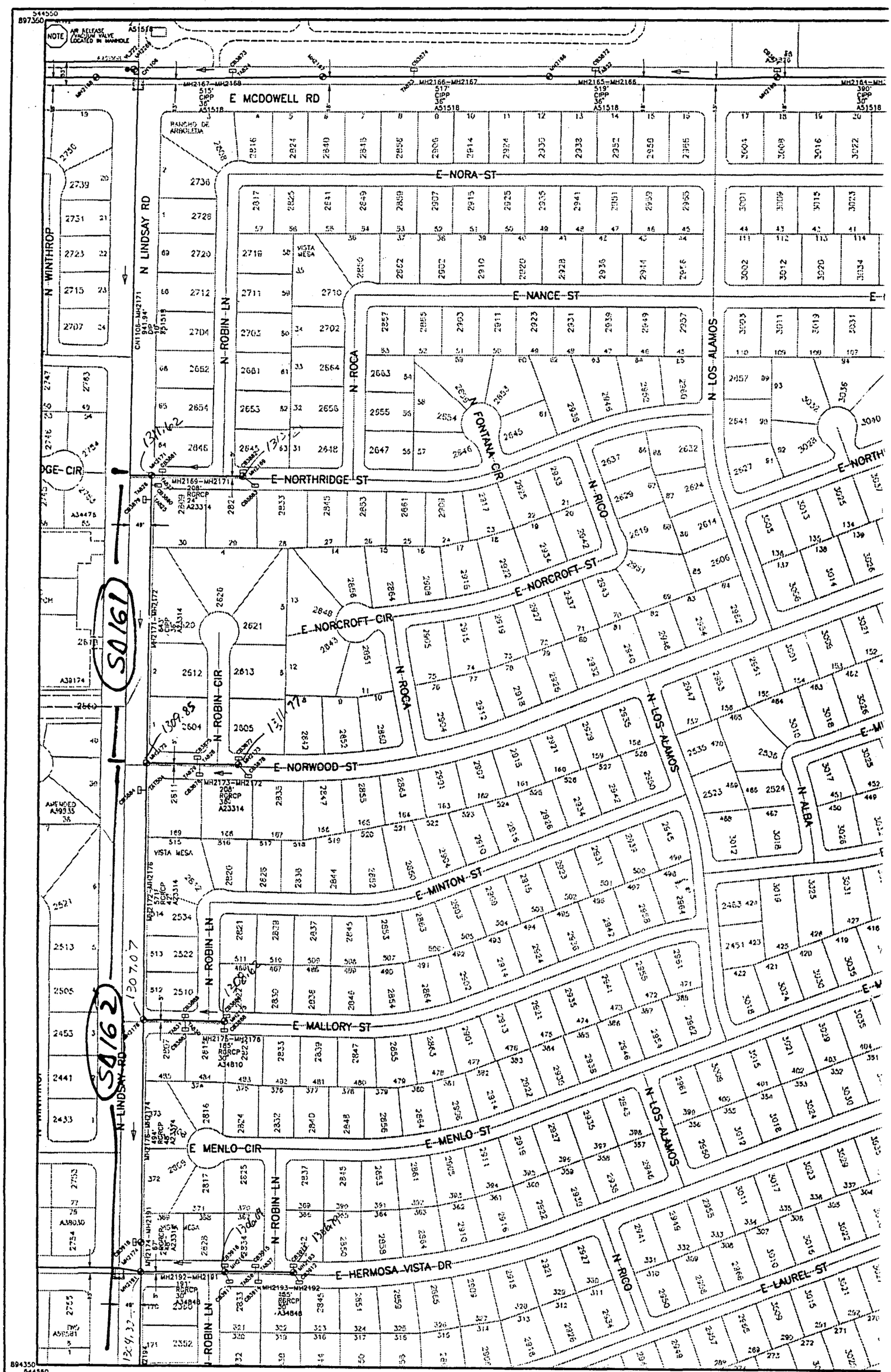
Map ID	HEC-1 ID	Return Area ID	Quarter Section Map ID	Street and Manholes	Pipe ID	U/S Manhole ID	D/S Manhole ID	U/S Invert Elevation (ft)	D/S Invert Elevation (ft)	Length (ft)	Pipe Diameter (in)	Velocity (for Q_{FULL}) (ft / s)	Q_{FULL} (ft^3 / s)	Q_{inter} (ft^3 / s)	ΣQ_{interc} (ft^3 / s)	$Q_{transport}$ (ft^3 / s)	Time Lag (5 min steps)
66	SD81	86	69D-77A	N. Greenfield Road (From Main St. to Broadway Rd.)	A34202	MH1953	MH1502	1289.54	1282.16	1825	54	7.9	125	35.0	104.0	125	1
67		98	69D-70C	E Broadway Road, west of Greenfield Rd.	A33871	MH1778	MH1502	1294.64	1282.16	1122	30	8.8	43	21.0	21.0		
68	DBOGR	98	70C-78A	N. Greenfield Road (From Broadway Rd. to 373' south Broadway Rd.)	A23637	MH1502	MH1503	1282.16	1281.09	373	54	6.6	105	0.0	125.0	105	0
69	SD98	101	70C-78A	N. Greenfield Road (From 373' south of Broadway Rd to Pueblo Ave.)	A23637	MH1503	MH1506	1281.09	1272.53	2392	54	7.4	118	35.0	105.0	118	1
		94	78B	From E Florian Cicle to E Farmdale Circle	A16175	MH1537	MH1535	1290.58	1289.10	250	30	6.4	32	10.0	10.0		
		94	78B	From E Farmdale Circle to E Emerald Circle	A16175	MH1535	MH1533	1289.10	1288.30	250	42	5.9	57	10.0	20.0		
		94	78B	From E Emerald Circle to E Enid Circle	A16175	MH1533	MH1531	1288.30	1287.48	240	48	6.7	84	10.0	30.0		
70		94	78B	From E Enid Circle to E Portland Street	A16175	MH1531	MH1526	1287.48	1285.39	1192	54	5.2	82	22.0	52.0		1
		94	78B	From E Escondido Avenue to E Edgewood Avenue	A16175	MH1525	MH1523	1287.50	1286.31	206	36	7.2	51	9.0	9.0		
71		94	78B	From E Edgewood Avenue to E Emelita Avenue	A16175	MH1523	MH1526	1286.31	1285.39	325	48	6.1	76	15.0	24.0		0
	Flow not included in SF102	94	78B	From E Enid Circle to S Greenfield Road	A16176	MH1526	MH1518	1285.39	1285.22	170	54	3.9	62	0.0	76.0		
72		94	78B	E Greenfield Road (From E Emelita Ave. to PA94)	A16177	MH1518	HW1110	1285.22	1282.00	629	60	9.5	186	4.0	80.0	66.0	1
73	SD101	104	70D-78B	Greenfield Road (From E Pueblo Ave. to Southern Ave.)	A23637	MH1506	MH1520	1272.53	1270.52	1612	54	4.4	69	0.0	69.0	69.0	1
74	SD114	115	86A-86B	Alley south. of E. Delta Ave. and east of Higley Rd.	A24072	MH1905	MH1617	1323.76	1309.67	1468	27	7.6	30	27.0	27.0	27.0	1
75	SD115	116	78D-86B	S. Higley Road (North of Southern Ave.)	A23637	MH1617	MH1548	1309.67	1305.16	1510	30	4.6	22	17.5	27.0	22.0	1
76	SD116	118	78D-86B	S. Higley Road (North of Southern Ave.)	A23637	MH1548	MH1025	1305.16	1301.39	1177	30	4.7	23	21.0	22.0	23.0	1
77	SD118	108	78D-79C, 78B-79A	E. Southern Ave. (From Higley Rd. to Greenfield Rd.)	A23637	MH1025	MH1539	1301.39	1286.83	2344	36	7.4	53	30.0	30.0	53.0	1
78	SD108	104	78B	E. Southern Ave.	A23637	MH1539	MH1446	1286.83	1267.87	2582	36	8.1	57	30.0	53.0	57.0	1
79		121	70D-71C	E. Southern Ave. (west of Greenfield Rd.)	A35205	MH1777	MH1446	1274.35	1267.87	658	30	8.3	41	18.0	18.0		
80	DSAGR	121	71C-79A	Greenfield Road (south of Southern Ave.)	A23637	MH1446	MH1447	1267.87	1267.20	679	72	4.7	133	0.0	126.0	133.0	1
81	SD64	84	69A-69B	Main Street (from N Sulleyss Dr to eastern Canal)	A40396	MH2042	HW1276	1288.85	1285.45	1640	42	4.8	46	49.0	49.0	46.0	1

NOTES: (1) Intercepted flow as well as the slope of the storm drain were found in the Drainage Report for Groves North under denomination "CB1".

(2) Intercepted flow as well as the slope of the storm drain were found in the Drainage Report for Groves North under denomination "CB2" to "CB8".

If the flow intercepted exceeds the storm drain capacity, the latter is considered as intercepted flow.

STORM 58A



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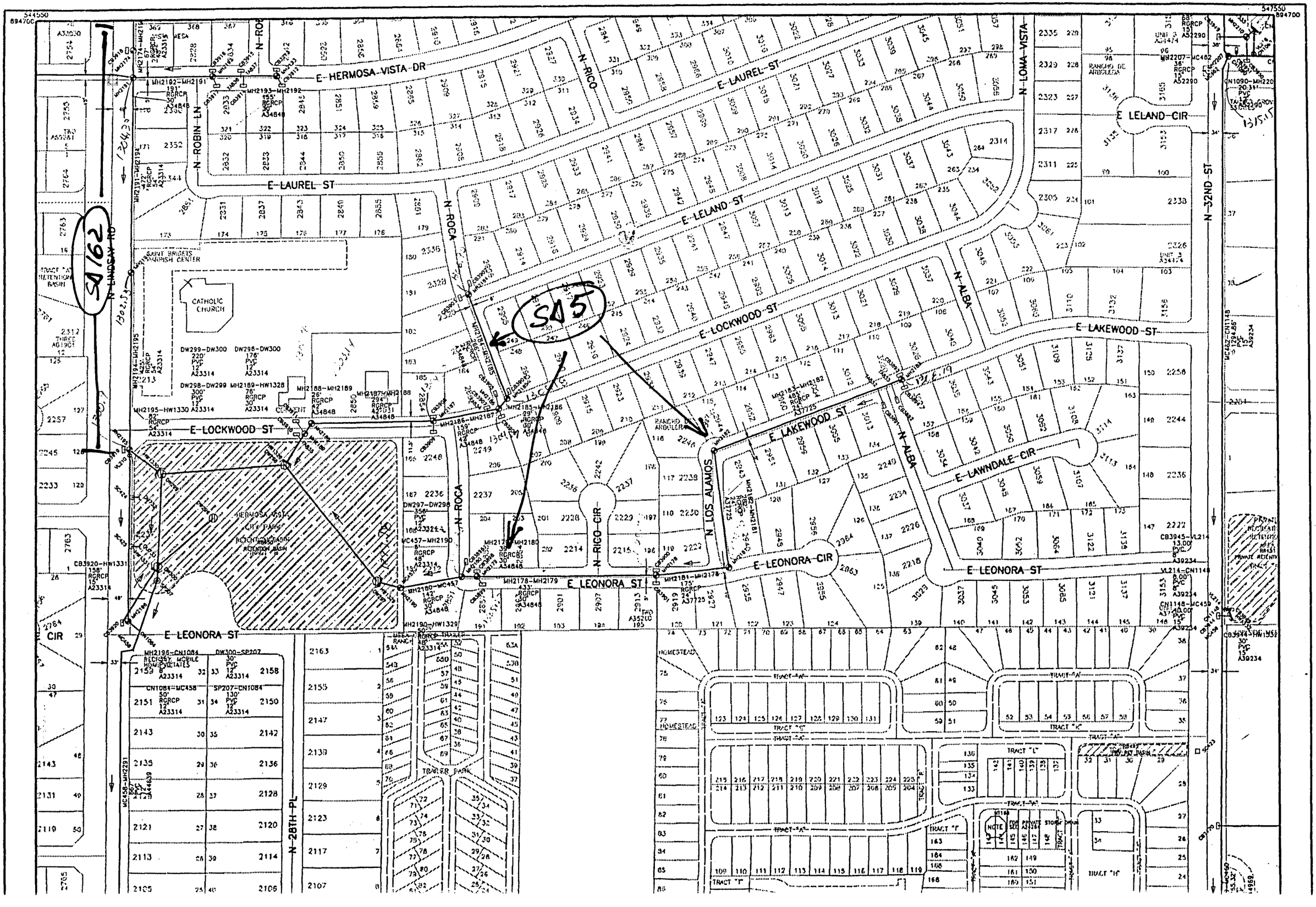
SCALE: 1" = 200'

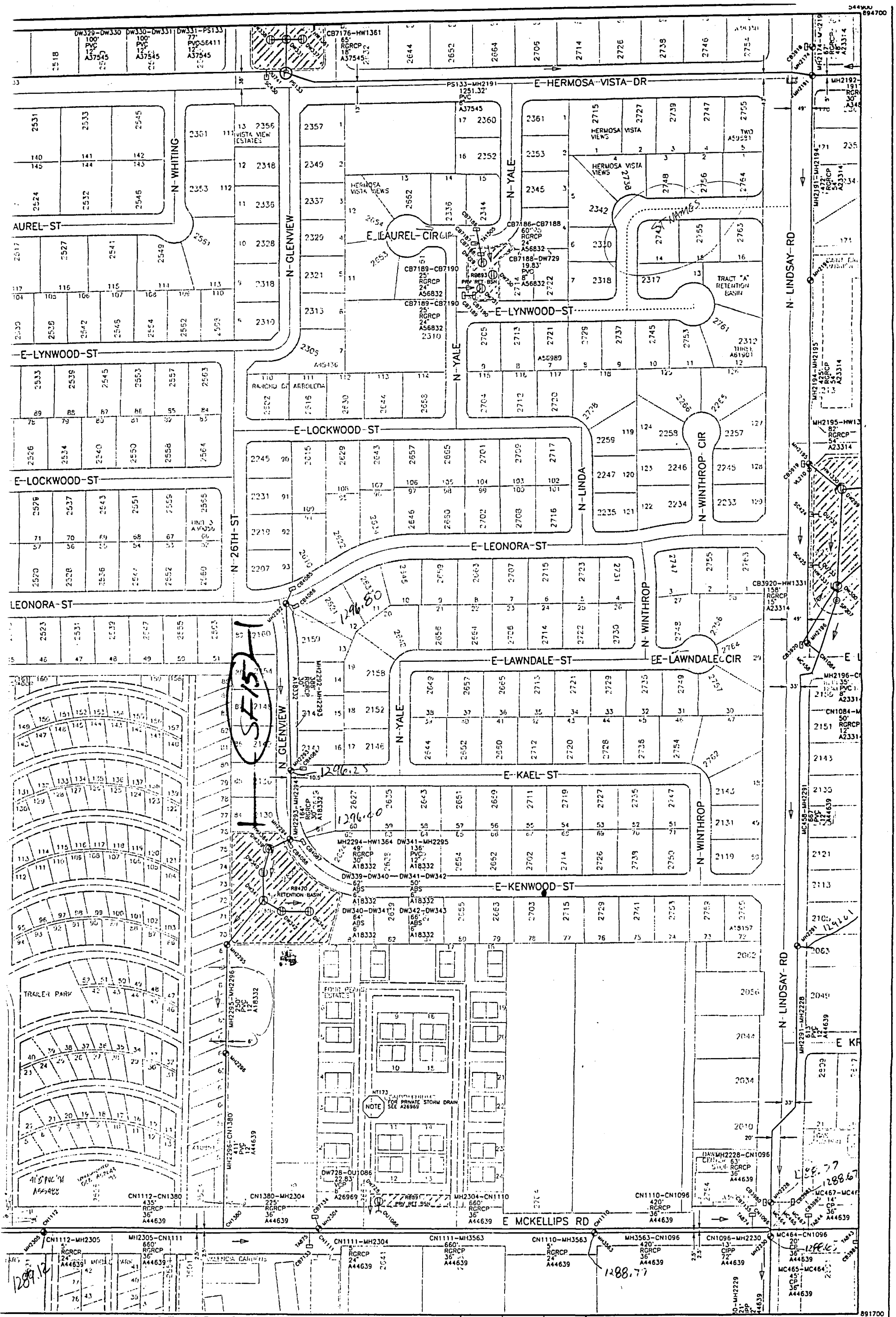
PLOT COMPILATION DATE: 06/28/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/28/96 STORM
REVISION DATE: 02/23/96 LAND

STORM 58A


E-HERMOSA-VISTA-DR
E-LAUREL-ST
N-ROBIN-LN
N-RICO
N-ROCA
E-LELAND-ST
N-LOWA-VISTA
E LELAND-CIR
N-32ND-ST
N-LINDSAY-RD
SAINT BRIGETS PARISH CENTER
CATHOLIC CHURCH
E-LOCKWOOD-ST
E-LAKEWOOD-ST
N-ALBA
E-LAWNDALE-CIR
N-LOS ALAMOS
N-RICO-CIR
E-LEONORA-CIR
E-LEONORA-ST
N-28TH-PL
TRAILER PARK
TRACT "A"
TRACT "B"
TRACT "C"
TRACT "D"
TRACT "E"
TRACT "F"
TRACT "G"
TRACT "H"
TRACT "I"
TRACT "L"
HOMESTEAD
S45
S162



= 100'

100' 200

DATE: 07/08/96

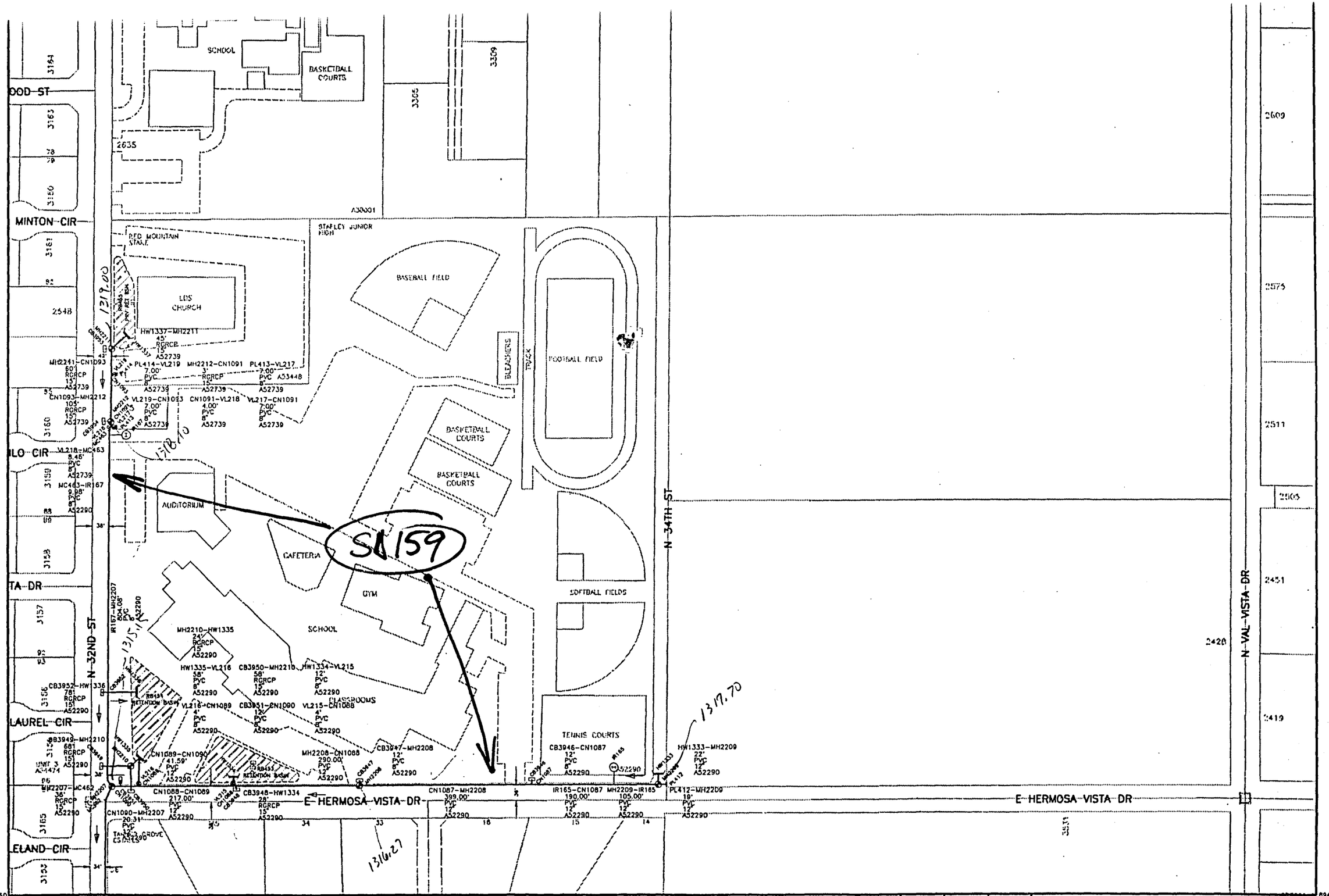
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 05/29/96 STORM
REVISION DATE: 06/13/96 LAND

50-A	50-C	58-A
50-B	50-D	58-B
51-A	51-C	59-A

STORM 50 D

LEGAL: 1N 6E SE 1/4 SEC 6



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SCALE: 1" = 200'

1" 0 100' 200

PLOT COMPILATION DATE: 06/28/96

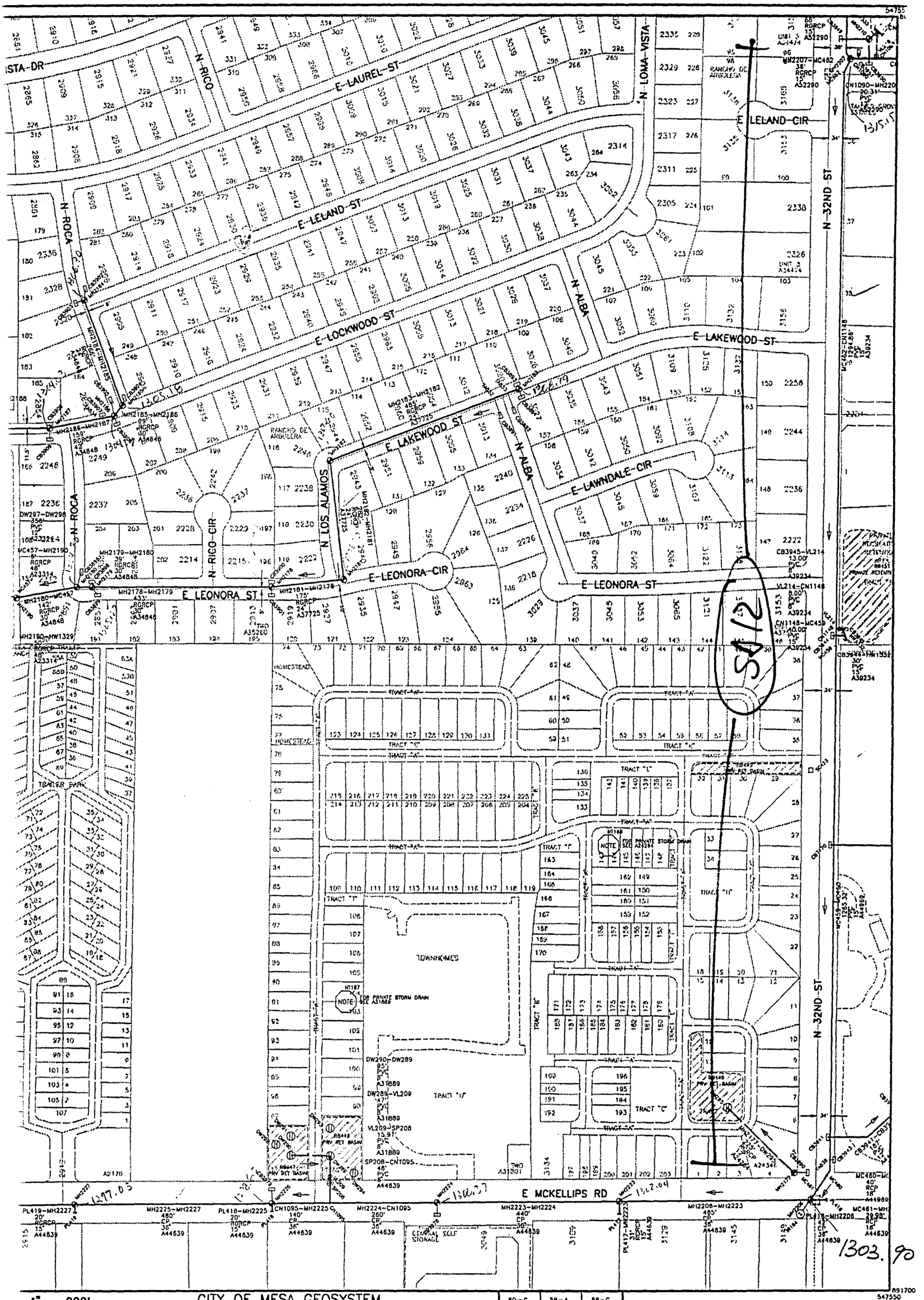
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/28/96 STORM
REVISION DATE: 02/23/96 LAND

57-B	57-D	65-B
58-A	58-C	66-A
58-B	58-D	66-B

STORM 58 C

LEGAL: 1N 6E NE 1/4 SEC 5



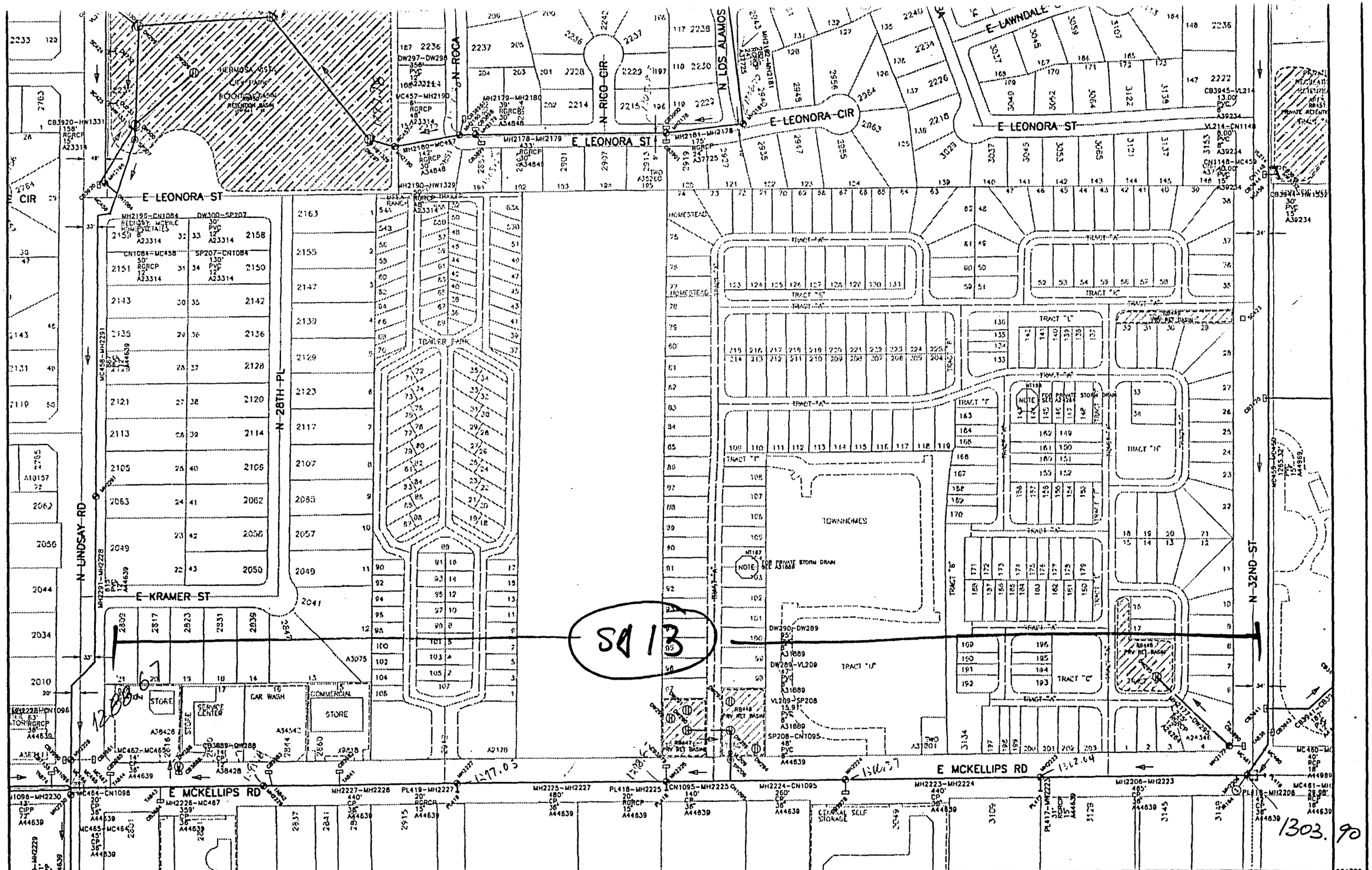
1" = 200'
0 100' 200

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 06/28/96 STORM
REVISION DATE: 02/23/98 LAND

50-C	58-A	58-C
50-D	58-B	58-D
51-C	59-A	59-C

STORM 58 B

LEGAL: 1N 6E SW 1/4 SEC 5



891700 544550

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SCALE: 1" = 200'

1" 0 100' 200

PLOT COMPILATION DATE: 06/28/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

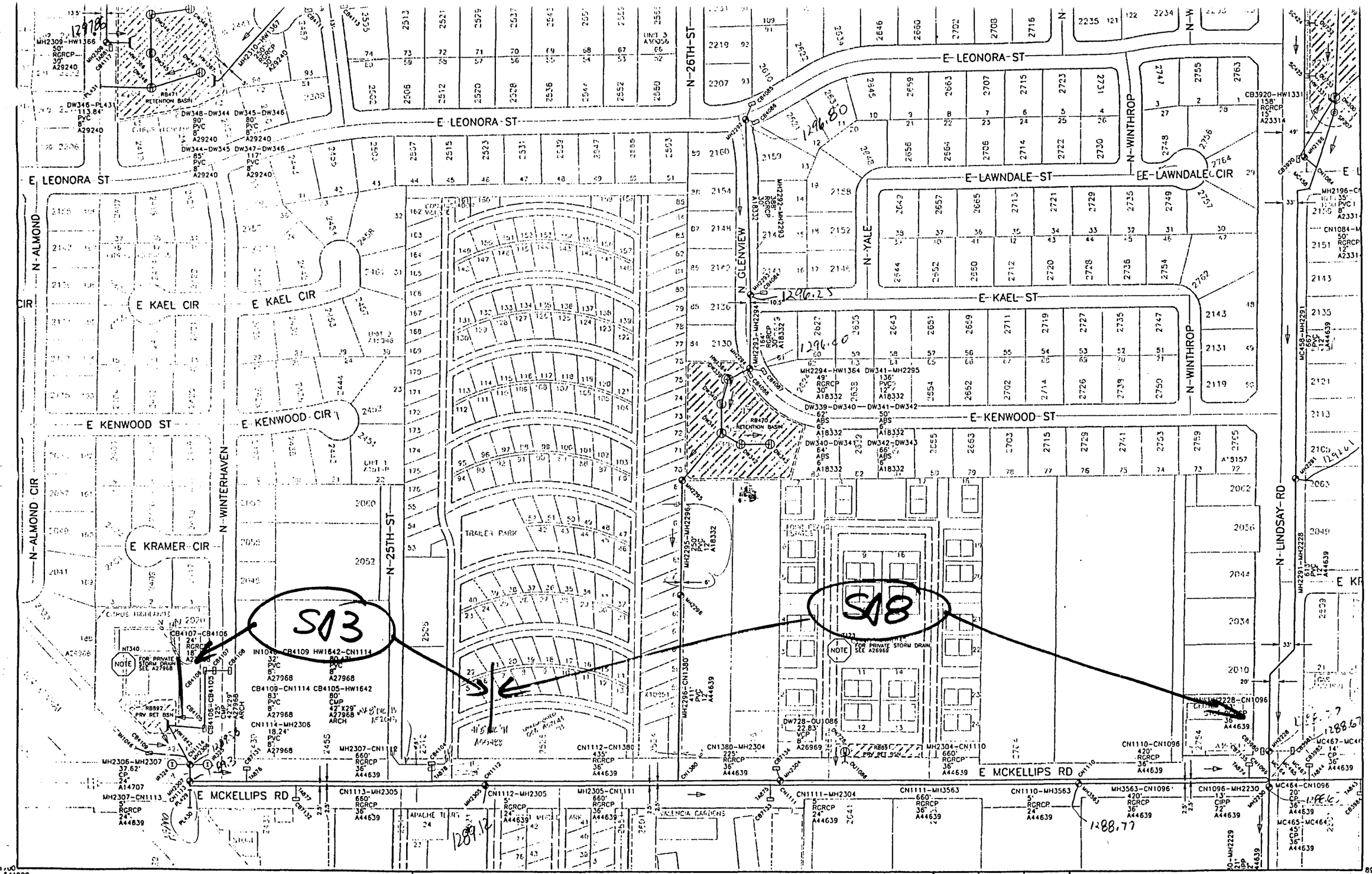
REVISION DATE: 06/28/96 STORM
REVISION DATE: 02/23/98 LAND

50-C	58-A	58-C
50-D	58-B	58-D
51-C	59-A	59-C

891700 547550

STORM 58 B

LEGAL: 1N 6E SW 1/4 SEC 5



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SCALE: 1" = 100'

PLOT COMPILATION DATE: 07/08/96

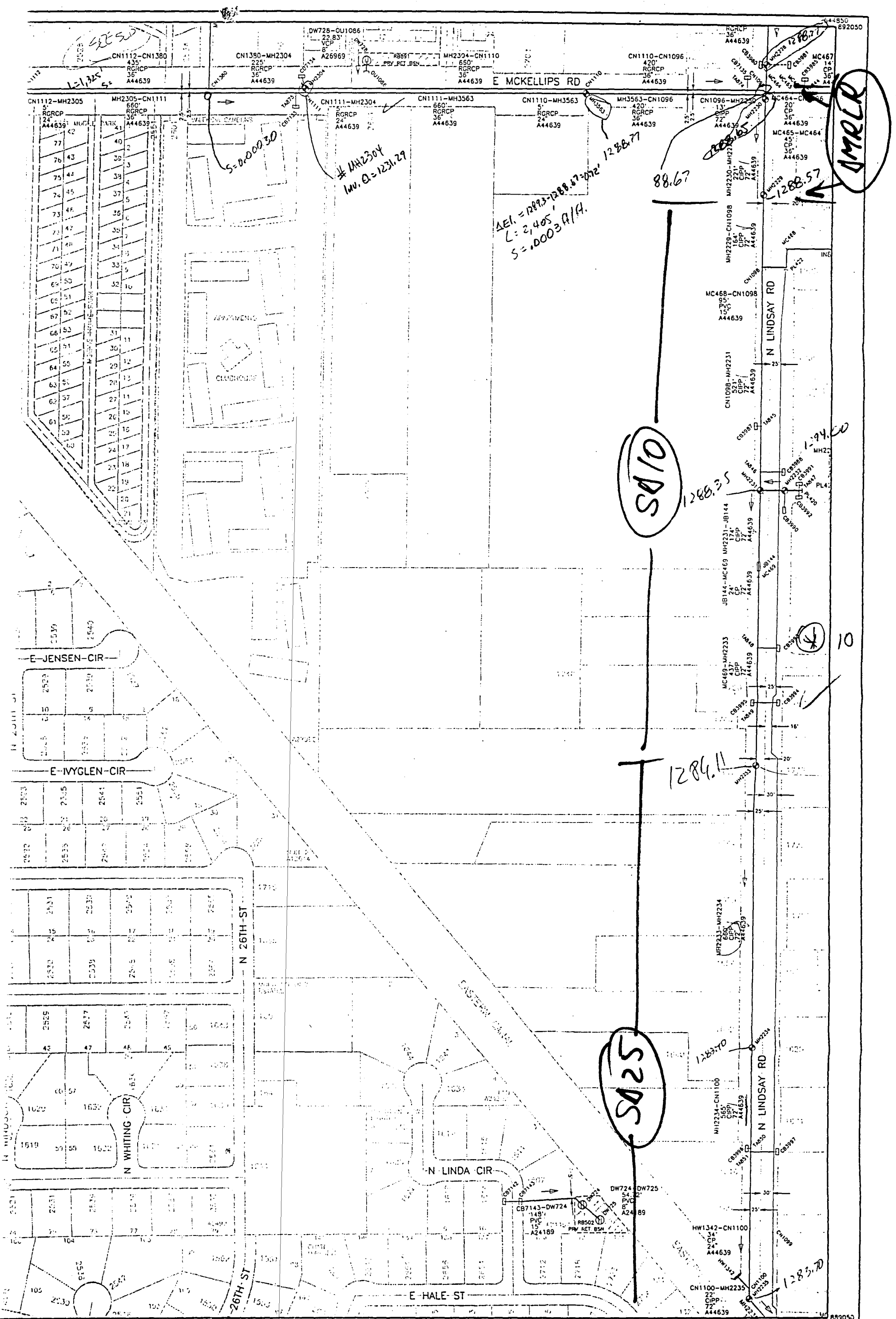
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 05/29/96 STORM
REVISION DATE: 06/13/96 LAND

50-A	50-C	58-A
50-B	50-D	58-B
51-A	51-C	59-A

STORM 50 D

LEGAL: 1N 6E SE 1/4 SEC 6


E MCKELLIPS RD
N LINDSAY RD
N 26TH ST
26TH ST
E JENSEN CIR
E IVYGLEN CIR
N WHITING CIR
N LINDA CIR
E HALE ST
CANAL
CLUBHOUSE
APARTMENTS
CN1112-CN1380
CN1380-MH2304
MH2304-CN1110
CN1110-CN1096
CN1112-MH2305
MH2305-CN1111
CN1111-MH2304
CN1111-MH3563
CN1110-MH3563
MH3563-CN1096
CN1096-MH2230
MC464-MC465
MC465-MC464
MC468-CN1098
CN1100-MH2235
HW1342-CN1100
DW724-DW725
CB7143-DW724
S=0.00030
# MH2304
Inv. El.=1231.29
ΔEl.=1289.3-1288.67=0.72'
L=2,405'
S=.0003 ft/ft.
88.67
1288.57
1288.35
1284.11
1283.70
S010
S025
10
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 05/30/96 STORM
REVISION DATE: 02/01/96 LAND
50-B 50-D 58-B
51-A 51-C 59-A
51-D 59-B
STORM 51 C
LEGAL: 1N 6E NE 1/4 SEC 7

544500
889400

STERN

N LINDSAY RD

E HACKAMORE CIR

E HUBER ST

E GRANDVIEW CIR

E GARY ST

E GLENCOVE ST

E BROWN RD

EASTERN CANAL

N ROCA

MOUNTAIN VIEW RANCHES

NORTHGROVE

CONDOMINIUMS

CHURCH

BROWN ROAD PROFESSIONAL PLAZA OFFICES

RETENTION BASIN

PRIVATE RETENTION BASIN

EDU PRIVATE STORM DRAIN

HW1342–CN1100
24"
CP
24"
A44639

CN1100–MH2235
72"
CIPP
72"
A44639

MC475–CN1104
10"
CIPP
WELL 72"
A44639

PL424–CN1104
15"
RGRCP
15"
A44639

CN1104–MH2244
A44639

MH2235 – MH2244
L=2170
72" CIPP

1283.16

Q: 60

SA25

MH2245–MH2244
18"
CIPP
72"
A55365

VL221–MH2245
13.09'
PVC
12"
A55365

CB4012–VL221
92.91'
PVC
12"
A55365

CB4013–CB4012
190'
PVC
12"
A55365

MH2245–MH2243
A44639

HW1343–CN1103
22.62'
CP
15"
A44639

CN1102–CN1101
296.86'
CP
42"
A44639

CN1102–CB4
20'
RGRCP
15"
A44639

MC472–CN1101
15'
CP
24"
A44639

MH2239–MC472
270'
HWCP
24"
A14568

IN822–CB4002
185'
PVC
10"
A27407

CB4002–MH2236
327'
ACP
8"
A27407

MH2236–MH2237
A17070

Q = 14.4

Q = 16.2

Q = 14.7

886400
544500

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SCALE: 1" = 200'

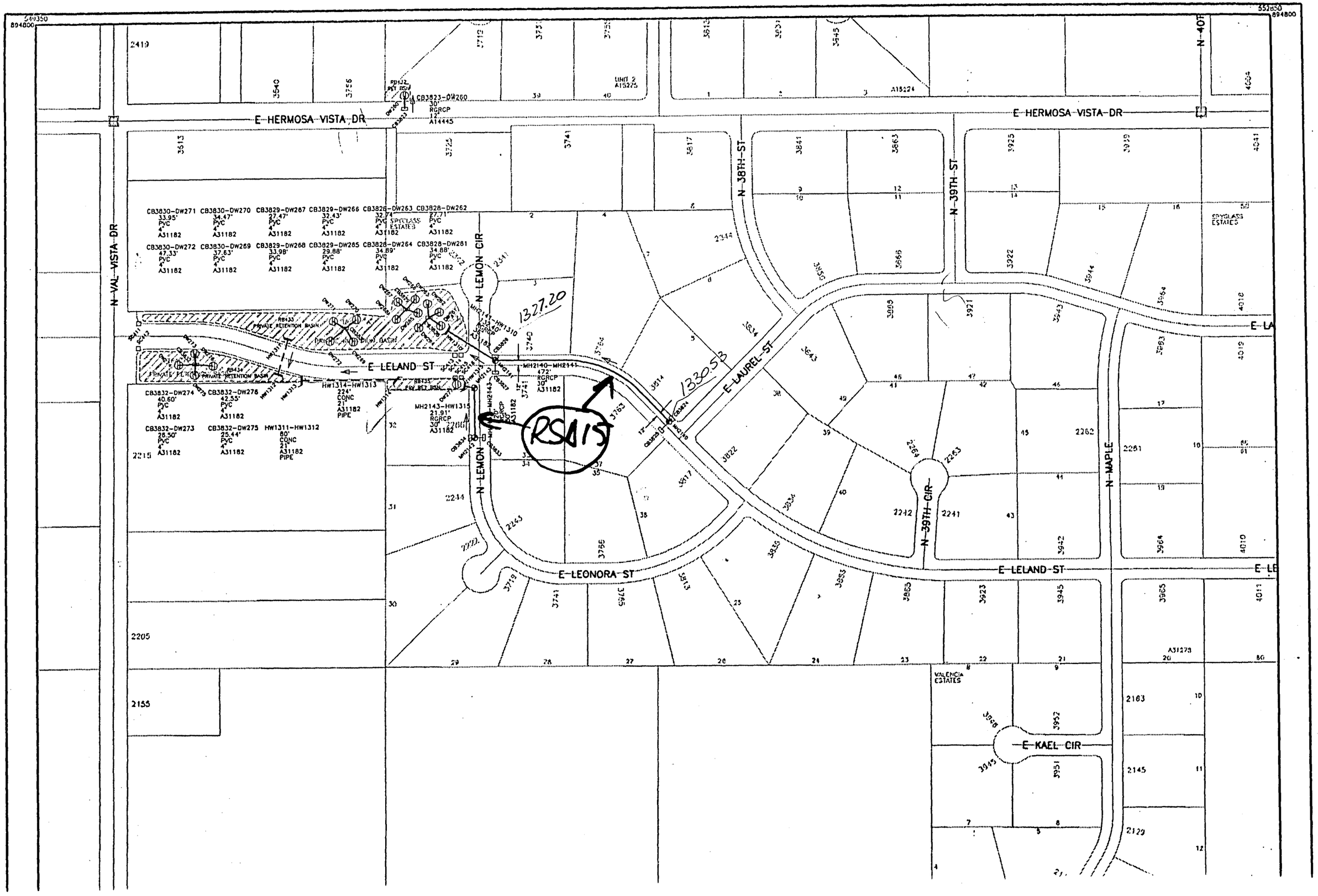
1" 0 100' 200

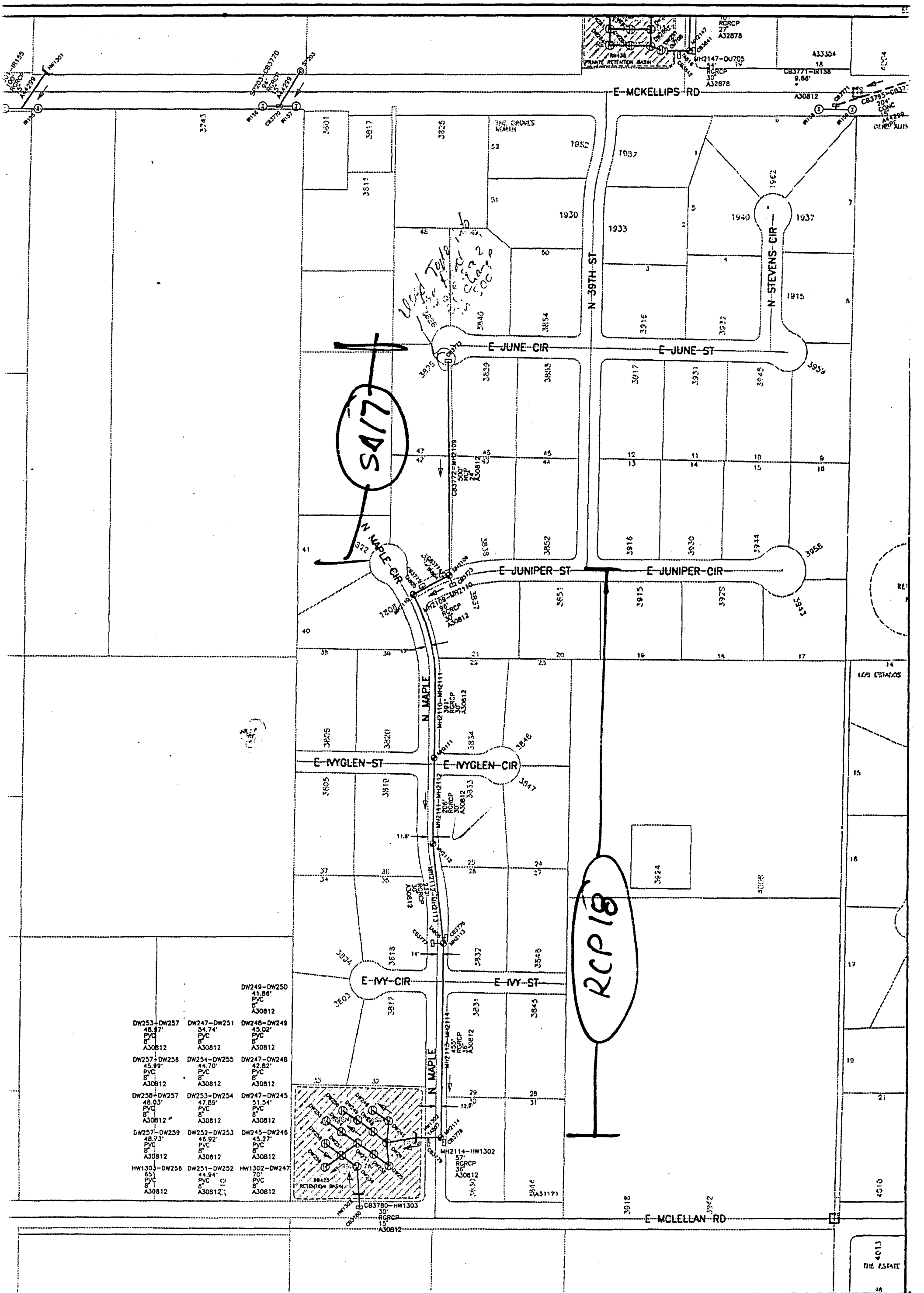
PLOT COMPILATION DATE: 06/28/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/28/96 STORM
REVISION DATE: 12/01/95 LAND

STORM 59B


E HERMOSA VISTA DR
N VAL VISTA DR
N LEMON CIR
N 38TH ST
N 39TH ST
N 40TH
N 39TH CIR
N MAPLE
E LELAND ST
E LAUREL ST
E LEONORA ST
E KAEL CIR
PRIVATE RETENTION BASIN
SPYGLASS ESTATES
VALENCIA ESTATES
1327.20
1330.53
RS415

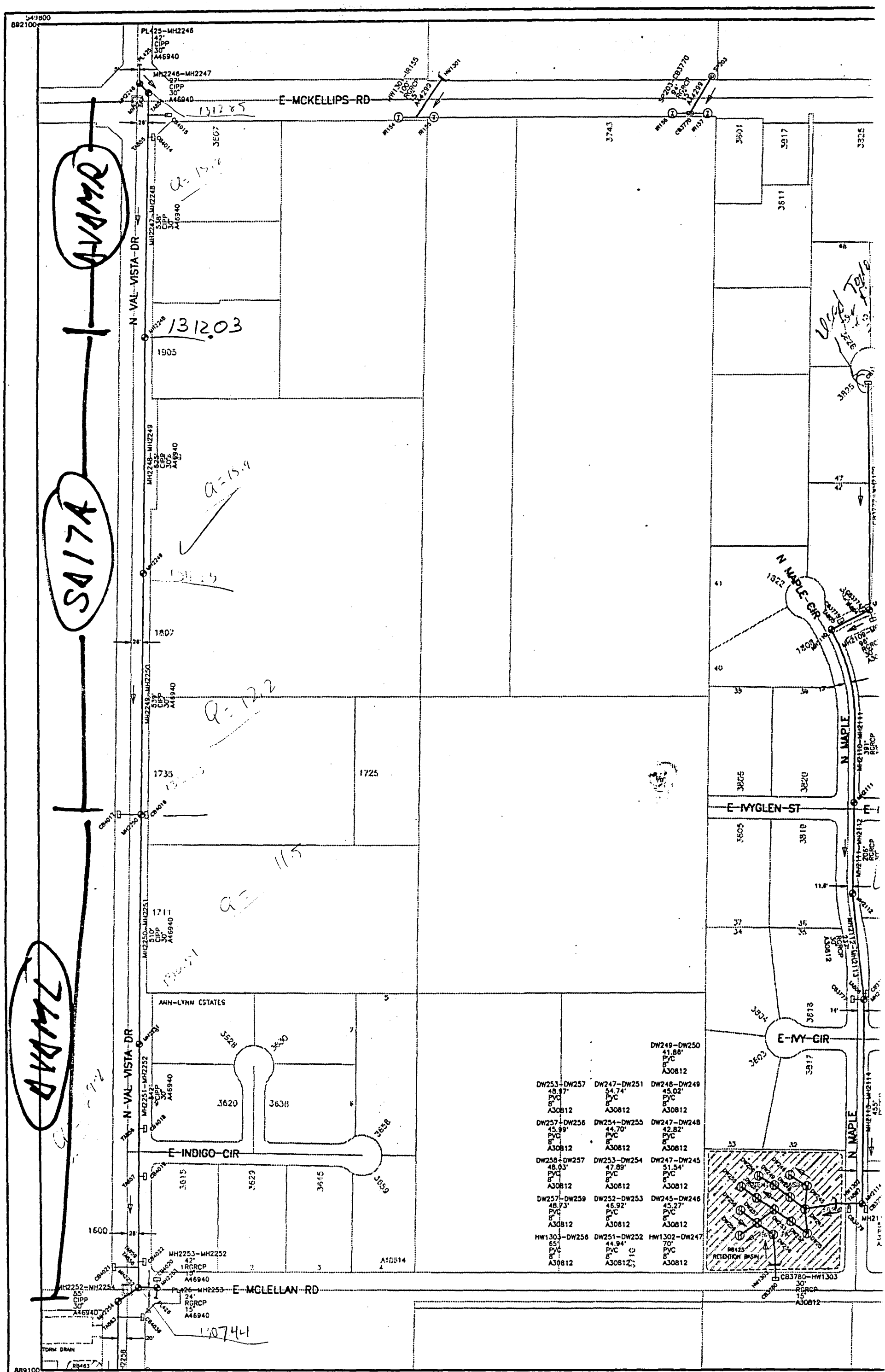


LE: 1" = 200'
0 100' 200
COMPILATION DATE: 06/

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 06/28/95 STORM
REVISION DATE: 06/14/95 LAND

58-D	66-B	66-D
59-C	67-A	67-C
59-D	67-B	67-D

STORM 67 A
LEGAL: 1N NW 1/4 SEC 9



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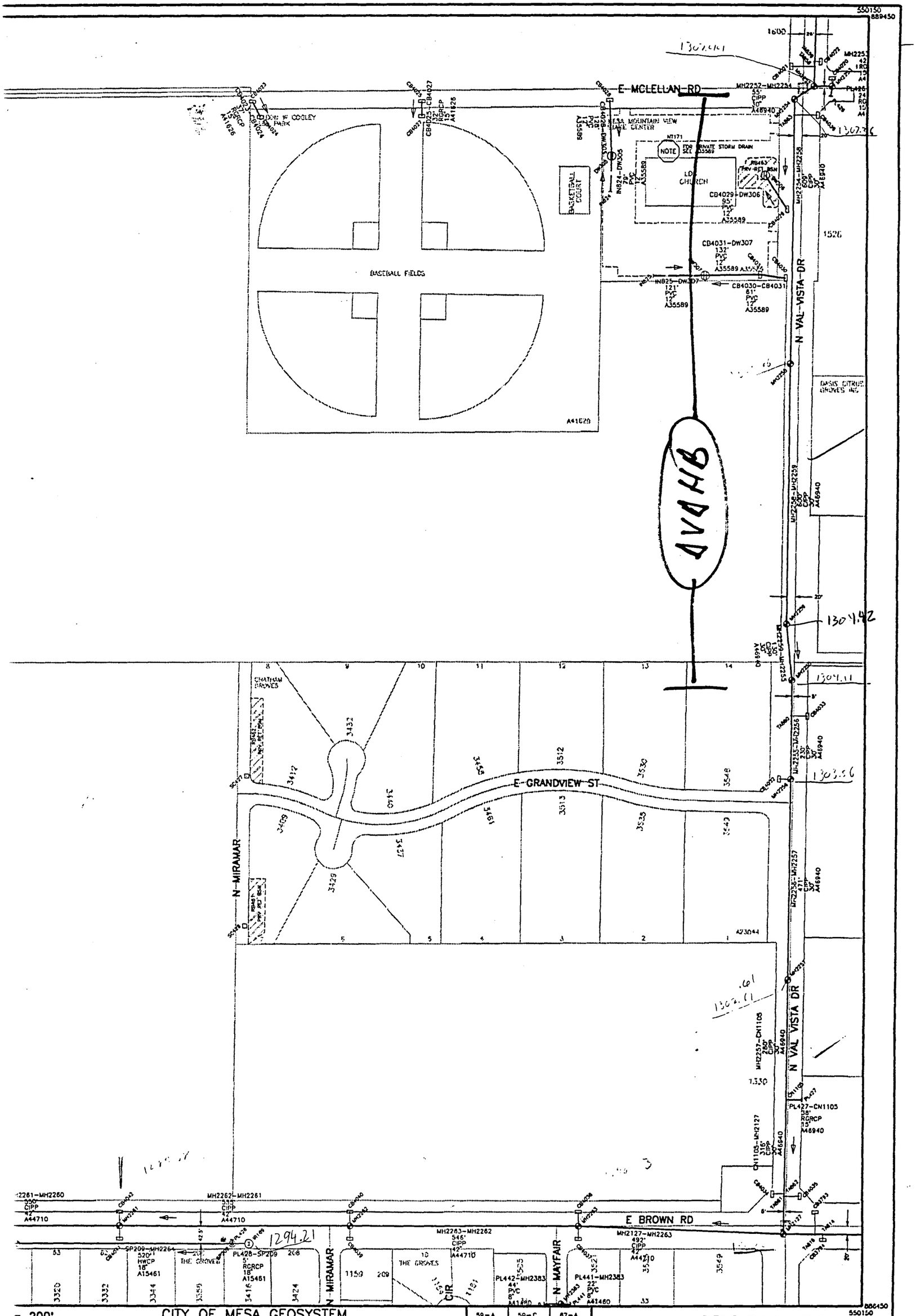
SCALE: 1" = 200'

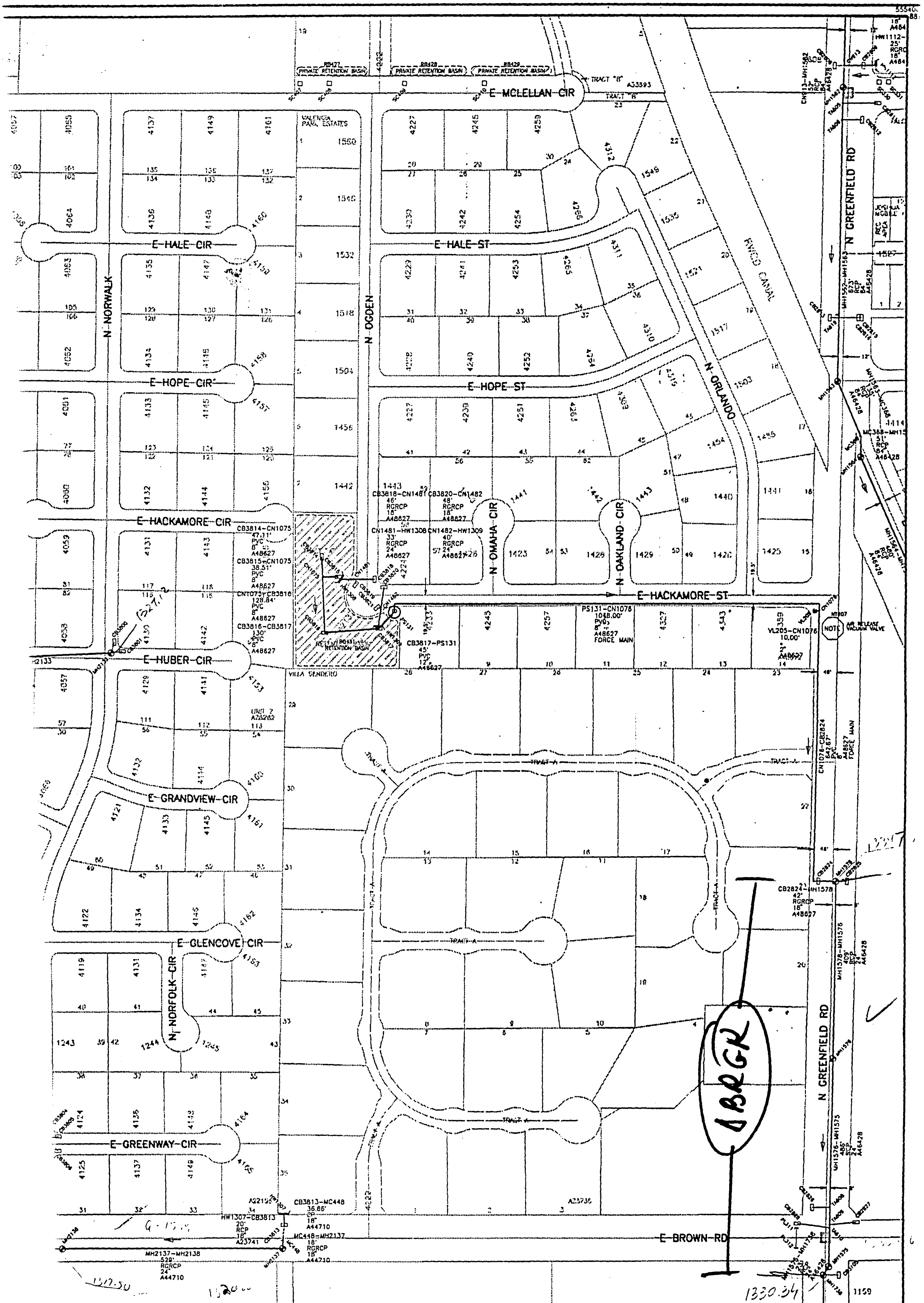
1" 0 100' 200

PLOT COMPILATION DATE: 06/28/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/28/96 STORM
REVISION DATE: 06/14/96 LAND


E-MCLELLAN-RD
E-GRANDVIEW-ST
E BROWN RD
N-VAL-VISTA-DR
N-MIRAMAR
N-MAYFAIR
BASEBALL FIELDS
BASKETBALL COURT
LDS CHURCH
MESA MOUNTAIN VIEW LAKE CENTER
DOC W COOLEY PARK
CHATHAM GROVES
THE GROVES
DASIS CITRUS GROVES INC
= 200'
100' 200
06/28/98
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 06/28/98 STORM
REVISION DATE: 12/01/95 LAND
59-A 59-C 67-A
59-D 59-D 67-B
60-A 60-C 68-A
STORM 59 D
LEGAL: 1N 6E SE 1/ EC 8



CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

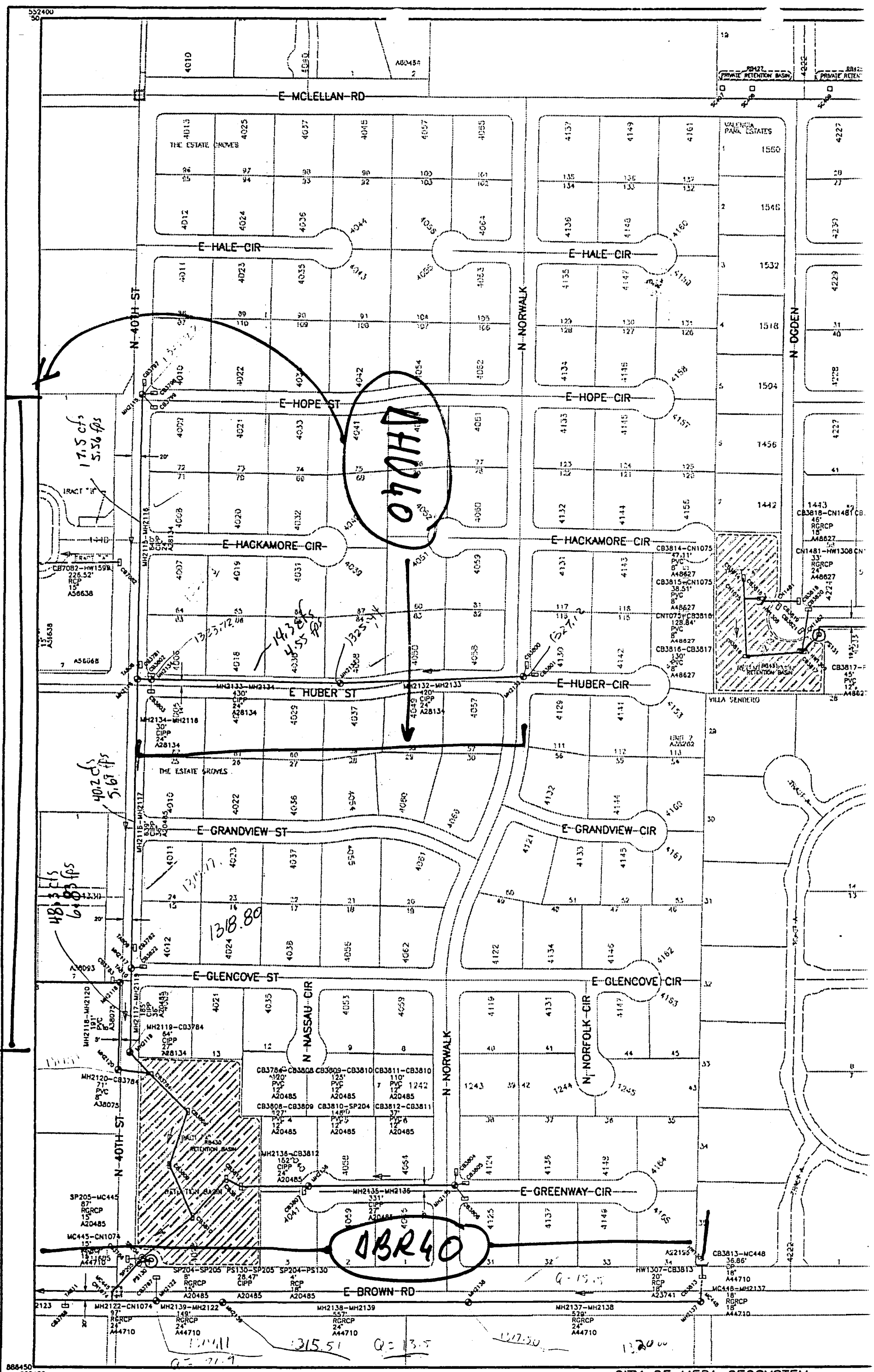
REVISION DATE: 06/28/96 STORM
REVISION DATE: 06/14/96 LAND

200'
100' 200
06/28/96

67–A	67–C	75–A
67–B	67–D,	75–B
38–A	68–C	76–A

STORM 67 D

LEGAL: 1N 6E SE 1/4 SEC 9



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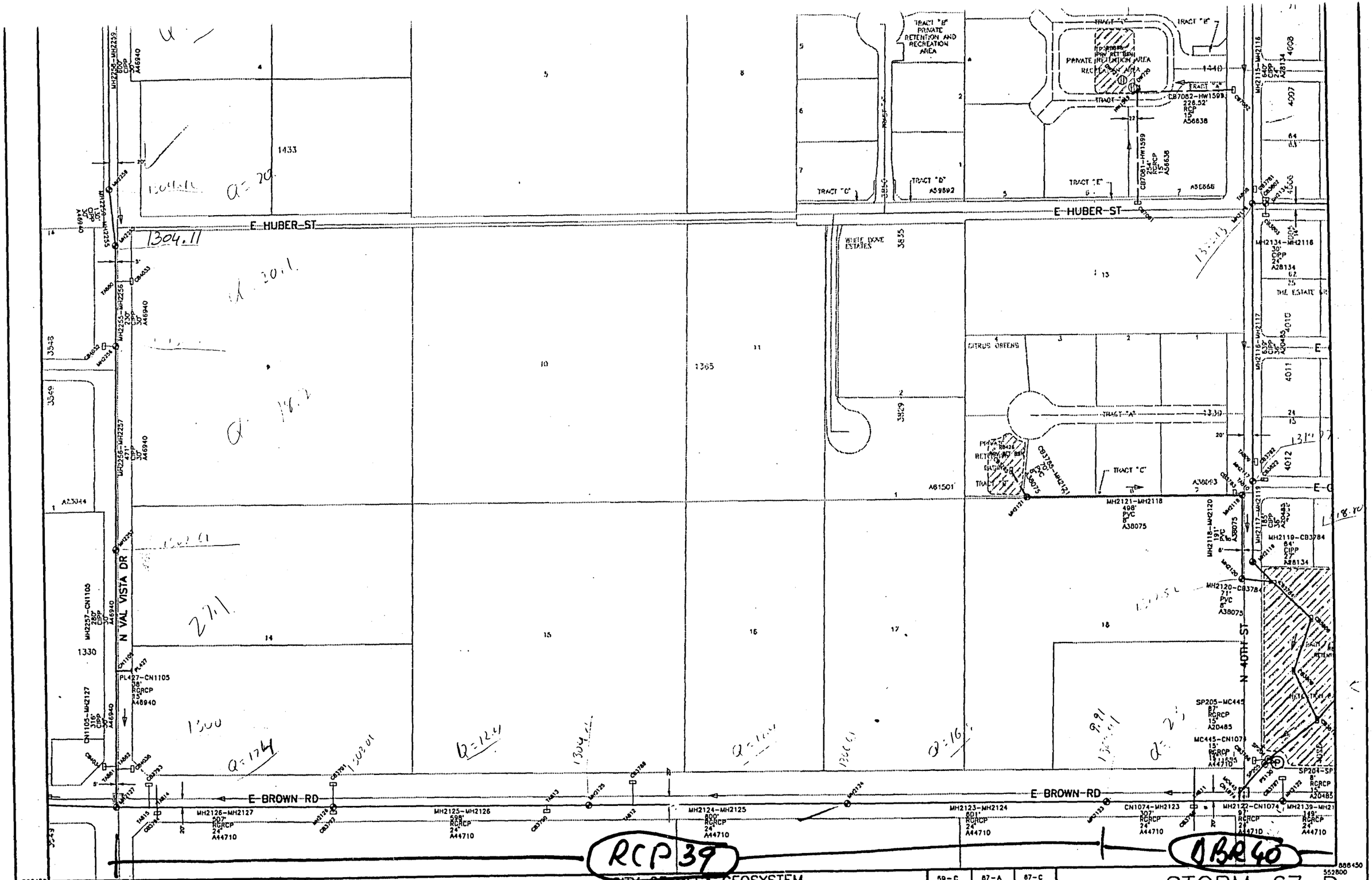
SCALE: 1" = 200'

PLOT COMPILATION DATE: 06/28/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/28/96 STORM
REVISION DATE: 06/14/96 LAND



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SCALE: 1" = 200'

1" 0 100' 200

PLOT COMPILATION DATE: 06/28/96

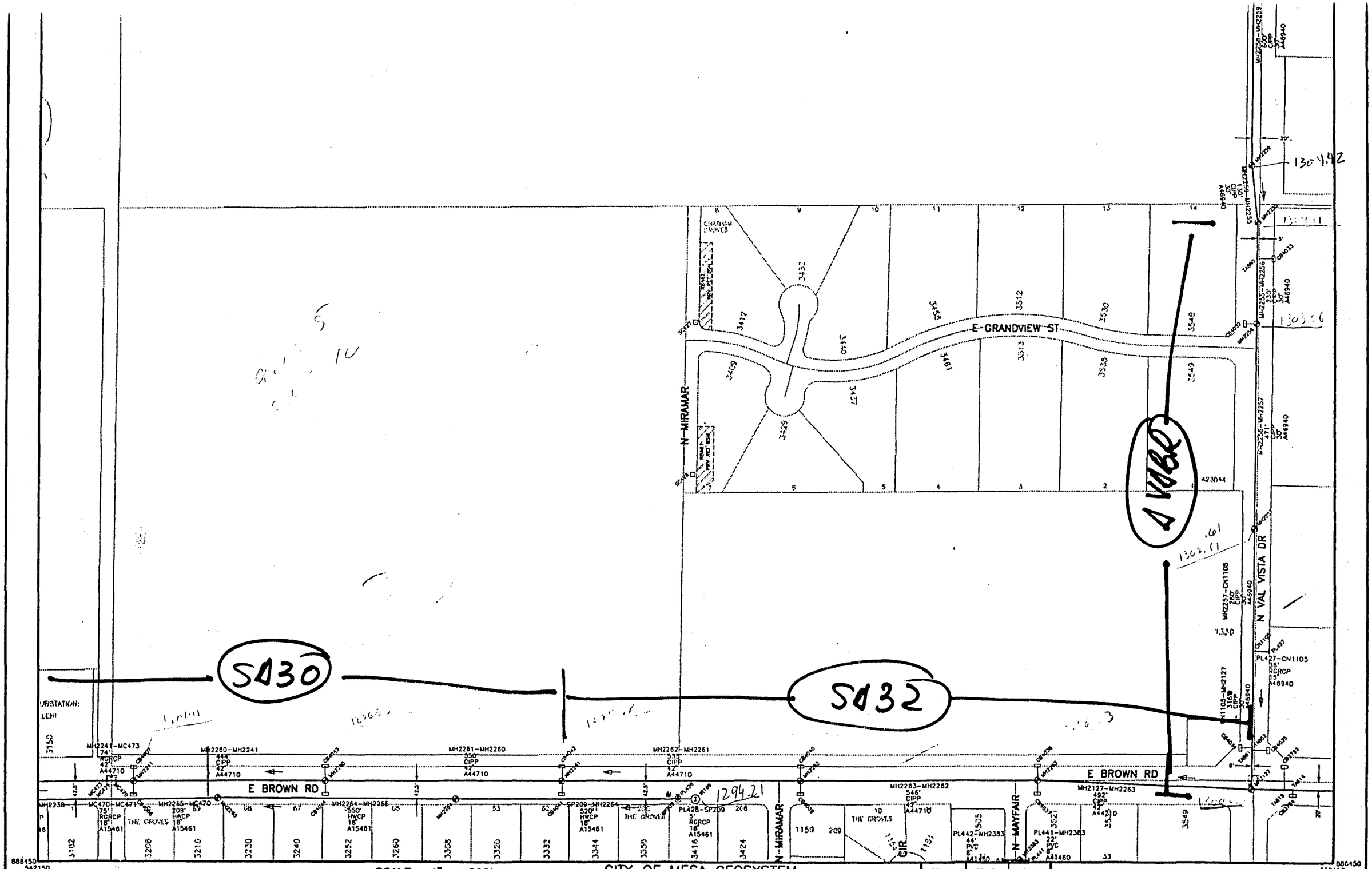
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/28/96 STORM
REVISION DATE: 06/14/96 LAND

59-C	67-A	67-C
59-D	67-B	67-D
60-C	68-A	68-C

STORM 67 B

LEGAL: 1N 6E SW 1/4 SEC 9



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PLOT COMPILATION DATE: 06/28/98

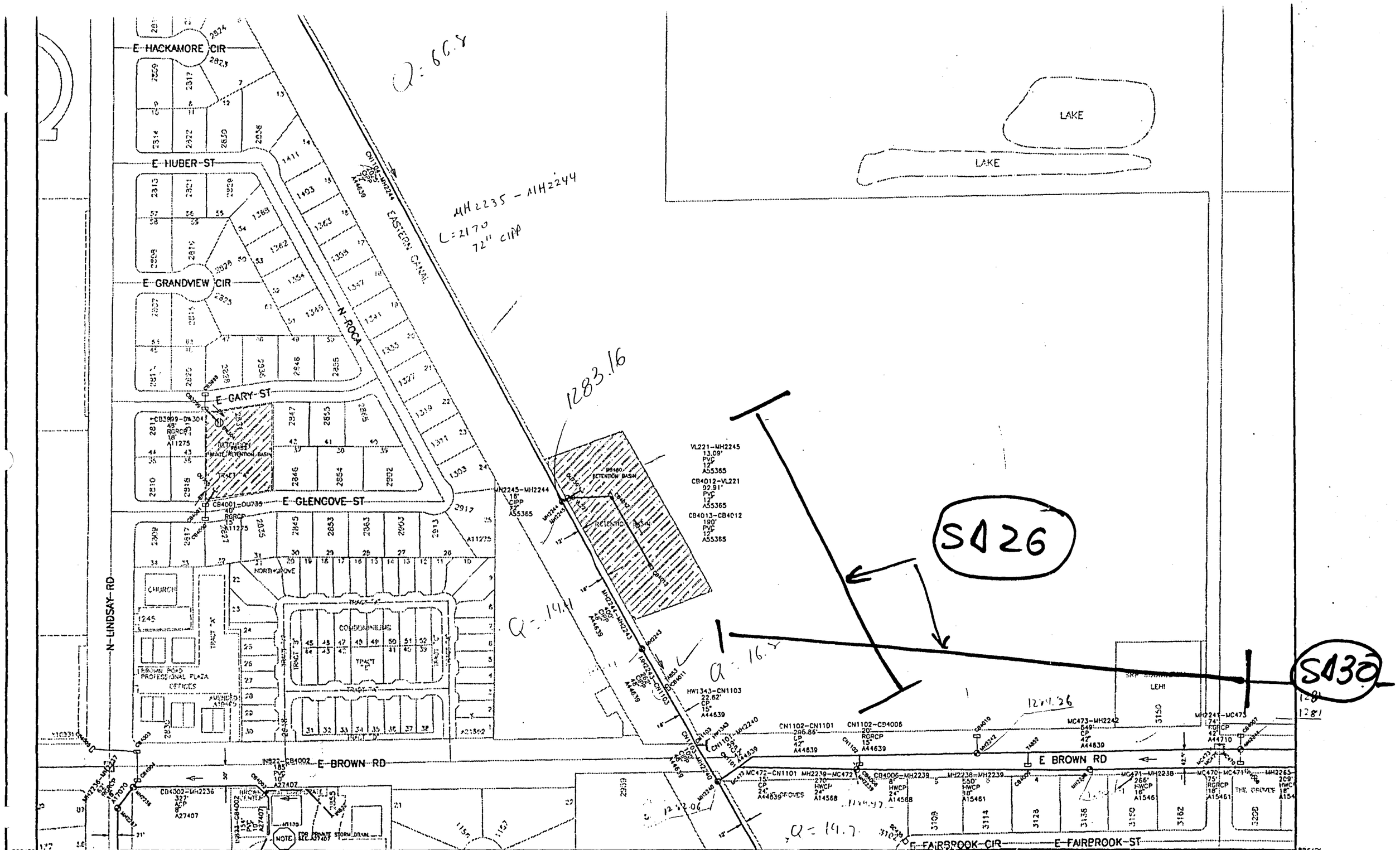
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/28/98 STORM
REVISION DATE: 12/01/95 LAND

59-A	59-C	67-A
59-D	59-D	67-B
60-A	60-C	68-A

STORM 59 D

LEGAL: 1N 6E SE 1/4 SEC 8



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SCALE: 1" = 200'

PLOT COMPILATION DATE: 06/28/96

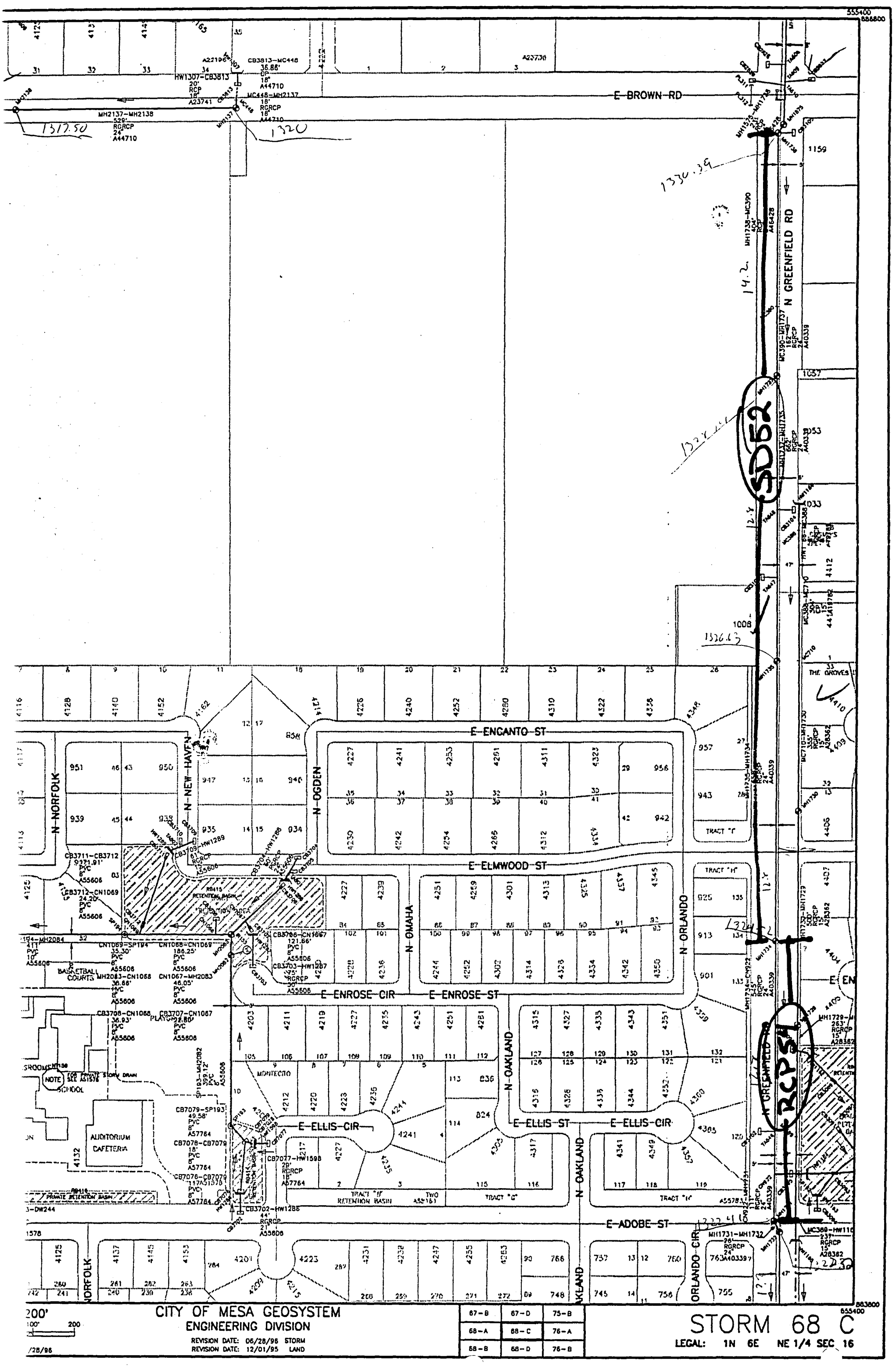
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/28/96 STORM
REVISION DATE: 12/01/05 LAND

51-C	59-A	59-C
51-D	59-B	59-D
52-C	60-A	60-C

STORM 59 B

LEGAL: 1N 6E SW 1/4 SEC 8

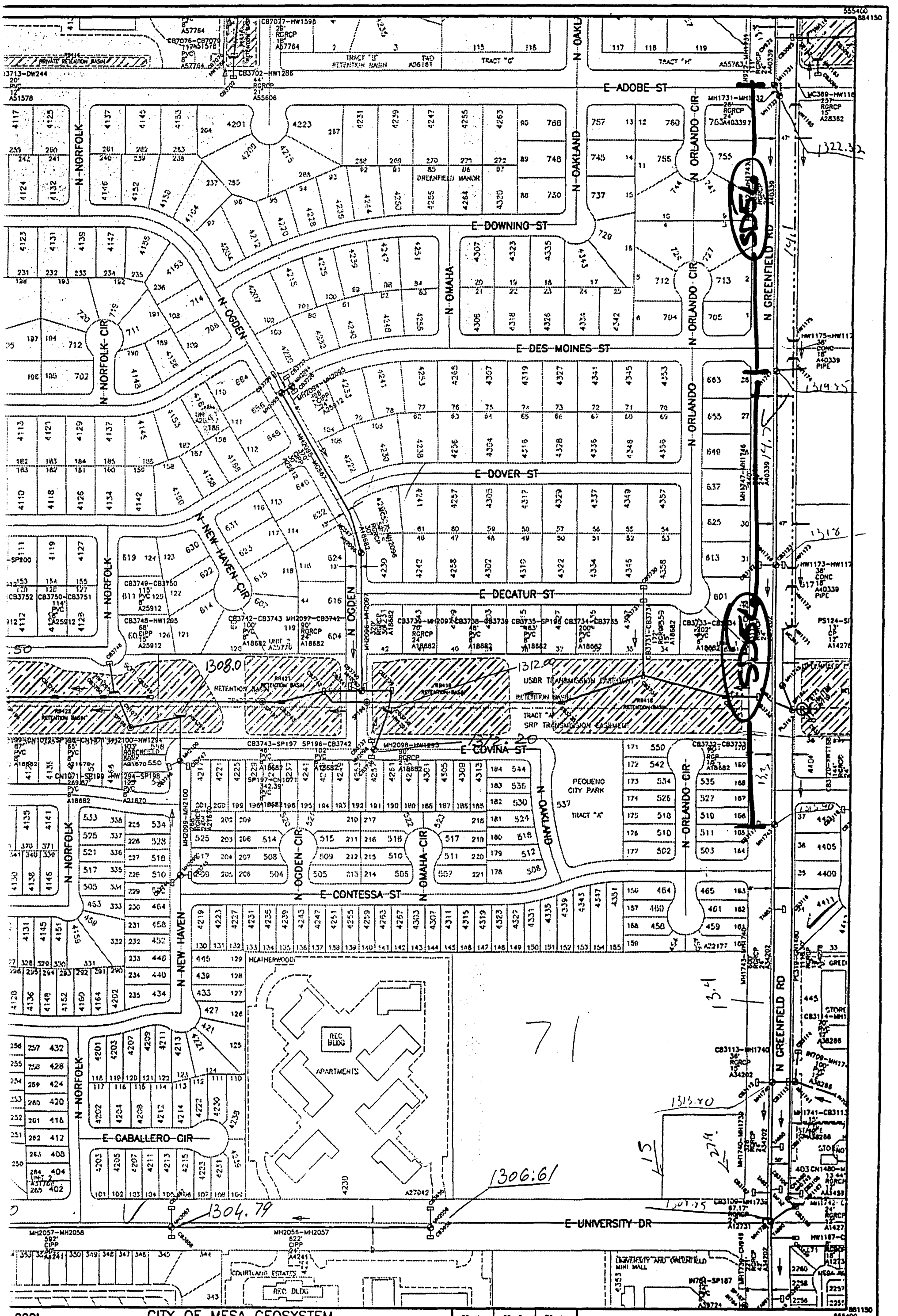


200'

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 06/28/96 STORM
REVISION DATE: 12/01/95 LAND

67-B	67-D	75-B
68-A	68-C	76-A
68-B	68-D	76-B

STORM 68 C
LEGAL: 1N 6E NE 1/4 SEC 16



200'

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

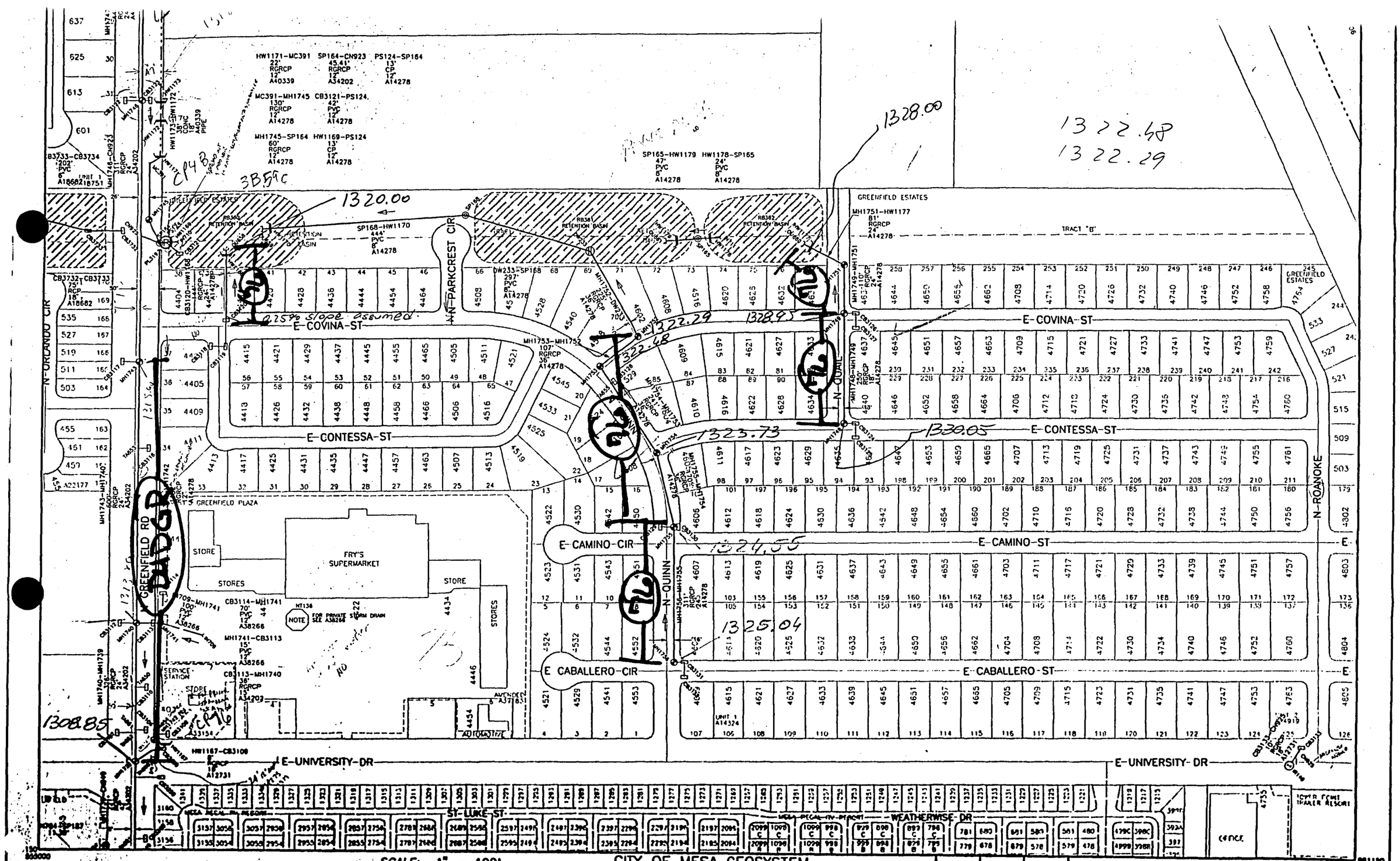
REVISION DATE: 06/28/95 STORM
REVISION DATE: 12/01/95 LAND

06/28/95

68-A	68-C	76-A
68-B	68-D	76-B
-A	69-C	77-A

STORM 68 D

LEGAL: 1N 6E SE 1/4 16



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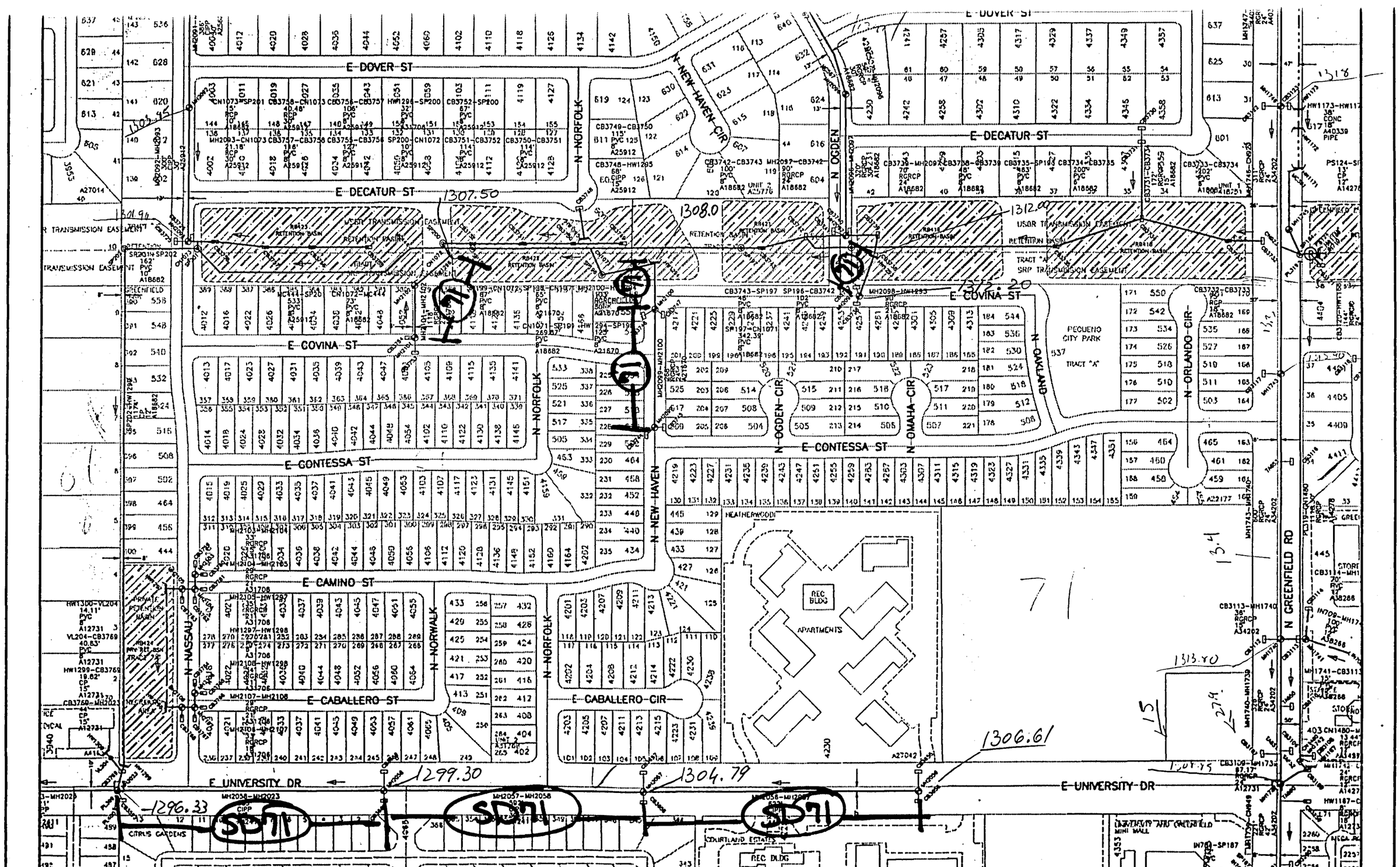
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 11/30/95 STORM
REVISION DATE: 03/02/95 LAND

68-C	76-A	76-C
68-D	76-B	76-D
69-C	77-A	77-C

STORM 76 B

LEGAL: 1N 6E SW 1/4 SEC 15



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SCALE: 1" = 200'

PLOT COMPILATION DATE: 06/28/98

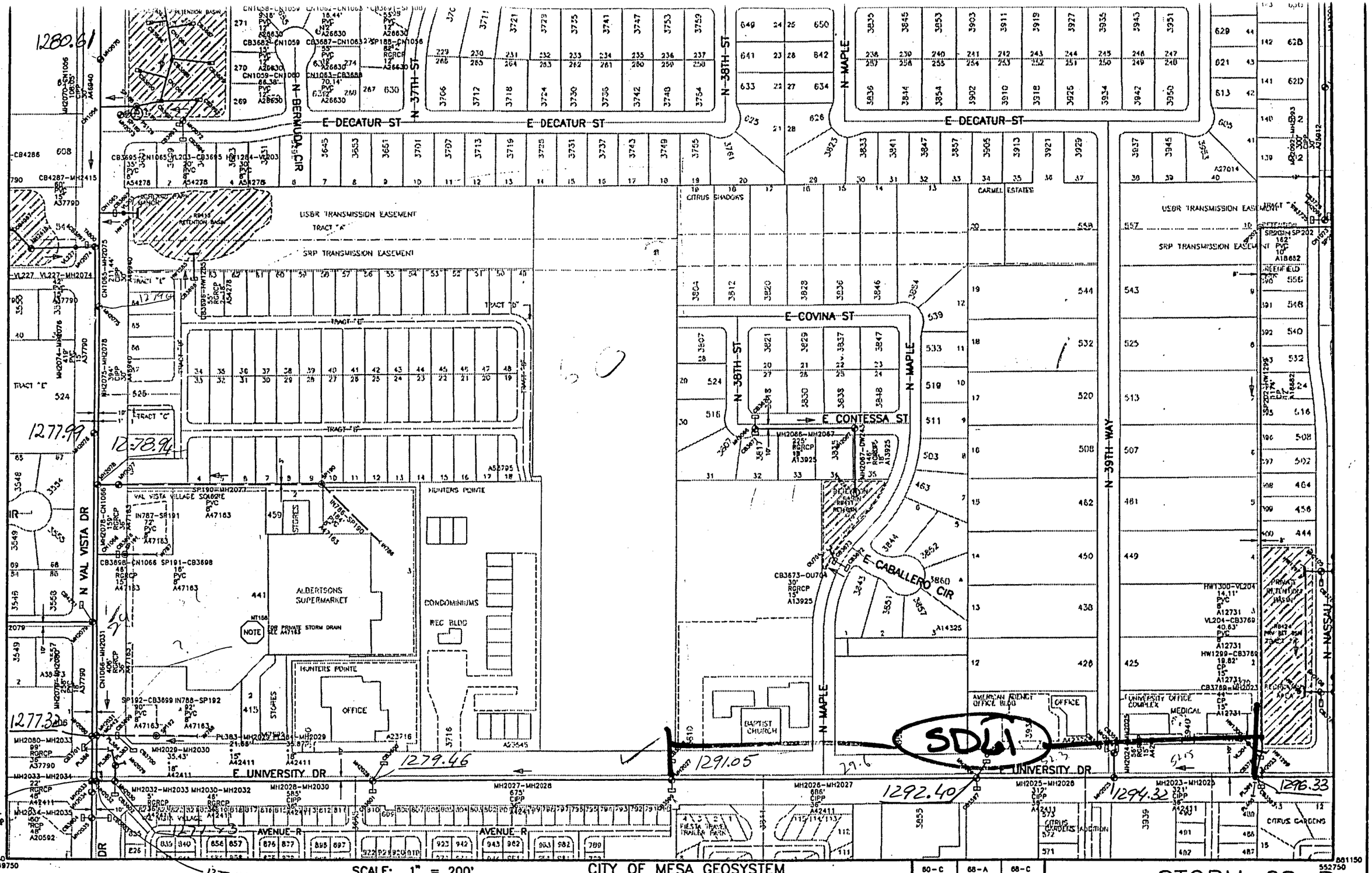
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/28/98 STORM
REVISION DATE: 12/01/95 LAND

68-A	68-C	76-A
68-B	68-D	76-B
69-A	69-C	77-A

STORM 68 D

LEGAL: 1N 6E SE 1/4 SEC 16



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SCALE: 1" = 200'

PLOT COMPILATION DATE: 08/28/96

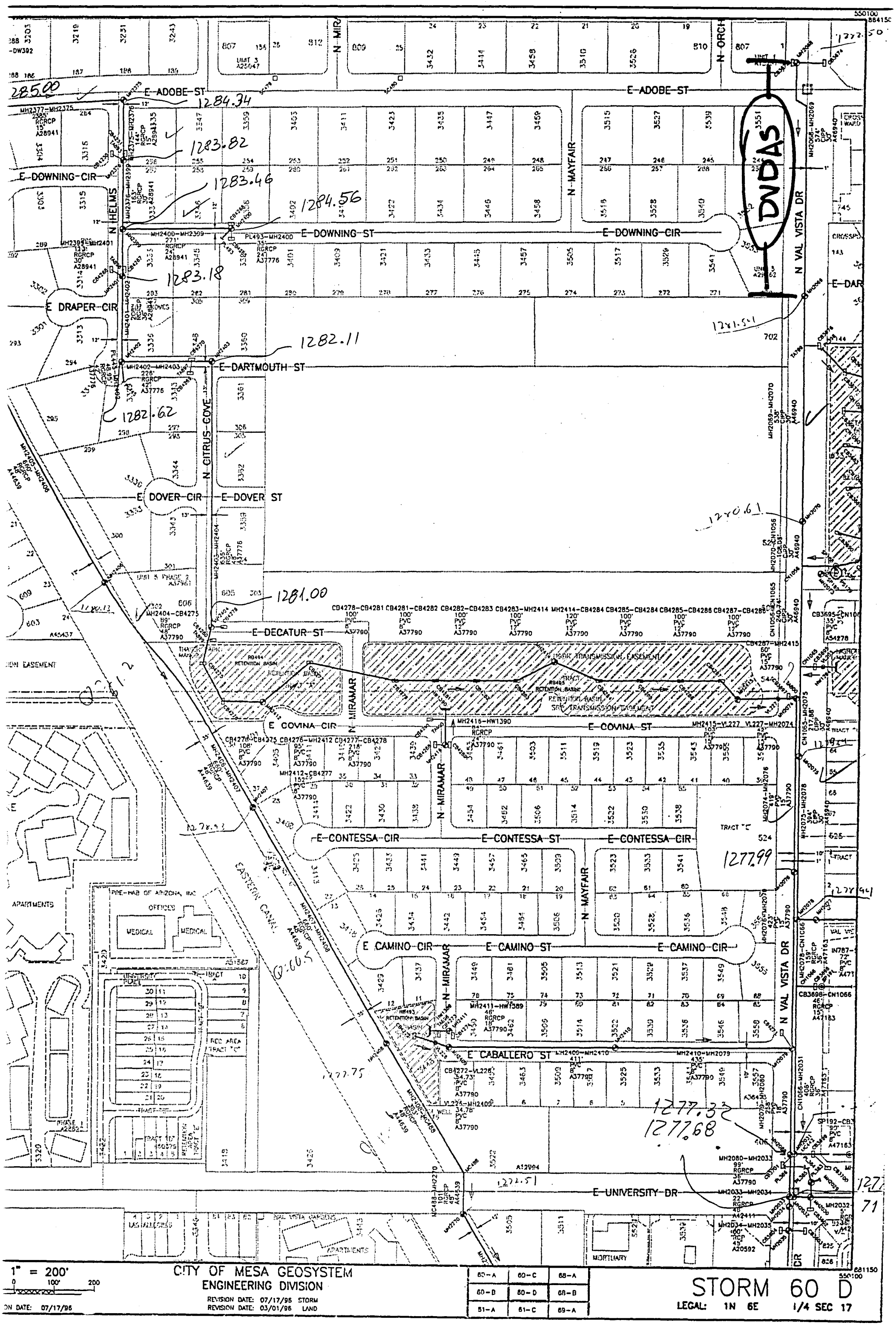
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/28/96 STORM
REVISION DATE: 12/01/95 LAND

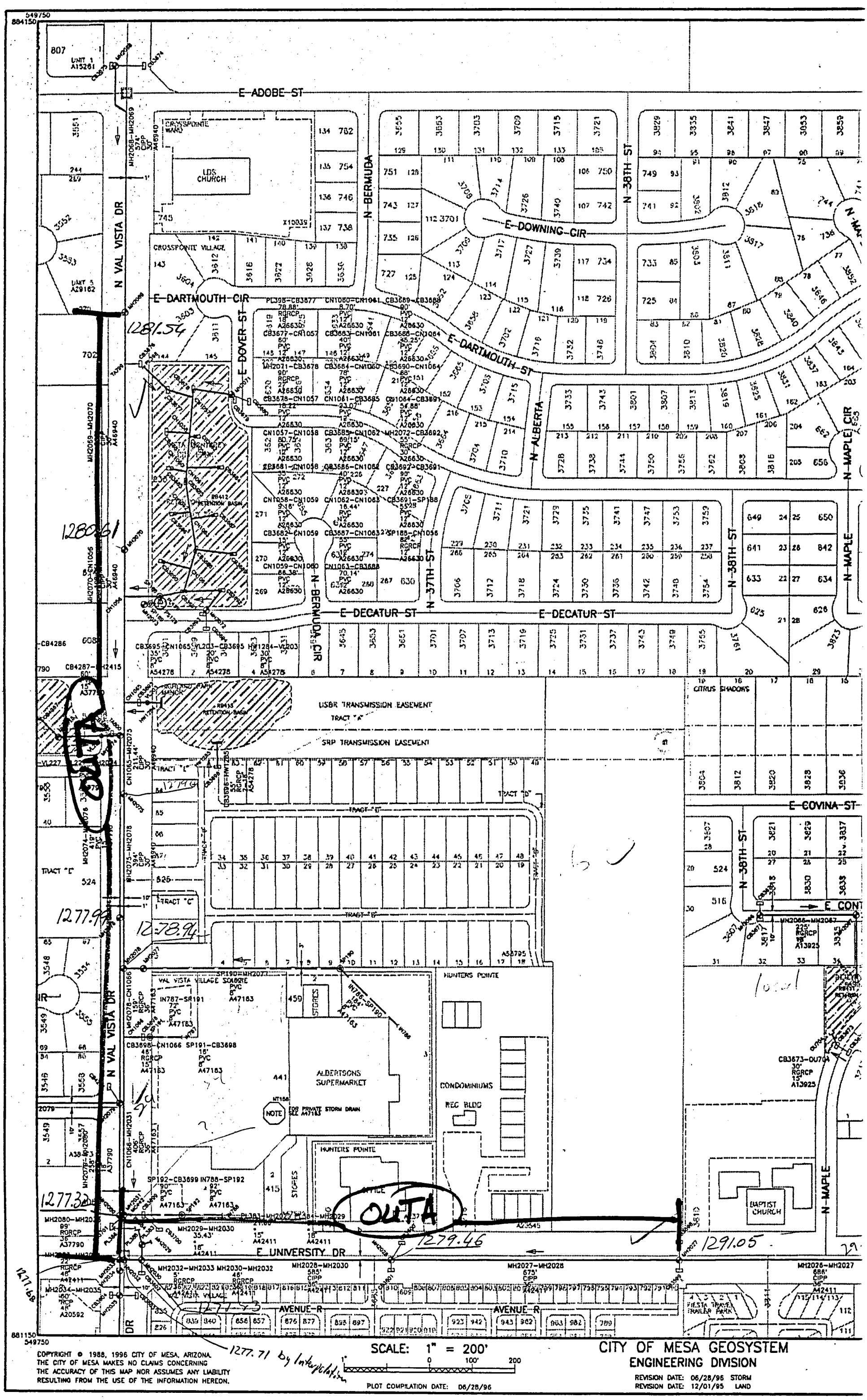
60-C	68-A	68-C
60-D	68-B	68-D
61-C	69-A	69-C

STORM 68 B

LEGAL: 1N 6E SW 1/4 SEC 16


E ADOBE ST
E DOWNING CIR
E DOWNING ST
N HELMS
N MAYFAIR
N VAL VISTA DR
E DRAPER CIR
E DARTMOUTH ST
N CITRUS COVE
E DOVER CIR
E DOVER ST
E DECATUR ST
E COVINA CIR
E COVINA ST
N MIRAMAR
E CONTESSA CIR
E CONTESSA ST
E CAMINO CIR
E CAMINO ST
E CABALLERO ST
E UNIVERSITY DR
EASTERN CANAL
DVDAS
1285.00
1284.34
1283.82
1283.46
1284.56
1283.18
1282.11
1282.62
1281.00
1277.99
1277.75
1277.32
1277.68
1272.51
1281.50
1280.61
1280.13
1278.93
1277.94
1277.71
1 = 200'
0 100' 200
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 07/17/96 STORM
REVISION DATE: 03/01/96 LAND
ON DATE: 07/17/96
60-A 60-C 68-A
60-B 60-D 68-B
51-A 61-C 69-A
STORM 60 D
LEGAL: 1N 6E 1/4 SEC 17

STORM 68-B



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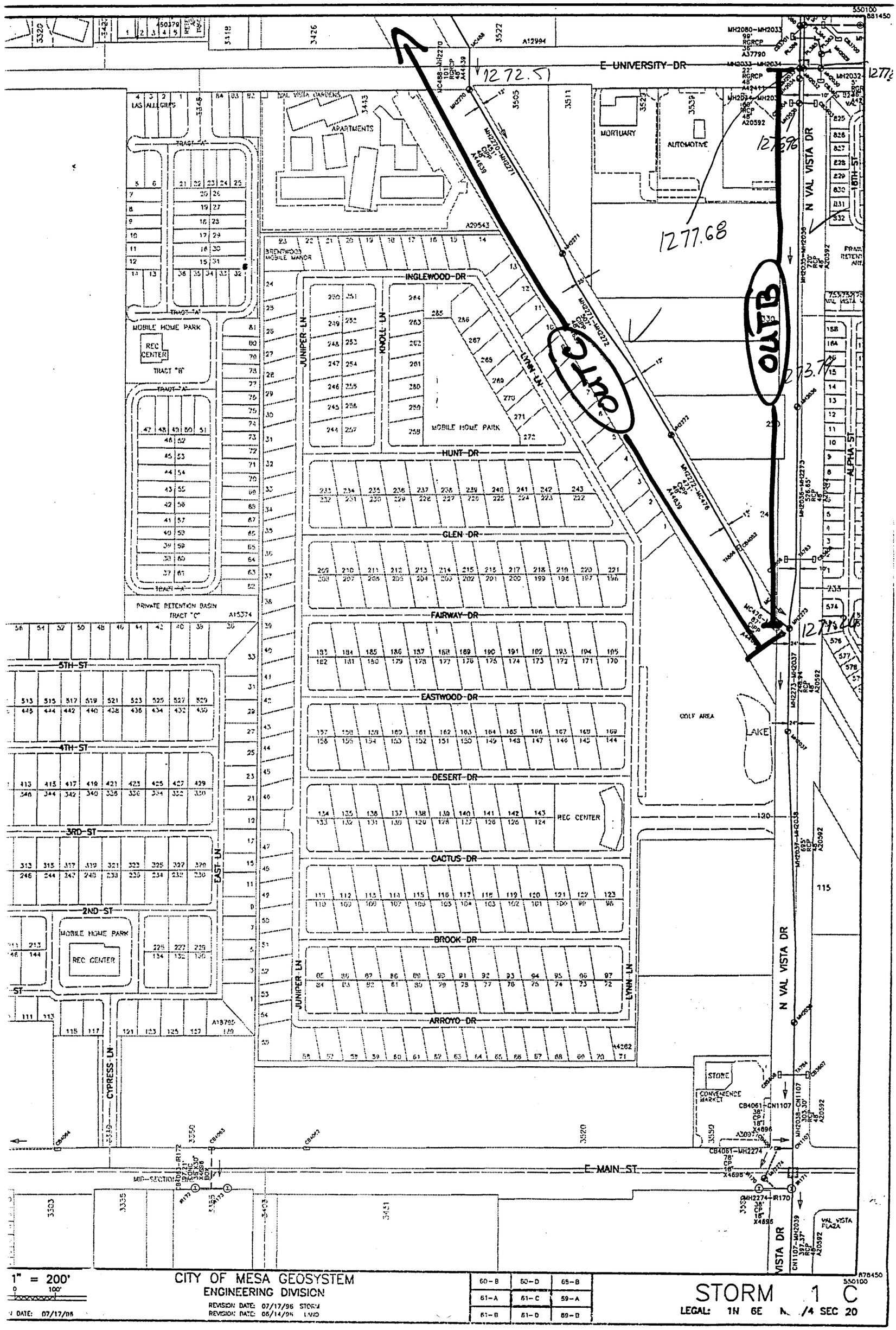
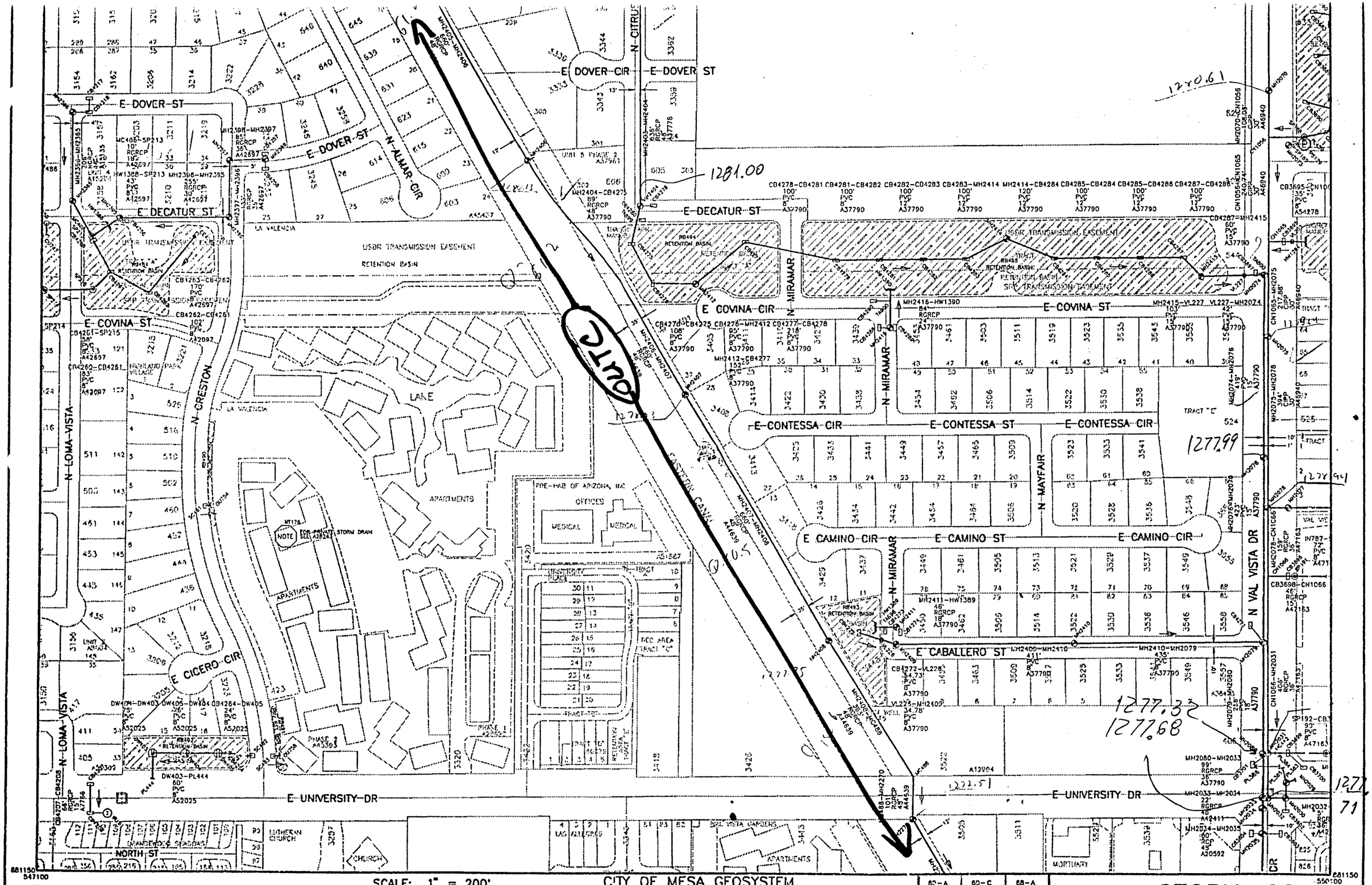
SCALE: 1" = 200'

PLOT COMPILATION DATE: 06/28/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/28/96 STORM
REVISION DATE: 12/01/95 LAND


E UNIVERSITY DR
N VAL VISTA DR
E MAIN ST
VAL VISTA GARDENS
APARTMENTS
MORTUARY
AUTOMOTIVE
BRENTWOOD MOBILE MANOR
MOBILE HOME PARK
REC CENTER
TRACT "B"
TRACT "A"
PRIVATE RETENTION BASIN TRACT "C"
INGLEWOOD DR
HUNT DR
GLEN DR
FAIRWAY DR
EASTWOOD DR
DESERT DR
CACTUS DR
BROOK DR
ARROYO DR
JUNIPER LN
KNOLL LN
LYNN LN
EAST LN
CYPRESS LN
5TH ST
4TH ST
3RD ST
2ND ST
GOLF AREA
LAKE
STORE
CONVENIENCE MARKET
VAL VISTA PLAZA
OUTC
OUTB
1272.51
1277.68
1273.70
1277.84
1" = 200'
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 07/17/96 STORM
REVISION DATE: 06/14/96 LAND
DATE: 07/17/96
STORM 1 C
LEGAL: 1N 6E N /4 SEC 20



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SCALE: 1" = 200'

PLOT COMPILATION DATE: 07/17/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

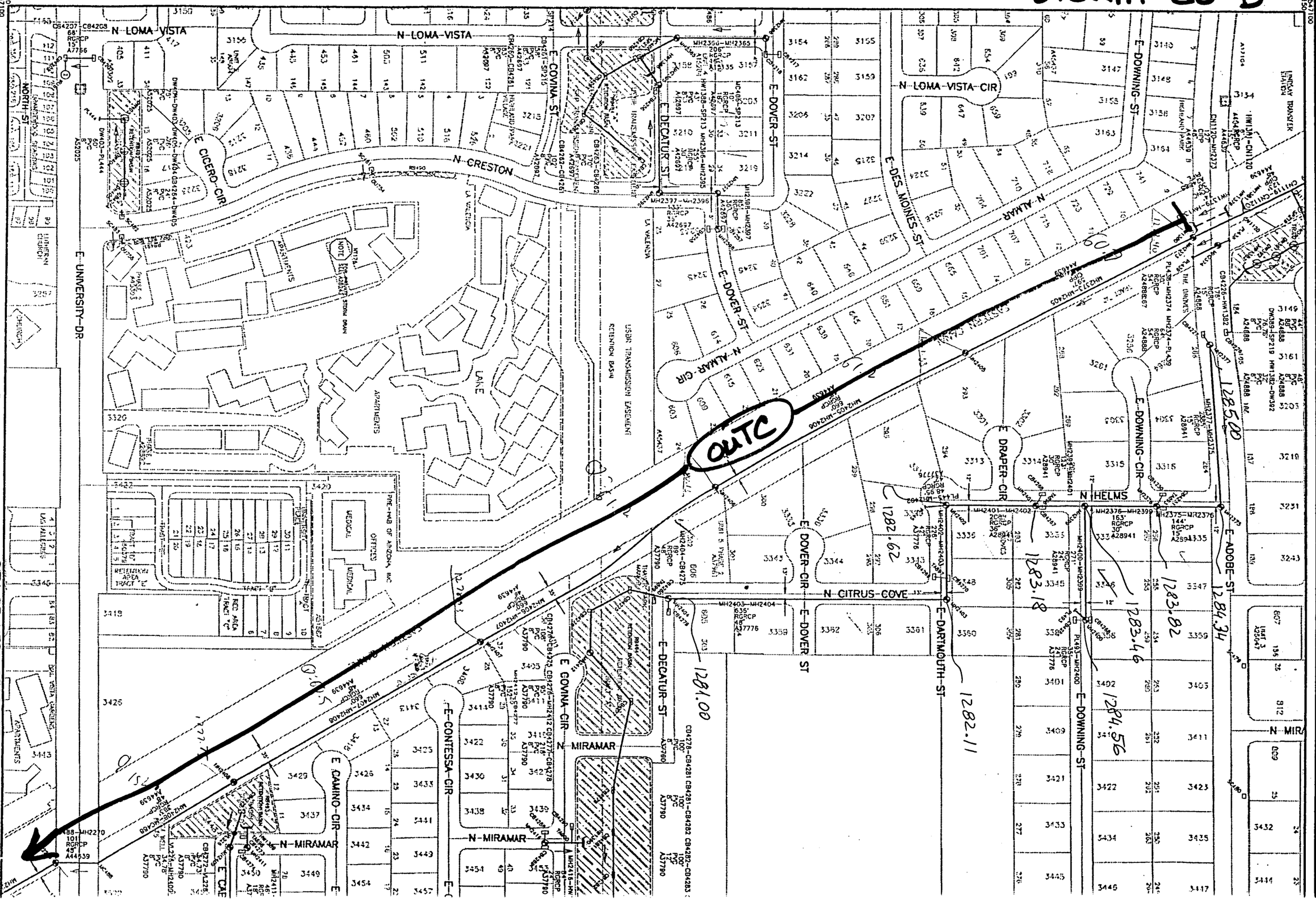
REVISION DATE: 07/17/95 STORM
REVISION DATE: 03/01/88 LAND

60-A	60-C	68-A
60-B	60-D	68-B
61-A	61-C	69-A

STORM 60 D

LEGAL: 1N 6E SE 1/4 SEC 17

STORM 60-D



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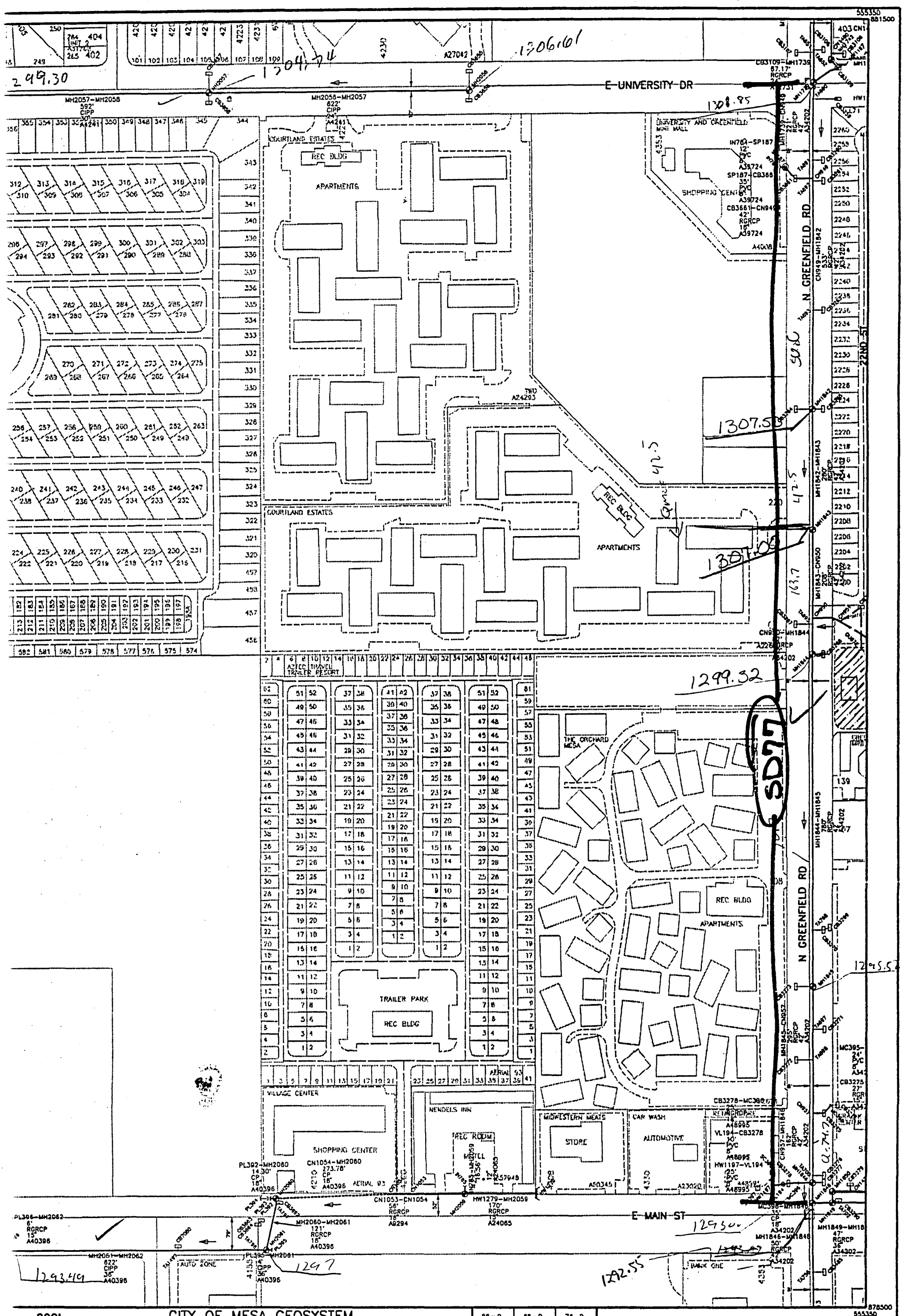
SCALE: 1" = 200'

PLOT COMPILATION DATE: 07/17/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 07/17/96 STORM
REVISION DATE: 03/01/96 LAND



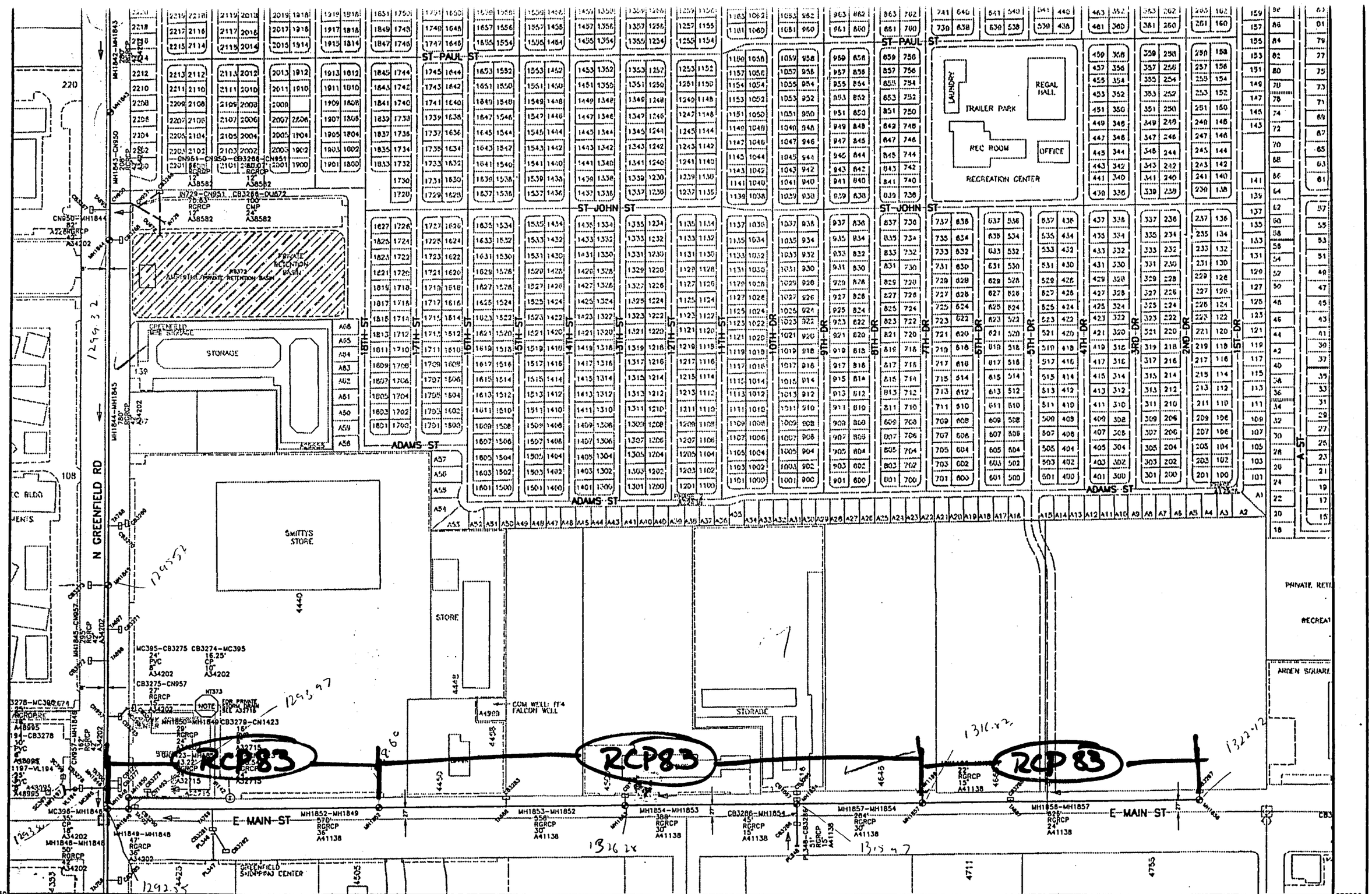
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 07/16/96 STORM
REVISION DATE: 02/14/96 LAND

68-B	68-D	76-B
69-A	69-C	77-A
69-B	69-D	77-B

STORM 69 C

LEGAL: 1N 6E NE 1/4 SEC 21



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SCALE: 1" = 200'

1" 0 100' 200

PLOT COMPILATION DATE: 06/25/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/25/96 STORM
REVISION DATE: 06/07/96 LAND

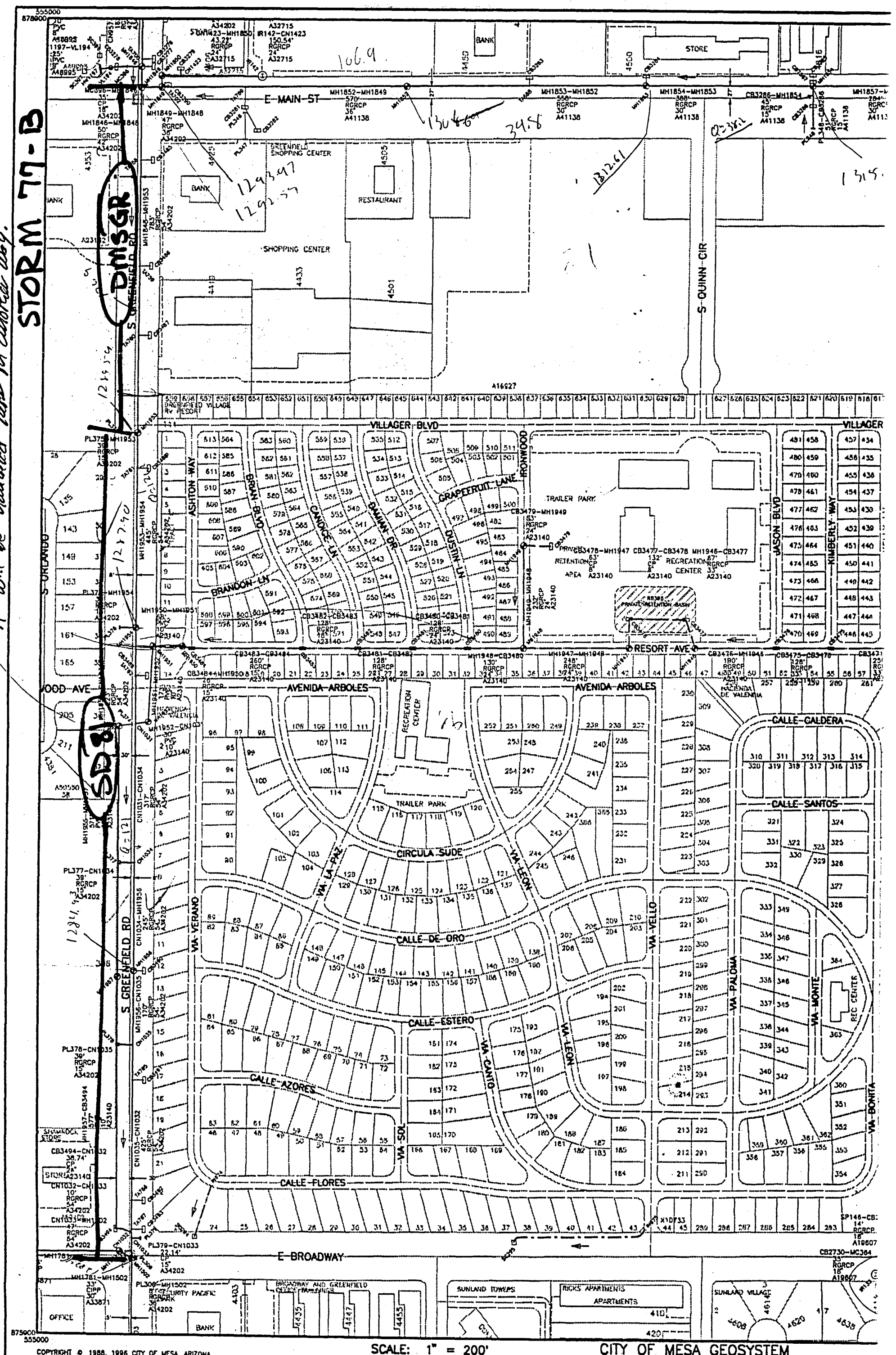
68-D	76-B	76-D
69-C	77-A	77-C
69-D	77-B	77-D

STORM 77 A

LEGAL: 1N 6E NW 1/4 SEC 22

The line along Resort Ave is not done per Bil. He says it will be handled in another way.

STORM 77-B



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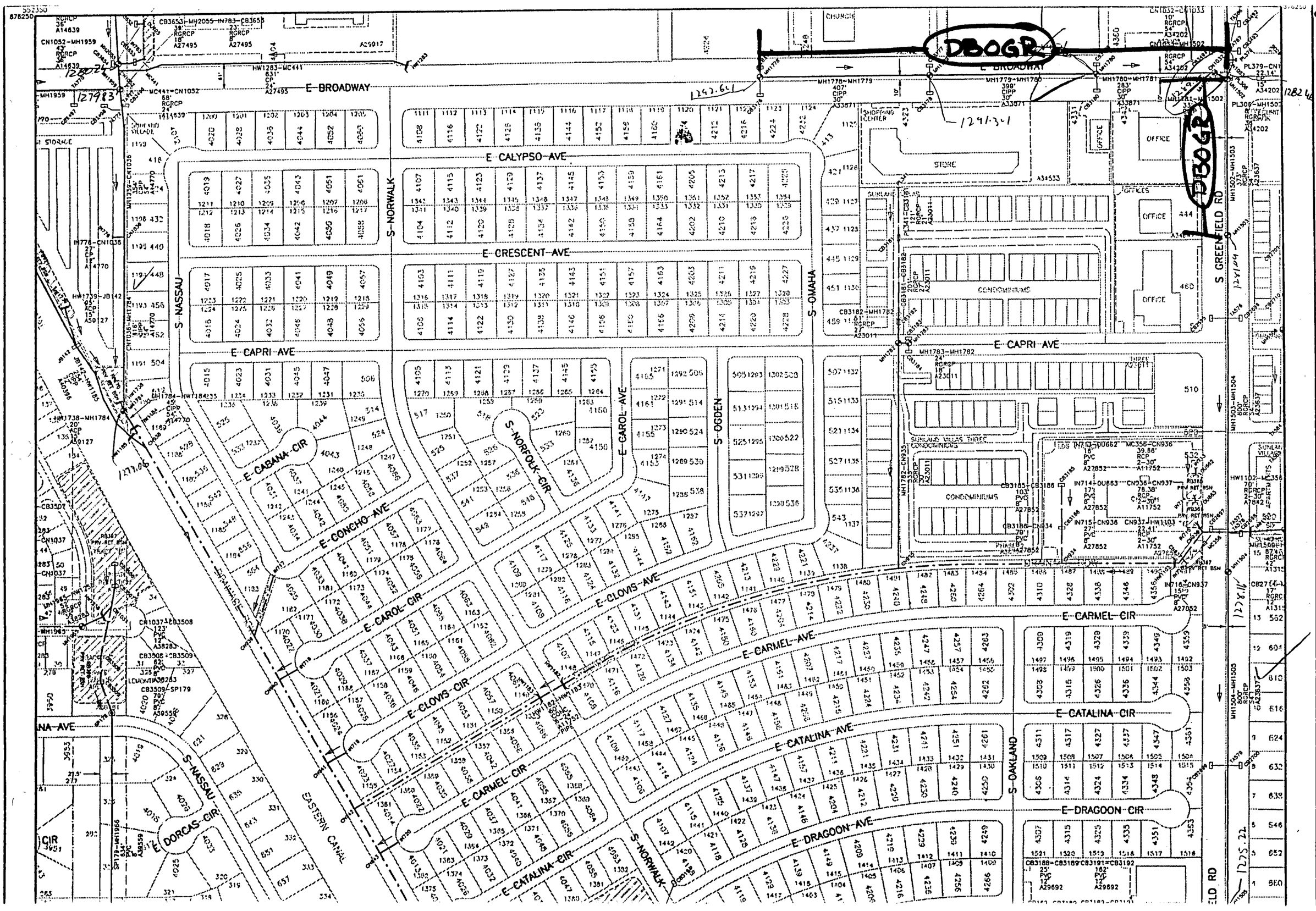
SCALE: 1" = 200'

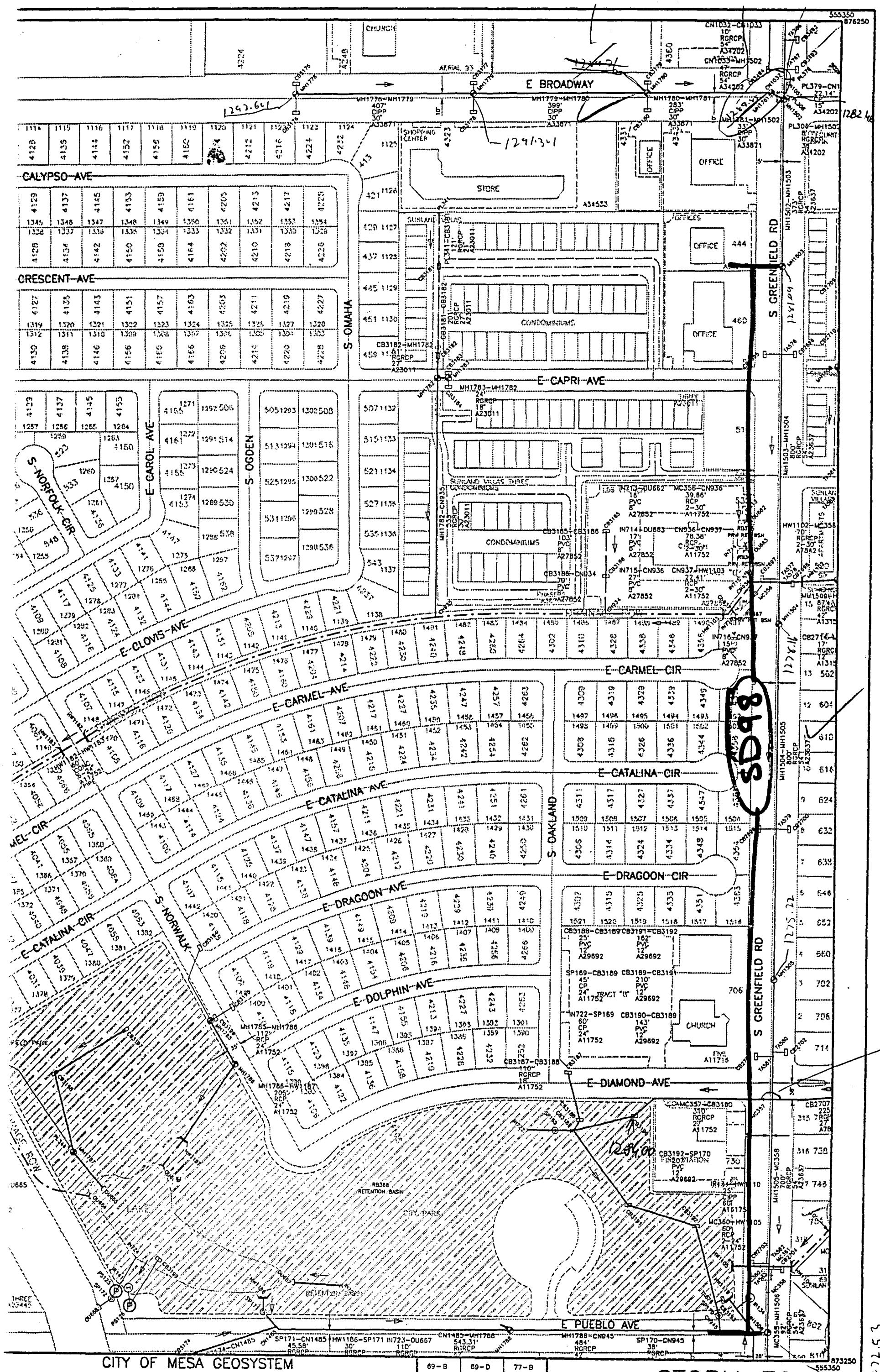
PLOT COMPILATION DATE: 06/25/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/25/96 STORM
REVISION DATE: 06/07/96 LAND

STORM
70-C


E BROADWAY
E CALYPSO AVE
E CRESCENT AVE
E CAPRI AVE
S NASSAU
S NORWALK
S OMAHA
S OGDEN
E CAROL AVE
S NORFOLK CIR
E CABANA CIR
E CONCHO AVE
E CAROL CIR
E CLOVIS AVE
E CLOVIS CIR
E CARMEL AVE
E CARMEL CIR
E CATALINA AVE
E CATALINA CIR
E DRAGOON AVE
E DRAGOON CIR
S OAKLAND
S GREENFIELD RD
EASTERN CANAL
E DORCAS CIR
STORE
OFFICE
CONDOMINIUMS
DBOGR
DBOGR



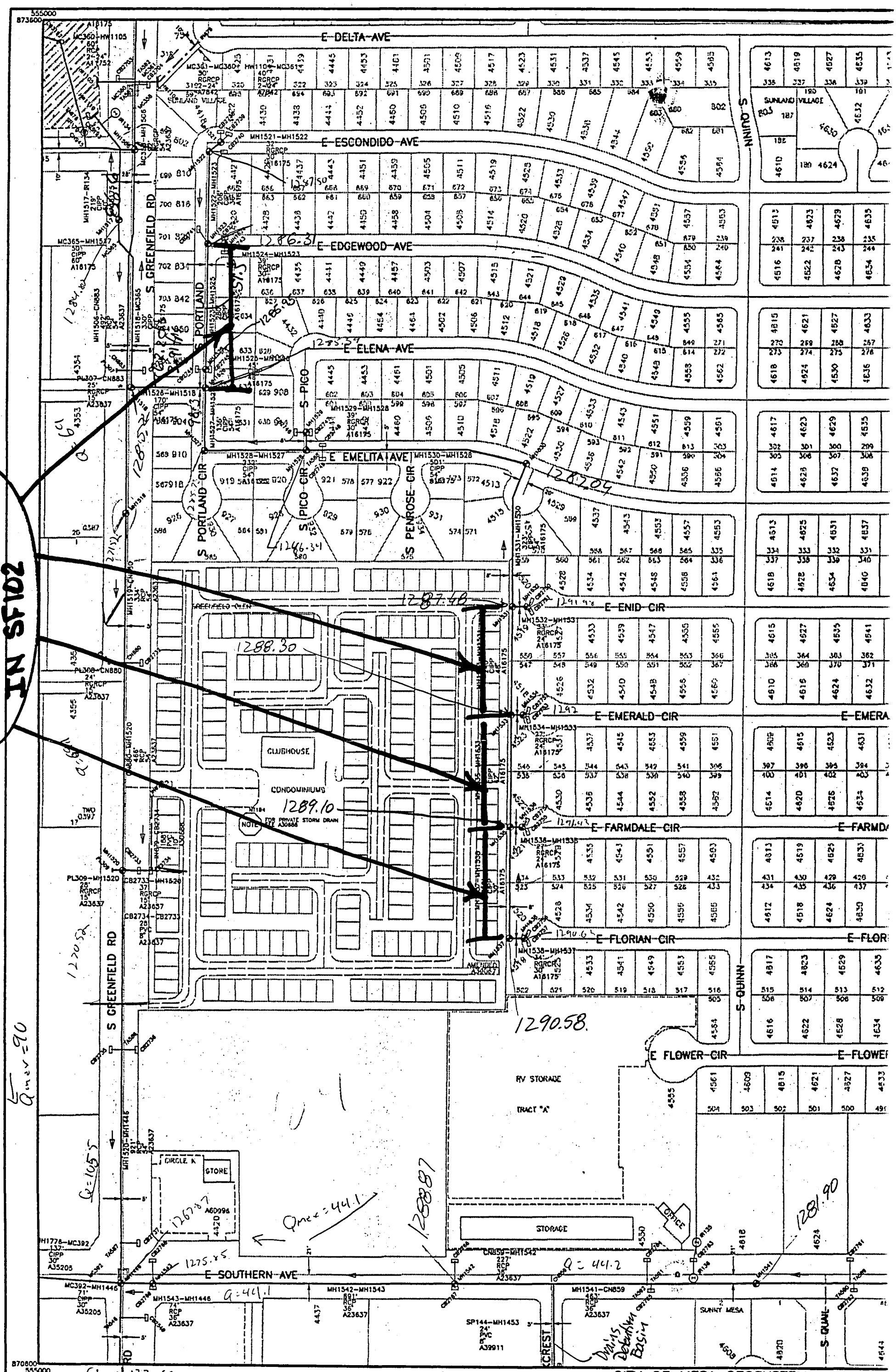
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 07/15/95 STORM
REVISION DATE: 09/08/95 LAND

69-B	69-D	77-B
70-A	70-C	78-A
70-B	-D	78-B

STORM 70 C
LEGAL: 1N 6E NE 1/4 SEC 28

STORM 78-B

FLOW NOT INCLUDED IN SF102



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SCALE: 1" = 200'

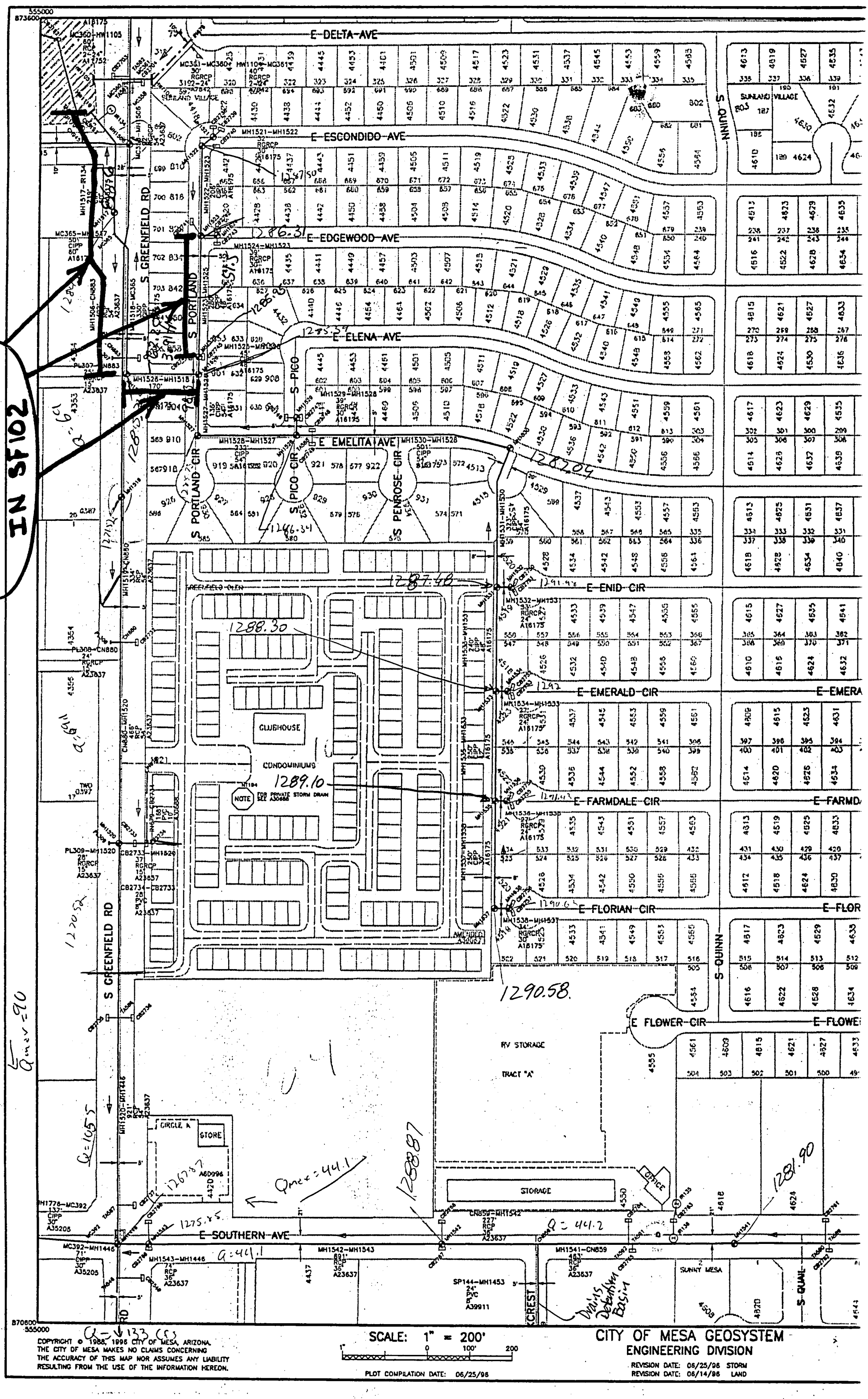
PLOT COMPILATION DATE: 06/25/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/25/96 STORM
REVISION DATE: 06/14/96 LAND

STORM 78-B

FLOW NOT INCLUDED IN SF102



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SCALE: 1" = 200'

PLOT COMPILATION DATE: 06/25/96

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/25/96 STORM
REVISION DATE: 06/14/96 LAND

E PUEBLO AVE

E EDGEWOOD AVE

E EDGEWOOD CIR

E EMELITA AVE

E EMELITA CIR

E FAIRVIEW CIR

E FLOWER CIR

E SOUTHERN AVE

S GREENFIELD RD

S 41ST ST

EASTERN CANAL

SKY RANCH

CHURCH

FUTURE SRP SUBSTATION TRYON

SDIC

1272.53

1271.52

1270.52

1267.97

S = 0.47%

1 = 200'

0 100' 200

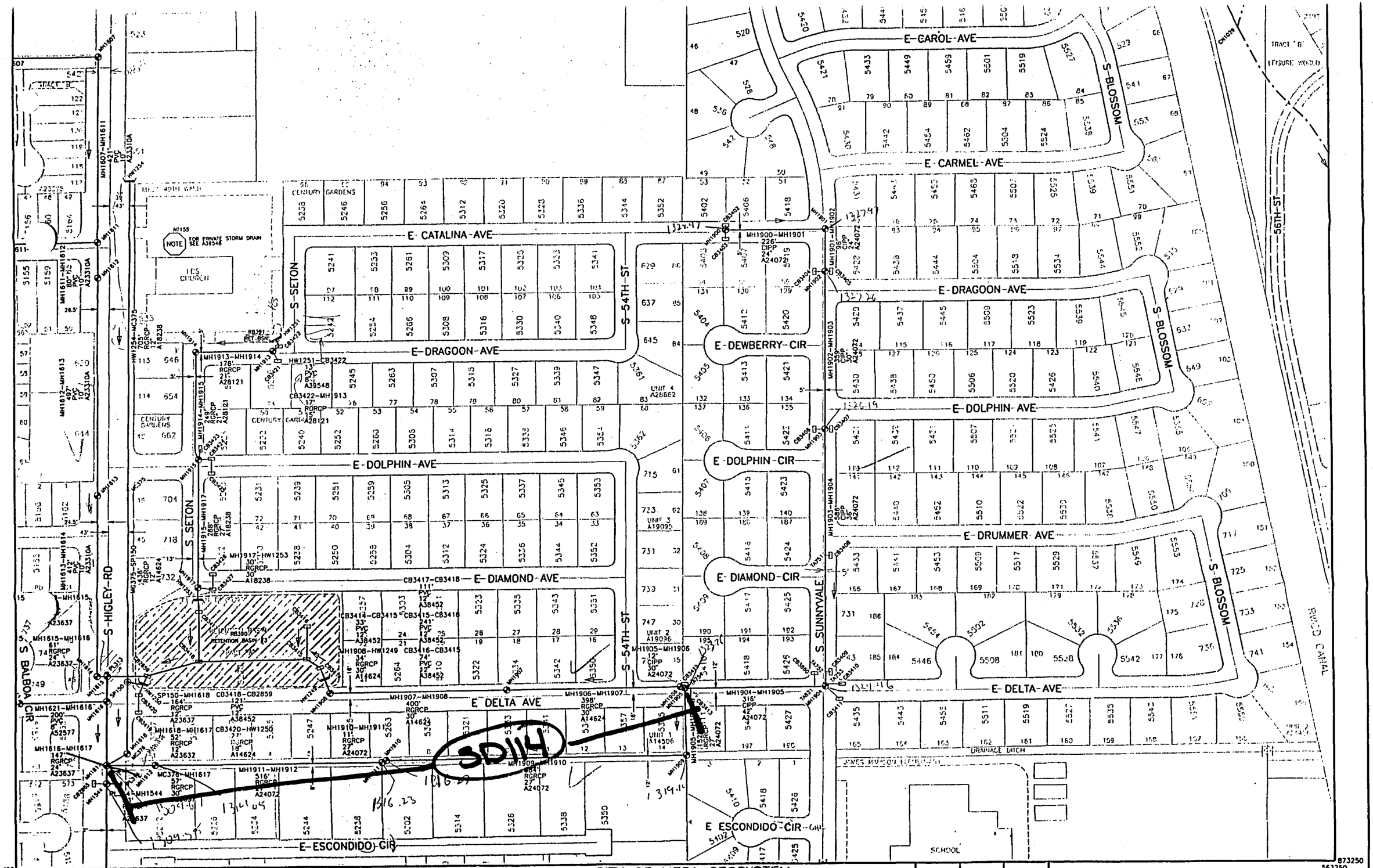
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 07/16/96 STORM
REVISION DATE: 09/08/95 LAND

70-A	70-C	78-A
70-B	70-D	78-B
71-A	71-C	79-A

STORM 70 D

LEGAL: 1N 6E 1/4 SEC 28



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SCALE: 1" = 100'

PLOT COMPILATION DATE: 01/04/96

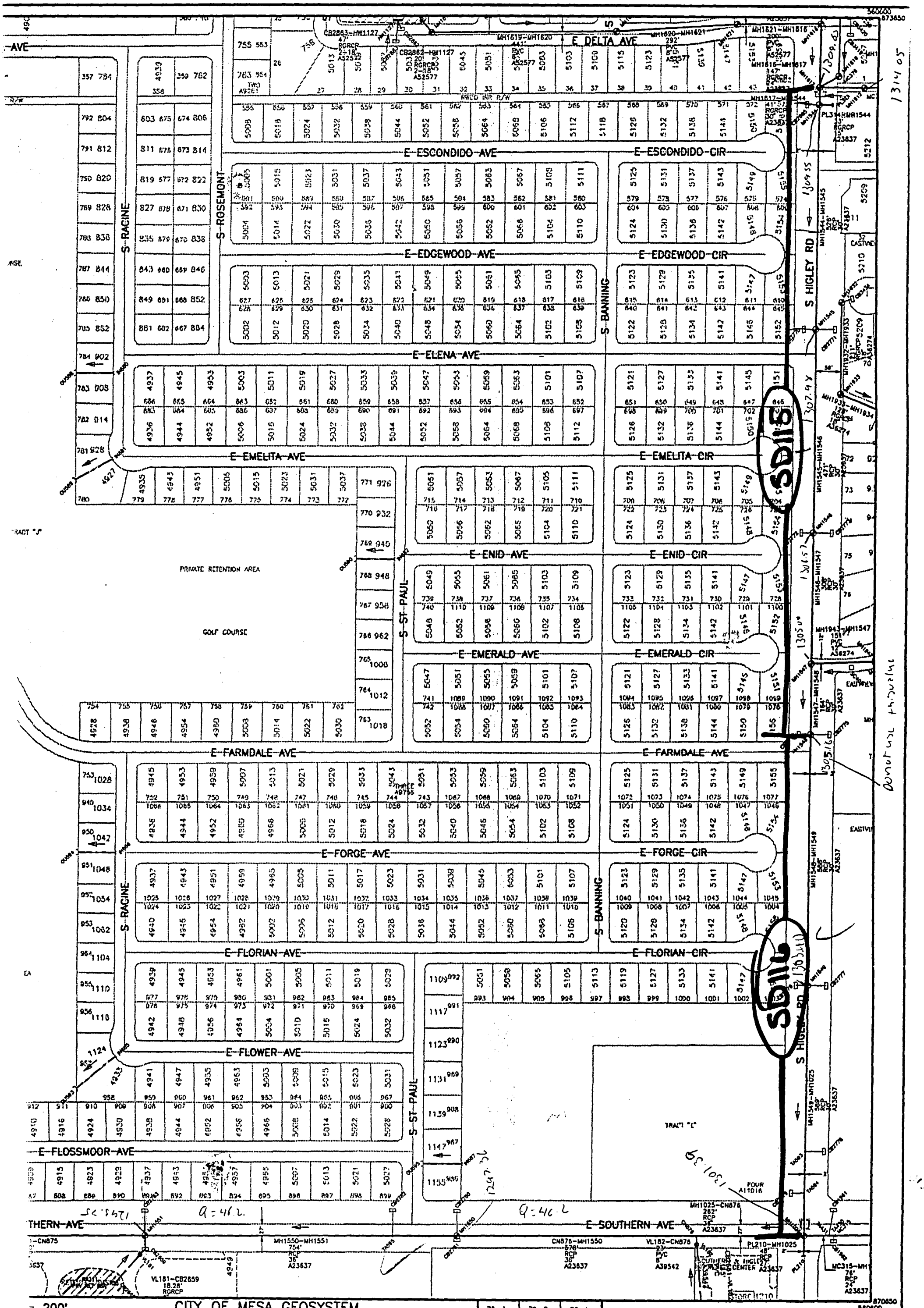
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

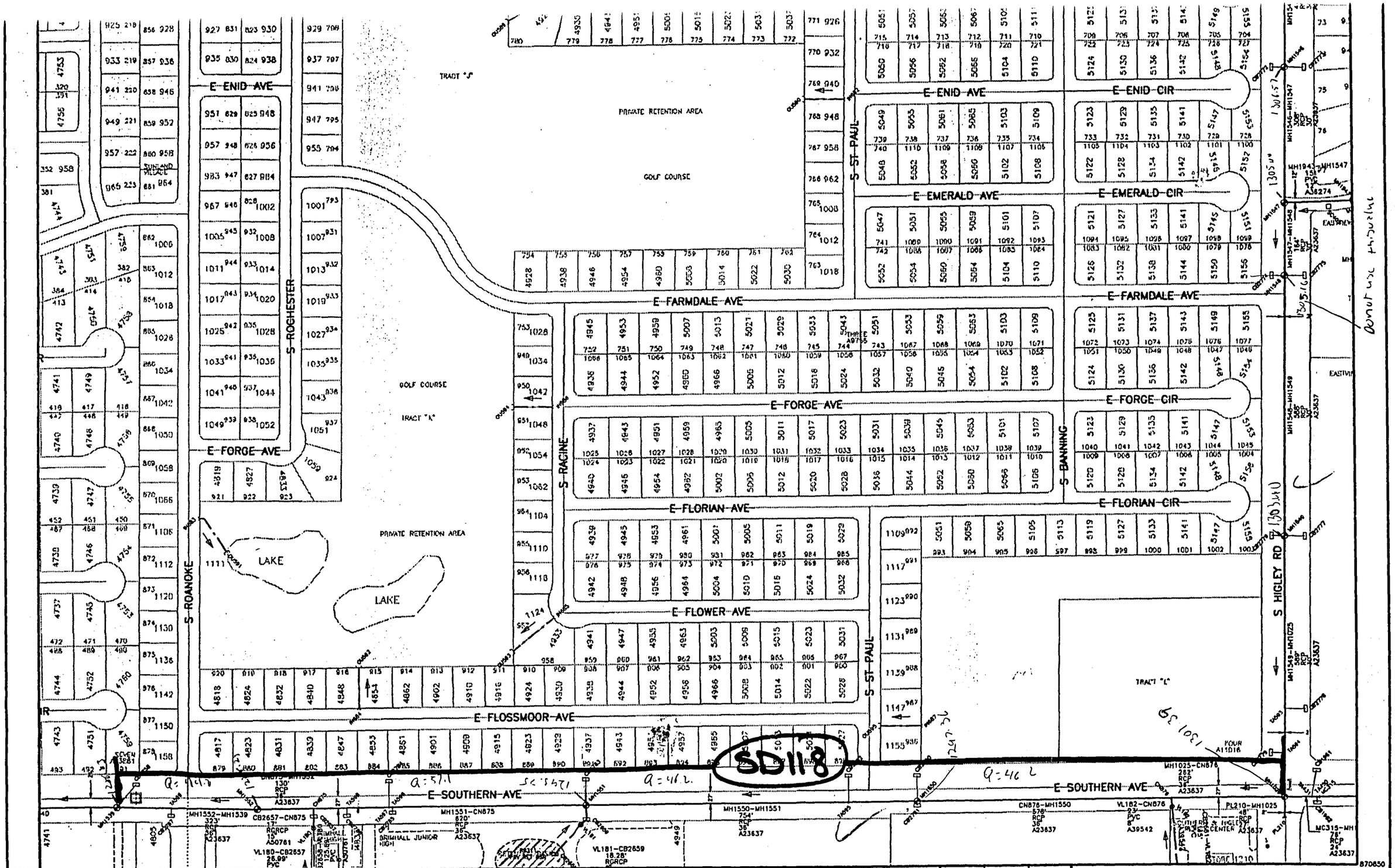
REVISION DATE: 12/05/95 STORM
REVISION DATE: 08/16/94 LAND

77-D	85-B	85-D
78-C	86-A	86-C
78-D	86-B	86-D

STORM 86 A

LEGAL: 1N 6E NW 1/4 SEC 26


E DELTA AVE
E ESCONDIDO AVE
E ESCONDIDO CIR
E EDGEWOOD AVE
E EDGEWOOD CIR
E ELENA AVE
E EMELITA AVE
E EMELITA CIR
E ENID AVE
E ENID CIR
E EMERALD AVE
E EMERALD CIR
E FARMDALE AVE
E FORGE AVE
E FORGE CIR
E FLORIAN AVE
E FLORIAN CIR
E FLOWER AVE
E FLOSSMOOR AVE
E SOUTHERN AVE
S RACINE
S ROSEMONT
S BANNING
S ST PAUL
S HIGLEY RD
PRIVATE RETENTION AREA
GOLF COURSE
TRACT "L"
SDII5
SDII6
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 06/25/96 STORM
REVISION DATE: 06/14/96 LAND
06/25/96
STORM 78 D
LEGAL: 1N 6E SE 1/4 C 27



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SCALE: 1" = 200'

PLOT COMPILATION DATE: 06/25/96

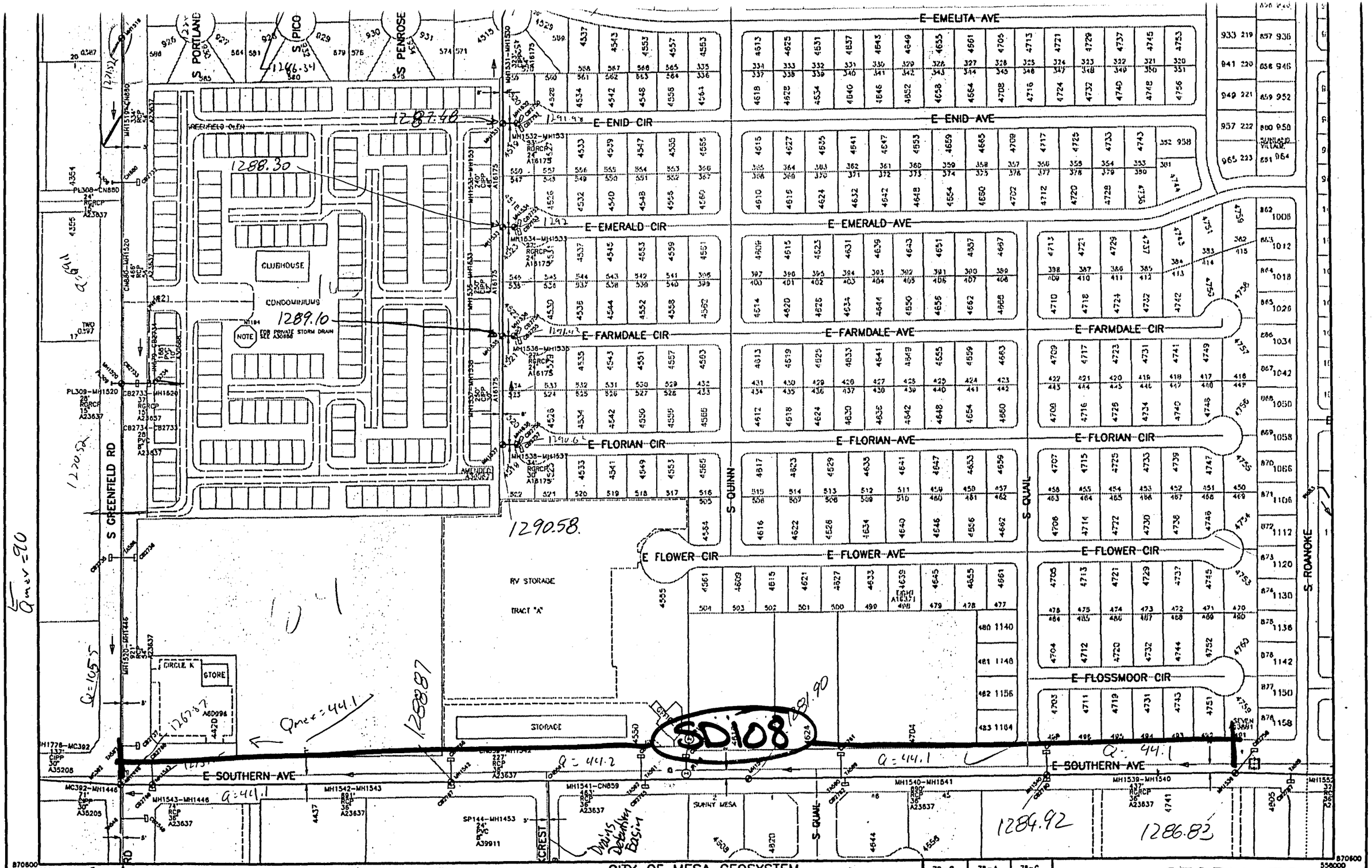
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/25/96 STORM
REVISION DATE: 06/14/96 LAND

78-A	78-C	86-A
78-B	78-D	86-B
79-A	79-C	87-A

STORM 78 D

LEGAL: 1N 6E SE 1/4 SEC 27



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SCALE: 1" = 200'

PLOT COMPILATION DATE: 06/25/98

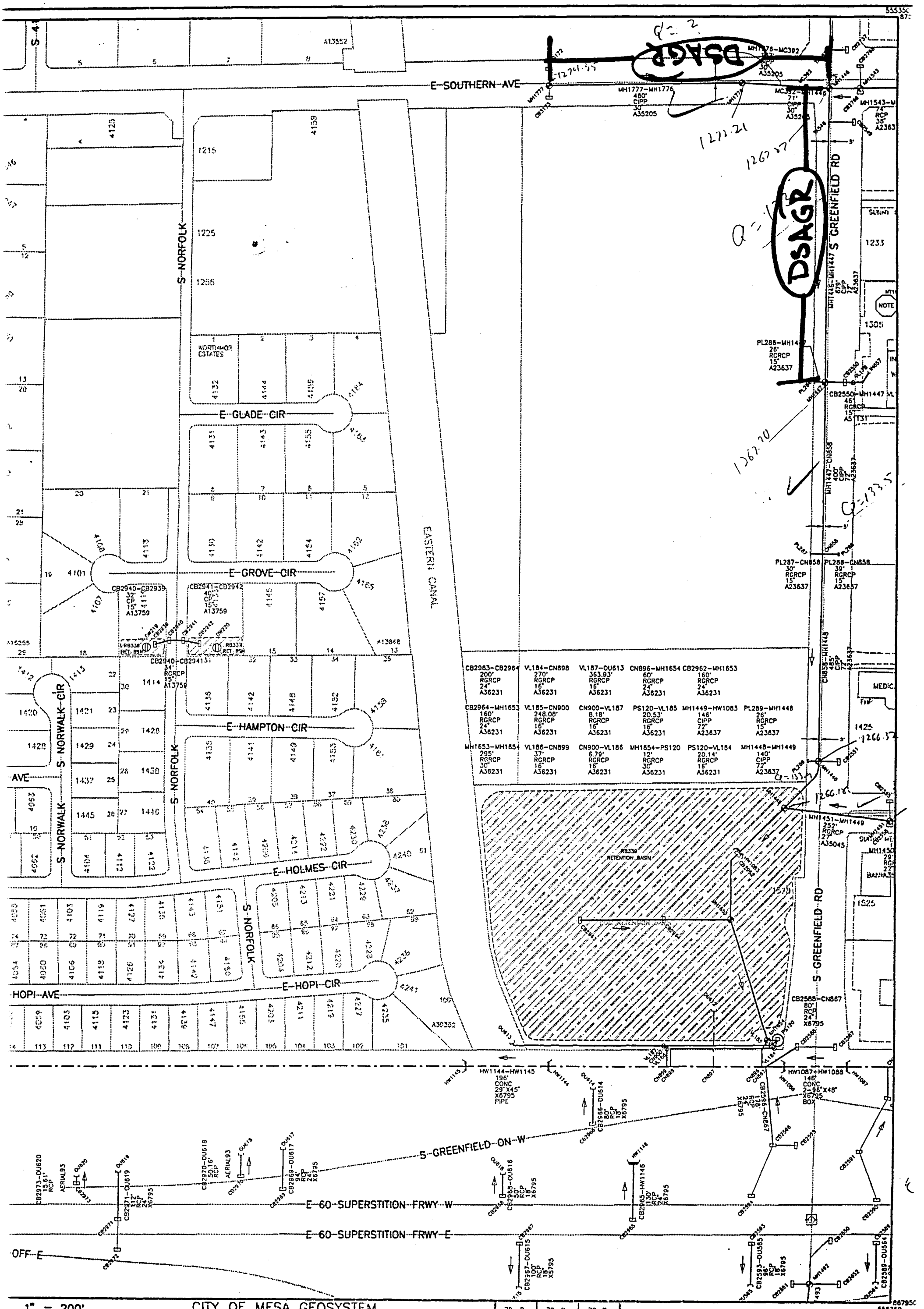
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION

REVISION DATE: 06/25/98 STORM
REVISION DATE: 06/14/98 LAND

70-C	78-A	78-C
70-D	78-B	78-D
71-C	79-A	79-C

STORM 78 B

LEGAL: 1N 6E SW 1/4 SEC 27


E-SOUTHERN-AVE
S-NORFOLK
S-GREENFIELD RD
S-GREENFIELD-ON-W
E-60-SUPERSTITION-FRWY-W
E-60-SUPERSTITION-FRWY-E
E-GLADE-CIR
E-GROVE-CIR
E-HAMPTON-CIR
E-HOLMES-CIR
E-HOPI-CIR
HOPI-AVE
S-NORWALK-CIR
EASTERN CANAL
DSAGR
MH1777-MH1776 480' CIPP 30" A35205
MC392-MH1446 71' CIPP 30" A35205
MH1446-MH1447 679' CIPP 72" A23637
PL286-MH1447 26' RCRCP 15" A23637
CB2550-MH1447 46' RCRCP 15" A5131
MH1447-CN858 400' CIPP 72" A23637
PL287-CN858 30' RCRCP 15" A23637
PL288-CN858 39' RCRCP 15" A23637
CN858-MH1448 485' CIPP 72" A23637
MH1451-MH1449 252' RCRCP 27" A35045
CB2588-CN867 80' RCP 24" X6795
HW1144-HW1145 196' CONC 29"X45" X6795 PIPE
HW1087-HW1088 146' CONC 2-96"X48" X6795 BOX
CB2966-OU614 80' RCP 18" X6795
CB2970-OU618 50.16' RCP
CB2969-OU617 94' RCP 24" X6795
CB2968-OU616 50' RCP 18" X6795
CB2965-HW1146 130' RCP 24" X6795
CB2971-OU619 112' RCP 24" X6795
CB2973-OU620 15.61' RCP
CB2957-OU615 100' RCP 18" X6795
CB2593-OU565 96' RCP 18" X6795
CB2589-OU564
CB2940-CB2939 32' CP 15" A13759
CB2941-CB2942 40' CP 15" A13759
CB2940-CB2941 34' RCRCP 15" A13759
RB339 RETENTION BASIN
RB338 RET. BSN
RB337 RET. BSN
CB2963-CB2964 200' RCRCP 24" A36231
VL184-CN898 270' RCRCP 16" A36231
VL187-OU613 363.93' RCRCP 16" A36231
CN896-MH1654 60' RCRCP 24" A36231
CB2962-MH1653 160' RCRCP 24" A36231
CB2964-MH1653 160' RCRCP 24" A36231
VL185-CN900 248.08' RCRCP 16" A36231
CN900-VL187 8.18' RCRCP 16" A36231
PS120-VL185 20.53' RCRCP 16" A36231
MH1449-HW1083 146' CIPP 72" A23637
PL289-MH1448 26' RCRCP 15" A23637
MH1653-MH1654 295' RCRCP 30" A36231
VL186-CN899 37' RCRCP 16" A36231
CN900-VL186 6.79' RCRCP 16" A36231
MH1654-PS120 12' RCRCP 30" A36231
PS120-VL184 20.14' RCRCP 16" A36231
MH1448-MH1449 140' CIPP 72" A23637
1" = 200'
0 100' 200
ATION DATE: 07/16/96
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 07/16/96 STORM
REVISION DATE: 06/14/96 LAND
70-B 70-D 78-D
71-A 71-C 79-A
71-B 71-D 79-B
STORM 71 C
LEGAL: 1N 6E 1/4 SEC 33

Appendix D.5.4

Post-Hydraulics, HEC-2 – based Flow Diversions

PRIMATECH
ENGINEERS & CONSULTANTS

Post-Hydraulics, Hec-2 -based Flow Diversions

Eastern Canal North Floodplain Delineation Study

FCD#98-36

PD25	DI	0	50	100	150	200	236	250	300
	DQ	0	0	31.3	78.8	126.7	161.6	175.5	224.5

PD120	DI	0	89	115	140	155	205	300
	DQ	0	0	14	34	46.5	94.7	185

CD128	DI	0	45	70	89	100.5	107.6	115	1000
	DQ	0	45	54	55.8	56.8	58.4	60	60

```
1*******************************************
 *  HEC-2 WATER SURFACE PROFILES           *
 *                                         *
 *  Version   4.6.2;  May 1991             *
 *                                         *
 *  RUN DATE    16OCT00    TIME   12:49:21 *
 *******************************************
```

```
 ***************************************
 *  U.S. ARMY CORPS OF ENGINEERS       *
 *  HYDROLOGIC ENGINEERING CENTER      *
 *  609 SECOND STREET, SUITE D         *
 *  DAVIS, CALIFORNIA 95616-4687       *
 *          (916) 756-1104             *
 ***************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
```


THIS RUN EXECUTED 16OCT00 12:49:21

```
*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
*************************************
```

```
SPLIT FLOW BEING PERFORMED

SF SPLIT FLOW PROBLEM

JC SPLIT FLOW PROBLEM
JP     0       0       0       0       0

TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13582    AND    13700
WS     2   13582   13700      -1      3.4
WC       1284.00  118.00 1282.90

TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13700    AND    14000
WS     2   13700   14000      -1      3.4
WC       1282.90  300.00 1282.00

TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14000    AND    14100
WS     2   14000   14100      -1      3.4
WC       1282.00  100.00 1283.00

TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14100    AND    14200
WS     2   14100   14200      -1      3.4
WC       1283.00  100.00 1284.00

TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14200    AND    14300
WS     2   14200   14300      -1      3.4
WC       1284.00  100.00 1284.00

TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14900    AND    1520
WS     2   14900   15200      -1      3.4
WC       1284.00  300.00 1284.00

TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15200    AND    1550
WS     2   15200   15500      -1      3.4
WC       1284.00  300.00 1284.00
```



```
TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15500    AND    1575
WS     2   15500   15750      -1      3.4
WC       1284.00  250.00 1284.00
```



```
T1      HEC-2 Input   Data    file:   SPLIT    FLOW    SOLUTION
T2      CHN128 - LATERAL WEIR SPLIT FLOW Q= 300 CFS
T3      CHN128 - LATERAL WEIR SPLIT FLOW Q= 300 CFS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0        2         0         0   .001237         0         0         0   1284.00         0

J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

    -10       -10

QT        1     300.00
NC   0.0450     0.0350     0.0350       0.1       0.3
X1    13582         37    9964.73   10000.00      0.00      0.00      0.00
```

GR	1284.0	9940.05	1283.98	9940.08	1283.99	9940.10	1283.99	9940.11	1283.99	9940.13
GR	1284.0	9940.26	1283.99	9940.28	1283.99	9940.34	1283.99	9940.41	1283.99	9940.46
GR	1284.0	9940.48	1283.99	9940.50	1283.98	9940.53	1283.98	9940.60	1283.97	9940.74
GR	1284.0	9940.95	1283.96	9941.17	1284.00	9941.79	1284.00	9942.65	1284.00	9943.30
GR	1284.0	9946.51	1284.00	9948.10	1284.00	9949.62	1284.00	9952.57	1284.00	9954.57
GR	1284.0	9964.73	1283.02	9968.55	1282.22	9971.25	1282.00	9972.08	1280.00	9979.60
GR	1278.1	9983.20	1280.00	9986.24	1281.30	9991.28	1282.00	9992.45	1282.93	9993.94
GR	1284.0	9995.82	1284.00	10000.00						
X1	13700	16	9967.79	10000.00	118.00	118.00	118.00			
GR	1282.9	9967.79	1282.60	9968.89	1282.20	9970.83	1282.00	9971.43	1280.75	9974.60
GR	1280.0	9976.34	1278.11	9979.33	1280.00	9982.10	1281.36	9984.58	1282.00	9985.65
GR	1282.2	9985.98	1284.00	9989.37	1284.47	9999.68	1284.47	9999.75	1284.48	9999.94
GR	1284.5	10000.00								
X1	14000	10	9963.80	10000.00	300.00	300.00	300.00			
GR	1282.0	9963.80	1282.00	9965.57	1281.43	9967.11	1278.40	9974.60	1280.00	9977.92
GR	1280.7	9979.14	1282.00	9981.63	1283.10	9983.42	1284.00	9985.11	1284.00	10000.00
X1	14100	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1283.0	9962.24	1282.46	9965.05	1281.76	9966.82	1280.68	9969.42	1279.76	9971.09
GR	1278.4	9975.00	1279.76	9978.71	1279.97	9979.20	1281.16	9981.30	1281.62	9982.20
GR	1281.8	9982.49	1282.46	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14200	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1284.0	9962.24	1282.58	9965.05	1281.88	9966.82	1280.80	9969.42	1279.88	9971.09
GR	1278.6	9975.00	1279.88	9978.71	1280.09	9979.20	1281.28	9981.30	1281.74	9982.20
GR	1281.9	9982.49	1282.58	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14300	58	9962.24	10000.00	100.00	100.00	100.00			
GR	1286.7	9200.00	1286.55	9214.47	1286.24	9247.77	1286.22	9249.93	1286.18	9254.29
GR	1286.2	9255.76	1286.16	9257.27	1286.15	9257.81	1286.00	9277.62	1285.86	9285.09
GR	1285.7	9304.74	1285.65	9329.46	1285.65	9336.21	1285.54	9352.68	1285.53	9362.72
GR	1285.4	9373.11	1285.39	9384.32	1285.40	9396.09	1285.24	9405.27	1285.10	9415.00
GR	1285.0	9424.76	1284.38	9525.97	1284.38	9542.27	1284.38	9567.22	1284.38	9601.08
GR	1284.4	9629.04	1284.38	9656.22	1284.34	9659.30	1284.33	9660.48	1284.33	9663.77
GR	1284.3	9667.99	1284.28	9673.37	1284.24	9680.25	1284.18	9689.49	1284.10	9700.00
GR	1284.1	9702.38	1284.00	9713.05	1284.00	9721.01	1284.00	9756.39	1284.00	9768.53
GR	1284.0	9771.25	1284.00	9862.26	1284.00	9862.54	1284.00	9863.29	1284.00	9962.24

GR	1282.7	9965.05	1282.00	9966.82	1280.92	9969.42	1280.00	9971.09	1278.68	9975.00
GR	1280.0	9978.71	1280.21	9979.20	1281.40	9981.30	1281.86	9982.20	1282.00	9982.49
GR	1282.7	9983.79	1284.00	9986.52	1284.00	10000.00				
X1	14600	48	9950.37	10000.00	300.00	300.00	300.00			
GR	1287.0	9200.00	1286.35	9319.42	1286.34	9322.88	1286.30	9331.31	1286.24	9341.79
GR	1286.2	9354.73	1286.09	9370.67	1286.00	9388.44	1285.97	9396.61	1285.90	9423.66
GR	1285.8	9452.72	1285.76	9471.57	1284.98	9550.29	1284.88	9565.91	1284.80	9575.21
GR	1284.7	9583.70	1284.64	9597.36	1284.55	9609.89	1284.49	9620.27	1284.45	9627.64
GR	1284.4	9636.14	1284.40	9645.58	1284.40	9655.79	1284.39	9665.38	1284.36	9674.53
GR	1284.3	9683.42	1284.28	9691.86	1284.23	9699.84	1284.23	9700.00	1284.09	9720.90
GR	1284.0	9734.06	1284.00	9734.48	1284.00	9816.10	1284.00	9828.24	1284.00	9950.37
GR	1283.6	9963.68	1283.43	9964.04	1282.00	9967.35	1280.49	9970.86	1280.00	9971.94
GR	1279.0	9974.45	1280.00	9976.90	1280.62	9978.11	1282.00	9980.99	1283.04	9983.19
GR	1284.0	9985.23	1284.00	9996.17	1284.00	10000.00				
X1	14900	40	9867.14	10000.00	300.00	300.00	300.00			
GR	1288.0	9100.00	1288.00	9106.54	1288.00	9113.03	1288.00	9113.89	1287.79	9142.77
GR	1287.1	9246.69	1286.15	9379.98	1286.14	9381.89	1286.00	9403.34	1285.85	9435.98
GR	1285.7	9468.11	1285.61	9487.09	1285.57	9498.84	1285.55	9505.90	1284.18	9649.12
GR	1284.1	9654.29	1284.08	9663.19	1284.02	9690.76	1284.00	9692.87	1284.00	9693.17
GR	1284.0	9696.73	1284.00	9700.00	1284.00	9722.57	1284.00	9737.75	1284.00	9791.21
GR	1284.0	9867.14	1283.91	9872.09	1283.57	9893.26	1283.45	9901.09	1282.29	9951.49
GR	1282.0	9963.88	1281.74	9964.55	1280.00	9968.47	1279.25	9971.84	1280.00	9975.21
GR	1280.4	9976.12	1282.00	9980.08	1282.67	9981.73	1284.00	9985.10	1284.00	10000.00
X1	15200	44	9898.92	10000.00	300.00	300.00	300.00			
GR	1287.8	9100.00	1287.51	9150.46	1287.41	9170.08	1287.28	9197.12	1287.11	9232.27
GR	1286.9	9279.37	1286.53	9344.87	1286.03	9438.34	1286.00	9444.80	1285.99	9445.78
GR	1286.0	9445.89	1285.99	9446.03	1285.99	9446.18	1285.99	9446.61	1285.99	9446.73
GR	1286.0	9446.87	1285.98	9447.20	1285.71	9485.26	1284.16	9700.00	1284.07	9712.60
GR	1284.0	9721.93	1284.00	9724.33	1284.00	9760.53	1284.00	9898.92	1283.91	9920.86
GR	1283.9	9925.25	1283.67	9930.34	1283.18	9944.66	1282.83	9952.63	1282.88	9953.92
GR	1282.8	9956.45	1282.62	9960.54	1282.00	9967.35	1281.38	9968.90	1280.72	9971.05
GR	1280.0	9972.42	1279.54	9975.05	1280.00	9977.81	1280.37	9978.85	1280.95	9980.52
GR	1282.0	9983.53	1282.90	9986.13	1284.00	9989.23	1284.00	10000.00		
X1	15500	74	9952.04	10000.00	300.00	300.00	300.00			
GR	1287.7	9100.00	1286.98	9170.15	1286.62	9205.88	1286.47	9220.79	1286.40	9228.89
GR	1286.3	9234.06	1286.32	9237.59	1286.30	9240.12	1286.28	9242.28	1286.27	9244.17
GR	1286.3	9245.88	1286.17	9257.27	1286.15	9260.35	1286.14	9262.52	1286.00	9278.11
GR	1285.9	9281.92	1285.94	9284.29	1285.94	9288.93	1285.97	9298.88	1286.00	9309.20
GR	1286.0	9334.48	1286.00	9344.49	1286.00	9349.76	1286.00	9351.02	1286.00	9351.94
GR	1285.2	9492.99	1284.39	9635.88	1284.25	9660.73	1284.16	9677.43	1284.11	9686.14
GR	1284.1	9688.29	1284.09	9689.51	1284.09	9690.11	1284.09	9690.80	1284.09	9691.56
GR	1284.1	9693.72	1284.08	9693.98	1284.08	9694.12	1284.05	9699.80	1284.05	9700.00
GR	1284.0	9700.72	1284.05	9701.39	1284.05	9701.71	1284.05	9701.89	1284.04	9702.06
GR	1284.0	9702.43	1284.04	9702.67	1284.04	9703.27	1284.04	9703.43	1284.04	9703.93
GR	1284.0	9704.11	1284.05	9705.14	1284.05	9705.30	1284.05	9705.32	1284.06	9705.35
GR	1284.1	9705.43	1284.08	9705.69	1284.09	9705.84	1284.11	9706.11	1284.12	9706.29
GR	1284.1	9706.64	1284.00	9952.04	1282.38	9970.04	1282.00	9970.60	1280.38	9973.46
GR	1280.0	9974.35	1279.82	9975.43	1280.00	9976.51	1280.50	9978.10	1281.33	9980.70
GR	1282.0	9982.87	1283.13	9986.69	1284.00	9989.60	1284.00	10000.00		

X1	15750	98	9969.81	10000.00	250.00	250.00	250.00			
GR	1288.3	9000.00	1288.00	9006.08	1288.00	9010.63	1288.00	9011.99	1288.00	9047.38
GR	1288.0	9066.66	1286.80	9236.69	1286.71	9248.37	1286.64	9258.28	1286.53	9272.90
GR	1286.4	9293.19	1286.18	9325.24	1286.17	9327.91	1286.17	9330.25	1286.17	9332.11
GR	1286.2	9333.55	1286.17	9333.84	1286.12	9338.63	1286.04	9346.70	1286.00	9352.31
GR	1286.0	9353.46	1286.00	9354.16	1286.00	9362.89	1286.00	9364.71	1286.00	9366.26
GR	1286.0	9367.67	1286.00	9369.34	1286.00	9371.21	1286.00	9376.48	1286.00	9388.42

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GR  1286.0    9396.78   1286.00   9415.14    1286.00    9415.50   1286.00    9421.19   1286.00   9436.14
GR  1286.0    9441.01   1286.00   9441.34    1286.00    9451.57   1285.65    9515.43   1285.61   9544.80
GR  1285.6    9566.53   1285.63   9577.15    1285.64    9583.15   1285.63    9588.96   1285.61   9601.37
GR  1285.6    9609.69   1285.63   9631.06    1285.63    9637.02   1285.65    9655.63   1285.65   9662.24
GR  1285.9    9738.73   1285.90   9742.64    1285.83    9745.00   1285.76    9762.03   1285.74   9772.19
GR  1285.8    9796.65   1285.70   9797.25    1285.75    9822.09   1285.73    9822.90   1285.71   9824.24
GR  1285.7    9826.16   1285.70   9828.02    1285.63    9830.00   1285.56    9832.39   1285.54   9863.26
GR  1285.5    9864.82   1285.50   9876.13    1285.53    9878.05   1285.39    9889.34   1285.49   9892.34
GR  1285.5    9894.05   1285.60   9895.05    1285.55    9896.06   1285.53    9896.97   1284.89   9918.28
GR  1284.0    9933.93   1284.00   9937.67    1284.00    9945.26   1284.00    9946.79   1284.04   9947.31
GR  1284.6    9959.24   1284.70   9959.51    1284.99    9963.36   1285.64    9966.69   1285.72   9967.24
GR  1284.0    9969.81   1282.31   9970.60    1281.96    9972.50   1280.69    9973.46   1280.31   9974.35
GR  1280.1    9975.43   1280.15   9976.51    1280.15    9978.10   1281.12    9980.70   1282.31   9982.87
GR  1283.4    9986.69   1284.00   9989.60    1284.00   10000.00
1
PROFILE FOR STREAM  CHN128 - LATERAL WEIR SP


PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA


ELEVATION  1278.     1279.     1280.     1281.     1282.     1283.     1284.     1285.     1286.     1287.
    SECNO   CUMDIS

 13582.00     0.  I         .         .         .      WE .         .        L.         .         .         .         .
             20.  I         .         .         .      WE .         .      L  R         .         .         .         .
             40.  I         .         .         .      WE .         .    L    .R        .         .         .         .
             60.  I         .         .         .       E .         .  L      . R       .         .         .         .
             80.  I         .         .         .       WE.         . L       . R       .         .         .         .
            100.  I         .         .         .       WE.         L         .  R      .         .         .         .
 13700.00   120.  I         .         .         .       WE.       L .         .   R     .         .         .         .
            140.  I         .         .         .        WE      L  .         .   R     .         .         .         .
            160.  I         .         .         .        WE      L  .         .  R      .         .         .         .
            180.  CI        .         .         .        WE     L   .         .  R      .         .         .         .
            200.  CI        .         .         .         WE    L   .         .  R      .         .         .         .
            220.  CI        .         .         .         WE   L    .         . R       .         .         .         .
            240.  CI        .         .         .         WE  L     .         . R       .         .         .         .
            260.  CI        .         .         .         .WE L     .         . R       .         .         .         .
            280.  C I       .         .         .         .WEL      .         .R        .         .         .         .
            300.  C I       .         .         .         .WEL      .         .R        .         .         .         .
            320.  C I       .         .         .         . WE      .         .R        .         .         .         .
            340.  C I       .         .         .         .LWE      .         R         .         .         .         .
            360.  C I       .         .         .         .LWE      .         R         .         .         .         .
            380.  C  I      .         .         .         L  WE     .         R         .         .         .         .
            400.  C  I      .         .         .         L  WE     .         R         .         .         .         .
 14000.00   420.  C  I      .         .         .        L.  WE     .        R.         .         .         .         .
            440.  C  I      .         .         .         .L  WE    .        R.         .         .         .         .
            460.  C  I      .         .         .         .  LWE    .        R.         .         .         .         .
            480.  C  I      .         .         .         .   WE    .        R.         .         .         .         .
            500.  C  I      .         .         .         .    WEL  .        R.         .         .         .         .
 14100.00   520.  C  I      .         .         .         .    WE  L.        R.         .         .         .         .
            540.  C  I      .         .         .         .    WE   .L       R.         .         .         .         .
            560.  C   I     .         .         .         .     WE  .  L     R.         .         .         .         .
            580.  C   I     .         .         .         .     WE  .    L   R.         .         .         .         .
            600.  C    I    .         .         .         .     WE  .      L R.         .         .         .         .
 14200.00   620.  C    I    .         .         .         .      WE .        L.         .         .         .         .
            640.  C    I    .         .         .         .      WE .        L.         .         .         .         .
            660.  C    I    .         .         .         .      WE .        L.         .         .         .         .
            680.  C    I    .         .         .         .      WE .        L.         .         .         .         .
            700.  C     I   .         .         .         .       WE.        L.         .         .         .         .
 14300.00   720.  C     I   .         .         .         .       WE.        L.         .         .         .         .
            740.  C     I   .         .         .         .       WE.        L.         .         .         .         .
            760.  C     I   .         .         .         .        WE        L.         .         .         .         .
            780.  C     I   .         .         .         .        WE        L.         .         .         .         .
            800.  C      I  .         .         .         .        WE        L.         .         .         .         .
            820.  C      I  .         .         .         .        W.E       L.         .         .         .         .
            840.  C      I  .         .         .         .         WE       L.         .         .         .         .
            860.  C      I  .         .         .         .         WE       L.         .         .         .         .
            880.  C       I .         .         .         .         WE       L.         .         .         .         .
            900.  C       I .         .         .         .         .WE      L.         .         .         .         .
            920.  C       I .         .         .         .         .WE      L.         .         .         .         .
            940.  C       I .         .         .         .         .WE      L.         .         .         .         .
            960.  C       I .         .         .         .         . WE     L.         .         .         .         .
            980.  C        I.         .         .         .         . WE     L.         .         .         .         .
           1000.  C        I.         .         .         .         . WE     L.         .         .         .         .
 14600.00  1020.  C        I.         .         .         .         . WE     L.         .         .         .         .
           1040.  C        I.         .         .         .         .  WE    L.         .         .         .         .
           1060.  C        I.         .         .         .         .  WE    L.         .         .         .         .
           1080.  C         I         .         .         .         .  WE    L.         .         .         .         .
           1100.  C         I         .         .         .         .  WE    L.         .         .         .         .
           1120.  C         I         .         .         .         .  WE    L.         .         .         .         .
           1140.  C         I         .         .         .         .   E    L.         .         .         .         .
           1160.  C         I         .         .         .         .   WE   L.         .         .         .         .
           1180.  C         I         .         .         .         .   WE   L.         .         .         .         .
           1200.  C         .I        .         .         .         .   WE   L.         .         .         .         .
           1220.  C         .I        .         .         .         .    E   L.         .         .         .         .
           1240.  C         .I        .         .         .         .    E   L.         .         .         .         .
           1260.  C         .I        .         .         .         .    E   L.         .         .         .         .
           1280.  C         .I        .         .         .         .    E   L.         .         .         .         .
           1300.  C         .I        .         .         .         .    WE  L.         .         .         .         .
 14900.00  1320.  C         . I       .         .         .         .     E  L.         .         .         .         .
           1340.  C         . I       .         .         .         .     E  L.         .         .         .         .
           1360.  C         . I       .         .         .         .     E  L.         .         .         .         .
           1380.  C         . I       .         .         .         .     E  L.         .         .         .         .
           1400.  C         . I       .         .         .         .     E  L.         .         .         .         .
           1420.  C         . I       .         .         .         .     E  L.         .         .         .         .
           1440.  C         .  I      .         .         .         .     E  L.         .         .         .         .
           1460.  C         .  I      .         .         .         .     WE L.         .         .         .         .
           1480.  C         .  I      .         .         .         .     WE L.         .         .         .         .
           1500.  C         .  I      .         .         .         .      E L.         .         .         .         .
           1520.  C         .  I      .         .         .         .      E L.         .         .         .         .
           1540.  C         .   I     .         .         .         .      E L.         .         .         .         .
           1560.  C         .   I     .         .         .         .      E L.         .         .         .         .
           1580.  C         .   I     .         .         .         .      E L.         .         .         .         .
           1600.  C         .   I     .         .         .         .      E L.         .         .         .         .
 15200.00  1620.  C         .   I     .         .         .         .      E L.         .         .         .         .
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          1640.  C        .   I    .         .         .         .      E L.        .         .         .         .
          1660.  C        .   I    .         .         .         .      WEL.        .         .         .         .
          1680.  C        .   I    .         .         .         .       EL.        .         .         .         .
          1700.  C        .   I    .         .         .         .       EL.        .         .         .         .
          1720.  C        .   I    .         .         .         .       EL.        .         .         .         .
          1740.  C        .    I   .         .         .         .       EL.        .         .         .         .
          1760.  C        .    I   .         .         .         .       WE.        .         .         .         .
          1780.  C        .    I   .         .         .         .       WE.        .         .         .         .
          1800.  C        .    I   .         .         .         .        E.        .         .         .         .
          1820.  C        .    I   .         .         .         .        E.        .         .         .         .
          1840.  C        .    I   .         .         .         .        E.        .         .         .         .
          1860.  C        .     I  .         .         .         .        E.        .         .         .         .
          1880.  C        .     I  .         .         .         .        WE        .         .         .         .
          1900.  C        .     I  .         .         .         .        WE        .         .         .         .
 15500.00 1920.  C        .     I  .         .         .         .        LE        .         .         .         .
          1940.  C        .     I  .         .         .         .        LWE       .         .         .         .
          1960.  C        .      I .         .         .         .        LWE       .         .         .         .
          1980.  C        .      I .         .         .         .        L.WE      .         .         .         .
          2000.  C        .      I .         .         .         .        L.W E     .         .         .         .
          2020.  C        .      I .         .         .         .        L. WE     .         .         .         .
          2040.  C        .       I.         .         .         .        L. W E    .         .         .         .
          2060.  C        .       I.         .         .         .        L.  W E   .         .         .         .
          2080.  C        .       I.         .         .         .        L.  W E   .         .         .         .
          2100.  C        .       I.         .         .         .        L.   W E  .         .         .         .
          2120.  C        .       I.         .         .         .        L.   W  E .         .         .         .
          2140.  C        .        I         .         .         .        L.    W E .         .         .         .
          2160.  C        .        I         .         .         .        L.    W  E.         .         .         .
 15750.00 2180.  C        .        I         .         .         .        L.    W  E.         .         .         .
1
   16OCT00      12:49:21                                                                                    PAGE    6
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THIS RUN EXECUTED 16OCT00 12:49:22

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*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
*************************************
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	13582.000	.00	.00	.00	1278.10	57.53	1281.79	.00	1281.85	12.28	1.91	30.16	16.42
	13700.000	118.00	.00	.00	1278.11	57.53	1281.94	.00	1282.03	17.21	2.34	24.54	13.87
*	14000.000	300.00	.00	.00	1278.40	94.44	1282.44	.00	1282.54	16.80	2.56	36.88	23.04
	14100.000	100.00	.00	.00	1278.40	114.07	1282.59	.00	1282.70	15.75	2.67	42.75	28.75
	14200.000	100.00	.00	.00	1278.60	114.07	1282.75	.00	1282.86	15.01	2.64	43.13	29.44
	14300.000	100.00	.00	.00	1278.68	114.07	1282.90	.00	1283.00	14.37	2.60	43.89	30.10
	14600.000	300.00	.00	.00	1279.00	114.07	1283.34	.00	1283.45	15.15	2.64	43.23	29.31
*	14900.000	300.00	.00	.00	1279.25	114.07	1283.66	.00	1283.68	4.30	.98	115.86	54.99
	15200.000	300.00	.00	.00	1279.54	114.07	1283.81	.00	1283.83	6.18	1.31	86.86	45.90
	15500.000	300.00	.00	.00	1279.82	114.95	1284.05	.00	1284.10	12.61	1.79	66.89	32.37
	15750.000	250.00	.00	.00	1280.10	300.00	1284.63	.00	1284.92	48.05	4.46	78.20	43.28

1
16OCT00 12:49:21 PAGE 7

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	13582.000	57.53	1281.79	.00	.00	-2.21	19.23	.00
	13700.000	57.53	1281.94	.00	.15	.00	13.97	118.00
*	14000.000	94.44	1282.44	.00	.50	.00	18.54	300.00
	14100.000	114.07	1282.59	.00	.16	.00	19.67	100.00
	14200.000	114.07	1282.75	.00	.16	.00	19.40	100.00
	14300.000	114.07	1282.90	.00	.15	.00	19.59	100.00
	14600.000	114.07	1283.34	.00	.44	.00	19.58	300.00
*	14900.000	114.07	1283.66	.00	.32	.00	96.71	300.00
	15200.000	114.07	1283.81	.00	.15	.00	61.38	300.00
	15500.000	114.95	1284.05	.00	.24	.00	170.53	300.00
	15750.000	300.00	1284.63	.00	.58	.00	67.61	250.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=  14000.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  14900.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

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1*******************************************
 *  HEC-2 WATER SURFACE PROFILES            *
 *                                          *
 *  Version   4.6.2;  May 1991              *
 *                                          *
 *  RUN DATE    16OCT00    TIME   12:29:02  *
 *******************************************
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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*          (916) 756-1104               *
*****************************************
```

```
X     X  XXXXXXX   XXXXX            XXXXX
X     X  X       X     X          X     X
X     X  X       X                       X
XXXXXXX  XXXX    X         XXXXX    XXXXX
X     X  X       X                 X
X     X  X       X     X           X
X     X  XXXXXXX  XXXXX            XXXXXXX
```


THIS RUN EXECUTED 16OCT00 12:29:02

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*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
*************************************
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SPLIT FLOW BEING PERFORMED

SF SPLIT FLOW PROBLEM

```
JC SPLIT FLOW PROBLEM
JP     0       0       0       0       0

TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13582    AND    13700
WS     2   13582   13700      -1      3.4
WC       1284.00  118.00 1282.90

TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13700    AND    14000
WS     2   13700   14000      -1      3.4
WC       1282.90  300.00 1282.00

TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14000    AND    14100
WS     2   14000   14100      -1      3.4
WC       1282.00  100.00 1283.00

TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14100    AND    14200
WS     2   14100   14200      -1      3.4
WC       1283.00  100.00 1284.00

TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14200    AND    14300
WS     2   14200   14300      -1      3.4
WC       1284.00  100.00 1284.00

TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14900    AND    1520
WS     2   14900   15200      -1      3.4
WC       1284.00  300.00 1284.00

TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15200    AND    1550
WS     2   15200   15500      -1      3.4
WC       1284.00  300.00 1284.00
```



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TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15500    AND    1575
WS     2   15500   15750      -1      3.4
WC       1284.00  250.00 1284.00
```



```
T1      HEC-2 Input   Data    file:   SPLIT    FLOW    SOLUTION
T2      CHN128 - LATERAL WEIR SPLIT FLOW Q= 205 CFS
T3      CHN128 - LATERAL WEIR SPLIT FLOW Q= 205 CFS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         6         0         0   .001237         0         0         0   1284.00         0

J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

    -10       -10

QT        5     89.00    115.00    140.00    155.00    205.00
NC   0.0450    0.0350    0.0350       0.1       0.3
X1    13582        37   9964.73  10000.00      0.00      0.00      0.00
```

GR	1284.0	9940.05	1283.98	9940.08	1283.99	9940.10	1283.99	9940.11	1283.99	9940.25
GR	1284.0	9940.26	1283.99	9940.28	1283.99	9940.34	1283.99	9940.41	1283.99	9940.46
GR	1284.0	9940.48	1283.99	9940.50	1283.98	9940.53	1283.98	9940.60	1283.97	9940.74
GR	1284.0	9940.95	1283.96	9941.17	1284.00	9941.79	1284.00	9942.65	1284.00	9943.30
GR	1284.0	9946.51	1284.00	9948.10	1284.00	9949.62	1284.00	9952.57	1284.00	9954.57
GR	1284.0	9964.73	1283.02	9968.55	1282.22	9971.25	1282.00	9972.08	1280.00	9979.60
GR	1278.1	9983.20	1280.00	9986.24	1281.30	9991.28	1282.00	9992.45	1282.93	9993.94
GR	1284.0	9995.82	1284.00	10000.00						
X1	13700	16	9967.79	10000.00	118.00	118.00	118.00			
GR	1282.9	9967.79	1282.60	9968.89	1282.20	9970.83	1282.00	9971.43	1280.75	9974.60
GR	1280.0	9976.34	1278.11	9979.33	1280.00	9982.10	1281.36	9984.58	1282.00	9985.65
GR	1282.2	9985.98	1284.00	9989.37	1284.47	9999.68	1284.47	9999.75	1284.48	9999.94
GR	1284.5	10000.00								
X1	14000	10	9963.80	10000.00	300.00	300.00	300.00			
GR	1282.0	9963.80	1282.00	9965.57	1281.43	9967.11	1278.40	9974.60	1280.00	9977.92
GR	1280.7	9979.14	1282.00	9981.63	1283.10	9983.42	1284.00	9985.11	1284.00	10000.00
X1	14100	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1283.0	9962.24	1282.46	9965.05	1281.76	9966.82	1280.68	9969.42	1279.76	9971.09
GR	1278.4	9975.00	1279.76	9978.71	1279.97	9979.20	1281.16	9981.30	1281.62	9982.20
GR	1281.8	9982.49	1282.46	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14200	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1284.0	9962.24	1282.58	9965.05	1281.88	9966.82	1280.80	9969.42	1279.88	9971.09
GR	1278.6	9975.00	1279.88	9978.71	1280.09	9979.20	1281.28	9981.30	1281.74	9982.20
GR	1281.9	9982.49	1282.58	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14300	58	9962.24	10000.00	100.00	100.00	100.00			
GR	1286.7	9200.00	1286.55	9214.47	1286.24	9247.77	1286.22	9249.93	1286.18	9254.29
GR	1286.2	9255.76	1286.16	9257.27	1286.15	9257.81	1286.00	9277.62	1285.86	9285.09
GR	1285.7	9304.74	1285.65	9329.46	1285.65	9336.21	1285.54	9352.68	1285.53	9362.72
GR	1285.4	9373.11	1285.39	9384.32	1285.40	9396.09	1285.24	9405.27	1285.10	9415.00
GR	1285.0	9424.76	1284.38	9525.97	1284.38	9542.27	1284.38	9567.22	1284.38	9601.08
GR	1284.4	9629.04	1284.38	9656.22	1284.34	9659.30	1284.33	9660.48	1284.33	9663.77
GR	1284.3	9667.99	1284.28	9673.37	1284.24	9680.25	1284.18	9689.49	1284.10	9700.00
GR	1284.1	9702.38	1284.00	9713.05	1284.00	9721.01	1284.00	9756.39	1284.00	9768.53
GR	1284.0	9771.25	1284.00	9862.26	1284.00	9862.54	1284.00	9863.29	1284.00	9962.24

GR	1282.7	9965.05	1282.00	9966.82	1280.92	9969.42	1280.00	9971.09	1278.68	9975.00
GR	1280.0	9978.71	1280.21	9979.20	1281.40	9981.30	1281.86	9982.20	1282.00	9982.49
GR	1282.7	9983.79	1284.00	9986.52	1284.00	10000.00				
X1	14600	48	9950.37	10000.00	300.00	300.00	300.00			
GR	1287.0	9200.00	1286.35	9319.42	1286.34	9322.88	1286.30	9331.31	1286.24	9341.79
GR	1286.2	9354.73	1286.09	9370.67	1286.00	9388.44	1285.97	9396.61	1285.90	9423.66
GR	1285.8	9452.72	1285.76	9471.57	1284.98	9550.29	1284.88	9565.91	1284.80	9575.21
GR	1284.7	9583.70	1284.64	9597.36	1284.55	9609.89	1284.49	9620.27	1284.45	9627.64
GR	1284.4	9636.14	1284.40	9645.58	1284.40	9655.79	1284.39	9665.38	1284.36	9674.53
GR	1284.3	9683.42	1284.28	9691.86	1284.23	9699.84	1284.23	9700.00	1284.09	9720.90
GR	1284.0	9734.06	1284.00	9734.48	1284.00	9816.10	1284.00	9828.24	1284.00	9950.37
GR	1283.6	9963.68	1283.43	9964.04	1282.00	9967.35	1280.49	9970.86	1280.00	9971.94
GR	1279.0	9974.45	1280.00	9976.90	1280.62	9978.11	1282.00	9980.99	1283.04	9983.19
GR	1284.0	9985.23	1284.00	9996.17	1284.00	10000.00				
X1	14900	40	9867.14	10000.00	300.00	300.00	300.00			
GR	1288.0	9100.00	1288.00	9106.54	1288.00	9113.03	1288.00	9113.89	1287.79	9142.77
GR	1287.1	9246.69	1286.15	9379.98	1286.14	9381.89	1286.00	9403.34	1285.85	9435.98
GR	1285.7	9468.11	1285.61	9487.09	1285.57	9498.84	1285.55	9505.90	1284.18	9649.12
GR	1284.1	9654.29	1284.08	9663.19	1284.02	9690.76	1284.00	9692.87	1284.00	9693.17
GR	1284.0	9696.73	1284.00	9700.00	1284.00	9722.57	1284.00	9737.75	1284.00	9791.21
GR	1284.0	9867.14	1283.91	9872.09	1283.57	9893.26	1283.45	9901.09	1282.29	9951.49
GR	1282.0	9963.88	1281.74	9964.55	1280.00	9968.47	1279.25	9971.84	1280.00	9975.21
GR	1280.4	9976.12	1282.00	9980.08	1282.67	9981.73	1284.00	9985.10	1284.00	10000.00
X1	15200	44	9898.92	10000.00	300.00	300.00	300.00			
GR	1287.8	9100.00	1287.51	9150.46	1287.41	9170.08	1287.28	9197.12	1287.11	9232.27
GR	1286.9	9279.37	1286.53	9344.87	1286.03	9438.34	1286.00	9444.80	1285.99	9445.78
GR	1286.0	9445.89	1285.99	9446.03	1285.99	9446.18	1285.99	9446.61	1285.99	9446.73
GR	1286.0	9446.87	1285.98	9447.20	1285.71	9485.26	1284.16	9700.00	1284.07	9712.60
GR	1284.0	9721.93	1284.00	9724.33	1284.00	9760.53	1284.00	9898.92	1283.91	9920.86
GR	1283.9	9925.25	1283.67	9930.34	1283.18	9944.66	1282.83	9952.63	1282.88	9953.92
GR	1282.8	9956.45	1282.62	9960.54	1282.00	9967.35	1281.38	9968.90	1280.72	9971.05
GR	1280.0	9972.42	1279.54	9975.05	1280.00	9977.81	1280.37	9978.85	1280.95	9980.52
GR	1282.0	9983.53	1282.90	9986.13	1284.00	9989.23	1284.00	10000.00		
X1	15500	74	9952.04	10000.00	300.00	300.00	300.00			
GR	1287.7	9100.00	1286.98	9170.15	1286.62	9205.88	1286.47	9220.79	1286.40	9228.89
GR	1286.3	9234.06	1286.32	9237.59	1286.30	9240.12	1286.28	9242.28	1286.27	9244.17
GR	1286.3	9245.88	1286.17	9257.27	1286.15	9260.35	1286.14	9262.52	1286.00	9278.11
GR	1285.9	9281.92	1285.94	9284.29	1285.94	9288.93	1285.97	9298.88	1286.00	9309.20
GR	1286.0	9334.48	1286.00	9344.49	1286.00	9349.76	1286.00	9351.02	1286.00	9351.94
GR	1285.2	9492.99	1284.39	9635.88	1284.25	9660.73	1284.16	9677.43	1284.11	9686.14
GR	1284.1	9688.29	1284.09	9689.51	1284.09	9690.11	1284.09	9690.80	1284.09	9691.56
GR	1284.1	9693.72	1284.08	9693.98	1284.08	9694.12	1284.05	9699.80	1284.05	9700.00
GR	1284.0	9700.72	1284.05	9701.39	1284.05	9701.71	1284.05	9701.89	1284.04	9702.06
GR	1284.0	9702.43	1284.04	9702.67	1284.04	9703.27	1284.04	9703.43	1284.04	9703.93
GR	1284.0	9704.11	1284.05	9705.14	1284.05	9705.30	1284.05	9705.32	1284.06	9705.35
GR	1284.1	9705.43	1284.08	9705.69	1284.09	9705.84	1284.11	9706.11	1284.12	9706.29
GR	1284.1	9706.64	1284.00	9952.04	1282.38	9970.04	1282.00	9970.60	1280.38	9973.46
GR	1280.0	9974.35	1279.82	9975.43	1280.00	9976.51	1280.50	9978.10	1281.33	9980.70
GR	1282.0	9982.87	1283.13	9986.69	1284.00	9989.60	1284.00	10000.00		

X1	15750	98	9969.81	10000.00	250.00	250.00	250.00			
GR	1288.3	9000.00	1288.00	9006.08	1288.00	9010.63	1288.00	9011.99	1288.00	9047.38
GR	1288.0	9066.66	1286.80	9236.69	1286.71	9248.37	1286.64	9258.28	1286.53	9272.90
GR	1286.4	9293.19	1286.18	9325.24	1286.17	9327.91	1286.17	9330.25	1286.17	9332.11
GR	1286.2	9333.55	1286.17	9333.84	1286.12	9338.63	1286.04	9346.70	1286.00	9352.31
GR	1286.0	9353.46	1286.00	9354.16	1286.00	9362.89	1286.00	9364.71	1286.00	9366.26
GR	1286.0	9367.67	1286.00	9369.34	1286.00	9371.21	1286.00	9376.48	1286.00	9388.42

GR	1286.0	9396.78	1286.00	9415.14	1286.00	9415.50	1286.00	9421.19	1286.00	9430.14
GR	1286.0	9441.01	1286.00	9441.34	1286.00	9451.57	1285.65	9515.43	1285.61	9544.80
GR	1285.6	9566.53	1285.63	9577.15	1285.64	9583.15	1285.63	9588.96	1285.61	9601.37
GR	1285.6	9609.69	1285.63	9631.06	1285.63	9637.02	1285.65	9655.63	1285.65	9662.24
GR	1285.9	9738.73	1285.90	9742.64	1285.83	9745.00	1285.76	9762.03	1285.74	9772.19
GR	1285.8	9796.65	1285.70	9797.25	1285.75	9822.09	1285.73	9822.90	1285.71	9824.24
GR	1285.7	9826.16	1285.70	9828.02	1285.63	9830.00	1285.56	9832.39	1285.54	9863.26
GR	1285.5	9864.82	1285.50	9876.13	1285.53	9878.05	1285.39	9889.34	1285.49	9892.34
GR	1285.5	9894.05	1285.60	9895.05	1285.55	9896.06	1285.53	9896.97	1284.89	9918.28
GR	1284.0	9933.93	1284.00	9937.67	1284.00	9945.26	1284.00	9946.79	1284.04	9947.31
GR	1284.6	9959.24	1284.70	9959.51	1284.99	9963.36	1285.64	9966.69	1285.72	9967.24
GR	1284.0	9969.81	1282.31	9970.60	1281.96	9972.50	1280.69	9973.46	1280.31	9974.35
GR	1280.1	9975.43	1280.15	9976.51	1280.15	9978.10	1281.12	9980.70	1282.31	9982.87
GR	1283.4	9986.69	1284.00	9989.60	1284.00	10000.00				

1

PROFILE FOR STREAM CHN128 - LATERAL WEIR SP

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION  1278.     1279.     1280.     1281.     1282.     1283.     1284.     1285.     1286.     1287.
    SECNO   CUMDIS

 13582.00     0.  I         .         .         .     WE  .         .        L.         .         .         .         .
             20.  I         .         .         .      E  .         .      L  R         .         .         .         .
             40.  I         .         .         .      WE .         .    L    .R        .         .         .         .
             60.  I         .         .         .      WE .         .  L      . R       .         .         .         .
             80.  I         .         .         .      WE .         . L       . R       .         .         .         .
            100.  I         .         .         .       WE.         L         .  R      .         .         .         .
 13700.00   120.  I         .         .         .       WE.       L .         .   R     .         .         .         .
            140.  I         .         .         .       WE.      L  .         .   R     .         .         .         .
            160.  I         .         .         .        E.      L  .         .  R      .         .         .         .
            180.  CI        .         .         .        WE     L   .         .  R      .         .         .         .
            200.  CI        .         .         .        WE     L   .         .  R      .         .         .         .
            220.  CI        .         .         .         E    L    .         . R       .         .         .         .
            240.  CI        .         .         .         WE  L     .         . R       .         .         .         .
            260.  CI        .         .         .         WE  L     .         . R       .         .         .         .
            280.  C I       .         .         .         .E L      .         .R        .         .         .         .
            300.  C I       .         .         .         .WEL      .         .R        .         .         .         .
            320.  C I       .         .         .         .WE       .         .R        .         .         .         .
            340.  C I       .         .         .         .WE       .         R         .         .         .         .
            360.  C I       .         .         .         .LWE      .         R         .         .         .         .
            380.  C  I      .         .         .         L WE      .         R         .         .         .         .
            400.  C  I      .         .         .         L WE      .        R.         .         .         .         .
 14000.00   420.  C  I      .         .         .        L.  WE     .        R.         .         .         .         .
            440.  C  I      .         .         .         .L WE     .        R.         .         .         .         .
            460.  C  I      .         .         .         .  WE     .        R.         .         .         .         .
            480.  C  I      .         .         .         .   WE    .        R.         .         .         .         .
            500.  C  I      .         .         .         .   WE L  .        R.         .         .         .         .
 14100.00   520.  C  I      .         .         .         .   WE   L.        R.         .         .         .         .
            540.  C  I      .         .         .         .    WE   .L       R.         .         .         .         .
            560.  C   I     .         .         .         .    WE   .  L     R.         .         .         .         .
            580.  C   I     .         .         .         .    WE   .    L   R.         .         .         .         .
            600.  C    I    .         .         .         .     WE  .      L R.         .         .         .         .
 14200.00   620.  C    I    .         .         .         .     WE  .        L.         .         .         .         .
            640.  C    I    .         .         .         .     WE  .        L.         .         .         .         .
            660.  C    I    .         .         .         .     W E .        L.         .         .         .         .
            680.  C    I    .         .         .         .      WE .        L.         .         .         .         .
            700.  C     I   .         .         .         .      WE .        L.         .         .         .         .
 14300.00   720.  C     I   .         .         .         .      WE .        L.         .         .         .         .
            740.  C     I   .         .         .         .       WE.        L.         .         .         .         .
            760.  C     I   .         .         .         .       WE.        L.         .         .         .         .
            780.  C     I   .         .         .         .       WE.        L.         .         .         .         .
            800.  C      I  .         .         .         .        WE        L.         .         .         .         .
            820.  C      I  .         .         .         .        WE        L.         .         .         .         .
            840.  C      I  .         .         .         .        WE        L.         .         .         .         .
            860.  C      I  .         .         .         .        W.E       L.         .         .         .         .
            880.  C       I .         .         .         .         WE       L.         .         .         .         .
            900.  C       I .         .         .         .         WE       L.         .         .         .         .
            920.  C       I .         .         .         .         WE       L.         .         .         .         .
            940.  C       I .         .         .         .         .WE      L.         .         .         .         .
            960.  C       I .         .         .         .         .WE      L.         .         .         .         .
            980.  C        I.         .         .         .         .WE      L.         .         .         .         .
           1000.  C        I.         .         .         .         . WE     L.         .         .         .         .
 14600.00  1020.  C        I.         .         .         .         . WE     L.         .         .         .         .
           1040.  C        I.         .         .         .         . WE     L.         .         .         .         .
           1060.  C        I.         .         .         .         . WE     L.         .         .         .         .
           1080.  C         I         .         .         .         . WE     L.         .         .         .         .
           1100.  C         I         .         .         .         .  WE    L.         .         .         .         .
           1120.  C         I         .         .         .         .  WE    L.         .         .         .         .
           1140.  C         I         .         .         .         .  WE    L.         .         .         .         .
           1160.  C         I         .         .         .         .  WE    L.         .         .         .         .
           1180.  C         I         .         .         .         .   E    L.         .         .         .         .
           1200.  C         .I        .         .         .         .   E    L.         .         .         .         .
           1220.  C         .I        .         .         .         .   E    L.         .         .         .         .
           1240.  C         .I        .         .         .         .   WE   L.         .         .         .         .
           1260.  C         .I        .         .         .         .   WE   L.         .         .         .         .
           1280.  C         .I        .         .         .         .    E   L.         .         .         .         .
           1300.  C         .I        .         .         .         .    E   L.         .         .         .         .
 14900.00  1320.  C         . I       .         .         .         .    E   L.         .         .         .         .
           1340.  C         . I       .         .         .         .    E   L.         .         .         .         .
           1360.  C         . I       .         .         .         .    E   L.         .         .         .         .
           1380.  C         . I       .         .         .         .    WE  L.         .         .         .         .
           1400.  C         . I       .         .         .         .     E  L.         .         .         .         .
           1420.  C         . I       .         .         .         .     E  L.         .         .         .         .
           1440.  C         .  I      .         .         .         .     E  L.         .         .         .         .
           1460.  C         .  I      .         .         .         .     E  L.         .         .         .         .
           1480.  C         .  I      .         .         .         .     E  L.         .         .         .         .
           1500.  C         .  I      .         .         .         .     E  L.         .         .         .         .
           1520.  C         .  I      .         .         .         .     E  L.         .         .         .         .
           1540.  C         .   I     .         .         .         .     E  L.         .         .         .         .
           1560.  C         .   I     .         .         .         .     WE L.         .         .         .         .
           1580.  C         .   I     .         .         .         .     WE L.         .         .         .         .
           1600.  C         .   I     .         .         .         .      E L.         .         .         .         .
 15200.00  1620.  C         .   I     .         .         .         .      E L.         .         .         .         .
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          1640.  C        .   I    .        .        .        .    E L.        .        .        .        .
          1660.  C        .   I    .        .        .        .    E L.        .        .        .        .
          1680.  C        .   I    .        .        .        .    E L.        .        .        .        .
          1700.  C        .   I    .        .        .        .    WEL.        .        .        .        .
          1720.  C        .   I    .        .        .        .    WEL.        .        .        .        .
          1740.  C        .    I   .        .        .        .     EL.        .        .        .        .
          1760.  C        .    I   .        .        .        .     EL.        .        .        .        .
          1780.  C        .    I   .        .        .        .     EL.        .        .        .        .
          1800.  C        .    I   .        .        .        .     EL.        .        .        .        .
          1820.  C        .    I   .        .        .        .     WE.        .        .        .        .
          1840.  C        .    I   .        .        .        .     WE.        .        .        .        .
          1860.  C        .     I  .        .        .        .      E.        .        .        .        .
          1880.  C        .     I  .        .        .        .      E.        .        .        .        .
          1900.  C        .     I  .        .        .        .      E.        .        .        .        .
 15500.00 1920.  C        .     I  .        .        .        .     WE         .        .        .        .
          1940.  C        .     I  .        .        .        .     WE         .        .        .        .
          1960.  C        .      I .        .        .        .     LE         .        .        .        .
          1980.  C        .      I .        .        .        .     LWE        .        .        .        .
          2000.  C        .      I .        .        .        .     L.E        .        .        .        .
          2020.  C        .      I .        .        .        .     L.WE       .        .        .        .
          2040.  C        .       I.        .        .        .     L.WE       .        .        .        .
          2060.  C        .       I.        .        .        .     L. WE      .        .        .        .
          2080.  C        .       I.        .        .        .     L. WE      .        .        .        .
          2100.  C        .       I.        .        .        .     L. W E     .        .        .        .
          2120.  C        .       I.        .        .        .     L.  WE     .        .        .        .
          2140.  C        .        I        .        .        .     L.  W E    .        .        .        .
          2160.  C        .        I        .        .        .     L.   WE    .        .        .        .
 15750.00 2180.  C        .        I        .        .        .     L.   WE    .        .        .        .
1
   16OCT00      12:29:02                                                                                PAGE    6
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THIS RUN EXECUTED 16OCT00 12:29:02

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*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	13582.000	.00	.00	.00	1278.10	55.11	1281.74	.00	1281.80	12.23	1.88	29.27	15.76
	13700.000	118.00	.00	.00	1278.11	55.11	1281.89	.00	1281.98	16.96	2.31	23.89	13.38
*	14000.000	300.00	.00	.00	1278.40	89.72	1282.38	.00	1282.48	16.46	2.50	35.87	22.11
	14100.000	100.00	.00	.00	1278.40	110.31	1282.53	.00	1282.64	15.70	2.65	41.59	27.84
	14200.000	100.00	.00	.00	1278.60	110.31	1282.69	.00	1282.80	15.09	2.63	42.00	28.39
	14300.000	100.00	.00	.00	1278.68	110.31	1282.84	.00	1282.95	14.40	2.58	42.76	29.06
	14600.000	300.00	.00	.00	1279.00	110.31	1283.28	.00	1283.39	15.18	2.62	42.12	28.31
*	14900.000	300.00	.00	.00	1279.25	110.31	1283.61	.00	1283.62	4.46	1.00	110.76	52.26
	15200.000	300.00	.00	.00	1279.54	110.31	1283.76	.00	1283.79	6.32	1.32	83.88	43.89
*	15500.000	300.00	.00	.00	1279.82	110.31	1284.01	.00	1284.05	12.99	1.78	61.96	30.61
	15750.000	250.00	.00	.00	1280.10	205.00	1284.47	.00	1284.64	31.12	3.41	67.54	36.75

1
16OCT00 12:29:02 PAGE 7

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	13582.000	55.11	1281.74	.00	.00	-2.26	18.98	.00
	13700.000	55.11	1281.89	.00	.15	.00	13.77	118.00
*	14000.000	89.72	1282.38	.00	.49	.00	18.45	300.00
	14100.000	110.31	1282.53	.00	.15	.00	19.25	100.00
	14200.000	110.31	1282.69	.00	.16	.00	19.17	100.00
	14300.000	110.31	1282.84	.00	.15	.00	19.34	100.00
	14600.000	110.31	1283.28	.00	.44	.00	19.33	300.00
*	14900.000	110.31	1283.61	.00	.33	.00	93.23	300.00
	15200.000	110.31	1283.76	.00	.15	.00	60.16	300.00
*	15500.000	110.31	1284.01	.00	.25	.00	62.13	300.00
	15750.000	205.00	1284.47	.00	.46	.00	61.53	250.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=  14000.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  14900.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  15500.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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1*********************************************
 *  HEC-2 WATER SURFACE PROFILES             *
 *                                           *
 *  Version   4.6.2;  May 1991               *
 *                                           *
 *  RUN DATE    16OCT00    TIME   12:32:06   *
 *********************************************
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*************************************
*  U.S. ARMY CORPS OF ENGINEERS     *
*  HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D       *
*  DAVIS, CALIFORNIA 95616-4687     *
*          (916) 756-1104           *
*************************************
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X     X  XXXXXXX  XXXXX            XXXXX
X     X  X       X    X           X    X
X     X  X       X                     X
XXXXXXX  XXXX    X         XXXXX   XXXXX
X     X  X       X                X
X     X  X       X    X           X
X     X  XXXXXXX  XXXXX            XXXXXXX
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1
   16OCT00      12:32:06                                                                    PAGE    1
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                                                                THIS RUN EXECUTED 16OCT00    12:32:06
 *************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 *************************************


 SPLIT FLOW BEING PERFORMED

 SF SPLIT FLOW PROBLEM

 JC SPLIT FLOW PROBLEM
 JP     0       0       0       0        0

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13582    AND    13700
 WS     2   13582   13700       -1      3.4
 WC       1284.00  118.00 1282.90

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13700    AND    14000
 WS     2   13700   14000       -1      3.4
 WC       1282.90  300.00 1282.00

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14000    AND    14100
 WS     2   14000   14100       -1      3.4
 WC       1282.00  100.00 1283.00

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14100    AND    14200
 WS     2   14100   14200       -1      3.4
 WC       1283.00  100.00 1284.00

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14200    AND    14300
 WS     2   14200   14300       -1      3.4
 WC       1284.00  100.00 1284.00

 TW     RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14900    AND     1520
 WS     2   14900   15200       -1      3.4
 WC       1284.00  300.00 1284.00

 TW     RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15200    AND     1550
 WS     2   15200   15500       -1      3.4
 WC       1284.00  300.00 1284.00
1
   16OCT00      12:32:06                                                                    PAGE    2


 TW     RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15500    AND     1575
 WS     2   15500   15750       -1      3.4
 WC       1284.00  250.00 1284.00
1
   16OCT00      12:32:06                                                                    PAGE    3


 T1      HEC-2 Input   Data    file:   SPLIT    FLOW    SOLUTION
 T2      CHN128 - LATERAL WEIR SPLIT FLOW Q= 155 CFS
 T3      CHN128 - LATERAL WEIR SPLIT FLOW Q= 155 CFS

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         5         0         0   .001237         0         0         0   1284.00         0

 J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

    -10       -10

 QT        5      89.00     115.00     140.00     155.00     205.00
 NC   0.0450     0.0350     0.0350        0.1        0.3
 X1    13582         37    9964.73   10000.00       0.00       0.00       0.00
```

GR	1284.0	9940.05	1283.98	9940.08	1283.99	9940.10	1283.99	9940.11	1283.99	9940.13
GR	1284.0	9940.26	1283.99	9940.28	1283.99	9940.34	1283.99	9940.41	1283.99	9940.46
GR	1284.0	9940.48	1283.99	9940.50	1283.98	9940.53	1283.98	9940.60	1283.97	9940.74
GR	1284.0	9940.95	1283.96	9941.17	1284.00	9941.79	1284.00	9942.65	1284.00	9943.30
GR	1284.0	9946.51	1284.00	9948.10	1284.00	9949.62	1284.00	9952.57	1284.00	9954.57
GR	1284.0	9964.73	1283.02	9968.55	1282.22	9971.25	1282.00	9972.08	1280.00	9979.60
GR	1278.1	9983.20	1280.00	9986.24	1281.30	9991.28	1282.00	9992.45	1282.93	9993.94
GR	1284.0	9995.82	1284.00	10000.00						
X1	13700	16	9967.79	10000.00	118.00	118.00	118.00			
GR	1282.9	9967.79	1282.60	9968.89	1282.20	9970.83	1282.00	9971.43	1280.75	9974.60
GR	1280.0	9976.34	1278.11	9979.33	1280.00	9982.10	1281.36	9984.58	1282.00	9985.65
GR	1282.2	9985.98	1284.00	9989.37	1284.47	9999.68	1284.47	9999.75	1284.48	9999.94
GR	1284.5	10000.00								
X1	14000	10	9963.80	10000.00	300.00	300.00	300.00			
GR	1282.0	9963.80	1282.00	9965.57	1281.43	9967.11	1278.40	9974.60	1280.00	9977.92
GR	1280.7	9979.14	1282.00	9981.63	1283.10	9983.42	1284.00	9985.11	1284.00	10000.00
X1	14100	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1283.0	9962.24	1282.46	9965.05	1281.76	9966.82	1280.68	9969.42	1279.76	9971.09
GR	1278.4	9975.00	1279.76	9978.71	1279.97	9979.20	1281.16	9981.30	1281.62	9982.20
GR	1281.8	9982.49	1282.46	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14200	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1284.0	9962.24	1282.58	9965.05	1281.88	9966.82	1280.80	9969.42	1279.88	9971.09
GR	1278.6	9975.00	1279.88	9978.71	1280.09	9979.20	1281.28	9981.30	1281.74	9982.20
GR	1281.9	9982.49	1282.58	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14300	58	9962.24	10000.00	100.00	100.00	100.00			
GR	1286.7	9200.00	1286.55	9214.47	1286.24	9247.77	1286.22	9249.93	1286.18	9254.29
GR	1286.2	9255.76	1286.16	9257.27	1286.15	9257.81	1286.00	9277.62	1285.86	9285.09
GR	1285.7	9304.74	1285.65	9329.46	1285.65	9336.21	1285.54	9352.68	1285.53	9362.72
GR	1285.4	9373.11	1285.39	9384.32	1285.40	9396.09	1285.24	9405.27	1285.10	9415.00
GR	1285.0	9424.76	1284.38	9525.97	1284.38	9542.27	1284.38	9567.22	1284.38	9601.08
GR	1284.4	9629.04	1284.38	9656.22	1284.34	9659.30	1284.33	9660.48	1284.33	9663.77
GR	1284.3	9667.99	1284.28	9673.37	1284.24	9680.25	1284.18	9689.49	1284.10	9700.00
GR	1284.1	9702.38	1284.00	9713.05	1284.00	9721.01	1284.00	9756.39	1284.00	9768.53
GR	1284.0	9771.25	1284.00	9862.26	1284.00	9862.54	1284.00	9863.29	1284.00	9962.24

GR	1282.7	9965.05	1282.00	9966.82	1280.92	9969.42	1280.00	9971.09	1278.68	9975.00
GR	1280.0	9978.71	1280.21	9979.20	1281.40	9981.30	1281.86	9982.20	1282.00	9982.49
GR	1282.7	9983.79	1284.00	9986.52	1284.00	10000.00				
X1	14600	48	9950.37	10000.00	300.00	300.00	300.00			
GR	1287.0	9200.00	1286.35	9319.42	1286.34	9322.88	1286.30	9331.31	1286.24	9341.79
GR	1286.2	9354.73	1286.09	9370.67	1286.00	9388.44	1285.97	9396.61	1285.90	9423.66
GR	1285.8	9452.72	1285.76	9471.57	1284.98	9550.29	1284.88	9565.91	1284.80	9575.21
GR	1284.7	9583.70	1284.64	9597.36	1284.55	9609.89	1284.49	9620.27	1284.45	9627.64
GR	1284.4	9636.14	1284.40	9645.58	1284.40	9655.79	1284.39	9665.38	1284.36	9674.53
GR	1284.3	9683.42	1284.28	9691.86	1284.23	9699.84	1284.23	9700.00	1284.09	9720.90
GR	1284.0	9734.06	1284.00	9734.48	1284.00	9816.10	1284.00	9828.24	1284.00	9950.37
GR	1283.6	9963.68	1283.43	9964.04	1282.00	9967.35	1280.49	9970.86	1280.00	9971.94
GR	1279.0	9974.45	1280.00	9976.90	1280.62	9978.11	1282.00	9980.99	1283.04	9983.19
GR	1284.0	9985.23	1284.00	9996.17	1284.00	10000.00				
X1	14900	40	9867.14	10000.00	300.00	300.00	300.00			
GR	1288.0	9100.00	1288.00	9106.54	1288.00	9113.03	1288.00	9113.89	1287.79	9142.77
GR	1287.1	9246.69	1286.15	9379.98	1286.14	9381.89	1286.00	9403.34	1285.85	9435.98
GR	1285.7	9468.11	1285.61	9487.09	1285.57	9498.84	1285.55	9505.90	1284.18	9649.12
GR	1284.1	9654.29	1284.08	9663.19	1284.02	9690.76	1284.00	9692.87	1284.00	9693.17
GR	1284.0	9696.73	1284.00	9700.00	1284.00	9722.57	1284.00	9737.75	1284.00	9791.21
GR	1284.0	9867.14	1283.91	9872.09	1283.57	9893.26	1283.45	9901.09	1282.29	9951.49
GR	1282.0	9963.88	1281.74	9964.55	1280.00	9968.47	1279.25	9971.84	1280.00	9975.21
GR	1280.4	9976.12	1282.00	9980.08	1282.67	9981.73	1284.00	9985.10	1284.00	10000.00
X1	15200	44	9898.92	10000.00	300.00	300.00	300.00			
GR	1287.8	9100.00	1287.51	9150.46	1287.41	9170.08	1287.28	9197.12	1287.11	9232.27
GR	1286.9	9279.37	1286.53	9344.87	1286.03	9438.34	1286.00	9444.80	1285.99	9445.78
GR	1286.0	9445.89	1285.99	9446.03	1285.99	9446.18	1285.99	9446.61	1285.99	9446.73
GR	1286.0	9446.87	1285.98	9447.20	1285.71	9485.26	1284.16	9700.00	1284.07	9712.60
GR	1284.0	9721.93	1284.00	9724.33	1284.00	9760.53	1284.00	9898.92	1283.91	9920.86
GR	1283.9	9925.25	1283.67	9930.34	1283.18	9944.66	1282.83	9952.63	1282.88	9953.92
GR	1282.8	9956.45	1282.62	9960.54	1282.00	9967.35	1281.38	9968.90	1280.72	9971.05
GR	1280.0	9972.42	1279.54	9975.05	1280.00	9977.81	1280.37	9978.85	1280.95	9980.52
GR	1282.0	9983.53	1282.90	9986.13	1284.00	9989.23	1284.00	10000.00		
X1	15500	74	9952.04	10000.00	300.00	300.00	300.00			
GR	1287.7	9100.00	1286.98	9170.15	1286.62	9205.88	1286.47	9220.79	1286.40	9228.89
GR	1286.3	9234.06	1286.32	9237.59	1286.30	9240.12	1286.28	9242.28	1286.27	9244.17
GR	1286.3	9245.88	1286.17	9257.27	1286.15	9260.35	1286.14	9262.52	1286.00	9278.11
GR	1285.9	9281.92	1285.94	9284.29	1285.94	9288.93	1285.97	9298.88	1286.00	9309.20
GR	1286.0	9334.48	1286.00	9344.49	1286.00	9349.76	1286.00	9351.02	1286.00	9351.94
GR	1285.2	9492.99	1284.39	9635.88	1284.25	9660.73	1284.16	9677.43	1284.11	9686.14
GR	1284.1	9688.29	1284.09	9689.51	1284.09	9690.11	1284.09	9690.80	1284.09	9691.56
GR	1284.1	9693.72	1284.08	9693.98	1284.08	9694.12	1284.05	9699.80	1284.05	9700.00
GR	1284.0	9700.72	1284.05	9701.39	1284.05	9701.71	1284.05	9701.89	1284.04	9702.06
GR	1284.0	9702.43	1284.04	9702.67	1284.04	9703.27	1284.04	9703.43	1284.04	9703.93
GR	1284.0	9704.11	1284.05	9705.14	1284.05	9705.30	1284.05	9705.32	1284.06	9705.35
GR	1284.1	9705.43	1284.08	9705.69	1284.09	9705.84	1284.11	9706.11	1284.12	9706.29
GR	1284.1	9706.64	1284.00	9952.04	1282.38	9970.04	1282.00	9970.60	1280.38	9973.46
GR	1280.0	9974.35	1279.82	9975.43	1280.00	9976.51	1280.50	9978.10	1281.33	9980.70
GR	1282.0	9982.87	1283.13	9986.69	1284.00	9989.60	1284.00	10000.00		

X1	15750	98	9969.81	10000.00	250.00	250.00	250.00			
GR	1288.3	9000.00	1288.00	9006.08	1288.00	9010.63	1288.00	9011.99	1288.00	9047.38
GR	1288.0	9066.66	1286.80	9236.69	1286.71	9248.37	1286.64	9258.28	1286.53	9272.90
GR	1286.4	9293.19	1286.18	9325.24	1286.17	9327.91	1286.17	9330.25	1286.17	9332.11
GR	1286.2	9333.55	1286.17	9333.84	1286.12	9338.63	1286.04	9346.70	1286.00	9352.31
GR	1286.0	9353.46	1286.00	9354.16	1286.00	9362.89	1286.00	9364.71	1286.00	9366.26
GR	1286.0	9367.67	1286.00	9369.34	1286.00	9371.21	1286.00	9376.48	1286.00	9388.42

GR	1286.0	9396.78	1286.00	9415.14	1286.00	9415.50	1286.00	9421.19	1286.00	9430.14
GR	1286.0	9441.01	1286.00	9441.34	1286.00	9451.57	1285.65	9515.43	1285.61	9544.80
GR	1285.6	9566.53	1285.63	9577.15	1285.64	9583.15	1285.63	9588.96	1285.61	9601.37
GR	1285.6	9609.69	1285.63	9631.06	1285.63	9637.02	1285.65	9655.63	1285.65	9662.24
GR	1285.9	9738.73	1285.90	9742.64	1285.83	9745.00	1285.76	9762.03	1285.74	9772.19
GR	1285.8	9796.65	1285.70	9797.25	1285.75	9822.09	1285.73	9822.90	1285.71	9824.24
GR	1285.7	9826.16	1285.70	9828.02	1285.63	9830.00	1285.56	9832.39	1285.54	9863.26
GR	1285.5	9864.82	1285.50	9876.13	1285.53	9878.05	1285.39	9889.34	1285.49	9892.34
GR	1285.5	9894.05	1285.60	9895.05	1285.55	9896.06	1285.53	9896.97	1284.89	9918.28
GR	1284.0	9933.93	1284.00	9937.67	1284.00	9945.26	1284.00	9946.79	1284.04	9947.31
GR	1284.6	9959.24	1284.70	9959.51	1284.99	9963.36	1285.64	9966.69	1285.72	9967.24
GR	1284.0	9969.81	1282.31	9970.60	1281.96	9972.50	1280.69	9973.46	1280.31	9974.35
GR	1280.1	9975.43	1280.15	9976.51	1280.15	9978.10	1281.12	9980.70	1282.31	9982.87
GR	1283.4	9986.69	1284.00	9989.60	1284.00	10000.00				

1

PROFILE FOR STREAM CHN128 - LATERAL WEIR SP

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

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ELEVATION 1278.     1279.     1280.     1281.     1282.     1283.     1284.     1285.     1286.     1287.
    SECNO   CUMDIS

 13582.00      0.  I         .         .         .      WE .         .        L.         .         .         .         .
              20.  I         .         .         .      WE .         .      L  R         .         .         .         .
              40.  I         .         .         .       E .         .    L    .R        .         .         .         .
              60.  I         .         .         .       WE.         .  L      . R       .         .         .         .
              80.  I         .         .         .       WE.         . L       . R       .         .         .         .
             100.  I         .         .         .       WE.         L         .  R      .         .         .         .
 13700.00    120.  I         .         .         .        E.       L .         .   R     .         .         .         .
             140.  I         .         .         .        WE      L  .         .   R     .         .         .         .
             160.  I         .         .         .        WE      L  .         .  R      .         .         .         .
             180.  CI        .         .         .         E     L   .         .  R      .         .         .         .
             200.  CI        .         .         .         WE    L   .         .  R      .         .         .         .
             220.  CI        .         .         .         WE   L    .         . R       .         .         .         .
             240.  CI        .         .         .         WE  L     .         . R       .         .         .         .
             260.  CI        .         .         .         .WE L     .         . R       .         .         .         .
             280.  C I       .         .         .         .WEL      .         .R        .         .         .         .
             300.  C I       .         .         .         .WEL      .         .R        .         .         .         .
             320.  C I       .         .         .         . WE      .         .R        .         .         .         .
             340.  C I       .         .         .         .LWE      .         R         .         .         .         .
             360.  C I       .         .         .         .LWE      .         R         .         .         .         .
             380.  C  I      .         .         .         L  WE     .         R         .         .         .         .
             400.  C  I      .         .         .         L  WE     .         R         .         .         .         .
 14000.00    420.  C  I      .         .         .        L.  WE     .        R.         .         .         .         .
             440.  C  I      .         .         .         .L  WE    .        R.         .         .         .         .
             460.  C  I      .         .         .         .  LWE    .        R.         .         .         .         .
             480.  C  I      .         .         .         .   WE    .        R.         .         .         .         .
             500.  C  I      .         .         .         .   W EL  .        R.         .         .         .         .
 14100.00    520.  C  I      .         .         .         .    WE  L.        R.         .         .         .         .
             540.  C  I      .         .         .         .    WE   .L       R.         .         .         .         .
             560.  C   I     .         .         .         .    WE   .  L     R.         .         .         .         .
             580.  C   I     .         .         .         .     WE  .    L   R.         .         .         .         .
             600.  C    I    .         .         .         .     WE  .      L R.         .         .         .         .
 14200.00    620.  C    I    .         .         .         .     WE  .        L.         .         .         .         .
             640.  C    I    .         .         .         .     WE  .        L.         .         .         .         .
             660.  C    I    .         .         .         .      WE .        L.         .         .         .         .
             680.  C    I    .         .         .         .      WE .        L.         .         .         .         .
             700.  C     I   .         .         .         .      WE .        L.         .         .         .         .
 14300.00    720.  C     I   .         .         .         .       E .        L.         .         .         .         .
             740.  C     I   .         .         .         .       WE.        L.         .         .         .         .
             760.  C     I   .         .         .         .       WE.        L.         .         .         .         .
             780.  C     I   .         .         .         .       WE.        L.         .         .         .         .
             800.  C      I  .         .         .         .        WE        L.         .         .         .         .
             820.  C      I  .         .         .         .        WE        L.         .         .         .         .
             840.  C      I  .         .         .         .        WE        L.         .         .         .         .
             860.  C      I  .         .         .         .         WE       L.         .         .         .         .
             880.  C       I .         .         .         .         WE       L.         .         .         .         .
             900.  C       I .         .         .         .         WE       L.         .         .         .         .
             920.  C       I .         .         .         .         WE       L.         .         .         .         .
             940.  C       I .         .         .         .         .WE      L.         .         .         .         .
             960.  C       I .         .         .         .         .WE      L.         .         .         .         .
             980.  C        I.         .         .         .         .WE      L.         .         .         .         .
            1000.  C        I.         .         .         .         .W E     L.         .         .         .         .
 14600.00   1020.  C        I.         .         .         .         . WE     L.         .         .         .         .
            1040.  C        I.         .         .         .         . WE     L.         .         .         .         .
            1060.  C        I.         .         .         .         . WE     L.         .         .         .         .
            1080.  C         I         .         .         .         . WE     L.         .         .         .         .
            1100.  C         I         .         .         .         .  E     L.         .         .         .         .
            1120.  C         I         .         .         .         .  WE    L.         .         .         .         .
            1140.  C         I         .         .         .         .  WE    L.         .         .         .         .
            1160.  C         I         .         .         .         .  WE    L.         .         .         .         .
            1180.  C         I         .         .         .         .  WE    L.         .         .         .         .
            1200.  C         .I        .         .         .         .   E    L.         .         .         .         .
            1220.  C         .I        .         .         .         .   E    L.         .         .         .         .
            1240.  C         .I        .         .         .         .   E    L.         .         .         .         .
            1260.  C         .I        .         .         .         .   WE   L.         .         .         .         .
            1280.  C         .I        .         .         .         .   WE   L.         .         .         .         .
            1300.  C         .I        .         .         .         .    E   L.         .         .         .         .
 14900.00   1320.  C         . I       .         .         .         .    E   L.         .         .         .         .
            1340.  C         . I       .         .         .         .    E   L.         .         .         .         .
            1360.  C         . I       .         .         .         .    E   L.         .         .         .         .
            1380.  C         . I       .         .         .         .    E   L.         .         .         .         .
            1400.  C         . I       .         .         .         .    E   L.         .         .         .         .
            1420.  C         . I       .         .         .         .    WE  L.         .         .         .         .
            1440.  C         .  I      .         .         .         .     E  L.         .         .         .         .
            1460.  C         .  I      .         .         .         .     E  L.         .         .         .         .
            1480.  C         .  I      .         .         .         .     E  L.         .         .         .         .
            1500.  C         .  I      .         .         .         .     E  L.         .         .         .         .
            1520.  C         .  I      .         .         .         .     E  L.         .         .         .         .
            1540.  C         .   I     .         .         .         .     E  L.         .         .         .         .
            1560.  C         .   I     .         .         .         .     E  L.         .         .         .         .
            1580.  C         .   I     .         .         .         .     E  L.         .         .         .         .
            1600.  C         .   I     .         .         .         .     E  L.         .         .         .         .
 15200.00   1620.  C         .   I     .         .         .         .     WE L.         .         .         .         .
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          1640.  C        .   I    .         .         .         .    E L.        .         .         .         .
          1660.  C        .   I    .         .         .         .    E L.        .         .         .         .
          1680.  C        .   I    .         .         .         .    E L.        .         .         .         .
          1700.  C        .   I    .         .         .         .    E L.        .         .         .         .
          1720.  C        .   I    .         .         .         .    E L.        .         .         .         .
          1740.  C        .    I   .         .         .         .    WEL.        .         .         .         .
          1760.  C        .    I   .         .         .         .    WEL.        .         .         .         .
          1780.  C        .    I   .         .         .         .     EL.        .         .         .         .
          1800.  C        .    I   .         .         .         .     EL.        .         .         .         .
          1820.  C        .    I   .         .         .         .     EL.        .         .         .         .
          1840.  C        .    I   .         .         .         .     EL.        .         .         .         .
          1860.  C        .     I  .         .         .         .     WE.        .         .         .         .
          1880.  C        .     I  .         .         .         .     WE.        .         .         .         .
          1900.  C        .     I  .         .         .         .     WE.        .         .         .         .
 15500.00 1920.  C        .     I  .         .         .         .     WE.        .         .         .         .
          1940.  C        .     I  .         .         .         .      E.        .         .         .         .
          1960.  C        .      I .         .         .         .      WE        .         .         .         .
          1980.  C        .      I .         .         .         .      WE        .         .         .         .
          2000.  C        .      I .         .         .         .      LE        .         .         .         .
          2020.  C        .      I .         .         .         .      LWE       .         .         .         .
          2040.  C        .       I.         .         .         .      LWE       .         .         .         .
          2060.  C        .       I.         .         .         .      L.E       .         .         .         .
          2080.  C        .       I.         .         .         .      L.WE      .         .         .         .
          2100.  C        .       I.         .         .         .      L.WE      .         .         .         .
          2120.  C        .       I.         .         .         .      L.WE      .         .         .         .
          2140.  C        .        I         .         .         .      L. WE     .         .         .         .
          2160.  C        .        I         .         .         .      L. WE     .         .         .         .
 15750.00 2180.  C        .        I         .         .         .      L. WE     .         .         .         .
1
   16OCT00      12:32:06                                                                                    PAGE    6
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THIS RUN EXECUTED 16OCT00 12:32:06

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*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	13582.000	.00	.00	.00	1278.10	58.34	1281.81	.00	1281.86	12.30	1.92	30.46	16.64
	13700.000	118.00	.00	.00	1278.11	58.34	1281.96	.00	1282.04	17.29	2.36	24.76	14.03
*	14000.000	300.00	.00	.00	1278.40	90.33	1282.43	.00	1282.53	15.42	2.45	36.84	23.00
	14100.000	100.00	.00	.00	1278.40	107.56	1282.58	.00	1282.68	14.24	2.53	42.44	28.50
	14200.000	100.00	.00	.00	1278.60	107.56	1282.72	.00	1282.82	13.86	2.53	42.54	28.89
	14300.000	100.00	.00	.00	1278.68	107.56	1282.86	.00	1282.95	13.44	2.50	43.06	29.34
	14600.000	300.00	.00	.00	1279.00	107.56	1283.27	.00	1283.38	14.60	2.56	41.94	28.15
*	14900.000	300.00	.00	.00	1279.25	107.56	1283.59	.00	1283.60	4.39	.99	108.98	51.32
	15200.000	300.00	.00	.00	1279.54	107.56	1283.74	.00	1283.76	6.25	1.30	82.61	43.03
	15500.000	300.00	.00	.00	1279.82	107.57	1283.95	.00	1284.00	9.93	1.80	59.62	34.13
	15750.000	250.00	.00	.00	1280.10	155.00	1284.31	.00	1284.43	24.85	2.88	58.21	31.10

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16OCT00 12:32:06 PAGE 7

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	13582.000	58.34	1281.81	.00	.00	-2.19	19.31	.00
	13700.000	58.34	1281.96	.00	.15	.00	14.03	118.00
*	14000.000	90.33	1282.43	.00	.48	.00	18.53	300.00
	14100.000	107.56	1282.58	.00	.14	.00	19.56	100.00
	14200.000	107.56	1282.72	.00	.14	.00	19.28	100.00
	14300.000	107.56	1282.86	.00	.14	.00	19.41	100.00
	14600.000	107.56	1283.27	.00	.42	.00	19.28	300.00
*	14900.000	107.56	1283.59	.00	.32	.00	91.99	300.00
	15200.000	107.56	1283.74	.00	.15	.00	59.63	300.00
	15500.000	107.57	1283.95	.00	.22	.00	36.77	300.00
	15750.000	155.00	1284.31	.00	.35	.00	55.06	250.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

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WARNING SECNO=  14000.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  14900.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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1*********************************************
 *  HEC-2 WATER SURFACE PROFILES             *
 *                                           *
 *  Version   4.6.2;  May 1991               *
 *                                           *
 *  RUN DATE    16OCT00    TIME   12:34:36   *
 *********************************************
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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*          (916) 756-1104               *
*****************************************
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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
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1
   16OCT00      12:34:36                                                                    PAGE    1


                                                                THIS RUN EXECUTED 16OCT00     12:34:36
 *************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 *************************************



 SPLIT FLOW BEING PERFORMED


 SF SPLIT FLOW PROBLEM


 JC SPLIT FLOW PROBLEM
 JP     0       0       0       0       0


 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13582    AND    13700
 WS     2   13582   13700      -1      3.4
 WC       1284.00  118.00 1282.90


 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13700    AND    14000
 WS     2   13700   14000      -1      3.4
 WC       1282.90  300.00 1282.00


 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14000    AND    14100
 WS     2   14000   14100      -1      3.4
 WC       1282.00  100.00 1283.00


 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14100    AND    14200
 WS     2   14100   14200      -1      3.4
 WC       1283.00  100.00 1284.00


 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14200    AND    14300
 WS     2   14200   14300      -1      3.4
 WC       1284.00  100.00 1284.00


 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14900    AND    1520
 WS     2   14900   15200      -1      3.4
 WC       1284.00  300.00 1284.00


 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15200    AND    1550
 WS     2   15200   15500      -1      3.4
 WC       1284.00  300.00 1284.00
1
   16OCT00      12:34:36                                                                    PAGE    2


 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15500    AND    1575
 WS     2   15500   15750      -1      3.4
 WC       1284.00  250.00 1284.00
1
   16OCT00      12:34:36                                                                    PAGE    3


 T1     HEC-2 Input   Data    file:   SPLIT    FLOW    SOLUTION
 T2     CHN128 - LATERAL WEIR SPLIT FLOW Q= 140 CFS
 T3     CHN128 - LATERAL WEIR SPLIT FLOW Q= 140 CFS

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         4         0         0   .001237         0         0         0   1284.00         0

 J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

    -10       -10

 QT        5     89.00    115.00    140.00    155.00    205.00
 NC   0.0450    0.0350    0.0350       0.1       0.3
 X1    13582        37   9964.73  10000.00      0.00      0.00      0.00
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GR	1284.0	9940.05	1283.98	9940.08	1283.99	9940.10	1283.99	9940.11	1283.99	9940.23
GR	1284.0	9940.26	1283.99	9940.28	1283.99	9940.34	1283.99	9940.41	1283.99	9940.46
GR	1284.0	9940.48	1283.99	9940.50	1283.98	9940.53	1283.98	9940.60	1283.97	9940.74
GR	1284.0	9940.95	1283.96	9941.17	1284.00	9941.79	1284.00	9942.65	1284.00	9943.30
GR	1284.0	9946.51	1284.00	9948.10	1284.00	9949.62	1284.00	9952.57	1284.00	9954.57
GR	1284.0	9964.73	1283.02	9968.55	1282.22	9971.25	1282.00	9972.08	1280.00	9979.60
GR	1278.1	9983.20	1280.00	9986.24	1281.30	9991.28	1282.00	9992.45	1282.93	9993.94
GR	1284.0	9995.82	1284.00	10000.00						
X1	13700	16	9967.79	10000.00	118.00	118.00	118.00			
GR	1282.9	9967.79	1282.60	9968.89	1282.20	9970.83	1282.00	9971.43	1280.75	9974.60
GR	1280.0	9976.34	1278.11	9979.33	1280.00	9982.10	1281.36	9984.58	1282.00	9985.65
GR	1282.2	9985.98	1284.00	9989.37	1284.47	9999.68	1284.47	9999.75	1284.48	9999.94
GR	1284.5	10000.00								
X1	14000	10	9963.80	10000.00	300.00	300.00	300.00			
GR	1282.0	9963.80	1282.00	9965.57	1281.43	9967.11	1278.40	9974.60	1280.00	9977.92
GR	1280.7	9979.14	1282.00	9981.63	1283.10	9983.42	1284.00	9985.11	1284.00	10000.00
X1	14100	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1283.0	9962.24	1282.46	9965.05	1281.76	9966.82	1280.68	9969.42	1279.76	9971.09
GR	1278.4	9975.00	1279.76	9978.71	1279.97	9979.20	1281.16	9981.30	1281.62	9982.20
GR	1281.8	9982.49	1282.46	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14200	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1284.0	9962.24	1282.58	9965.05	1281.88	9966.82	1280.80	9969.42	1279.88	9971.09
GR	1278.6	9975.00	1279.88	9978.71	1280.09	9979.20	1281.28	9981.30	1281.74	9982.20
GR	1281.9	9982.49	1282.58	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14300	58	9962.24	10000.00	100.00	100.00	100.00			
GR	1286.7	9200.00	1286.55	9214.47	1286.24	9247.77	1286.22	9249.93	1286.18	9254.29
GR	1286.2	9255.76	1286.16	9257.27	1286.15	9257.81	1286.00	9277.62	1285.86	9285.09
GR	1285.7	9304.74	1285.65	9329.46	1285.65	9336.21	1285.54	9352.68	1285.53	9362.72
GR	1285.4	9373.11	1285.39	9384.32	1285.40	9396.09	1285.24	9405.27	1285.10	9415.00
GR	1285.0	9424.76	1284.38	9525.97	1284.38	9542.27	1284.38	9567.22	1284.38	9601.08
GR	1284.4	9629.04	1284.38	9656.22	1284.34	9659.30	1284.33	9660.48	1284.33	9663.77
GR	1284.3	9667.99	1284.28	9673.37	1284.24	9680.25	1284.18	9689.49	1284.10	9700.00
GR	1284.1	9702.38	1284.00	9713.05	1284.00	9721.01	1284.00	9756.39	1284.00	9768.53
GR	1284.0	9771.25	1284.00	9862.26	1284.00	9862.54	1284.00	9863.29	1284.00	9962.24

GR	1282.7	9965.05	1282.00	9966.82	1280.92	9969.42	1280.00	9971.09	1278.68	9975.00
GR	1280.0	9978.71	1280.21	9979.20	1281.40	9981.30	1281.86	9982.20	1282.00	9982.49
GR	1282.7	9983.79	1284.00	9986.52	1284.00	10000.00				
X1	14600	48	9950.37	10000.00	300.00	300.00	300.00			
GR	1287.0	9200.00	1286.35	9319.42	1286.34	9322.88	1286.30	9331.31	1286.24	9341.79
GR	1286.2	9354.73	1286.09	9370.67	1286.00	9388.44	1285.97	9396.61	1285.90	9423.66
GR	1285.8	9452.72	1285.76	9471.57	1284.98	9550.29	1284.88	9565.91	1284.80	9575.21
GR	1284.7	9583.70	1284.64	9597.36	1284.55	9609.89	1284.49	9620.27	1284.45	9627.64
GR	1284.4	9636.14	1284.40	9645.58	1284.40	9655.79	1284.39	9665.38	1284.36	9674.53
GR	1284.3	9683.42	1284.28	9691.86	1284.23	9699.84	1284.23	9700.00	1284.09	9720.90
GR	1284.0	9734.06	1284.00	9734.48	1284.00	9816.10	1284.00	9828.24	1284.00	9950.37
GR	1283.6	9963.68	1283.43	9964.04	1282.00	9967.35	1280.49	9970.86	1280.00	9971.94
GR	1279.0	9974.45	1280.00	9976.90	1280.62	9978.11	1282.00	9980.99	1283.04	9983.19
GR	1284.0	9985.23	1284.00	9996.17	1284.00	10000.00				
X1	14900	40	9867.14	10000.00	300.00	300.00	300.00			
GR	1288.0	9100.00	1288.00	9106.54	1288.00	9113.03	1288.00	9113.89	1287.79	9142.77
GR	1287.1	9246.69	1286.15	9379.98	1286.14	9381.89	1286.00	9403.34	1285.85	9435.98
GR	1285.7	9468.11	1285.61	9487.09	1285.57	9498.84	1285.55	9505.90	1284.18	9649.12
GR	1284.1	9654.29	1284.08	9663.19	1284.02	9690.76	1284.00	9692.87	1284.00	9693.17
GR	1284.0	9696.73	1284.00	9700.00	1284.00	9722.57	1284.00	9737.75	1284.00	9791.21
GR	1284.0	9867.14	1283.91	9872.09	1283.57	9893.26	1283.45	9901.09	1282.29	9951.49
GR	1282.0	9963.88	1281.74	9964.55	1280.00	9968.47	1279.25	9971.84	1280.00	9975.21
GR	1280.4	9976.12	1282.00	9980.08	1282.67	9981.73	1284.00	9985.10	1284.00	10000.00
X1	15200	44	9898.92	10000.00	300.00	300.00	300.00			
GR	1287.8	9100.00	1287.51	9150.46	1287.41	9170.08	1287.28	9197.12	1287.11	9232.27
GR	1286.9	9279.37	1286.53	9344.87	1286.03	9438.34	1286.00	9444.80	1285.99	9445.78
GR	1286.0	9445.89	1285.99	9446.03	1285.99	9446.18	1285.99	9446.61	1285.99	9446.73
GR	1286.0	9446.87	1285.98	9447.20	1285.71	9485.26	1284.16	9700.00	1284.07	9712.60
GR	1284.0	9721.93	1284.00	9724.33	1284.00	9760.53	1284.00	9898.92	1283.91	9920.86
GR	1283.9	9925.25	1283.67	9930.34	1283.18	9944.66	1282.83	9952.63	1282.88	9953.92
GR	1282.8	9956.45	1282.62	9960.54	1282.00	9967.35	1281.38	9968.90	1280.72	9971.05
GR	1280.0	9972.42	1279.54	9975.05	1280.00	9977.81	1280.37	9978.85	1280.95	9980.52
GR	1282.0	9983.53	1282.90	9986.13	1284.00	9989.23	1284.00	10000.00		
X1	15500	74	9952.04	10000.00	300.00	300.00	300.00			
GR	1287.7	9100.00	1286.98	9170.15	1286.62	9205.88	1286.47	9220.79	1286.40	9228.89
GR	1286.3	9234.06	1286.32	9237.59	1286.30	9240.12	1286.28	9242.28	1286.27	9244.17
GR	1286.3	9245.88	1286.17	9257.27	1286.15	9260.35	1286.14	9262.52	1286.00	9278.11
GR	1285.9	9281.92	1285.94	9284.29	1285.94	9288.93	1285.97	9298.88	1286.00	9309.20
GR	1286.0	9334.48	1286.00	9344.49	1286.00	9349.76	1286.00	9351.02	1286.00	9351.94
GR	1285.2	9492.99	1284.39	9635.88	1284.25	9660.73	1284.16	9677.43	1284.11	9686.14
GR	1284.1	9688.29	1284.09	9689.51	1284.09	9690.11	1284.09	9690.80	1284.09	9691.56
GR	1284.1	9693.72	1284.08	9693.98	1284.08	9694.12	1284.05	9699.80	1284.05	9700.00
GR	1284.0	9700.72	1284.05	9701.39	1284.05	9701.71	1284.05	9701.89	1284.04	9702.06
GR	1284.0	9702.43	1284.04	9702.67	1284.04	9703.27	1284.04	9703.43	1284.04	9703.93
GR	1284.0	9704.11	1284.05	9705.14	1284.05	9705.30	1284.05	9705.32	1284.06	9705.35
GR	1284.1	9705.43	1284.08	9705.69	1284.09	9705.84	1284.11	9706.11	1284.12	9706.29
GR	1284.1	9706.64	1284.00	9952.04	1282.38	9970.04	1282.00	9970.60	1280.38	9973.46
GR	1280.0	9974.35	1279.82	9975.43	1280.00	9976.51	1280.50	9978.10	1281.33	9980.70
GR	1282.0	9982.87	1283.13	9986.69	1284.00	9989.60	1284.00	10000.00		

X1	15750	98	9969.81	10000.00	250.00	250.00	250.00			
GR	1288.3	9000.00	1288.00	9006.08	1288.00	9010.63	1288.00	9011.99	1288.00	9047.38
GR	1288.0	9066.66	1286.80	9236.69	1286.71	9248.37	1286.64	9258.28	1286.53	9272.90
GR	1286.4	9293.19	1286.18	9325.24	1286.17	9327.91	1286.17	9330.25	1286.17	9332.11
GR	1286.2	9333.55	1286.17	9333.84	1286.12	9338.63	1286.04	9346.70	1286.00	9352.31
GR	1286.0	9353.46	1286.00	9354.16	1286.00	9362.89	1286.00	9364.71	1286.00	9366.26
GR	1286.0	9367.67	1286.00	9369.34	1286.00	9371.21	1286.00	9376.48	1286.00	9388.42

GR	1286.0	9396.78	1286.00	9415.14	1286.00	9415.50	1286.00	9421.19	1286.00	9430.24
GR	1286.0	9441.01	1286.00	9441.34	1286.00	9451.57	1285.65	9515.43	1285.61	9544.80
GR	1285.6	9566.53	1285.63	9577.15	1285.64	9583.15	1285.63	9588.96	1285.61	9601.37
GR	1285.6	9609.69	1285.63	9631.06	1285.63	9637.02	1285.65	9655.63	1285.65	9662.24
GR	1285.9	9738.73	1285.90	9742.64	1285.83	9745.00	1285.76	9762.03	1285.74	9772.19
GR	1285.8	9796.65	1285.70	9797.25	1285.75	9822.09	1285.73	9822.90	1285.71	9824.24
GR	1285.7	9826.16	1285.70	9828.02	1285.63	9830.00	1285.56	9832.39	1285.54	9863.26
GR	1285.5	9864.82	1285.50	9876.13	1285.53	9878.05	1285.39	9889.34	1285.49	9892.34
GR	1285.5	9894.05	1285.60	9895.05	1285.55	9896.06	1285.53	9896.97	1284.89	9918.28
GR	1284.0	9933.93	1284.00	9937.67	1284.00	9945.26	1284.00	9946.79	1284.04	9947.31
GR	1284.6	9959.24	1284.70	9959.51	1284.99	9963.36	1285.64	9966.69	1285.72	9967.24
GR	1284.0	9969.81	1282.31	9970.60	1281.96	9972.50	1280.69	9973.46	1280.31	9974.35
GR	1280.1	9975.43	1280.15	9976.51	1280.15	9978.10	1281.12	9980.70	1282.31	9982.87
GR	1283.4	9986.69	1284.00	9989.60	1284.00	10000.00				

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1
PROFILE FOR STREAM  CHN128 - LATERAL WEIR SP


PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA


ELEVATION 1278.     1279.     1280.     1281.     1282.     1283.     1284.     1285.     1286.     1287.
    SECNO  CUMDIS

 13582.00     0.  I         .         .         .      E  .         .        L.         .         .         .         .
             20.  I         .         .         .      WE .         .      L  R         .         .         .         .
             40.  I         .         .         .      WE .         .    L    .R        .         .         .         .
             60.  I         .         .         .       E .         .  L      . R       .         .         .         .
             80.  I         .         .         .       WE.         . L       . R       .         .         .         .
            100.  I         .         .         .       WE.         L         .  R      .         .         .         .
 13700.00   120.  I         .         .         .       WE.       L .         .   R     .         .         .         .
            140.  I         .         .         .        WE      L  .         .   R     .         .         .         .
            160.  I         .         .         .        WE      L  .         .  R      .         .         .         .
            180.  CI        .         .         .        WE     L   .         .  R      .         .         .         .
            200.  CI        .         .         .         E     L   .         .  R      .         .         .         .
            220.  CI        .         .         .         WE   L    .         . R       .         .         .         .
            240.  CI        .         .         .         WE  L     .         . R       .         .         .         .
            260.  CI        .         .         .         .E  L     .         . R       .         .         .         .
            280.  C I       .         .         .         .WEL      .         .R        .         .         .         .
            300.  C I       .         .         .         .WEL      .         .R        .         .         .         .
            320.  C I       .         .         .         . E       .         .R        .         .         .         .
            340.  C I       .         .         .         .LWE      .         R         .         .         .         .
            360.  C I       .         .         .         .LWE      .         R         .         .         .         .
            380.  C  I      .         .         .         L WE      .         R         .         .         .         .
            400.  C  I      .         .         .         L  WE     .        R.         .         .         .         .
 14000.00   420.  C  I      .         .         .        L.  WE     .        R.         .         .         .         .
            440.  C  I      .         .         .         .L WE     .        R.         .         .         .         .
            460.  C  I      .         .         .         .  LWE    .        R.         .         .         .         .
            480.  C  I      .         .         .         .   WE    .        R.         .         .         .         .
            500.  C  I      .         .         .         .   WE L  .        R.         .         .         .         .
 14100.00   520.  C  I      .         .         .         .    WE  L.        R.         .         .         .         .
            540.  C  I      .         .         .         .    WE   .L       R.         .         .         .         .
            560.  C   I     .         .         .         .    WE   .  L     R.         .         .         .         .
            580.  C   I     .         .         .         .    WE   .    L   R.         .         .         .         .
            600.  C    I    .         .         .         .     WE  .      L R.         .         .         .         .
 14200.00   620.  C    I    .         .         .         .     WE  .        L.         .         .         .         .
            640.  C    I    .         .         .         .     WE  .        L.         .         .         .         .
            660.  C    I    .         .         .         .     WE  .        L.         .         .         .         .
            680.  C    I    .         .         .         .      WE .        L.         .         .         .         .
            700.  C     I   .         .         .         .      WE .        L.         .         .         .         .
 14300.00   720.  C     I   .         .         .         .      WE .        L.         .         .         .         .
            740.  C     I   .         .         .         .       E .        L.         .         .         .         .
            760.  C     I   .         .         .         .       WE.        L.         .         .         .         .
            780.  C     I   .         .         .         .       WE.        L.         .         .         .         .
            800.  C      I  .         .         .         .       WE.        L.         .         .         .         .
            820.  C      I  .         .         .         .        WE        L.         .         .         .         .
            840.  C      I  .         .         .         .        WE        L.         .         .         .         .
            860.  C      I  .         .         .         .        WE        L.         .         .         .         .
            880.  C       I .         .         .         .        WE        L.         .         .         .         .
            900.  C       I .         .         .         .         WE       L.         .         .         .         .
            920.  C       I .         .         .         .         WE       L.         .         .         .         .
            940.  C       I .         .         .         .         WE       L.         .         .         .         .
            960.  C       I .         .         .         .         .WE      L.         .         .         .         .
            980.  C        I.         .         .         .         .WE      L.         .         .         .         .
           1000.  C        I.         .         .         .         .WE      L.         .         .         .         .
 14600.00  1020.  C        I.         .         .         .         .WE      L.         .         .         .         .
           1040.  C        I.         .         .         .         . WE     L.         .         .         .         .
           1060.  C        I.         .         .         .         . WE     L.         .         .         .         .
           1080.  C         I         .         .         .         . WE     L.         .         .         .         .
           1100.  C         I         .         .         .         . WE     L.         .         .         .         .
           1120.  C         I         .         .         .         . WE     L.         .         .         .         .
           1140.  C         I         .         .         .         .  E     L.         .         .         .         .
           1160.  C         I         .         .         .         .  E     L.         .         .         .         .
           1180.  C         I         .         .         .         .  WE    L.         .         .         .         .
           1200.  C         .I        .         .         .         .  WE    L.         .         .         .         .
           1220.  C         .I        .         .         .         .   E    L.         .         .         .         .
           1240.  C         .I        .         .         .         .   E    L.         .         .         .         .
           1260.  C         .I        .         .         .         .   E    L.         .         .         .         .
           1280.  C         .I        .         .         .         .   E    L.         .         .         .         .
           1300.  C         .I        .         .         .         .   WE   L.         .         .         .         .
 14900.00  1320.  C         . I       .         .         .         .    E   L.         .         .         .         .
           1340.  C         . I       .         .         .         .    E   L.         .         .         .         .
           1360.  C         . I       .         .         .         .    E   L.         .         .         .         .
           1380.  C         . I       .         .         .         .    E   L.         .         .         .         .
           1400.  C         . I       .         .         .         .    E   L.         .         .         .         .
           1420.  C         . I       .         .         .         .    E   L.         .         .         .         .
           1440.  C         .  I      .         .         .         .    E   L.         .         .         .         .
           1460.  C         .  I      .         .         .         .    E   L.         .         .         .         .
           1480.  C         .  I      .         .         .         .    WE  L.         .         .         .         .
           1500.  C         .  I      .         .         .         .     E  L.         .         .         .         .
           1520.  C         .  I      .         .         .         .     E  L.         .         .         .         .
           1540.  C         .   I     .         .         .         .     E  L.         .         .         .         .
           1560.  C         .   I     .         .         .         .     E  L.         .         .         .         .
           1580.  C         .   I     .         .         .         .     E  L.         .         .         .         .
           1600.  C         .   I     .         .         .         .     E  L.         .         .         .         .
 15200.00  1620.  C         .   I     .         .         .         .     E  L.         .         .         .         .
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          1640.  C        .   I    .         .         .         .    E  L.        .         .         .         .
          1660.  C        .   I    .         .         .         .   WE L.        .         .         .         .
          1680.  C        .   I    .         .         .         .    E L.        .         .         .         .
          1700.  C        .   I    .         .         .         .    E L.        .         .         .         .
          1720.  C        .   I    .         .         .         .    E L.        .         .         .         .
          1740.  C        .    I   .         .         .         .    E L.        .         .         .         .
          1760.  C        .    I   .         .         .         .    E L.        .         .         .         .
          1780.  C        .    I   .         .         .         .   WEL.        .         .         .         .
          1800.  C        .    I   .         .         .         .   WEL.        .         .         .         .
          1820.  C        .    I   .         .         .         .    EL.        .         .         .         .
          1840.  C        .    I   .         .         .         .    EL.        .         .         .         .
          1860.  C        .     I  .         .         .         .    EL.        .         .         .         .
          1880.  C        .     I  .         .         .         .    EL.        .         .         .         .
          1900.  C        .     I  .         .         .         .    WE.        .         .         .         .
 15500.00 1920.  C        .     I  .         .         .         .    WE.        .         .         .         .
          1940.  C        .     I  .         .         .         .    WE.        .         .         .         .
          1960.  C        .      I .         .         .         .     E.        .         .         .         .
          1980.  C        .      I .         .         .         .     WE        .         .         .         .
          2000.  C        .      I .         .         .         .     WE        .         .         .         .
          2020.  C        .      I .         .         .         .     LE        .         .         .         .
          2040.  C        .       I.         .         .         .     LWE       .         .         .         .
          2060.  C        .       I.         .         .         .     LWE       .         .         .         .
          2080.  C        .       I.         .         .         .     LWE       .         .         .         .
          2100.  C        .       I.         .         .         .     L.WE      .         .         .         .
          2120.  C        .       I.         .         .         .     L.WE      .         .         .         .
          2140.  C        .        I         .         .         .     L.WE      .         .         .         .
          2160.  C        .        I         .         .         .     L.W E     .         .         .         .
 15750.00 2180.  C        .        I         .         .         .     L. WE     .         .         .         .
1
   16OCT00      12:34:36                                                                                    PAGE    6
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THIS RUN EXECUTED 16OCT00 12:34:36

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**************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	13582.000	.00	.00	.00	1278.10	57.06	1281.78	.00	1281.84	12.27	1.90	29.99	16.29
	13700.000	118.00	.00	.00	1278.11	57.06	1281.93	.00	1282.02	17.16	2.34	24.42	13.77
*	14000.000	300.00	.00	.00	1278.40	88.61	1282.41	.00	1282.50	15.43	2.44	36.35	22.56
	14100.000	100.00	.00	.00	1278.40	105.25	1282.55	.00	1282.65	14.03	2.51	41.92	28.09
	14200.000	100.00	.00	.00	1278.60	105.25	1282.69	.00	1282.79	13.75	2.51	41.99	28.39
	14300.000	100.00	.00	.00	1278.68	105.25	1282.83	.00	1282.92	13.34	2.48	42.49	28.82
	14600.000	300.00	.00	.00	1279.00	105.25	1283.24	.00	1283.34	14.54	2.55	41.32	27.60
*	14900.000	300.00	.00	.00	1279.25	105.25	1283.56	.00	1283.57	4.46	.99	106.06	49.81
	15200.000	300.00	.00	.00	1279.54	105.25	1283.71	.00	1283.73	6.32	1.30	80.85	41.86
	15500.000	300.00	.00	.00	1279.82	105.25	1283.92	.00	1283.97	9.82	1.79	58.87	33.59
	15750.000	250.00	.00	.00	1280.10	140.00	1284.26	.00	1284.37	22.40	2.69	55.68	29.58

1
16OCT00 12:34:36 PAGE 7

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	13582.000	57.06	1281.78	.00	.00	-2.22	19.18	.00
	13700.000	57.06	1281.93	.00	.15	.00	13.93	118.00
*	14000.000	88.61	1282.41	.00	.48	.00	18.49	300.00
	14100.000	105.25	1282.55	.00	.14	.00	19.37	100.00
	14200.000	105.25	1282.69	.00	.14	.00	19.17	100.00
	14300.000	105.25	1282.83	.00	.14	.00	19.28	100.00
	14600.000	105.25	1283.24	.00	.41	.00	19.14	300.00
*	14900.000	105.25	1283.56	.00	.32	.00	89.87	300.00
	15200.000	105.25	1283.71	.00	.15	.00	58.89	300.00
	15500.000	105.25	1283.92	.00	.22	.00	36.47	300.00
	15750.000	140.00	1284.26	.00	.33	.00	53.18	250.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

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WARNING SECNO=  14000.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  14900.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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1*********************************************
 *  HEC-2 WATER SURFACE PROFILES             *
 *                                           *
 *  Version   4.6.2;  May 1991               *
 *                                           *
 *  RUN DATE    16OCT00    TIME   12:35:45   *
 *********************************************
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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*        (916) 756-1104                 *
*****************************************
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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X    X            X     X
X     X  X        X                 X     X
XXXXXXX  XXXX     X         XXXXX    XXXXX
X     X  X        X                 X
X     X  X        X    X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
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1
   16OCT00      12:35:45                                                                    PAGE    1


                                                                THIS RUN EXECUTED 16OCT00    12:35:45
 *************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 *************************************



 SPLIT FLOW BEING PERFORMED


 SF SPLIT FLOW PROBLEM


 JC SPLIT FLOW PROBLEM
 JP     0       0       0       0       0


 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13582    AND    13700
 WS     2   13582   13700      -1      3.4
 WC       1284.00  118.00 1282.90


 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13700    AND    14000
 WS     2   13700   14000      -1     3.4
 WC       1282.90  300.00 1282.00


 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14000    AND    14100
 WS     2   14000   14100      -1     3.4
 WC       1282.00  100.00 1283.00


 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14100    AND    14200
 WS     2   14100   14200      -1     3.4
 WC       1283.00  100.00 1284.00


 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14200    AND    14300
 WS     2   14200   14300      -1     3.4
 WC       1284.00  100.00 1284.00


 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14900    AND    1520
 WS     2   14900   15200      -1     3.4
 WC       1284.00  300.00 1284.00


 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15200    AND    1550
 WS     2   15200   15500      -1     3.4
 WC       1284.00  300.00 1284.00
1
   16OCT00      12:35:45                                                                    PAGE    2


 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15500    AND    1575
 WS     2   15500   15750      -1     3.4
 WC       1284.00  250.00 1284.00
1
   16OCT00      12:35:45                                                                    PAGE    3


 T1      HEC-2 Input   Data    file:   SPLIT    FLOW    SOLUTION
 T2      CHN128 - LATERAL WEIR SPLIT FLOW Q= 115 CFS
 T3      CHN128 - LATERAL WEIR SPLIT FLOW Q= 115 CFS

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         3         0         0   .001237         0         0         0   1284.00         0

 J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

    -10       -10

 QT        5      89.00     115.00     140.00     155.00     205.00
 NC   0.0450     0.0350     0.0350        0.1        0.3
 X1    13582         37    9964.73   10000.00       0.00       0.00       0.00
```

GR	1284.0	9940.05	1283.98	9940.08	1283.99	9940.10	1283.99	9940.11	1283.99	9940.25
GR	1284.0	9940.26	1283.99	9940.28	1283.99	9940.34	1283.99	9940.41	1283.99	9940.46
GR	1284.0	9940.48	1283.99	9940.50	1283.98	9940.53	1283.98	9940.60	1283.97	9940.74
GR	1284.0	9940.95	1283.96	9941.17	1284.00	9941.79	1284.00	9942.65	1284.00	9943.30
GR	1284.0	9946.51	1284.00	9948.10	1284.00	9949.62	1284.00	9952.57	1284.00	9954.57
GR	1284.0	9964.73	1283.02	9968.55	1282.22	9971.25	1282.00	9972.08	1280.00	9979.60
GR	1278.1	9983.20	1280.00	9986.24	1281.30	9991.28	1282.00	9992.45	1282.93	9993.94
GR	1284.0	9995.82	1284.00	10000.00						
X1	13700	16	9967.79	10000.00	118.00	118.00	118.00			
GR	1282.9	9967.79	1282.60	9968.89	1282.20	9970.83	1282.00	9971.43	1280.75	9974.60
GR	1280.0	9976.34	1278.11	9979.33	1280.00	9982.10	1281.36	9984.58	1282.00	9985.65
GR	1282.2	9985.98	1284.00	9989.37	1284.47	9999.68	1284.47	9999.75	1284.48	9999.94
GR	1284.5	10000.00								
X1	14000	10	9963.80	10000.00	300.00	300.00	300.00			
GR	1282.0	9963.80	1282.00	9965.57	1281.43	9967.11	1278.40	9974.60	1280.00	9977.92
GR	1280.7	9979.14	1282.00	9981.63	1283.10	9983.42	1284.00	9985.11	1284.00	10000.00
X1	14100	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1283.0	9962.24	1282.46	9965.05	1281.76	9966.82	1280.68	9969.42	1279.76	9971.09
GR	1278.4	9975.00	1279.76	9978.71	1279.97	9979.20	1281.16	9981.30	1281.62	9982.20
GR	1281.8	9982.49	1282.46	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14200	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1284.0	9962.24	1282.58	9965.05	1281.88	9966.82	1280.80	9969.42	1279.88	9971.09
GR	1278.6	9975.00	1279.88	9978.71	1280.09	9979.20	1281.28	9981.30	1281.74	9982.20
GR	1281.9	9982.49	1282.58	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14300	58	9962.24	10000.00	100.00	100.00	100.00			
GR	1286.7	9200.00	1286.55	9214.47	1286.24	9247.77	1286.22	9249.93	1286.18	9254.29
GR	1286.2	9255.76	1286.16	9257.27	1286.15	9257.81	1286.00	9277.62	1285.86	9285.09
GR	1285.7	9304.74	1285.65	9329.46	1285.65	9336.21	1285.54	9352.68	1285.53	9362.72
GR	1285.4	9373.11	1285.39	9384.32	1285.40	9396.09	1285.24	9405.27	1285.10	9415.00
GR	1285.0	9424.76	1284.38	9525.97	1284.38	9542.27	1284.38	9567.22	1284.38	9601.08
GR	1284.4	9629.04	1284.38	9656.22	1284.34	9659.30	1284.33	9660.48	1284.33	9663.77
GR	1284.3	9667.99	1284.28	9673.37	1284.24	9680.25	1284.18	9689.49	1284.10	9700.00
GR	1284.1	9702.38	1284.00	9713.05	1284.00	9721.01	1284.00	9756.39	1284.00	9768.53
GR	1284.0	9771.25	1284.00	9862.26	1284.00	9862.54	1284.00	9863.29	1284.00	9962.24

GR	1282.7	9965.05	1282.00	9966.82	1280.92	9969.42	1280.00	9971.09	1278.68	9975.00
GR	1280.0	9978.71	1280.21	9979.20	1281.40	9981.30	1281.86	9982.20	1282.00	9982.49
GR	1282.7	9983.79	1284.00	9986.52	1284.00	10000.00				
X1	14600	48	9950.37	10000.00	300.00	300.00	300.00			
GR	1287.0	9200.00	1286.35	9319.42	1286.34	9322.88	1286.30	9331.31	1286.24	9341.79
GR	1286.2	9354.73	1286.09	9370.67	1286.00	9388.44	1285.97	9396.61	1285.90	9423.66
GR	1285.8	9452.72	1285.76	9471.57	1284.98	9550.29	1284.88	9565.91	1284.80	9575.21
GR	1284.7	9583.70	1284.64	9597.36	1284.55	9609.89	1284.49	9620.27	1284.45	9627.64
GR	1284.4	9636.14	1284.40	9645.58	1284.40	9655.79	1284.39	9665.38	1284.36	9674.53
GR	1284.3	9683.42	1284.28	9691.86	1284.23	9699.84	1284.23	9700.00	1284.09	9720.90
GR	1284.0	9734.06	1284.00	9734.48	1284.00	9816.10	1284.00	9828.24	1284.00	9950.37
GR	1283.6	9963.68	1283.43	9964.04	1282.00	9967.35	1280.49	9970.86	1280.00	9971.94
GR	1279.0	9974.45	1280.00	9976.90	1280.62	9978.11	1282.00	9980.99	1283.04	9983.19
GR	1284.0	9985.23	1284.00	9996.17	1284.00	10000.00				
X1	14900	40	9867.14	10000.00	300.00	300.00	300.00			
GR	1288.0	9100.00	1288.00	9106.54	1288.00	9113.03	1288.00	9113.89	1287.79	9142.77
GR	1287.1	9246.69	1286.15	9379.98	1286.14	9381.89	1286.00	9403.34	1285.85	9435.98
GR	1285.7	9468.11	1285.61	9487.09	1285.57	9498.84	1285.55	9505.90	1284.18	9649.12
GR	1284.1	9654.29	1284.08	9663.19	1284.02	9690.76	1284.00	9692.87	1284.00	9693.17
GR	1284.0	9696.73	1284.00	9700.00	1284.00	9722.57	1284.00	9737.75	1284.00	9791.21
GR	1284.0	9867.14	1283.91	9872.09	1283.57	9893.26	1283.45	9901.09	1282.29	9951.49
GR	1282.0	9963.88	1281.74	9964.55	1280.00	9968.47	1279.25	9971.84	1280.00	9975.21
GR	1280.4	9976.12	1282.00	9980.08	1282.67	9981.73	1284.00	9985.10	1284.00	10000.00
X1	15200	44	9898.92	10000.00	300.00	300.00	300.00			
GR	1287.8	9100.00	1287.51	9150.46	1287.41	9170.08	1287.28	9197.12	1287.11	9232.27
GR	1286.9	9279.37	1286.53	9344.87	1286.03	9438.34	1286.00	9444.80	1285.99	9445.78
GR	1286.0	9445.89	1285.99	9446.03	1285.99	9446.18	1285.99	9446.61	1285.99	9446.73
GR	1286.0	9446.87	1285.98	9447.20	1285.71	9485.26	1284.16	9700.00	1284.07	9712.60
GR	1284.0	9721.93	1284.00	9724.33	1284.00	9760.53	1284.00	9898.92	1283.91	9920.86
GR	1283.9	9925.25	1283.67	9930.34	1283.18	9944.66	1282.83	9952.63	1282.88	9953.92
GR	1282.8	9956.45	1282.62	9960.54	1282.00	9967.35	1281.38	9968.90	1280.72	9971.05
GR	1280.0	9972.42	1279.54	9975.05	1280.00	9977.81	1280.37	9978.85	1280.95	9980.52
GR	1282.0	9983.53	1282.90	9986.13	1284.00	9989.23	1284.00	10000.00		
X1	15500	74	9952.04	10000.00	300.00	300.00	300.00			
GR	1287.7	9100.00	1286.98	9170.15	1286.62	9205.88	1286.47	9220.79	1286.40	9228.89
GR	1286.3	9234.06	1286.32	9237.59	1286.30	9240.12	1286.28	9242.28	1286.27	9244.17
GR	1286.3	9245.88	1286.17	9257.27	1286.15	9260.35	1286.14	9262.52	1286.00	9278.11
GR	1285.9	9281.92	1285.94	9284.29	1285.94	9288.93	1285.97	9298.88	1286.00	9309.20
GR	1286.0	9334.48	1286.00	9344.49	1286.00	9349.76	1286.00	9351.02	1286.00	9351.94
GR	1285.2	9492.99	1284.39	9635.88	1284.25	9660.73	1284.16	9677.43	1284.11	9686.14
GR	1284.1	9688.29	1284.09	9689.51	1284.09	9690.11	1284.09	9690.80	1284.09	9691.56
GR	1284.1	9693.72	1284.08	9693.98	1284.08	9694.12	1284.05	9699.80	1284.05	9700.00
GR	1284.0	9700.72	1284.05	9701.39	1284.05	9701.71	1284.05	9701.89	1284.04	9702.06
GR	1284.0	9702.43	1284.04	9702.67	1284.04	9703.27	1284.04	9703.43	1284.04	9703.93
GR	1284.0	9704.11	1284.05	9705.14	1284.05	9705.30	1284.05	9705.32	1284.06	9705.35
GR	1284.1	9705.43	1284.08	9705.69	1284.09	9705.84	1284.11	9706.11	1284.12	9706.29
GR	1284.1	9706.64	1284.00	9952.04	1282.38	9970.04	1282.00	9970.60	1280.38	9973.46
GR	1280.0	9974.35	1279.82	9975.43	1280.00	9976.51	1280.50	9978.10	1281.33	9980.70
GR	1282.0	9982.87	1283.13	9986.69	1284.00	9989.60	1284.00	10000.00		

X1	15750	98	9969.81	10000.00	250.00	250.00	250.00			
GR	1288.3	9000.00	1288.00	9006.08	1288.00	9010.63	1288.00	9011.99	1288.00	9047.38
GR	1288.0	9066.66	1286.80	9236.69	1286.71	9248.37	1286.64	9258.28	1286.53	9272.90
GR	1286.4	9293.19	1286.18	9325.24	1286.17	9327.91	1286.17	9330.25	1286.17	9332.11
GR	1286.2	9333.55	1286.17	9333.84	1286.12	9338.63	1286.04	9346.70	1286.00	9352.31
GR	1286.0	9353.46	1286.00	9354.16	1286.00	9362.89	1286.00	9364.71	1286.00	9366.26
GR	1286.0	9367.67	1286.00	9369.34	1286.00	9371.21	1286.00	9376.48	1286.00	9388.42

GR	1286.0	9396.78	1286.00	9415.14	1286.00	9415.50	1286.00	9421.19	1286.00	9436.14
GR	1286.0	9441.01	1286.00	9441.34	1286.00	9451.57	1285.65	9515.43	1285.61	9544.80
GR	1285.6	9566.53	1285.63	9577.15	1285.64	9583.15	1285.63	9588.96	1285.61	9601.37
GR	1285.6	9609.69	1285.63	9631.06	1285.63	9637.02	1285.65	9655.63	1285.65	9662.24
GR	1285.9	9738.73	1285.90	9742.64	1285.83	9745.00	1285.76	9762.03	1285.74	9772.19
GR	1285.8	9796.65	1285.70	9797.25	1285.75	9822.09	1285.73	9822.90	1285.71	9824.24
GR	1285.7	9826.16	1285.70	9828.02	1285.63	9830.00	1285.56	9832.39	1285.54	9863.26
GR	1285.5	9864.82	1285.50	9876.13	1285.53	9878.05	1285.39	9889.34	1285.49	9892.34
GR	1285.5	9894.05	1285.60	9895.05	1285.55	9896.06	1285.53	9896.97	1284.89	9918.28
GR	1284.0	9933.93	1284.00	9937.67	1284.00	9945.26	1284.00	9946.79	1284.04	9947.31
GR	1284.6	9959.24	1284.70	9959.51	1284.99	9963.36	1285.64	9966.69	1285.72	9967.24
GR	1284.0	9969.81	1282.31	9970.60	1281.96	9972.50	1280.69	9973.46	1280.31	9974.35
GR	1280.1	9975.43	1280.15	9976.51	1280.15	9978.10	1281.12	9980.70	1282.31	9982.87
GR	1283.4	9986.69	1284.00	9989.60	1284.00	10000.00				

1
PROFILE FOR STREAM CHN128 - LATERAL WEIR SP

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION  1278.     1279.     1280.     1281.     1282.     1283.     1284.     1285.     1286.     1287.
    SECNO   CUMDIS

  13582.00     0.  I         .         .         .      E  .         .        L.         .         .         .         .
              20.  I         .         .         .      WE .         .      L  R         .         .         .         .
              40.  I         .         .         .      WE .         .    L    .R        .         .         .         .
              60.  I         .         .         .       E .         .  L      . R       .         .         .         .
              80.  I         .         .         .       WE.         . L       . R       .         .         .         .
             100.  I         .         .         .       WE.         L         .  R      .         .         .         .
  13700.00   120.  I         .         .         .       WE.       L .         .   R     .         .         .         .
             140.  I         .         .         .        E.      L  .         .   R     .         .         .         .
             160.  I         .         .         .        WE      L  .         .  R      .         .         .         .
             180.  CI        .         .         .        WE     L   .         .  R      .         .         .         .
             200.  CI        .         .         .         E     L   .         .  R      .         .         .         .
             220.  CI        .         .         .         WE   L    .         . R       .         .         .         .
             240.  CI        .         .         .         WE  L     .         . R       .         .         .         .
             260.  CI        .         .         .         WE  L     .         . R       .         .         .         .
             280.  C I       .         .         .         .WEL      .         .R        .         .         .         .
             300.  C I       .         .         .         .WEL      .         .R        .         .         .         .
             320.  C I       .         .         .         .WE       .         .R        .         .         .         .
             340.  C I       .         .         .         .LWE      .         R         .         .         .         .
             360.  C I       .         .         .         .LWE      .         R         .         .         .         .
             380.  C  I      .         .         .         L WE      .         R         .         .         .         .
             400.  C  I      .         .         .         L  E      .        R.         .         .         .         .
  14000.00   420.  C  I      .         .         .        L.  WE     .        R.         .         .         .         .
             440.  C  I      .         .         .         .L WE     .        R.         .         .         .         .
             460.  C  I      .         .         .         .  WE     .        R.         .         .         .         .
             480.  C  I      .         .         .         .   WE    .        R.         .         .         .         .
             500.  C  I      .         .         .         .   WE L  .        R.         .         .         .         .
  14100.00   520.  C  I      .         .         .         .   WE   L.        R.         .         .         .         .
             540.  C  I      .         .         .         .    E    .L       R.         .         .         .         .
             560.  C   I     .         .         .         .    WE   .  L     R.         .         .         .         .
             580.  C   I     .         .         .         .    WE   .    L   R.         .         .         .         .
             600.  C    I    .         .         .         .    WE   .      L R.         .         .         .         .
  14200.00   620.  C    I    .         .         .         .     WE  .        L.         .         .         .         .
             640.  C    I    .         .         .         .     WE  .        L.         .         .         .         .
             660.  C    I    .         .         .         .     WE  .        L.         .         .         .         .
             680.  C    I    .         .         .         .     WE  .        L.         .         .         .         .
             700.  C     I   .         .         .         .      WE .        L.         .         .         .         .
  14300.00   720.  C     I   .         .         .         .      WE .        L.         .         .         .         .
             740.  C     I   .         .         .         .      WE .        L.         .         .         .         .
             760.  C     I   .         .         .         .      WE .        L.         .         .         .         .
             780.  C     I   .         .         .         .       WE.        L.         .         .         .         .
             800.  C      I  .         .         .         .       WE.        L.         .         .         .         .
             820.  C      I  .         .         .         .       WE.        L.         .         .         .         .
             840.  C      I  .         .         .         .        E.        L.         .         .         .         .
             860.  C      I  .         .         .         .        WE        L.         .         .         .         .
             880.  C       I .         .         .         .        WE        L.         .         .         .         .
             900.  C       I .         .         .         .        WE        L.         .         .         .         .
             920.  C       I .         .         .         .         E        L.         .         .         .         .
             940.  C       I .         .         .         .         WE       L.         .         .         .         .
             960.  C       I .         .         .         .         WE       L.         .         .         .         .
             980.  C        I.         .         .         .         WE       L.         .         .         .         .
            1000.  C        I.         .         .         .         .WE      L.         .         .         .         .
  14600.00  1020.  C        I.         .         .         .         .WE      L.         .         .         .         .
            1040.  C        I.         .         .         .         .WE      L.         .         .         .         .
            1060.  C        I.         .         .         .         .WE      L.         .         .         .         .
            1080.  C         I         .         .         .         . E      L.         .         .         .         .
            1100.  C         I         .         .         .         . E      L.         .         .         .         .
            1120.  C         I         .         .         .         . WE     L.         .         .         .         .
            1140.  C         I         .         .         .         . WE     L.         .         .         .         .
            1160.  C         I         .         .         .         . WE     L.         .         .         .         .
            1180.  C         I         .         .         .         .  E     L.         .         .         .         .
            1200.  C         .I        .         .         .         .  E     L.         .         .         .         .
            1220.  C         .I        .         .         .         .  E     L.         .         .         .         .
            1240.  C         .I        .         .         .         .  E     L.         .         .         .         .
            1260.  C         .I        .         .         .         .  WE    L.         .         .         .         .
            1280.  C         .I        .         .         .         .   E    L.         .         .         .         .
            1300.  C         .I        .         .         .         .   E    L.         .         .         .         .
  14900.00  1320.  C         . I       .         .         .         .   E    L.         .         .         .         .
            1340.  C         . I       .         .         .         .   E    L.         .         .         .         .
            1360.  C         . I       .         .         .         .   E    L.         .         .         .         .
            1380.  C         . I       .         .         .         .   E    L.         .         .         .         .
            1400.  C         . I       .         .         .         .   WE   L.         .         .         .         .
            1420.  C         . I       .         .         .         .    E   L.         .         .         .         .
            1440.  C         .  I      .         .         .         .    E   L.         .         .         .         .
            1460.  C         .  I      .         .         .         .    E   L.         .         .         .         .
            1480.  C         .  I      .         .         .         .    E   L.         .         .         .         .
            1500.  C         .  I      .         .         .         .    E   L.         .         .         .         .
            1520.  C         .  I      .         .         .         .    E   L.         .         .         .         .
            1540.  C         .   I     .         .         .         .    E   L.         .         .         .         .
            1560.  C         .   I     .         .         .         .    E   L.         .         .         .         .
            1580.  C         .   I     .         .         .         .    WE  L.         .         .         .         .
            1600.  C         .   I     .         .         .         .    WE  L.         .         .         .         .
  15200.00  1620.  C         .   I     .         .         .         .     E  L.         .         .         .         .
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            1640.  C         .    I    .         .         .         .    E  L.         .         .         .         .
            1660.  C         .    I    .         .         .         .    E  L.         .         .         .         .
            1680.  C         .    I    .         .         .         .    E  L.         .         .         .         .
            1700.  C         .    I    .         .         .         .    E  L.         .         .         .         .
            1720.  C         .    I    .         .         .         .   WE L.         .         .         .         .
            1740.  C         .     I   .         .         .         .   WE L.         .         .         .         .
            1760.  C         .     I   .         .         .         .    E L.         .         .         .         .
            1780.  C         .     I   .         .         .         .    E L.         .         .         .         .
            1800.  C         .     I   .         .         .         .    E L.         .         .         .         .
            1820.  C         .     I   .         .         .         .    E L.         .         .         .         .
            1840.  C         .     I   .         .         .         .   WEL.         .         .         .         .
            1860.  C         .      I  .         .         .         .   WEL.         .         .         .         .
            1880.  C         .      I  .         .         .         .   WEL.         .         .         .         .
            1900.  C         .      I  .         .         .         .    EL.         .         .         .         .
  15500.00  1920.  C         .      I  .         .         .         .    EL.         .         .         .         .
            1940.  C         .      I  .         .         .         .    EL.         .         .         .         .
            1960.  C         .       I .         .         .         .    WE.         .         .         .         .
            1980.  C         .       I .         .         .         .    WE.         .         .         .         .
            2000.  C         .       I .         .         .         .     E.         .         .         .         .
            2020.  C         .       I .         .         .         .     WE         .         .         .         .
            2040.  C         .        I.         .         .         .     WE         .         .         .         .
            2060.  C         .        I.         .         .         .     WE         .         .         .         .
            2080.  C         .        I.         .         .         .     LE         .         .         .         .
            2100.  C         .        I.         .         .         .     LWE        .         .         .         .
            2120.  C         .        I.         .         .         .     LWE        .         .         .         .
            2140.  C         .         I         .         .         .     LWE        .         .         .         .
            2160.  C         .         I         .         .         .     L.E        .         .         .         .
  15750.00  2180.  C         .         I         .         .         .     L.WE       .         .         .         .
1
   16OCT00      12:35:45                                                                                    PAGE     6
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THIS RUN EXECUTED 16OCT00 12:35:45

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*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	13582.000	.00	.00	.00	1278.10	56.81	1281.78	.00	1281.83	12.27	1.90	29.90	16.22
	13700.000	118.00	.00	.00	1278.11	56.81	1281.93	.00	1282.01	17.14	2.33	24.35	13.72
*	14000.000	300.00	.00	.00	1278.40	85.36	1282.39	.00	1282.48	14.66	2.37	36.06	22.29
	14100.000	100.00	.00	.00	1278.40	100.53	1282.53	.00	1282.62	13.13	2.42	41.46	27.74
	14200.000	100.00	.00	.00	1278.60	100.53	1282.66	.00	1282.75	13.05	2.43	41.38	27.83
	14300.000	100.00	.00	.00	1278.68	100.53	1282.79	.00	1282.88	12.76	2.41	41.74	28.14
	14600.000	300.00	.00	.00	1279.00	100.53	1283.19	.00	1283.28	14.19	2.49	40.30	26.69
*	14900.000	300.00	.00	.00	1279.25	100.53	1283.50	.00	1283.51	4.53	1.00	100.89	47.22
	15200.000	300.00	.00	.00	1279.54	100.53	1283.65	.00	1283.68	6.39	1.30	77.60	39.77
	15500.000	300.00	.00	.00	1279.82	100.53	1283.87	.00	1283.92	9.75	1.77	56.89	32.19
	15750.000	250.00	.00	.00	1280.10	115.00	1284.18	.00	1284.26	18.14	2.34	51.41	27.00

1
16OCT00 12:35:45 PAGE 7

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	13582.000	56.81	1281.78	.00	.00	-2.22	19.15	.00
	13700.000	56.81	1281.93	.00	.15	.00	13.91	118.00
*	14000.000	85.36	1282.39	.00	.47	.00	18.46	300.00
	14100.000	100.53	1282.53	.00	.14	.00	19.20	100.00
	14200.000	100.53	1282.66	.00	.13	.00	19.04	100.00
	14300.000	100.53	1282.79	.00	.13	.00	19.11	100.00
	14600.000	100.53	1283.19	.00	.40	.00	18.90	300.00
*	14900.000	100.53	1283.50	.00	.31	.00	85.88	300.00
	15200.000	100.53	1283.65	.00	.15	.00	57.36	300.00
	15500.000	100.53	1283.87	.00	.22	.00	35.68	300.00
	15750.000	115.00	1284.18	.00	.31	.00	49.83	250.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=  14000.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  14900.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

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1*******************************************
 *  HEC-2 WATER SURFACE PROFILES           *
 *                                         *
 *  Version   4.6.2;  May 1991             *
 *                                         *
 *  RUN DATE    16OCT00    TIME   12:36:33 *
 *******************************************
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 *  U.S. ARMY CORPS OF ENGINEERS           *
 *  HYDROLOGIC ENGINEERING CENTER          *
 *  609 SECOND STREET, SUITE D             *
 *  DAVIS, CALIFORNIA 95616-4687           *
 *          (916) 756-1104                 *
 ******************************************
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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
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1
   16OCT00      12:36:33                                                                    PAGE    1


                                                                THIS RUN EXECUTED 16OCT00    12:36:33
 *************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 *************************************



 SPLIT FLOW BEING PERFORMED

 SF SPLIT FLOW PROBLEM

 JC SPLIT FLOW PROBLEM
 JP     0       0       0       0       0

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13582    AND    13700
 WS     2   13582   13700      -1      3.4
 WC       1284.00  118.00 1282.90

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13700    AND    14000
 WS     2   13700   14000      -1      3.4
 WC       1282.90  300.00 1282.00

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14000    AND    14100
 WS     2   14000   14100      -1      3.4
 WC       1282.00  100.00 1283.00

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14100    AND    14200
 WS     2   14100   14200      -1      3.4
 WC       1283.00  100.00 1284.00

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14200    AND    14300
 WS     2   14200   14300      -1      3.4
 WC       1284.00  100.00 1284.00

 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14900    AND    1520
 WS     2   14900   15200      -1      3.4
 WC       1284.00  300.00 1284.00

 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15200    AND    1550
 WS     2   15200   15500      -1      3.4
 WC       1284.00  300.00 1284.00
1
   16OCT00      12:36:33                                                                    PAGE    2


 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15500    AND    1575
 WS     2   15500   15750      -1      3.4
 WC       1284.00  250.00 1284.00
1
   16OCT00      12:36:33                                                                    PAGE    3

 T1      HEC-2 Input   Data    file:   SPLIT    FLOW    SOLUTION
 T2      CHN128 - LATERAL WEIR SPLIT FLOW Q= 89  CFS
 T3      CHN128 - LATERAL WEIR SPLIT FLOW Q= 89  CFS

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2         0         0   .001237         0         0         0   1284.00         0

 J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

    -10       -10

 QT        5     89.00    115.00    140.00    155.00    205.00
 NC   0.0450    0.0350    0.0350       0.1       0.3
 X1    13582        37   9964.73  10000.00      0.00      0.00      0.00
```

GR	1284.0	9940.05	1283.98	9940.08	1283.99	9940.10	1283.99	9940.11	1283.99	9940.29
GR	1284.0	9940.26	1283.99	9940.28	1283.99	9940.34	1283.99	9940.41	1283.99	9940.46
GR	1284.0	9940.48	1283.99	9940.50	1283.98	9940.53	1283.98	9940.60	1283.97	9940.74
GR	1284.0	9940.95	1283.96	9941.17	1284.00	9941.79	1284.00	9942.65	1284.00	9943.30
GR	1284.0	9946.51	1284.00	9948.10	1284.00	9949.62	1284.00	9952.57	1284.00	9954.57
GR	1284.0	9964.73	1283.02	9968.55	1282.22	9971.25	1282.00	9972.08	1280.00	9979.60
GR	1278.1	9983.20	1280.00	9986.24	1281.30	9991.28	1282.00	9992.45	1282.93	9993.94
GR	1284.0	9995.82	1284.00	10000.00						
X1	13700	16	9967.79	10000.00	118.00	118.00	118.00			
GR	1282.9	9967.79	1282.60	9968.89	1282.20	9970.83	1282.00	9971.43	1280.75	9974.60
GR	1280.0	9976.34	1278.11	9979.33	1280.00	9982.10	1281.36	9984.58	1282.00	9985.65
GR	1282.2	9985.98	1284.00	9989.37	1284.47	9999.68	1284.47	9999.75	1284.48	9999.94
GR	1284.5	10000.00								
X1	14000	10	9963.80	10000.00	300.00	300.00	300.00			
GR	1282.0	9963.80	1282.00	9965.57	1281.43	9967.11	1278.40	9974.60	1280.00	9977.92
GR	1280.7	9979.14	1282.00	9981.63	1283.10	9983.42	1284.00	9985.11	1284.00	10000.00
X1	14100	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1283.0	9962.24	1282.46	9965.05	1281.76	9966.82	1280.68	9969.42	1279.76	9971.09
GR	1278.4	9975.00	1279.76	9978.71	1279.97	9979.20	1281.16	9981.30	1281.62	9982.20
GR	1281.8	9982.49	1282.46	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14200	14	9962.24	10000.00	100.00	100.00	100.00			
GR	1284.0	9962.24	1282.58	9965.05	1281.88	9966.82	1280.80	9969.42	1279.88	9971.09
GR	1278.6	9975.00	1279.88	9978.71	1280.09	9979.20	1281.28	9981.30	1281.74	9982.20
GR	1281.9	9982.49	1282.58	9983.79	1284.00	9986.52	1284.00	10000.00		
X1	14300	58	9962.24	10000.00	100.00	100.00	100.00			
GR	1286.7	9200.00	1286.55	9214.47	1286.24	9247.77	1286.22	9249.93	1286.18	9254.29
GR	1286.2	9255.76	1286.16	9257.27	1286.15	9257.81	1286.00	9277.62	1285.86	9285.09
GR	1285.7	9304.74	1285.65	9329.46	1285.65	9336.21	1285.54	9352.68	1285.53	9362.72
GR	1285.4	9373.11	1285.39	9384.32	1285.40	9396.09	1285.24	9405.27	1285.10	9415.00
GR	1285.0	9424.76	1284.38	9525.97	1284.38	9542.27	1284.38	9567.22	1284.38	9601.08
GR	1284.4	9629.04	1284.38	9656.22	1284.34	9659.30	1284.33	9660.48	1284.33	9663.77
GR	1284.3	9667.99	1284.28	9673.37	1284.24	9680.25	1284.18	9689.49	1284.10	9700.00
GR	1284.1	9702.38	1284.00	9713.05	1284.00	9721.01	1284.00	9756.39	1284.00	9768.53
GR	1284.0	9771.25	1284.00	9862.26	1284.00	9862.54	1284.00	9863.29	1284.00	9962.24

GR	1282.7	9965.05	1282.00	9966.82	1280.92	9969.42	1280.00	9971.09	1278.68	9975.00
GR	1280.0	9978.71	1280.21	9979.20	1281.40	9981.30	1281.86	9982.20	1282.00	9982.49
GR	1282.7	9983.79	1284.00	9986.52	1284.00	10000.00				
X1	14600	48	9950.37	10000.00	300.00	300.00	300.00			
GR	1287.0	9200.00	1286.35	9319.42	1286.34	9322.88	1286.30	9331.31	1286.24	9341.79
GR	1286.2	9354.73	1286.09	9370.67	1286.00	9388.44	1285.97	9396.61	1285.90	9423.66
GR	1285.8	9452.72	1285.76	9471.57	1284.98	9550.29	1284.88	9565.91	1284.80	9575.21
GR	1284.7	9583.70	1284.64	9597.36	1284.55	9609.89	1284.49	9620.27	1284.45	9627.64
GR	1284.4	9636.14	1284.40	9645.58	1284.40	9655.79	1284.39	9665.38	1284.36	9674.53
GR	1284.3	9683.42	1284.28	9691.86	1284.23	9699.84	1284.23	9700.00	1284.09	9720.90
GR	1284.0	9734.06	1284.00	9734.48	1284.00	9816.10	1284.00	9828.24	1284.00	9950.37
GR	1283.6	9963.68	1283.43	9964.04	1282.00	9967.35	1280.49	9970.86	1280.00	9971.94
GR	1279.0	9974.45	1280.00	9976.90	1280.62	9978.11	1282.00	9980.99	1283.04	9983.19
GR	1284.0	9985.23	1284.00	9996.17	1284.00	10000.00				
X1	14900	40	9867.14	10000.00	300.00	300.00	300.00			
GR	1288.0	9100.00	1288.00	9106.54	1288.00	9113.03	1288.00	9113.89	1287.79	9142.77
GR	1287.1	9246.69	1286.15	9379.98	1286.14	9381.89	1286.00	9403.34	1285.85	9435.98
GR	1285.7	9468.11	1285.61	9487.09	1285.57	9498.84	1285.55	9505.90	1284.18	9649.12
GR	1284.1	9654.29	1284.08	9663.19	1284.02	9690.76	1284.00	9692.87	1284.00	9693.17
GR	1284.0	9696.73	1284.00	9700.00	1284.00	9722.57	1284.00	9737.75	1284.00	9791.21
GR	1284.0	9867.14	1283.91	9872.09	1283.57	9893.26	1283.45	9901.09	1282.29	9951.49
GR	1282.0	9963.88	1281.74	9964.55	1280.00	9968.47	1279.25	9971.84	1280.00	9975.21
GR	1280.4	9976.12	1282.00	9980.08	1282.67	9981.73	1284.00	9985.10	1284.00	10000.00
X1	15200	44	9898.92	10000.00	300.00	300.00	300.00			
GR	1287.8	9100.00	1287.51	9150.46	1287.41	9170.08	1287.28	9197.12	1287.11	9232.27
GR	1286.9	9279.37	1286.53	9344.87	1286.03	9438.34	1286.00	9444.80	1285.99	9445.78
GR	1286.0	9445.89	1285.99	9446.03	1285.99	9446.18	1285.99	9446.61	1285.99	9446.73
GR	1286.0	9446.87	1285.98	9447.20	1285.71	9485.26	1284.16	9700.00	1284.07	9712.60
GR	1284.0	9721.93	1284.00	9724.33	1284.00	9760.53	1284.00	9898.92	1283.91	9920.86
GR	1283.9	9925.25	1283.67	9930.34	1283.18	9944.66	1282.83	9952.63	1282.88	9953.92
GR	1282.8	9956.45	1282.62	9960.54	1282.00	9967.35	1281.38	9968.90	1280.72	9971.05
GR	1280.0	9972.42	1279.54	9975.05	1280.00	9977.81	1280.37	9978.85	1280.95	9980.52
GR	1282.0	9983.53	1282.90	9986.13	1284.00	9989.23	1284.00	10000.00		
X1	15500	74	9952.04	10000.00	300.00	300.00	300.00			
GR	1287.7	9100.00	1286.98	9170.15	1286.62	9205.88	1286.47	9220.79	1286.40	9228.89
GR	1286.3	9234.06	1286.32	9237.59	1286.30	9240.12	1286.28	9242.28	1286.27	9244.17
GR	1286.3	9245.88	1286.17	9257.27	1286.15	9260.35	1286.14	9262.52	1286.00	9278.11
GR	1285.9	9281.92	1285.94	9284.29	1285.94	9288.93	1285.97	9298.88	1286.00	9309.20
GR	1286.0	9334.48	1286.00	9344.49	1286.00	9349.76	1286.00	9351.02	1286.00	9351.94
GR	1285.2	9492.99	1284.39	9635.88	1284.25	9660.73	1284.16	9677.43	1284.11	9686.14
GR	1284.1	9688.29	1284.09	9689.51	1284.09	9690.11	1284.09	9690.80	1284.09	9691.56
GR	1284.1	9693.72	1284.08	9693.98	1284.08	9694.12	1284.05	9699.80	1284.05	9700.00
GR	1284.0	9700.72	1284.05	9701.39	1284.05	9701.71	1284.05	9701.89	1284.04	9702.06
GR	1284.0	9702.43	1284.04	9702.67	1284.04	9703.27	1284.04	9703.43	1284.04	9703.93
GR	1284.0	9704.11	1284.05	9705.14	1284.05	9705.30	1284.05	9705.32	1284.06	9705.35
GR	1284.1	9705.43	1284.08	9705.69	1284.09	9705.84	1284.11	9706.11	1284.12	9706.29
GR	1284.1	9706.64	1284.00	9952.04	1282.38	9970.04	1282.00	9970.60	1280.38	9973.46
GR	1280.0	9974.35	1279.82	9975.43	1280.00	9976.51	1280.50	9978.10	1281.33	9980.70
GR	1282.0	9982.87	1283.13	9986.69	1284.00	9989.60	1284.00	10000.00		

X1	15750	98	9969.81	10000.00	250.00	250.00	250.00			
GR	1288.3	9000.00	1288.00	9006.08	1288.00	9010.63	1288.00	9011.99	1288.00	9047.38
GR	1288.0	9066.66	1286.80	9236.69	1286.71	9248.37	1286.64	9258.28	1286.53	9272.90
GR	1286.4	9293.19	1286.18	9325.24	1286.17	9327.91	1286.17	9330.25	1286.17	9332.11
GR	1286.2	9333.55	1286.17	9333.84	1286.12	9338.63	1286.04	9346.70	1286.00	9352.31
GR	1286.0	9353.46	1286.00	9354.16	1286.00	9362.89	1286.00	9364.71	1286.00	9366.26
GR	1286.0	9367.67	1286.00	9369.34	1286.00	9371.21	1286.00	9376.48	1286.00	9388.42

GR	1286.0	9396.78	1286.00	9415.14	1286.00	9415.50	1286.00	9421.19	1286.00	9430.14
GR	1286.0	9441.01	1286.00	9441.34	1286.00	9451.57	1285.65	9515.43	1285.61	9544.80
GR	1285.6	9566.53	1285.63	9577.15	1285.64	9583.15	1285.63	9588.96	1285.61	9601.37
GR	1285.6	9609.69	1285.63	9631.06	1285.63	9637.02	1285.65	9655.63	1285.65	9662.24
GR	1285.9	9738.73	1285.90	9742.64	1285.83	9745.00	1285.76	9762.03	1285.74	9772.19
GR	1285.8	9796.65	1285.70	9797.25	1285.75	9822.09	1285.73	9822.90	1285.71	9824.24
GR	1285.7	9826.16	1285.70	9828.02	1285.63	9830.00	1285.56	9832.39	1285.54	9863.26
GR	1285.5	9864.82	1285.50	9876.13	1285.53	9878.05	1285.39	9889.34	1285.49	9892.34
GR	1285.5	9894.05	1285.60	9895.05	1285.55	9896.06	1285.53	9896.97	1284.89	9918.28
GR	1284.0	9933.93	1284.00	9937.67	1284.00	9945.26	1284.00	9946.79	1284.04	9947.31
GR	1284.6	9959.24	1284.70	9959.51	1284.99	9963.36	1285.64	9966.69	1285.72	9967.24
GR	1284.0	9969.81	1282.31	9970.60	1281.96	9972.50	1280.69	9973.46	1280.31	9974.35
GR	1280.1	9975.43	1280.15	9976.51	1280.15	9978.10	1281.12	9980.70	1282.31	9982.87
GR	1283.4	9986.69	1284.00	9989.60	1284.00	10000.00				

1

PROFILE FOR STREAM CHN128 - LATERAL WEIR SP

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

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ELEVATION  1278.     1279.     1280.     1281.     1282.     1283.     1284.     1285.     1286.     1287.
    SECNO   CUMDIS

 13582.00     0.  I         .         .         .      E  .         .        L.         .         .         .         .
             20.  I         .         .         .      E  .         .      L  R         .         .         .         .
             40.  I         .         .         .      WE .         .    L    .R        .         .         .         .
             60.  I         .         .         .      WE .         .  L      . R       .         .         .         .
             80.  I         .         .         .       E .         . L       . R       .         .         .         .
            100.  I         .         .         .       WE.         L         .  R      .         .         .         .
 13700.00   120.  I         .         .         .       WE.       L .         .   R     .         .         .         .
            140.  I         .         .         .       WE.      L  .         .   R     .         .         .         .
            160.  I         .         .         .        E.      L  .         .  R      .         .         .         .
            180.  CI        .         .         .        WE     L   .         .  R      .         .         .         .
            200.  CI        .         .         .        WE     L   .         .  R      .         .         .         .
            220.  CI        .         .         .         E    L    .         . R       .         .         .         .
            240.  CI        .         .         .         WE  L     .         . R       .         .         .         .
            260.  CI        .         .         .         WE  L     .         . R       .         .         .         .
            280.  C I       .         .         .         WE L      .         .R        .         .         .         .
            300.  C I       .         .         .         .WEL      .         .R        .         .         .         .
            320.  C I       .         .         .         .WE       .         .R        .         .         .         .
            340.  C I       .         .         .         .WE       .         R         .         .         .         .
            360.  C I       .         .         .         .LE       .         R         .         .         .         .
            380.  C  I      .         .         .         L WE      .         R         .         .         .         .
            400.  C  I      .         .         .         L WE      .        R.         .         .         .         .
 14000.00   420.  C  I      .         .         .        L.  E      .        R.         .         .         .         .
            440.  C  I      .         .         .         .L WE     .        R.         .         .         .         .
            460.  C  I      .         .         .         .  WE     .        R.         .         .         .         .
            480.  C  I      .         .         .         .  WEL    .        R.         .         .         .         .
            500.  C  I      .         .         .         .  WE  L  .        R.         .         .         .         .
 14100.00   520.  C  I      .         .         .         .   E    L.        R.         .         .         .         .
            540.  C  I      .         .         .         .   WE    .L       R.         .         .         .         .
            560.  C   I     .         .         .         .   WE    .  L     R.         .         .         .         .
            580.  C   I     .         .         .         .   WE    .    L   R.         .         .         .         .
            600.  C    I    .         .         .         .    E    .      L R.         .         .         .         .
 14200.00   620.  C    I    .         .         .         .    WE   .        L.         .         .         .         .
            640.  C    I    .         .         .         .    WE   .        L.         .         .         .         .
            660.  C    I    .         .         .         .    WE   .        L.         .         .         .         .
            680.  C    I    .         .         .         .    WE   .        L.         .         .         .         .
            700.  C     I   .         .         .         .     E   .        L.         .         .         .         .
 14300.00   720.  C     I   .         .         .         .     WE  .        L.         .         .         .         .
            740.  C     I   .         .         .         .     WE  .        L.         .         .         .         .
            760.  C     I   .         .         .         .     WE  .        L.         .         .         .         .
            780.  C     I   .         .         .         .      E  .        L.         .         .         .         .
            800.  C      I  .         .         .         .      WE .        L.         .         .         .         .
            820.  C      I  .         .         .         .      WE .        L.         .         .         .         .
            840.  C      I  .         .         .         .      WE .        L.         .         .         .         .
            860.  C      I  .         .         .         .       E .        L.         .         .         .         .
            880.  C       I .         .         .         .       WE.        L.         .         .         .         .
            900.  C       I .         .         .         .       WE.        L.         .         .         .         .
            920.  C       I .         .         .         .       WE.        L.         .         .         .         .
            940.  C       I .         .         .         .        E.        L.         .         .         .         .
            960.  C       I .         .         .         .        WE        L.         .         .         .         .
            980.  C        I.         .         .         .        WE        L.         .         .         .         .
           1000.  C        I.         .         .         .        WE        L.         .         .         .         .
 14600.00  1020.  C        I.         .         .         .         E        L.         .         .         .         .
           1040.  C        I.         .         .         .         WE       L.         .         .         .         .
           1060.  C        I.         .         .         .         WE       L.         .         .         .         .
           1080.  C         I         .         .         .         WE       L.         .         .         .         .
           1100.  C         I         .         .         .         WE       L.         .         .         .         .
           1120.  C         I         .         .         .         .E       L.         .         .         .         .
           1140.  C         I         .         .         .         .E       L.         .         .         .         .
           1160.  C         I         .         .         .         .E       L.         .         .         .         .
           1180.  C         I         .         .         .         .WE      L.         .         .         .         .
           1200.  C         .I        .         .         .         .WE      L.         .         .         .         .
           1220.  C         .I        .         .         .         . E      L.         .         .         .         .
           1240.  C         .I        .         .         .         . E      L.         .         .         .         .
           1260.  C         .I        .         .         .         . E      L.         .         .         .         .
           1280.  C         .I        .         .         .         . E      L.         .         .         .         .
           1300.  C         .I        .         .         .         . WE     L.         .         .         .         .
 14900.00  1320.  C         . I       .         .         .         .  E     L.         .         .         .         .
           1340.  C         . I       .         .         .         .  E     L.         .         .         .         .
           1360.  C         . I       .         .         .         .  E     L.         .         .         .         .
           1380.  C         . I       .         .         .         .  E     L.         .         .         .         .
           1400.  C         . I       .         .         .         .  E     L.         .         .         .         .
           1420.  C         . I       .         .         .         .  E     L.         .         .         .         .
           1440.  C         .  I      .         .         .         .  E     L.         .         .         .         .
           1460.  C         .  I      .         .         .         .  E     L.         .         .         .         .
           1480.  C         .  I      .         .         .         .  WE    L.         .         .         .         .
           1500.  C         .  I      .         .         .         .  WE    L.         .         .         .         .
           1520.  C         .  I      .         .         .         .   E    L.         .         .         .         .
           1540.  C         .   I     .         .         .         .   E    L.         .         .         .         .
           1560.  C         .   I     .         .         .         .   E    L.         .         .         .         .
           1580.  C         .   I     .         .         .         .   E    L.         .         .         .         .
           1600.  C         .   I     .         .         .         .   E    L.         .         .         .         .
 15200.00  1620.  C         .   I     .         .         .         .   E    L.         .         .         .         .
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            1640.  C         .   I    .         .         .         .   E    L.         .         .         .         .
            1660.  C         .   I    .         .         .         .  WE    L.         .         .         .         .
            1680.  C         .   I    .         .         .         .   E    L.         .         .         .         .
            1700.  C         .   I    .         .         .         .   E    L.         .         .         .         .
            1720.  C         .   I    .         .         .         .   E    L.         .         .         .         .
            1740.  C         .    I   .         .         .         .   E    L.         .         .         .         .
            1760.  C         .    I   .         .         .         .   E    L.         .         .         .         .
            1780.  C         .    I   .         .         .         .  WE    L.         .         .         .         .
            1800.  C         .    I   .         .         .         .  WE    L.         .         .         .         .
            1820.  C         .    I   .         .         .         .   E    L.         .         .         .         .
            1840.  C         .    I   .         .         .         .   E    L.         .         .         .         .
            1860.  C         .     I  .         .         .         .   E    L.         .         .         .         .
            1880.  C         .     I  .         .         .         .   E    L.         .         .         .         .
            1900.  C         .     I  .         .         .         .  WE    L.         .         .         .         .
  15500.00  1920.  C         .     I  .         .         .         .  WE    L.         .         .         .         .
            1940.  C         .     I  .         .         .         .   E    L.         .         .         .         .
            1960.  C         .      I .         .         .         .   E    L.         .         .         .         .
            1980.  C         .      I .         .         .         .   E    L.         .         .         .         .
            2000.  C         .      I .         .         .         .  WEL.         .         .         .         .
            2020.  C         .      I .         .         .         .  WEL.         .         .         .         .
            2040.  C         .       I.         .         .         .   EL.         .         .         .         .
            2060.  C         .       I.         .         .         .   EL.         .         .         .         .
            2080.  C         .       I.         .         .         .   WE.         .         .         .         .
            2100.  C         .       I.         .         .         .   WE.         .         .         .         .
            2120.  C         .       I.         .         .         .    E.         .         .         .         .
            2140.  C         .        I         .         .         .    E.         .         .         .         .
            2160.  C         .        I         .         .         .   WE         .         .         .         .
  15750.00  2180.  C         .        I         .         .         .   WE         .         .         .         .
1
   16OCT00      12:36:33                                                                                    PAGE    6
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THIS RUN EXECUTED 16OCT00 12:36:33

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*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	13582.000	.00	.00	.00	1278.10	55.79	1281.76	.00	1281.81	12.25	1.89	29.52	15.94
	13700.000	118.00	.00	.00	1278.11	55.79	1281.91	.00	1281.99	17.03	2.32	24.08	13.52
*	14000.000	300.00	.00	.00	1278.40	77.80	1282.35	.00	1282.43	13.01	2.21	35.27	21.57
	14100.000	100.00	.00	.00	1278.40	88.95	1282.47	.00	1282.54	10.95	2.20	40.35	26.88
	14200.000	100.00	.00	.00	1278.60	88.95	1282.58	.00	1282.66	11.31	2.23	39.87	26.45
	14300.000	100.00	.00	.00	1278.68	88.95	1282.69	.00	1282.77	11.26	2.23	39.91	26.51
	14600.000	300.00	.00	.00	1279.00	88.95	1283.05	.00	1283.14	13.22	2.36	37.75	24.46
*	14900.000	300.00	.00	.00	1279.25	88.95	1283.35	.00	1283.37	4.77	1.00	88.90	40.72
	15200.000	300.00	.00	.00	1279.54	88.95	1283.51	.00	1283.53	6.39	1.27	69.79	35.18
	15500.000	300.00	.00	.00	1279.82	88.95	1283.73	.00	1283.77	9.57	1.71	51.95	28.76
	15750.000	250.00	.00	.00	1280.10	89.00	1284.02	.00	1284.08	15.92	2.05	43.58	22.31

1
16OCT00 12:36:33 PAGE 7

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	13582.000	55.79	1281.76	.00	.00	-2.24	19.05	.00
	13700.000	55.79	1281.91	.00	.15	.00	13.83	118.00
*	14000.000	77.80	1282.35	.00	.44	.00	18.40	300.00
	14100.000	88.95	1282.47	.00	.12	.00	18.80	100.00
	14200.000	88.95	1282.58	.00	.11	.00	18.73	100.00
	14300.000	88.95	1282.69	.00	.11	.00	18.70	100.00
	14600.000	88.95	1283.05	.00	.36	.00	18.29	300.00
*	14900.000	88.95	1283.35	.00	.30	.00	78.08	300.00
	15200.000	88.95	1283.51	.00	.16	.00	52.82	300.00
	15500.000	88.95	1283.73	.00	.22	.00	33.62	300.00
	15750.000	89.00	1284.02	.00	.29	.00	43.29	250.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=  14000.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  14900.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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1*****************************************
****************************************
 *  HEC-2 WATER SURFACE PROFILES          *                    *  U.S. ARMY CORPS OF ENGINEERS
 *                                        *                    *  HYDROLOGIC ENGINEERING CENTER
 *  Version   4.6.2;  May 1991            *                    *  609 SECOND STREET, SUITE D
 *                                        *                    *  DAVIS, CALIFORNIA 95616-4687
 *  RUN DATE    16OCT00    TIME   12:41:23 *                    *          (916) 756-1104
 *****************************************
****************************************

                                        X     X  XXXXXXX  XXXXX            XXXXX
                                        X     X  X       X    X          X     X
                                        X     X  X       X                     X
                                        XXXXXXX  XXXX    X         XXXXX   XXXXX
                                        X     X  X       X                X
                                        X     X  X       X    X           X
                                        X     X  XXXXXXX  XXXXX            XXXXXXX
1
   16OCT00      12:41:23                                                                    PAGE    1


                                                                  THIS RUN EXECUTED 16OCT00    12:41:23
 ***************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 ***************************************


 SPLIT FLOW BEING PERFORMED

 SF SPLIT FLOW PROBLEM

 JC SPLIT FLOW PROBLEM
 JP     0       0       0       0        0

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13582    AND    13700
 WS     2   13582   13700      -1      3.4
 WC       1284.00  118.00 1282.90

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   13700    AND    14000
 WS     2   13700   14000      -1      3.4
 WC       1282.90  300.00 1282.00

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14000    AND    14100
 WS     2   14000   14100      -1      3.4
 WC       1282.00  100.00 1283.00

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14100    AND    14200
 WS     2   14100   14200      -1      3.4
 WC       1283.00  100.00 1284.00

 TW      LEFT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14200    AND    14300
 WS     2   14200   14300      -1      3.4
 WC       1284.00  100.00 1284.00

 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   14900    AND    1520
 WS     2   14900   15200      -1      3.4
 WC       1284.00  300.00 1284.00

 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15200    AND    1550
 WS     2   15200   15500      -1      3.4
 WC       1284.00  300.00 1284.00
1
   16OCT00      12:41:23                                                                    PAGE    2


 TW      RIGHT   BANK    NATURAL LEVEE    BETWEEN SECTIONS   15500    AND    1575
 WS     2   15500   15750      -1      3.4
 WC       1284.00  250.00 1284.00
1
   16OCT00      12:41:23                                                                    PAGE    3

 T1      HEC-2 Input   Data    file:   SPLIT    FLOW    SOLUTION
 T2      CHN128 - LATERAL WEIR SPLIT FLOW Q= 45  CFS
 T3      CHN128 - LATERAL WEIR SPLIT FLOW Q= 45  CFS

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2         0         0   .001237         0         0         0   1284.00         0
```

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J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

    -10      -10

QT        1     45.00
NC   0.0450    0.0350    0.0350       0.1       0.3
X1    13582        37   9964.73  10000.00      0.00      0.00      0.00
GR   1284.0   9940.05   1283.98   9940.08   1283.99   9940.10   1283.99   9940.11   1283.99   9940.25
GR   1284.0   9940.26   1283.99   9940.28   1283.99   9940.34   1283.99   9940.41   1283.99   9940.46
GR   1284.0   9940.48   1283.99   9940.50   1283.98   9940.53   1283.98   9940.60   1283.97   9940.74
GR   1284.0   9940.95   1283.96   9941.17   1284.00   9941.79   1284.00   9942.65   1284.00   9943.30
GR   1284.0   9946.51   1284.00   9948.10   1284.00   9949.62   1284.00   9952.57   1284.00   9954.57
GR   1284.0   9964.73   1283.02   9968.55   1282.22   9971.25   1282.00   9972.08   1280.00   9979.60
GR   1278.1   9983.20   1280.00   9986.24   1281.30   9991.28   1282.00   9992.45   1282.93   9993.94
GR   1284.0   9995.82   1284.00  10000.00

X1    13700        16   9967.79  10000.00    118.00    118.00    118.00
GR   1282.9   9967.79   1282.60   9968.89   1282.20   9970.83   1282.00   9971.43   1280.75   9974.60
GR   1280.0   9976.34   1278.11   9979.33   1280.00   9982.10   1281.36   9984.58   1282.00   9985.65
GR   1282.2   9985.98   1284.00   9989.37   1284.47   9999.68   1284.47   9999.75   1284.48   9999.94
GR   1284.5  10000.00

X1    14000        10   9963.80  10000.00    300.00    300.00    300.00
GR   1282.0   9963.80   1282.00   9965.57   1281.43   9967.11   1278.40   9974.60   1280.00   9977.92
GR   1280.7   9979.14   1282.00   9981.63   1283.10   9983.42   1284.00   9985.11   1284.00  10000.00

X1    14100        14   9962.24  10000.00    100.00    100.00    100.00
GR   1283.0   9962.24   1282.46   9965.05   1281.76   9966.82   1280.68   9969.42   1279.76   9971.09
GR   1278.4   9975.00   1279.76   9978.71   1279.97   9979.20   1281.16   9981.30   1281.62   9982.20
GR   1281.8   9982.49   1282.46   9983.79   1284.00   9986.52   1284.00  10000.00

X1    14200        14   9962.24  10000.00    100.00    100.00    100.00
GR   1284.0   9962.24   1282.58   9965.05   1281.88   9966.82   1280.80   9969.42   1279.88   9971.09
GR   1278.6   9975.00   1279.88   9978.71   1280.09   9979.20   1281.28   9981.30   1281.74   9982.20
GR   1281.9   9982.49   1282.58   9983.79   1284.00   9986.52   1284.00  10000.00

X1    14300        58   9962.24  10000.00    100.00    100.00    100.00
GR   1286.7   9200.00   1286.55   9214.47   1286.24   9247.77   1286.22   9249.93   1286.18   9254.29
GR   1286.2   9255.76   1286.16   9257.27   1286.15   9257.81   1286.00   9277.62   1285.86   9285.09
GR   1285.7   9304.74   1285.65   9329.46   1285.65   9336.21   1285.54   9352.68   1285.53   9362.72
GR   1285.4   9373.11   1285.39   9384.32   1285.40   9396.09   1285.24   9405.27   1285.10   9415.00
GR   1285.0   9424.76   1284.38   9525.97   1284.38   9542.27   1284.38   9567.22   1284.38   9601.08
GR   1284.4   9629.04   1284.38   9656.22   1284.34   9659.30   1284.33   9660.48   1284.33   9663.77
GR   1284.3   9667.99   1284.28   9673.37   1284.24   9680.25   1284.18   9689.49   1284.10   9700.00
GR   1284.1   9702.38   1284.00   9713.05   1284.00   9721.01   1284.00   9756.39   1284.00   9768.53
GR   1284.0   9771.25   1284.00   9862.26   1284.00   9862.54   1284.00   9863.29   1284.00   9962.24
1
   16OCT00      12:41:23                                                                          PAGE     4

GR   1282.7   9965.05   1282.00   9966.82   1280.92   9969.42   1280.00   9971.09   1278.68   9975.00
GR   1280.0   9978.71   1280.21   9979.20   1281.40   9981.30   1281.86   9982.20   1282.00   9982.49
GR   1282.7   9983.79   1284.00   9986.52   1284.00  10000.00

X1    14600        48   9950.37  10000.00    300.00    300.00    300.00
GR   1287.0   9200.00   1286.35   9319.42   1286.34   9322.88   1286.30   9331.31   1286.24   9341.79
GR   1286.2   9354.73   1286.09   9370.67   1286.00   9388.44   1285.97   9396.61   1285.90   9423.66
GR   1285.8   9452.72   1285.76   9471.57   1284.98   9550.29   1284.88   9565.91   1284.80   9575.21
GR   1284.7   9583.70   1284.64   9597.36   1284.55   9609.89   1284.49   9620.27   1284.45   9627.64
GR   1284.4   9636.14   1284.40   9645.58   1284.40   9655.79   1284.39   9665.38   1284.36   9674.53
GR   1284.3   9683.42   1284.28   9691.86   1284.23   9699.84   1284.23   9700.00   1284.09   9720.90
GR   1284.0   9734.06   1284.00   9734.48   1284.00   9816.10   1284.00   9828.24   1284.00   9950.37
GR   1283.6   9963.68   1283.43   9964.04   1282.00   9967.35   1280.49   9970.86   1280.00   9971.94
GR   1279.0   9974.45   1280.00   9976.90   1280.62   9978.11   1282.00   9980.99   1283.04   9983.19
GR   1284.0   9985.23   1284.00   9996.17   1284.00  10000.00

X1    14900        40   9867.14  10000.00    300.00    300.00    300.00
GR   1288.0   9100.00   1288.00   9106.54   1288.00   9113.03   1288.00   9113.89   1287.79   9142.77
GR   1287.1   9246.69   1286.15   9379.98   1286.14   9381.89   1286.00   9403.34   1285.85   9435.98
GR   1285.7   9468.11   1285.61   9487.09   1285.57   9498.84   1285.55   9505.90   1284.18   9649.12
GR   1284.1   9654.29   1284.08   9663.19   1284.02   9690.76   1284.00   9692.87   1284.00   9693.17
GR   1284.0   9696.73   1284.00   9700.00   1284.00   9722.57   1284.00   9737.75   1284.00   9791.21
GR   1284.0   9867.14   1283.91   9872.09   1283.57   9893.26   1283.45   9901.09   1282.29   9951.49
GR   1282.0   9963.88   1281.74   9964.55   1280.00   9968.47   1279.25   9971.84   1280.00   9975.21
GR   1280.4   9976.12   1282.00   9980.08   1282.67   9981.73   1284.00   9985.10   1284.00  10000.00

X1    15200        44   9898.92  10000.00    300.00    300.00    300.00
GR   1287.8   9100.00   1287.51   9150.46   1287.41   9170.08   1287.28   9197.12   1287.11   9232.27
GR   1286.9   9279.37   1286.53   9344.87   1286.03   9438.34   1286.00   9444.80   1285.99   9445.78
GR   1286.0   9445.89   1285.99   9446.03   1285.99   9446.18   1285.99   9446.61   1285.99   9446.73
GR   1286.0   9446.87   1285.98   9447.20   1285.71   9485.26   1284.16   9700.00   1284.07   9712.60
GR   1284.0   9721.93   1284.00   9724.33   1284.00   9760.53   1284.00   9898.92   1283.91   9920.86
GR   1283.9   9925.25   1283.67   9930.34   1283.18   9944.66   1282.83   9952.63   1282.88   9953.92
GR   1282.8   9956.45   1282.62   9960.54   1282.00   9967.35   1281.38   9968.90   1280.72   9971.05
GR   1280.0   9972.42   1279.54   9975.05   1280.00   9977.81   1280.37   9978.85   1280.95   9980.52
GR   1282.0   9983.53   1282.90   9986.13   1284.00   9989.23   1284.00  10000.00

X1    15500        74   9952.04  10000.00    300.00    300.00    300.00
GR   1287.7   9100.00   1286.98   9170.15   1286.62   9205.88   1286.47   9220.79   1286.40   9228.89
GR   1286.3   9234.06   1286.32   9237.59   1286.30   9240.12   1286.28   9242.28   1286.27   9244.17
GR   1286.3   9245.88   1286.17   9257.27   1286.15   9260.35   1286.14   9262.52   1286.00   9278.11
GR   1285.9   9281.92   1285.94   9284.29   1285.94   9288.93   1285.97   9298.88   1286.00   9309.20
GR   1286.0   9334.48   1286.00   9344.49   1286.00   9349.76   1286.00   9351.02   1286.00   9351.94
GR   1285.2   9492.99   1284.39   9635.88   1284.25   9660.73   1284.16   9677.43   1284.11   9686.14
GR   1284.1   9688.29   1284.09   9689.51   1284.09   9690.11   1284.09   9690.80   1284.09   9691.56
GR   1284.1   9693.72   1284.08   9693.98   1284.08   9694.12   1284.05   9699.80   1284.05   9700.00
GR   1284.0   9700.72   1284.05   9701.39   1284.05   9701.71   1284.05   9701.89   1284.04   9702.06
GR   1284.0   9702.43   1284.04   9702.67   1284.04   9703.27   1284.04   9703.43   1284.04   9703.93
GR   1284.0   9704.11   1284.05   9705.14   1284.05   9705.30   1284.05   9705.32   1284.06   9705.35
GR   1284.1   9705.43   1284.08   9705.69   1284.09   9705.84   1284.11   9706.11   1284.12   9706.29
GR   1284.1   9706.64   1284.00   9952.04   1282.38   9970.04   1282.00   9970.60   1280.38   9973.46
GR   1280.0   9974.35   1279.82   9975.43   1280.00   9976.51   1280.50   9978.10   1281.33   9980.70
GR   1282.0   9982.87   1283.13   9986.69   1284.00   9989.60   1284.00  10000.00
1
   16OCT00      12:41:23                                                                          PAGE     5
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X1	15750	98	9969.81	10000.00	250.00	250.00	250.00			
GR	1288.3	9000.00	1288.00	9006.08	1288.00	9010.63	1288.00	9011.99	1288.00	9047.38
GR	1288.0	9066.66	1286.80	9236.69	1286.71	9248.37	1286.64	9258.28	1286.53	9272.90
GR	1286.4	9293.19	1286.18	9325.24	1286.17	9327.91	1286.17	9330.25	1286.17	9332.11
GR	1286.2	9333.55	1286.17	9333.84	1286.12	9338.63	1286.04	9346.70	1286.00	9352.31
GR	1286.0	9353.46	1286.00	9354.16	1286.00	9362.89	1286.00	9364.71	1286.00	9366.26
GR	1286.0	9367.67	1286.00	9369.34	1286.00	9371.21	1286.00	9376.48	1286.00	9388.42
GR	1286.0	9396.78	1286.00	9415.14	1286.00	9415.50	1286.00	9421.19	1286.00	9436.14
GR	1286.0	9441.01	1286.00	9441.34	1286.00	9451.57	1285.65	9515.43	1285.61	9544.80
GR	1285.6	9566.53	1285.63	9577.15	1285.64	9583.15	1285.63	9588.96	1285.61	9601.37
GR	1285.6	9609.69	1285.63	9631.06	1285.63	9637.02	1285.65	9655.63	1285.65	9662.24
GR	1285.9	9738.73	1285.90	9742.64	1285.83	9745.00	1285.76	9762.03	1285.74	9772.19
GR	1285.8	9796.65	1285.70	9797.25	1285.75	9822.09	1285.73	9822.90	1285.71	9824.24
GR	1285.7	9826.16	1285.70	9828.02	1285.63	9830.00	1285.56	9832.39	1285.54	9863.26
GR	1285.5	9864.82	1285.50	9876.13	1285.53	9878.05	1285.39	9889.34	1285.49	9892.34
GR	1285.5	9894.05	1285.60	9895.05	1285.55	9896.06	1285.53	9896.97	1284.89	9918.28
GR	1284.0	9933.93	1284.00	9937.67	1284.00	9945.26	1284.00	9946.79	1284.04	9947.31
GR	1284.6	9959.24	1284.70	9959.51	1284.99	9963.36	1285.64	9966.69	1285.72	9967.24
GR	1284.0	9969.81	1282.31	9970.60	1281.96	9972.50	1280.69	9973.46	1280.31	9974.35
GR	1280.1	9975.43	1280.15	9976.51	1280.15	9978.10	1281.12	9980.70	1282.31	9982.87
GR	1283.4	9986.69	1284.00	9989.60	1284.00	10000.00				

1

PROFILE FOR STREAM CHN128 - LATERAL WEIR SP

PLOTTED POINTS (BY PRIORITY) E-ENERGY,W-WATER SURFACE,I-INVERT,C-CRITICAL W.S.,L-LEFT BANK,R-RIGHT BANK,M-LOWER END STA

```
ELEVATION        1278.     1279.     1280.     1281.     1282.     1283.     1284.     1285.     1286.     1287.
    SECNO  CUMDIS

13582.00      0. I         .         .         .   WE    .         .        L.         .         .         .         .
             20. I         .         .         .   WE    .         .      L  R         .         .         .         .
             40. I         .         .         .    E    .         .    L    .R        .         .         .         .
             60. I         .         .         .    WE   .         .  L      . R       .         .         .         .
             80. I         .         .         .    WE   .         . L       . R       .         .         .         .
            100. I         .         .         .    WE   .         L         .  R      .         .         .         .
13700.00    120. I         .         .         .     E   .       L .         .   R     .         .         .         .
            140. I         .         .         .     WE  .      L  .         .   R     .         .         .         .
            160. I         .         .         .     WE  .      L  .         .  R      .         .         .         .
            180. CI        .         .         .     WE  .     L   .         .  R      .         .         .         .
            200. CI        .         .         .      E  .     L   .         .  R      .         .         .         .
            220. CI        .         .         .      E  .    L    .         . R       .         .         .         .
            240. CI        .         .         .      WE .   L     .         . R       .         .         .         .
            260. CI        .         .         .      WE .   L     .         . R       .         .         .         .
            280. C I       .         .         .       E .  L      .         .R        .         .         .         .
            300. C I       .         .         .       E .  L      .         .R        .         .         .         .
            320. C I       .         .         .       WE. L       .         .R        .         .         .         .
            340. C I       .         .         .       WE.L        .         R         .         .         .         .
            360. C I       .         .         .        E.L        .         R         .         .         .         .
            380. C  I      .         .         .        EL         .         R         .         .         .         .
            400. C  I      .         .         .        EL         .        R.         .         .         .         .
14000.00    420. C  I      .         .         .        WE         .        R.         .         .         .         .
            440. C  I      .         .         .        WEL        .        R.         .         .         .         .
            460. C  I      .         .         .         E  L      .        R.         .         .         .         .
            480. C  I      .         .         .         E    L    .        R.         .         .         .         .
            500. C  I      .         .         .         E      L  .        R.         .         .         .         .
14100.00    520. C  I      .         .         .         E        L.        R.         .         .         .         .
            540. C  I      .         .         .         E         .L       R.         .         .         .         .
            560. C   I     .         .         .         E         .  L     R.         .         .         .         .
            580. C   I     .         .         .         WE        .    L   R.         .         .         .         .
            600. C    I    .         .         .         WE        .      L R.         .         .         .         .
14200.00    620. C    I    .         .         .         WE        .        L.         .         .         .         .
            640. C    I    .         .         .         .E        .        L.         .         .         .         .
            660. C    I    .         .         .         .E        .        L.         .         .         .         .
            680. C    I    .         .         .         .E        .        L.         .         .         .         .
            700. C     I   .         .         .         .E        .        L.         .         .         .         .
14300.00    720. C     I   .         .         .         .E        .        L.         .         .         .         .
            740. C     I   .         .         .         .E        .        L.         .         .         .         .
            760. C     I   .         .         .         .E        .        L.         .         .         .         .
            780. C     I   .         .         .         .WE       .        L.         .         .         .         .
            800. C      I  .         .         .         .WE       .        L.         .         .         .         .
            820. C      I  .         .         .         . E       .        L.         .         .         .         .
            840. C      I  .         .         .         . E       .        L.         .         .         .         .
            860. C      I  .         .         .         . E       .        L.         .         .         .         .
            880. C       I .         .         .         . E       .        L.         .         .         .         .
            900. C       I .         .         .         . E       .        L.         .         .         .         .
            920. C       I .         .         .         . WE      .        L.         .         .         .         .
            940. C       I .         .         .         . WE      .        L.         .         .         .         .
            960. C       I .         .         .         .  E      .        L.         .         .         .         .
            980. C        I.         .         .         .  E      .        L.         .         .         .         .
           1000. C        I.         .         .         .  E      .        L.         .         .         .         .
14600.00   1020. C        I.         .         .         .  E      .        L.         .         .         .         .
           1040. C        I.         .         .         .  E      .        L.         .         .         .         .
           1060. C        I.         .         .         .  WE     .        L.         .         .         .         .
           1080. C         I         .         .         .  WE     .        L.         .         .         .         .
           1100. C         I         .         .         .   E     .        L.         .         .         .         .
           1120. C         I         .         .         .   E     .        L.         .         .         .         .
           1140. C         I         .         .         .   E     .        L.         .         .         .         .
           1160. C         I         .         .         .   E     .        L.         .         .         .         .
           1180. C         I         .         .         .   E     .        L.         .         .         .         .
           1200. C         .I        .         .         .   WE    .        L.         .         .         .         .
           1220. C         .I        .         .         .    E    .        L.         .         .         .         .
           1240. C         .I        .         .         .    E    .        L.         .         .         .         .
           1260. C         .I        .         .         .    E    .        L.         .         .         .         .
           1280. C         .I        .         .         .    E    .        L.         .         .         .         .
           1300. C         .I        .         .         .    E    .        L.         .         .         .         .
14900.00   1320. C         . I       .         .         .    WE   .        L.         .         .         .         .
           1340. C         . I       .         .         .     E   .        L.         .         .         .         .
           1360. C         . I       .         .         .     E   .        L.         .         .         .         .
           1380. C         . I       .         .         .     E   .        L.         .         .         .         .
           1400. C         . I       .         .         .     E   .        L.         .         .         .         .
           1420. C         . I       .         .         .     E   .        L.         .         .         .         .
           1440. C         .  I      .         .         .     E   .        L.         .         .         .         .
           1460. C         .  I      .         .         .     E   .        L.         .         .         .         .
           1480. C         .  I      .         .         .     E   .        L.         .         .         .         .
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          1500.  C        . I      .        .        .    E   .        L.        .        .        .        .
          1520.  C        . I      .        .        .   WE   .        L.        .        .        .        .
          1540.  C        .  I     .        .        .    E   .        L.        .        .        .        .
          1560.  C        .  I     .        .        .    E   .        L.        .        .        .        .
          1580.  C        .  I     .        .        .    E   .        L.        .        .        .        .
          1600.  C        .  I     .        .        .    E   .        L.        .        .        .        .
 15200.00 1620.  C        .  I     .        .        .    E   .        L.        .        .        .        .
          1640.  C        .   I    .        .        .    E   .        L.        .        .        .        .
          1660.  C        .   I    .        .        .    E   .        L.        .        .        .        .
          1680.  C        .   I    .        .        .    E   .        L.        .        .        .        .
          1700.  C        .   I    .        .        .   WE   .        L.        .        .        .        .
          1720.  C        .   I    .        .        .    E   .        L.        .        .        .        .
          1740.  C        .    I   .        .        .    E   .        L.        .        .        .        .
          1760.  C        .    I   .        .        .    E   .        L.        .        .        .        .
          1780.  C        .    I   .        .        .    E   .        L.        .        .        .        .
          1800.  C        .    I   .        .        .    E   .        L.        .        .        .        .
          1820.  C        .    I   .        .        .    E   .        L.        .        .        .        .
          1840.  C        .    I   .        .        .    E   .        L.        .        .        .        .
          1860.  C        .     I  .        .        .   WE.        L.        .        .        .        .
          1880.  C        .     I  .        .        .   WE.        L.        .        .        .        .
          1900.  C        .     I  .        .        .    E.        L.        .        .        .        .
 15500.00 1920.  C        .     I  .        .        .    E.        L.        .        .        .        .
          1940.  C        .     I  .        .        .    E.        L.        .        .        .        .
          1960.  C        .      I .        .        .    E.        L.        .        .        .        .
          1980.  C        .      I .        .        .    E.        L.        .        .        .        .
          2000.  C        .      I .        .        .   WE        L.        .        .        .        .
          2020.  C        .      I .        .        .   WE        L.        .        .        .        .
          2040.  C        .       I.        .        .    E        L.        .        .        .        .
          2060.  C        .       I.        .        .    E        L.        .        .        .        .
          2080.  C        .       I.        .        .    E        L.        .        .        .        .
          2100.  C        .       I.        .        .    E        L.        .        .        .        .
          2120.  C        .       I.        .        .   WE        L.        .        .        .        .
          2140.  C        .        I        .        .   WE        L.        .        .        .        .
          2160.  C        .        I        .        .   .E        L.        .        .        .        .
 15750.00 2180.  C        .        I        .        .   .E        L.        .        .        .        .
1
   16OCT00      12:41:23                                                                                PAGE    6
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THIS RUN EXECUTED 16OCT00 12:41:23

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************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	13582.000	.00	.00	.00	1278.10	44.95	1281.52	.00	1281.57	12.34	1.79	25.17	12.80
	13700.000	118.00	.00	.00	1278.11	44.95	1281.67	.00	1281.74	16.04	2.15	20.92	11.23
*	14000.000	300.00	.00	.00	1278.40	44.99	1282.02	.00	1282.06	7.45	1.53	29.45	16.48
	14100.000	100.00	.00	.00	1278.40	45.00	1282.09	.00	1282.12	4.54	1.34	33.59	21.11
	14200.000	100.00	.00	.00	1278.60	45.00	1282.14	.00	1282.17	5.17	1.40	32.04	19.80
	14300.000	100.00	.00	.00	1278.68	45.00	1282.19	.00	1282.22	5.60	1.45	31.09	19.02
	14600.000	300.00	.00	.00	1279.00	45.00	1282.39	.00	1282.43	8.60	1.69	26.59	15.34
	14900.000	300.00	.00	.00	1279.25	45.00	1282.63	.00	1282.65	5.82	1.00	44.89	18.65
	15200.000	300.00	.00	.00	1279.54	45.00	1282.79	.00	1282.81	4.91	1.13	39.73	20.31
	15500.000	300.00	.00	.00	1279.82	45.00	1282.97	.00	1283.00	8.57	1.47	30.59	15.37
	15750.000	250.00	.00	.00	1280.10	45.00	1283.16	.00	1283.20	7.26	1.58	28.49	16.70

1
16OCT00 12:41:23 PAGE 7

CHN128 - LATERAL WEIR SP

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	13582.000	44.95	1281.52	.00	.00	-2.48	17.76	.00
	13700.000	44.95	1281.67	.00	.15	.00	12.83	118.00
*	14000.000	44.99	1282.02	.00	.36	.00	17.87	300.00
	14100.000	45.00	1282.09	.00	.07	.00	17.08	100.00
	14200.000	45.00	1282.14	.00	.05	.00	16.77	100.00
	14300.000	45.00	1282.19	.00	.05	.00	16.50	100.00
	14600.000	45.00	1282.39	.00	.20	.00	15.36	300.00
	14900.000	45.00	1282.63	.00	.24	.00	45.26	300.00

15200.000	45.00	1282.79	.00	.16	.00	29.10	300.00
15500.000	45.00	1282.97	.00	.18	.00	22.64	300.00
15750.000	45.00	1283.16	.00	.19	.00	15.65	250.00

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 14000.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

Appendix D.6

Hydrologic Calculations

D.6.1 The HEC-1 Model

D.6.2 Indirect Methods of Discharge Verification

Appendix D.6.1

The HEC-1 Model

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN  1998               *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   03OCT01  TIME  14:52:56  *
*                                      *
****************************************
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```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
1                                          HEC-1 INPUT                                                          PAGE  1

  LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

    1           ID        THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
    2           ID        MFC015 - EASTERN CANAL NORTH FLOOD PLAIN DELINEATION STUDY : FCD # 98-36
    3           ID
    4           ID        EVENT:                    100 YEAR - 24 HOUR
    5           ID        RAINFALL DISTRIBUTION:    PER MARICOPA COUNTY FLOOD CONTROLD DISTRICT MAN
    6           ID        AREAL REDUCTION FACTORS:  PER MARICOPA COUNTY FLOOD CONTROLD DISTRICT MAN
    7           ID        INPUT FILE NAME:          EC10024Z.DAT
    8           ID        DATE:                     October 2001
    9           ID
   10           ID        PREPARED BY PRIMATECH LLC, ENGINEERS AND CONSULTATNS
   11           ID        ADDRESS: 1295 WEST WASHINGTON STREET, SUITE 115
   12           ID                 TEMPE, ARIZONA 85281
   13           ID        TEL:     (602)985-9009
   14           ID        FAX:     (602)685-9015
   15           ID
   16           ID
                *DIAGRAM
   17           IT       5                    500
   18           IO       5

   19           KK     164
   20           KM   SUB-BASIN 164
   21           KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
   22           KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
   23           KM     L =  .46  Kb = .056  Adj. Slope =   36.0
   24           BA    .091
   25           IN      15
   26           KM   RAINFALL DEPTH OF 3.39 WAS SPACIALLY REDUCED AS SHOWN BY THE PB RECORD
   27           PB   3.156
   28           KM   THE FOLLOWING PC RECORD USED A 24-HR SCS TYPE II STORM
   29           PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
   30           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
   31           PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
   32           PC    .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
   33           PC    .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
   34           PC    .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
   35           PC    .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
   36           PC    .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
   37           PC    .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
   38           PC    .983    .986    .989    .992    .995    .998   1.000
   39           LG    .290    .250   4.60     .40   18.0
   40           UC    .429    .305
   41           UA       0       5      16      30      65      77      84      90      94      97
   42           UA     100
   43           KM   **********
   44           KM
   45           KM        This detention basin was added to this model after additional data was
   46           KM        acquired from City of Mesa As-built records.
   47           KM
1                                          HEC-1 INPUT                                                          PAGE  2

  LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

   48           KK   OB164
   49           KM        Detention basin Storage for Drainage area 164
   50           KM        FLOW DIVERTED INTO A 2.01 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
   51           KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
   52           KM         - 20% ESCAPES THE SUB-BASIN.
   53           KM        FCD#98-36
   54           DT  OUT164    2.01
   55           DI       0    1000
   56           DQ       0     800
   57           KM   **********

   58           KK  RCP164
   59           KM
```

```
 60          KM        ROUTE OB164 TO CP1 (TYPE 2)
 61          KM
 62          RS       1    FLOW
 63          RC    .013    .016    .013     720   .0028
 64          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
 65          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
 66          KM   **********

 67          KK     163
 68          KM   SUB-BASIN 163
 69          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 70          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
 71          KM     L =  .46  Kb = .053  Adj. Slope =   36.0
 72          BA    .152
 73          LG    .250    .250   4.550    .420  29.000
 74          UC    .396    .208
 75          UA       0       5      16      30      65      77      84      90      94      97
 76          UA     100
 77          KM   **********
 78          KM
 79          KM        This detention basin was added to this model after additional data was
 80          KM        acquired from City of Mesa As-built records.
 81          KM

 82          KK   OB163
 83          KM
 84          KM        Detention Basin Storage for Drainage area 163
 85          KM        FLOW DIVERTED INTO A 11.7 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
 86          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
 87          KM         - 20% ESCAPES THE SUB BASIN.
 88          KM        FCD#98-36
 89          DT  OUT163    11.7
 90          DI       0      10     100    1000
 91          DQ       0       8      80     800
 92          KM   **********
1                                    HEC-1 INPUT                                          PAGE  3

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 93          KK     CP1
 94          KM
 95          KM        COMBINE 164 +163
 96          KM
 97          HC       2
 98          KM   **********

 99          KK  RCP163
100          KM
101          KM        ROUTE CP1 TO CP2 (TYPE 1)
102          KM
103          RS       2    FLOW
104          RC    .013    .016    .013    2450   .0036
105          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
106          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
107          KM   **********

108          KK     165
109          KM   SUB-BASIN 165
110          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
111          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
112          KM     L =  .65  Kb = .055  Adj. Slope =   26.0
113          BA    .097
114          LG    .290    .250   4.350    .480  17.000
115          UC    .637    .601
116          UA       0       5      16      30      65      77      84      90      94      97
117          UA     100
118          KM   **********
119          KM
120          KM        This detention basin was added to this model after additional data was
121          KM        acquired from City of Mesa As-built records.
122          KM

123          KK   OB165
124          KM
125          KM        Detention basin Storge for Drainage area 165
126          KM        FLOW DIVERTED INTO A 4.24 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
127          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
128          KM         - 20% ESCAPES THE SUB BASIN.
129          KM        FCD#98-36
130          DT  OUT165    4.24
131          DI       0    1000
132          DQ       0     800
133          KM   **********

134          KK     CP2
135          KM
136          KM        COMBINE CP1 + 165
137          KM
138          HC       2
139          KM   **********
1                                    HEC-1 INPUT                                          PAGE  4

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

140          KK     166
141          KM   SUB-BASIN 166
142          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
143          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
144          KM     L =  .79  Kb = .056  Adj. Slope =   24.0
145          BA    .081
146          LG    .280    .250    4.25    .510    21.0
147          UC    .779    .973
148          UA       0       5      16      30      65      77      84      90      94      97
```

```
149          UA     100
150          KM
151          KM        This detention basin was added to this model after additional data was
152          KM        acquired from City of Mesa As-built records.
153          KM
154          KM   **********

155          KK   0B166
156          KM
157          KM        Detention basin Storage for Drainage area 166
158          KM        FLOW DIVERTED INTO A 7.98 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
159          KM         - 100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
160          KM         - 0% ESCAPES THE SUB BASIN.
161          KM        FCD#98-36
162          DT  OUT166    7.98
163          DI       0    1000
164          DQ       0    1000
165          KM   **********

166          KK     CP3
167          KM
168          KM        COMBINE CP2 + 166
169          KM
170          HC       2
171          KM   **********

172          KK    PA01
173          KM
174          RS       1    STOR       0      -1
175          SV    0.00    1.01    4.85    7.98    8.12    9.07   11.40   19.04
176          SE  1290.1 1291.00 1292.00 1292.52 1292.54 1292.68 1293.00 1294.00
177          SQ    0.00    0.00    0.00    0.00    0.03   14.90   89.87  400.95
178          KM   *********

179          KK    RCP1
180          KM
181          KM        ROUTE CP3 TO CP4 (TYPE 5)
182          KM
183          RS       2    FLOW
184          RC   0.027   0.027   0.027    1645  0.0012
185          RX      90     110     150     155     160     165     205     225
186          RY      30      18      18      13      13      18      18      30
187          KM   **********
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

188          KK       4
189          KM   SUB-BASIN 4
190          KM        The boundaries of this basin were modified compared to the original mode
191          KM        to model better the existing conditions.
192          KM        FCD#98-36
193          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
194          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
195          KM     L =  .69  Kb = .054  Adj. Slope =   18.0
196          BA    .118
197          LG    .260    .250   4.800    .360  27.000
198          UC    .850    .776
199          UA       0       5      16      30      65      77      84      90      94      97
200          UA     100
201          KM   **********

202          KK    DSD4
203          KM        DIVERT STORM DRAIN FLOW SOUTH OF LEONORA STREET TO 1B153
204          KM      INTERCEPTION CAPACITY AT LEONORA ST. = 7 CFS (2 CATCH BASINS)
205          KM      TRANSPORT CAPACITY = 16 CFS
206          KM        FCD#98-36
207          DT     SD4
208          DI       0      7.    100.   1000.
209          DQ       0      7.      7.      7.
210          KM   **********

211          KK     1B4
212          KM
213          KM        Retention Basin Storage for Drainage area 4
214          KM        FLOW DIVERTED INTO A 2.85 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
215          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
216          KM         - 20% ESCAPES THE SUB BASIN.
217          KM        FCD#98-36
218          DT    OUT4    2.85
219          DI       0      10     100    1000
220          DQ       0       8      80     800
221          KM   **********

222          KK    RCP4
223          KM
224          KM        ROUTE 4 TO CP4 (TYPE 1)
225          KM      FCD#98-36
226          KM
227          RS       2    FLOW
228          RC   0.013   0.016   0.013    1971  0.0033
229          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
230          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
231          KM   **********

232          KK       1
233          KM   SUB-BASIN 1
234          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
235          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
236          KM     L =  .24  Kb = .060  Adj. Slope =   20.0
237          BA    .041
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
238          LG    .260    .250   4.800    .360  27.000
239          UC    .354    .231
240          UA       0       5      16      30      65      77      84      90      94      97
241          UA     100
242          KM   **********

243          KK       2
244          KM   SUB-BASIN 2
245          KM
246          KM        The boundaries of this basin were modified compared to the original mode
247          KM        to model better the existing conditions.
248          KM        FCD#98-36
249          KM
250          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
251          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
252          KM     L =  .40  Kb = .060  Adj. Slope =   18.0
253          BA    .089
254          LG    .270    .250   4.800    .370  26.000
255          UC    .617    .413
256          UA       0       5      16      30      65      77      84      90      94      97
257          UA     100
258          KM   **********

259          KK     CP4
260          KM
261          KM        COMBINE CP3 + 2 + RCP4 + 1
262          KM
263          HC       4
264          KM   **********

265          KK    PA02
266          KM
267          RS       1    STOR       0      -1
268          SV       0   28.47   37.61   67.10   73.47
269          SE    1284  1292.0  1292.6  1293.8  1294.0
270          SQ       0       0      22   897.4  1289.6
271          KM   *********
272          KM
273          KM        This diversion represents possible breakout flows over the Eastern
274          KM        Canal. This flow will not be retrieved into the model.
275          KM

276          KK   CPD02
277          KM        DIVERT FLOW Over the Eastern canal due to weiring over its banks
278          DT    PD02
279          DI       0     22.   897.4  1289.6
280          DQ       0       0    749.  1110.2
281          KM   **********

282          KK    RCP2
283          KM
284          KM        ROUTE CP4 TO CPMA (SPECIAL TYPE)
285          KM
286          RS       1    FLOW
287          RC   0.035   0.035   0.035     524  0.0038
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

288          RX      90     110     150     155     160     165     205     225
289          RY      16      14      14      13      13      14      14      16
290          KM   **********

291          KK       3
292          KM   SUB-BASIN 3
293          KM        The boundaries of this basin were modified compared to the original mode
294          KM        to model better the existing conditions.
295          KM        FCD#98-36
296          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
297          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
298          KM     L =  .44  Kb = .056  Adj. Slope =   17.0
299          BA    .065
300          LG    .240    .260   3.740    .670  32.000
301          UC    .667    .581
302          UA       0       5      16      30      65      77      84      90      94      97
303          UA     100
304          KM   **********

305          KK    DSD3
306          KM        DIVERT STORM DRAIN FLOW EAST, ALONG McKELLIPS RD. TO SUB-BASIN 6
307          KM      2x36-INCH SD. ALONG N McKELLIPS RD. (From EASTERN CANAL to Lindsay Rd.)
308          KM      INTERCEPTION CAPACITY = 35 CFS (10 CATCH BASINS)
309          KM      TOTAL TRANSPORT CAPACITY = 22 CFS
310          KM      TOTAL TRANSPORT = 22 CFS
311          KM        FCD#98-36
312          DT     SD3
313          DI       0     22.    100.   1000.
314          DQ       0     22.     22.     22.
315          KM   **********

316          KK     156
317          KM   SUB-BASIN 156
318          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
319          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
320          KM     L =  .57  Kb = .054  Adj. Slope =   18.0
321          BA    .129
322          LG    .300    .250   4.800    .360  15.000
323          UC    .650    .470
324          UA       0       5      16      30      65      77      84      90      94      97
325          UA     100
326          KM   **********

327          KK  RCP156
328          KM
```

```
 329          KM        ROUTE 156 TO CP5 (TYPE 1)
 330          KM
 331          RS       1    FLOW
 332          RC    .013    .016    .013    1347   .0040
 333          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
 334          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
 335          KM   **********
1                                        HEC-1 INPUT                                                          PAGE  8

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 336          KK     157
 337          KM   SUB-BASIN 157
 338          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 339          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
 340          KM     L =  .76  Kb = .053  Adj. Slope =   18.0
 341          BA    .152
 342          LG    .300    .250   4.500    .430  15.000
 343          UC    .825    .702
 344          UA       0       5      16      30      65      77      84      90      94      97
 345          UA     100
 346          KM   **********

 347          KK     CP5
 348          KM
 349          KM        COMBINE 156 + 157
 350          KM
 351          HC       2
 352          KM   **********

 353          KK   DHVRV
 354          KM        DIVERT STREET FLOW SOUTH ON VAL VISTA DRIVE, TO AREA 151.
 355          KM        FCD#98-36
 356          DT   DVDHV
 357          DI       0.0   101.5   265.5   704.4  1507.3
 358          DQ       0.0     0.0    90.9   250.4   557.7
 359          KM   **********

 360          KK  RCP157
 361          KM
 362          KM        ROUTE CP5 TO CP6 (TYPE 1)
 363          KM
 364          RS       1    FLOW
 365          RC    .013    .016    .013    1284   .0058
 366          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
 367          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
 368          KM   **********

 369          KK     158
 370          KM   SUB-BASIN 158
 371          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 372          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
 373          KM     L =  .46  Kb = .056  Adj. Slope =   14.0
 374          BA    .089
 375          LG    .300    .250   4.600    .400  15.000
 376          UC    .650    .489
 377          UA       0       5      16      30      65      77      84      90      94      97
 378          UA     100
 379          KM   **********
1                                        HEC-1 INPUT                                                          PAGE  9

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 380          KK     CP6
 381          KM
 382          KM        COMBINE CP5 + 158
 383          KM
 384          HC       2
 385          KM   **********

 386          KK  RCP158
 387          KM
 388          KM        ROUTE CP6 TO CP7 (TYPE 2)
 389          KM
 390          RS       1    FLOW
 391          RC    .013    .016    .013    1322   .0042
 392          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
 393          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
 394          KM   **********

 395          KK     160
 396          KM   SUB-BASIN 160
 397          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 398          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
 399          KM     L =  .57  Kb = .057  Adj. Slope =   20.0
 400          BA    .078
 401          LG    .300    .250   4.300    .490  15.000
 402          UC    .679    .658
 403          UA       0       5      16      30      65      77      84      90      94      97
 404          UA     100
 405          KM   **********

 406          KK  RCP160
 407          KM
 408          KM        ROUTE 160 TO CP7 (TYPE 2)
 409          KM
 410          RS       2    FLOW
 411          RC    .013    .016    .013    1511   .0032
 412          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
 413          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
 414          KM   **********

 415          KK     159
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416          KM   SUB-BASIN 159
417          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
418          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
419          KM     L =  .76  Kb = .057  Adj. Slope =   14.0
420          BA    .076
421          LG    .300    .250   4.550    .420  15.000
422          UC    .983   1.267
423          UA      0       5      16      30      65      77      84      90      94      97
424          UA    100
425          KM   **********
1                                        HEC-1 INPUT                                                    PAGE 10

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

426          KK     CP7
427          KM
428          KM        COMBINE CP6 + 160 + 159
429          KM
430          HC       3
431          KM   **********

432          KK  DSD159
433          KM        DIVERT STORM DRAIN FLOW SOUTH OF HERMOSA VISTA DR. TO SUB-BASIN 12
434          KM      8-INCH SD ALONG N 32nd ST. (From Menlo Cir. to Hermosa Vista Dr.) AND
435          KM      12-INCH SD E Hermosa Vista Dr. (From N 34th St. to n 32th St.)
436          KM      INTERCEPTION CAPACITY = 3 CFS (3 CATCH BASINS)
437          KM      TOTAL TRANSPORT CAPACITY = 3 CFS
438          KM        FCD#98-36
439          DT   SD159
440          DI       0      3.    100.   1000.
441          DQ       0      3.      3.      3.
442          KM   **********

443          KK  RCP159
444          KM
445          KM        ROUTE CP7 TO CP9 (TYPE 2)
446          KM
447          RS       2    FLOW
448          RC    .013    .016    .013    1279   .0034
449          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
450          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
451          KM   **********

452          KK      12
453          KM   SUB-BASIN 12
454          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
455          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
456          KM     L =  .65  Kb = .054  Adj. Slope =   24.0
457          BA    .131
458          LG    .300    .250   4.450    .450  15.000
459          UC    .650    .518
460          UA      0       5      16      30      65      77      84      90      94      97
461          UA    100
462          KM   **********

463          KK  RSD159
464          KM        RETRIEVE FLOW FROM STORM DRAIN FLOW DIVERTED FROM BASIN 159
465          KM        FCD#98-36
466          DR   SD159
467          KM   **********

468          KK   TL159
469          KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 159
470          RT       0       1       2
471          KM   **********
1                                        HEC-1 INPUT                                                    PAGE 11

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

472          KK   DSD12
473          KM        DIVERT STORM DRAIN FLOW SOUTH OF HERMOSA VISTA. DR. TO SUB-BASIN 13
474          KM      15-INCH SD ALONG N 32nd ST. (Hermosa Vista Dr. to McKellips Rd.)
475          KM      INTERCEPTION CAPACITY = 0 CFS (0 CATCH BASINS)
476          KM      TOTAL TRANSPORT CAPACITY = 3 CFS
477          KM        FCD#98-36
478          DT    SD12
479          DI       0      4.    100.   1000.
480          DQ       0      4.      4.      4.
481          KM   **********

482          KK     CP9
483          KM
484          KM        COMBINE CP7 + 12 + SD159
485          KM
486          HC       3
487          KM   **********

488          KK    1B12
489          KM
490          KM        Retention Basin Storage for Drainage area 12
491          KM        FLOW DIVERTED INTO A 4.12 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
492          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
493          KM         - 20% ESCAPES THE SUB BASIN.
494          KM        FCD#98-36
495          DT   OUT12    4.12
496          DI       0      10     100    1000
497          DQ       0       8      80     800
498          KM   **********

499          KK   RCP12
500          KM
501          KM        ROUTE 1B12 TO CP12A (TYPE 2)
502          KM
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503          RS       2    FLOW
504          RC   0.013   0.016   0.013    1356  0.0024
505          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
506          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
507          KM   **********

508          KK   DIS16
509          KM        This diversion into the system represents the breakout discharge
510          KM        from the watershed east of the Roosevelt Canal. The input is the
511          KM        hydrograph from the Upper EMF study. The ordinate step was modified
512          KM        in the model to match the ordinate values for this study. The NSTPS
513          KM        were verified for each model to match.
514          IN       5
515          BA   0.890
516          QI       0       0       0       0       0       0       0       0       0       0
517          QI       0       0       0       0       0       0       0       0       0       0
518          QI       0       0       0       0       0       0       0       0       0       0
519          QI       0       0       0       0       0       0       0       0       0       0
520          QI       0       0       0       0       0       0       0       0       0       0
521          QI       0       0       0       0       0       0       0       0       0       0
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

522          QI       0       0       0       0       0       0       0       0       0       0
523          QI       0       0       0       0       0       0       0       0       0       0
524          QI       0       0       0       0       0       0       0       0       0       0
525          QI       0       0       0       0       0       0       0       0       0       0
526          QI       0       0       0       0       0       0       0       0       0       0
527          QI       0       0       0       0       0       0       0       0       0       0
528          QI       0       0       0       0       0       0       0       0       0       0
529          QI       0       0       0       0       0       0       0       0       0       0
530          QI       0       0       0       0       0       0       0       0       0       6
531          QI      15      20      23      25      25      24      23      22      21      23
532          QI      29      39      42      42      42      42      42      42      42      47
533          QI      52      57      61      64      67      70      72      73      74      75
534          QI      76      76      77      77      76      76      75      75      74      73
535          QI      72      71      70      69      68      67      65      64      63      62
536          QI      60      59      58      57      55      54      53      52      51      50
537          QI      48      47      46      45      44      43      42      42      42      42
538          QI      42      42      42      42      42      42      42      42      42      42
539          QI      42      42      42      42      42      42      42      42      42      42
540          QI      42      42      42      42      42      42      42      42      42      42
541          QI      42      42      42      42      42      40      38      35      33      31
542          QI      30      28      26      25      24      22      21      20      19      18
543          QI      17      16      16      15      14      13      13      12      12      11
544          QI      11      10      10      10       9       9       9       8       8       8
545          QI       8       7       7       7       7       6       6       6       6       6
546          QI       5       5       5       5       5       5       5       4       4       4
547          QI       4       4       4       4       4       4       3       3       3       3
548          QI       3       3       3       3       3       3       3       3       3       3
549          QI       3       3       2       2       2       2       2       2       2       2
550          QI       2       2       2       2       2       2       2       2       1       1
551          QI       1       1       1       1       1       1       1       0       0       0
552          QI       0       0       0       0       0       0       0       0       0       0
553          QI       0       0       0       0       0       0       0       0       0       0
554          QI       0       0       0       0       0       0       0       0       0       0
555          QI       0       0       0       0       0       0       0       0       0       0
556          KM   **********

557          KK      16
558          KM   SUB-BASIN 16
559          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
560          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
561          KM     L =  .45  Kb = .055  Adj. Slope =   27.0
562          BA    .100
563          LG    .300    .250   4.800    .360  15.000
564          UC    .458    .305
565          UA       0       5      16      30      65      77      84      90      94      97
566          UA     100
567          KM   **********

568          KK    CPA1
569          KM
570          KM        COMBINE 16 + DIS16
571          KM
572          HC       2
573          KM   **********
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

574          KK    1B16
575          KM
576          KM        Retention Basin Storage for Drainage area 16
577          KM        FLOW DIVERTED INTO A 1.47 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
578          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
579          KM         - 20% ESCAPES THE SUB BASIN.
580          KM        FCD#98-36
581          DT   OUT16    1.47
582          DI       0      10     100    1000
583          DQ       0       8      80     800
584          KM   **********

585          KK   DO16A
586          KM        This diversion into the system represents the breakout discharge
587          KM        from the watershed east of the Roosevelt Canal. The input is the
588          KM        hydrograph from the Upper EMF study. The ordinate step was modified
589          KM        in the model to match the ordinate valus for this study. The NSTPS
590          KM        were verified for each model to match.
591          IN       5
592          BA   0.020
593          QI       0       0       0       0       0       0       0       0       0       0
594          QI       0       0       0       0       0       0       0       0       0       0
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 595          QI       0       0       0       0       0       0       0       0       0       0
 596          QI       0       0       0       0       0       0       0       0       0       0
 597          QI       0       0       0       0       0       0       0       0       0       0
 598          QI       1       1       1       1       1       1       1       1       1       1
 599          QI       1       1       1       1       1       1       1       1       1       1
 600          QI       1       1       1       1       1       1       1       1       1       1
 601          QI       1       1       1       1       1       1       1       1       1       1
 602          QI       1       1       1       1       1       1       1       1       1       1
 603          QI       1       1       1       1       1       1       1       1       1       1
 604          QI       1       1       1       1       1       1       1       1       1       1
 605          QI       1       1       1       1       1       1       1       1       1       1
 606          QI       1       1       1       1       1       1       1       1       1       2
 607          QI       2       3       5       9      21      23      23      23      23      23
 608          QI      23      23      23      23      23      23      23      23      23      23
 609          QI      23      23      20      17      17      17      17      16      16      16
 610          QI      16      16      16      17      17      17      17      17      17      17
 611          QI      17      17      17      17      17      16      16      16      16      15
 612          QI      15      15      15      15      14      14      14      14      13      13
 613          QI      13      13      13      12      12      12      12      11      11      11
 614          QI      11      11      10      10      10      10      10      10       9       9
 615          QI       9       9       9       9       9       9       9       9       8       8
 616          QI       8       8       8       8       8       8       8       8       8       8
 617          QI       8       8       8       8       8       8       8       8       7       7
 618          QI       7       7       7       7       7       7       7       7       7       7
 619          QI       6       6       6       6       6       6       6       6       5       5
 620          QI       5       5       5       5       5       5       5       5       5       5
 621          QI       5       5       4       4       4       4       4       4       4       4
 622          QI       4       4       4       4       4       4       4       4       4       4
 623          QI       4       4       4       4       4       4       4       4       4       4
 624          QI       3       3       3       3       3       3       3       3       3       3
 625          QI       3       3       3       3       3       3       3       3       3       3
 626          QI       3       3       3       3       3       3       3       3       3       3
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 627          QI       3       3       3       3       3       3       3       3       3       3
 628          QI       3       3       3       3       3       3       3       3       3       3
 629          QI       3       3       3       3       3       3       3       3       3       3
 630          QI       3       3       3       3       3       3       3       3       3       3
 631          QI       3       3       3       3       3       3       3       3       3       3
 632          QI       3       3       3       3       3       3       3       3       3       3
 633          KM   **********

 634          KK    CPA2
 635          KM
 636          KM        COMBINE 1B16 + DO16A
 637          KM
 638          HC       2
 639          KM   **********

 640          KK   RCP16
 641          KM
 642          KM        ROUTE CPA2 TO CP10 (TYPE 2)
 643          KM
 644          RS       2    FLOW
 645          RC   0.013   0.016   0.013    1986  0.0056
 646          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
 647          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
 648          KM   **********

 649          KK     152
 650          KM   SUB-BASIN 152
 651          KM        The boundaries of this basin were modified compared to the original mode
 652          KM        to model better the existing conditions.
 653          KM        FCD#98-36
 654          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 655          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
 656          KM     L =  .48  Kb = .055  Adj. Slope =   25.0
 657          BA    .097
 658          LG    .300    .250   4.800    .360  15.000
 659          UC    .592    .434
 660          UA       0       5      16      30      65      77      84      90      94      97
 661          UA     100
 662          KM   **********

 663          KK    CP10
 664          KM
 665          KM        COMBINE RCP16 + 152
 666          KM
 667          HC       2
 668          KM   **********

 669          KK   DMRVD
 670          KM        DIVERT STREET FLOW SOUTH ON VAL VISTA DRIVE.
 671          KM        DIVERT STORM DRAIN FLOW TO AREA 17
 672          KM        STORM DRAIN CAPACITY = 10 CFS SOUTH
 673          KM        FCD#98-36
 674          DT   DVDMR
 675          DI     0.0    10.0   103.4   256.6   666.5  1420.4
 676          DQ     0.0    10.0    10.0    99.7   258.5   566.6
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 677          KM   **********

 678          KK  RCP152
 679          KM
 680          KM        ROUTE CP10 TO CP200 (TYPE 2)
 681          KM
 682          RS       1    FLOW
 683          RC    .013    .016    .013    1306   .0054
 684          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
 685          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
```

```
686          KM   **********

687          KK     170
688          KM
689          KM      THIS SUB-BASIN WAS NOT DELINEATED IN THE ORIGINAL MODEL
690          KM        FCD#98-36
691          KM
692          KM   SUB-BASIN 170
693          KM        The boundaries of this basin were modified compared to the original mode
694          KM        to better consider the existing conditions.
695          KM        FCD#98-36
696          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
697          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
698          KM     L =  .37  Kb = .065  Adj. Slope =   24.0
699          BA    .063
700          LG    .330    .250   4.800    .380  13.000
701          UC    .575    .437
702          UA      0       5      16      30      65      77      84      90      94      97
703          UA    100
704          KM   **********

705          KK   CP200
706          KM
707          KM      THIS COMBINE WAS NOT INCLUDED IN THE ORIGINAL MODEL
708          KM        FCD#98-36
709          KM
710          KM        COMBINE CP170 + RCP152
711          KM
712          HC       2
713          KM   **********

714          KK  RCP200
715          KM
716          KM
717          KM        ROUTE CP200 TO CP12A (TYPE 3)
718          KM        FCD#98-36
719          KM
720          RS       1    FLOW
721          RC    .013    .016    .013    1383   .0046
722          RX    99.9     100     104   104.1  180.02  180.03  184.02  184.03
723          RY   20.31   10.31   10.31    10.0    10.0   10.31   10.31   20.31
724          KM   **********
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

725          KK      13
726          KM   SUB-BASIN 13
727          KM        The boundaries of this basin were modified compared to the original mode
728          KM        to MODEL better the existing conditions.
729          KM        FCD#98-36
730          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
731          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
732          KM     L =  .20  Kb = .099  Adj. Slope =   58.0
733          BA    .063
734          LG    .450    .250   4.800    .450   7.000
735          UC    .371    .164
736          UA      0       3       5       8      12      20      43      75      90      96
737          UA    100
738          KM   **********

739          KK      15
740          KM   SUB-BASIN 15
741          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
742          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
743          KM     L =  .77  Kb = .053  Adj. Slope =   29.0
744          BA    .141
745          LG    .300    .250   4.800    .360  15.000
746          UC    .642    .560
747          UA      0       5      16      30      65      77      84      90      94      97
748          UA    100
749          KM   **********

750          KK    SF15
751          KM
752          KM        The hydrograph remaining as SD15 is the storm drain flow which
753          KM        is time lag routed to detention basin 1B151, and combined with
754          KM        the hydrograph for drainage sub-basin 151. Only flow from the
755          KM        storm drain and the flow for drainage sub-basin 151 are
756          KM        storage routed through detention basin 1B151.
757          KM
758          DT    SF15       0       0       0       0       0       0       0
759          DI       0      18     100    1000
760          DQ       0       0      82     982
761          KM   **********

762          KK   RSD15
763          KM
764          KM        Route the storm drain hydrograph using the time
765          KM        lag option of the RT card. The time lag for SD15 hydrograph
766          KM        is less than 5 minutes but at the request of the FCDMC to
767          KM        route all hydrographs, the interger value of 1 will be
768          KM        used in field 3 of the RT card to time lag the storm drain
769          KM        flow one time increment of the IT card, 5-minutes, as it
770          KM        flows through the 30-inch RGRCP at a velocity of 7.1 fps
771          KM        to detention basin 1B151.
772          KM
773          RT       0       1       0
774          KM   **********
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
775          KK     151
776          KM   SUB-BASIN 151
777          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
778          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
779          KM     L =  .28  Kb = .064  Adj. Slope =   38.0
780          BA    .022
781          LG    .300    .250   4.500    .430  15.000
782          UC    .329    .343
783          UA       0       5      16      30      65      77      84      90      94      97
784          UA     100
785          KM   **********

786          KK   DRDHV
787          KM        RETRIEVE STREET INTERSECTION DIVERSION
788          KM        FCD#98-36
789          DR   DVDHV
790          KM   **********

791          KK  SD+151
792          KM
793          KM        Combine the routed storm drain flow from drainage sub-basin 15,
794          KM        SD15, with the hydrograph from drainage sub-basin 151, and with
795          KM        DVDHV from North of Hermosa Vista Drive.
796          KM
797          HC       3
798          KM   **********

799          KK   1B151
800          KM
801          KM        Detention Basin Storage for Drainage area 155
802          KM        FLOW DIVERTED INTO A 1.32 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
803          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
804          KM         - 20% ESCAPES THE SUB BASIN.
805          KM        FCD#98-36
806          DT  OUT151    1.32
807          DI       0      10     100    1000
808          DQ       0       8      80     800
809          KM   **********

810          KK    SF15
811          KM
812          KM        Recall the surface flow of drainage sub-basin 15, SF15.
813          KM
814          DR    SF15
815          KM   **********

816          KK     CP8
817          KM
818          KM        COMBINE RCP151 + SF15
819          KM
820          HC       2
821          KM   **********
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

822          KK   RCP15
823          KM
824          KM        ROUTE CP8 TO CP11 (TYPE 1)
825          KM
826          RS       2    FLOW
827          RC   0.013   0.016   0.013    2035  0.0059
828          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
829          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
830          KM   **********

831          KK    CP11
832          KM
833          KM        COMBINE CP15 + 13
834          KM
835          HC       2
836          KM   **********

837          KK    1B13
838          KM
839          KM        Retention Basin Storage for Drainage area 13
840          KM        FLOW DIVERTED INTO A 19.17 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
841          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
842          KM         - 20% ESCAPES THE SUB BASIN.
843          KM        FCD#98-36
844          DT   OUT13   19.17
845          DI       0      10     100    1000
846          DQ       0       8      80     800
847          KM   **********

848          KK   RSD12
849          KM        RETRIEVE FLOW FROM STORM DRAIN DIVERSION
850          KM        FCD#98-36
851          DR    SD12
852          KM   **********

853          KK    TL12
854          KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 12
855          RT       0       1       2
856          KM   **********

857          KK   CP12A
858          KM
859          KM        COMBINE RCP170 + RCP12 + 1B13 + SD12
860          KM
861          HC       4
862          KM   **********

863          KK   DSD13
```

```
 864          KM        DIVERT STORM DRAIN FLOW WEST OF 32ND ST. TO SUB-BASIN 6
 865          KM       36-INCH SD ALONG N MCKELLIPS RD. (From 32nd St. to Lindsay Rd.)
 866          KM       INTERCEPTION CAPACITY = 24 CFS (4 CATCH BASINS)
 867          KM       TOTAL TRANSPORT CAPACITY = 51 CFS
 868          KM       TOTAL TRANSPORT = 24 + 3(From SD12) = 27 CFS
 869          KM        FCD#98-36
1                                        HEC-1 INPUT                                                    PAGE 19

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 870          DT    SD13
 871          DI       0     27.    100.   1000.
 872          DQ       0     27.     27.     27.
 873          KM   **********

 874          KK   RCP13
 875          KM
 876          KM        ROUTE CP12A TO CP13 (TYPE 3)
 877          KM
 878          RS       1    FLOW
 879          RC   0.013   0.016   0.013    1283  0.0051
 880          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
 881          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
 882          KM   **********

 883          KK      11
 884          KM   SUB-BASIN 11
 885          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 886          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
 887          KM     L =  .49  Kb = .030  Adj. Slope =   21.0
 888          BA    .063
 889          LG    .100    .250   4.400    .550  80.000
 890          UC    .325    .290
 891          UA       0       5      16      30      65      77      84      90      94      97
 892          UA     100
 893          KM   **********

 894          KK    1B11
 895          KM
 896          KM        Retention Basin Storage for Drainage area 11
 897          KM        FLOW DIVERTED INTO A 0.93 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
 898          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
 899          KM         - 20% ESCAPES THE SUB BASIN.
 900          KM        FCD#98-36
 901          DT   OUT11    0.93
 902          DI       0      10     100    1000
 903          DQ       0       8      80     800
 904          KM   **********

 905          KK    CP12
 906          KM
 907          KM        COMBINE RCP13 + 1B11
 908          KM
 909          HC       2
 910          KM   **********

 911          KK   RCP11
 912          KM
 913          KM        ROUTE CP12 TO CP15 (TYPE 3)
 914          KM
 915          RS       2    FLOW
 916          RC   0.013   0.016   0.013    1320  0.0027
 917          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
 918          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
 919          KM   **********
1                                        HEC-1 INPUT                                                    PAGE 20

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 920          KK     161
 921          KM   SUB-BASIN 161
 922          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 923          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
 924          KM     L =  .61  Kb = .056  Adj. Slope =    6.0
 925          BA    .088
 926          LG    .250    .250   4.450    .450  29.000
 927          UC   1.163   1.177
 928          UA       0       5      16      30      65      77      84      90      94      97
 929          UA     100
 930          KM   **********

 931          KK   SD161
 932          KM        DIVERT STREET FLOW FROM NORTHRIDGE ST. AND LINDSAY RD. THROUGH 36" STORM
 933          KM        UNDER LINDSAY RD. TO CP13.
 934          KM        STORM DRAIN INTERCEPTION CAPACITY (LINDSAY RD. AT NORTHRIDGE ST.) = 23.3
 935          KM        FCD#98-36
 936          DT   SD161
 937          DI       0    17.8    1000
 938          DQ       0    17.8    17.8
 939          KM   **********

 940          KK  RCP161
 941          KM
 942          KM        ROUTE 161 TO CP13 (TYPE 2)
 943          KM
 944          RS       2    FLOW
 945          RC    .013    .016    .013    1425   .0030
 946          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
 947          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
 948          KM   **********

 949          KK     162
 950          KM   SUB-BASIN 162
 951          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
```

```
 952          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
 953          KM     L =  .65  Kb = .053  Adj. Slope =   24.0
 954          BA    .137
 955          LG    .250     .250   4.300     .490  30.000
 956          UC    .613     .472
 957          UA       0        5      16       30       65       77       84       90       94       97
 958          UA     100
 959          KM   **********

 960          KK   DS161
 961          KM        RETRIEVE STORM DRAIN FLOW DIVERTED FROM BASIN 161
 962          KM        NO LAG TIME INCLUDED FOR STORM DRAIN FLOW
 963          DR   SD161
 964          KM   **********
1                                        HEC-1 INPUT                                                          PAGE 21

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 965          KK    CP13
 966          KM
 967          KM        COMBINE 161(STREET+STORM DRAIN) + 162
 968          KM
 969          HC       3
 970          KM   **********

 971          KK   SD162
 972          KM        DIVERT STREET FLOW FROM SUB BASIN 162 THROUGH 54" STORM DRAIN FLOW
 973          KM        UNDER LINDSAY RD. TO 1B5.
 974          KM        STORM DRAIN INTERCEPTION CAPACITY (LINDSAY RD. AT NORWOOD ST.) =24 CFS
 975          KM        STORM DRAIN INTERCEPTION CAPACITY (LINDSAY RD. AT MALLORY ST.) = 20.0 CF
 976          KM        STORM DRAIN INTERCEPTION CAPACITY (LINDSAY RD. AT HERMOSA VISTA.) = 31.1
 977          KM        TOTAL INTERCEPTED FLOW = 20.0+24.0+31.1 = 75.1 CFS
 978          KM        STORM DRAIN CAPACITY (90%) =109.4 CFS
 979          KM        TOTAL TRANSPORTED FLOW = 17.8+20.0+24.0+31.1 = 92.9 CFS
 980          KM        FCD#98-36
 981          DT   SD162
 982          DI       0    92.9    1000
 983          DQ       0    92.9    92.9
 984          KM   **********

 985          KK  RCP162
 986          KM
 987          KM        ROUTE CP13 TO CP14 (TYPE 3)
 988          KM
 989          RS       1    FLOW
 990          RC    .013    .016    .013    1260   .0033
 991          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
 992          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
 993          KM   **********

 994          KK       5
 995          KM   SUB-BASIN 5
 996          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
 997          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
 998          KM     L =  .64  Kb = .053  Adj. Slope =   25.0
 999          BA    .146
1000          LG    .250     .250   4.550     .420  30.000
1001          UC    .579     .423
1002          UA       0        5      16       30       65       77       84       90       94       97
1003          UA     100
1004          KM   **********

1005          KK     SD5
1006          KM        DIVERT FLOW FROM SUB BASIN 5 THET DRAINS THROUGH TWO STORM DRAINS TO 1B5
1007          KM        - LOCKWOOD ST.; STORM DRAIN CAPACITY = 57.0 CFS
1008          KM                        INTERCEPTION CAPACITY = 42.0 CFS
1009          KM        - LEONORA ST.; STORM DRAIN CAPACITY = 56.0 CFS
1010          KM                        INTERCEPTION CAPACITY = 40.8 CFS
1011          KM        TOTAL STORM DRAIN CAPACITY = 42.0+40.8 = 82.8 CFS
1012          KM        FCD#98-36
1013          DT     SD5
1014          DI       0    82.8    1000
1                                        HEC-1 INPUT                                                          PAGE 22

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1015          DQ       0    82.8    82.8
1016          KM   **********

1017          KK    CP14
1018          KM
1019          KM        COMBINE CP13 + 5
1020          KM
1021          HC       2
1022          KM   **********

1023          KK   DS162
1024          KM        RETRIEVE STORM DRAIN FLOW DIVERTED FROM BASIN 162
1025          DR   SD162
1026          KM   **********

1027          KK   TL162
1028          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 162
1029          RT       0       1       1
1030          KM   **********

1031          KK     DS5
1032          KM        RETRIEVE STORM DRAIN FLOW DIVERTED FROM BASIN 5
1033          DR     SD5
1034          KM   **********

1035          KK   CP1B5
1036          KM
1037          KM        COMBINE DS162 + DS5
```

```
1038          KM
1039          HC       2
1040          KM   **********

1041          KK     1B5
1042          KM
1043          KM        Retention Basin Storage for Drainage area 5
1044          KM        FLOW DIVERTED INTO A 19.0 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
1045          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
1046          KM         - 20% ESCAPES THE SUB BASIN.
1047          KM        FCD#98-36
1048          DT    OUT5    19.0
1049          DI       0      10      100     1000
1050          DQ       0       8       80      800
1051          KM   **********

1052          KK   CP14B
1053          KM
1054          KM        COMBINE 1B5 + CP14
1055          KM
1056          HC       2
1057          KM   **********
1                                   HEC-1 INPUT                                                    PAGE 23

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1058          KK    RCP5
1059          KM
1060          KM        ROUTE CP14B TO CP15 (TYPE 3)
1061          KM
1062          RS       2    FLOW
1063          RC   0.013   0.016   0.013    1374  0.0034
1064          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
1065          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
1066          KM   **********

1067          KK       6
1068          KM   SUB-BASIN 6
1069          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1070          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1071          KM     L =  .44  Kb = .057  Adj. Slope =   24.0
1072          BA    .065
1073          LG    .250    .250   4.600    .400  40.000
1074          UC    .463    .387
1075          UA       0       5      16      30      65      77      84      90      94      97
1076          UA     100
1077          KM   **********

1078          KK   RSD13
1079          KM        RETRIEVE FLOW FROM STORM DRAIN DIVERSION
1080          KM        FCD#98-36
1081          DR    SD13
1082          KM   **********

1083          KK    TL13
1084          KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 13
1085          RT       0       1       1
1086          KM   **********

1087          KK    CP15
1088          KM
1089          KM        COMBINE CP12 + CP14 + 6 + SD13
1090          KM
1091          HC       4
1092          KM   **********

1093          KK  DIMRLR
1094          KM        DIVERT STREET FLOW AND STORM DRAIN SOUTH ON LINDSAY ROAD, TO SUB-BASIN 1
1095          KM      72-INCH SD. ALONG LINDSAY ROAD (From McKELLIPS RD. to EASTERN CANAL)
1096          KM      INTERCEPTION CAPACITY = 28 CFS (7 CATCH BASINS)
1097          KM      TOTAL FROM SD13 = 27 CFS
1098          KM      TOTAL TRANSPORT CAPACITY = 88 CFS
1099          KM      TOTAL TRANSPORT FROM NORTH OF McKELLIPS RD. = 27 CFS
1100          KM      THE STORM DRAIN CAPACITY IS INCLUDED IN THE STREET DIVERSION ALGORITHM
1101          KM        FCD#98-36
1102          DT   DMRLR
1103          DI     0.0    27.0   114.0   258.7   645.8  1361.2
1104          DQ     0.0    27.0    27.0   114.3   269.9   573.8
1105          KM   **********
1                                   HEC-1 INPUT                                                    PAGE 24

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1106          KK    RCP6
1107          KM
1108          KM        ROUTE CP15 TO CP16 (TYPE 3)
1109          KM
1110          RS       1    FLOW
1111          RC   0.013   0.016   0.013    1447  0.0065
1112          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
1113          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
1114          KM   **********

1115          KK     153
1116          KM   SUB-BASIN 153
1117          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1118          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1119          KM     L =  .35  Kb = .061  Adj. Slope =   25.0
1120          BA    .039
1121          LG    .250    .250   4.000    .560  30.000
1122          UC    .433    .401
1123          UA       0       5      16      30      65      77      84      90      94      97
1124          UA     100
```

```
1125          KM   **********

1126          KK    RSD4
1127          KM        RETRIEVE FLOW FROM STORM DRAIN DIVERSION
1128          KM        FCD#98-36
1129          DR     SD4
1130          KM   **********

1131          KK     TL4
1132          KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 4
1133          RT       0       1       1
1134          KM   **********

1135          KK   CP153
1136          KM
1137          KM        COMBINE 153 + SD4
1138          KM        FCD#98-36
1139          KM
1140          HC       2
1141          KM   **********

1142          KK   1B153
1143          KM
1144          KM        Retention Basin Storage for Drainage area 153
1145          KM        FLOW DIVERTED INTO A 2.18 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
1146          KM         - 100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
1147          KM        FCD#98-36
1148          DT  OUT153    2.00
1149          DI       0      10     100    1000
1150          DQ       0      10     100    1000
1151          KM   **********
1                                        HEC-1 INPUT                                                    PAGE 25

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1152          KK  RCP153
1153          KM
1154          KM        ROUTE 1B153 TO CP16 (SPECIAL TYPE)
1155          KM
1156          RS       2    FLOW
1157          RC    .035    .035    .035     708   .0088
1158          RX      89      90     100     132     291     421     431     432
1159          RY    20.9    10.9    10.6      10      10    10.6    10.9    20.9
1160          KM   **********

1161          KK       8
1162          KM   SUB-BASIN 8
1163          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1164          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1165          KM     L =  .30  Kb = .058  Adj. Slope =   28.0
1166          BA    .037
1167          LG    .230    .250   4.450    .450  43.000
1168          UC    .346    .285
1169          UA       0       5      16      30      65      77      84      90      94      97
1170          UA     100
1171          KM   **********

1172          KK    RSD3
1173          KM        RETRIEVE FLOW FROM STORM DRAIN DIVERSION
1174          KM        FCD#98-36
1175          DR     SD3
1176          KM   **********

1177          KK     TL3
1178          KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 3
1179          RT       0       1       1
1180          KM   **********

1181          KK    CP16
1182          KM
1183          KM        COMBINE CP15 + 153 + 8 + SD3
1184          KM
1185          HC       4
1186          KM   **********

1187          KK    DSD8
1188          KM        DIVERT STORM DRAIN FLOW EAST, ALONG McKELLIPS RD. TO SUB-BASIN 6
1189          KM      2x36-INCH SD. ALONG N McKELLIPS RD. (From EASTERN CANAL to Lindsay Rd.)
1190          KM      INTERCEPTION CAPACITY = 8 CFS (3 CATCH BASINS)
1191          KM      TOTAL FROM SD3 = 22 CFS
1192          KM      TOTAL TRANSPORT CAPACITY = 22 CFS
1193          KM      TOTAL TRANSPORT = 22 CFS
1194          KM        FCD#98-36
1195          DT     SD8
1196          DI       0     22.    100.   1000.
1197          DQ       0     22.     22.     22.
1198          KM   **********
1                                        HEC-1 INPUT                                                    PAGE 26

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1199          KK    RCP8
1200          KM
1201          KM        ROUTE CP16 TO CPMA (TYPE 3)
1202          KM
1203          RS       1    FLOW
1204          RC   0.013   0.016   0.013    1080  0.0026
1205          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
1206          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
1207          KM
1208          KM   **********

1209          KK    CPMA
```

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1210          KM
1211          KM        This hydrograph combination point was added to reflect the revision to
1212          KM        basin 3.
1213          KM        FCD#98-36
1214          KM
1215          KM        COMBINE RCP2 + RCP8 + Basin 3
1216          HC       3
1217          KM
1218          KM   **********

1219          KK    PA03
1220          KM
1221          RS       1    STOR       0      -1       0       0       0       0       0       0
1222          SV       0    3.17    5.64   11.73   13.09   19.28
1223          SE  1292.0  1293.0  1293.4  1294.0  1294.1  1294.5
1224          SQ       0       0   121.1  1105.6  1354.8  2744.3
1225          KM   **********
1226          KM
1227          KM        This diversion represents possible breakout flows over the Eastern
1228          KM        Canal. This flow will not be retrieved into the model.
1229          KM

1230          KK   CPD03
1231          KM        DIVERT FLOW Over the Eastern canal due to weiring over its banks
1232          DT    PD03
1233          DI       0   121.1  1105.6  1354.8  2744.3
1234          DQ       0       0       0     2.5   139.4
1235          KM
1236          KM   **********

1237          KK    RCP3
1238          KM
1239          KM        ROUTE CPMA TO CP18 (TYPE 5)
1240          KM
1241          RS       4    FLOW
1242          RC   0.027   0.027   0.027    2837  0.0001
1243          RX      90     110     150     155     160     165     205     225
1244          RY      30      18      18      13      13      18      18      30
1245          KM   **********
1                                        HEC-1 INPUT                                                PAGE 27

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1246          KK       9
1247          KM   SUB-BASIN 9
1248          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1249          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1250          KM     L =  .42  Kb = .051  Adj. Slope =   34.0
1251          BA    .067
1252          LG    .230    .250   4.600    .380  42.000
1253          UC    .363    .280
1254          UA       0       5      16      30      65      77      84      90      94      97
1255          UA     100
1256          KM   **********

1257          KK     168
1258          KM   SUB-BASIN 168
1259          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1260          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1261          KM     L =  .47  Kb = .054  Adj. Slope =   25.0
1262          BA    .051
1263          LG    .260    .250   4.600    .350  18.000
1264          UC    .471    .478
1265          UA       0       5      16      30      65      77      84      90      94      97
1266          UA     100
1267          KM   **********

1268          KK    CP18
1269          KM
1270          KM        COMBINE CP170 + 9 + 168
1271          KM
1272          HC       3
1273          KM   **********

1274          KK    PA09
1275          KM
1276          RS       1    STOR       0      -1
1277          SV    0.00    0.15    8.64   34.02   36.64   42.23   45.20   48.29   65.47
1278          SE  1287.0 1288.00 1290.00 1291.50 1291.60 1291.80 1291.90 1292.00 1292.50
1279          SQ    0.00    4.20   20.00   27.26  120.35  629.92 1321.00 1533.00 3056.40
1280          KM   **********
1281          KM
1282          KM        This diversion represents possible breakout flows over the Eastern
1283          KM        Canal. This flow will not be retrieved into the model.
1284          KM

1285          KK   CPD09
1286          KM        DIVERT FLOW Over the Eastern canal due to weiring over its banks
1287          DT    PD09
1288          DI    0.00    4.20   20.00   27.26  120.35  629.92 1321.00 1533.00 3056.40
1289          DQ    0.00    0.00    0.00    0.00   92.60  601.20 1291.80 1503.00 2559.00
1290          KM
1291          KM   **********
1                                        HEC-1 INPUT                                                PAGE 28

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1292          KK      22
1293          KM   SUB-BASIN 22
1294          KM        The boundaries of this basin were modified compared to the original mode
1295          KM        to MODEL better the existing conditions.
1296          KM        FCD#98-36
1297          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
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1298          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1299          KM     L =  .39  Kb = .053  Adj. Slope =   26.0
1300          BA    .060
1301          LG    .270    .250   4.800    .320  23.000
1302          UC    .458    .364
1303          UA      0       5      16      30      65      77      84      90      94      97
1304          UA     100
1305          KM   **********

1306          KK   RCP22
1307          KM
1308          KM        ROUTE 22 TO CP19 (TYPE 1)
1309          KM
1310          RS       1    FLOW
1311          RC   0.013   0.016   0.013    1301  0.0040
1312          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
1313          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
1314          KM   **********

1315          KK  RDMRLR
1316          KM        RETRIEVE FLOW FROM STORM DRAIN AND STREET FLOW DIVERSION
1317          KM        FCD#98-36
1318          DR   DMRLR
1319          KM   **********

1320          KK    RSD8
1321          KM        RETRIEVE FLOW FROM STORM DRAIN DIVERSION
1322          KM        FCD#98-36
1323          DR     SD8
1324          KM   **********

1325          KK     TL8
1326          KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 3
1327          RT       0       1       2
1328          KM   **********

1329          KK      10
1330          KM   SUB-BASIN 10
1331          KM        The boundaries of this basin were modified compared to the original mode
1332          KM        to model better the existing conditions.
1333          KM        FCD#98-36
1334          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1335          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1336          KM     L =  .42  Kb = .047  Adj. Slope =   23.0
1337          BA    .063
1338          LG    .250    .250   4.800    .320  30.000
1339          UC    .458    .364
1340          UA      0       5      16      30      65      77      84      90      94      97
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1341          UA     100
1342          KM   **********

1343          KK    CP19
1344          KM
1345          KM        COMBINE 22 + 10 + DLRMR + SD8
1346          KM        FCD#98-36
1347          KM
1348          HC       4
1349          KM   **********

1350          KK   DSD10
1351          KM        DIVERT STORM DRAIN TO SUB-BASIN 25
1352          KM      72-INCH SD. ALONG LINDSAY ROAD (From MCKELLIPS RD. to EASTERN CANAL)
1353          KM      INTERCEPTION CAPACITY = 28 CFS (7 CATCH BASINS)
1354          KM      TOTAL FROM SD13 = 27 CFS
1355          KM      TOTAL FROM SD8 = 22 CFS
1356          KM      TOTAL TRANSPORT CAPACITY = 229 CFS
1357          KM      TOTAL TRANSPORT = 27 + 22 + 28 = 77 CFS
1358          KM        FCD#98-36
1359          DT    SD10
1360          DI       0     78.    100.   1000.   2000.
1361          DQ       0     78.     78.     78.     78.
1362          KM   **********

1363          KK   RCP10
1364          KM
1365          KM        ROUTE CP19 TO CP21 (TYPE 3)
1366          KM
1367          RS       1    FLOW
1368          RC   0.013   0.016   0.013    1251  0.0024
1369          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
1370          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
1371          KM   **********

1372          KK      25
1373          KM   SUB-BASIN 25
1374          KM        The boundaries of this basin were modified compared to the original mode
1375          KM        to model better the existing conditions.
1376          KM        FCD#98-36
1377          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1378          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1379          KM     L =  .79  Kb = .055  Adj. Slope =   15.0
1380          BA    .102
1381          LG    .300    .250   4.800    .360  15.000
1382          UC   1.117   1.272
1383          UA      0       5      16      30      65      77      84      90      94      97
1384          UA     100
1385          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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1386        KK   RSD10
1387        KM        RETRIEVE FLOW FROM STORM DRAIN AND STREET FLOW DIVERSION
1388        KM        FCD#98-36
1389        DR    SD10
1390        KM   **********

1391        KK     TL8
1392        KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 3
1393        RT       0       1       1
1394        KM   **********

1395        KK    CP21
1396        KM
1397        KM        COMBINE PA09 + RCP10 + 25 + SD10
1398        KM
1399        HC       4
1400        KM   **********

1401        KK   DSD25
1402        KM        DIVERT STORM DRAIN TO SUB-BASIN 25
1403        KM      72-INCH SD. ALONG LINDSAY ROAD (From MCKELLIPS RD. to EASTERN CANAL) AND
1404        KM      EASTERN CANAL.
1405        KM      INTERCEPTION CAPACITY = 9 CFS (3 CATCH BASINS)
1406        KM      TOTAL FROM SD10 = 77 CFS
1407        KM      TOTAL TRANSPORT CAPACITY = 71 CFS
1408        KM      TOTAL TRANSPORT = 71 CFS
1409        KM        FCD#98-36
1410        DT    SD25
1411        DI       0     71.    100.   1000.   2000.
1412        DQ       0     71.     71.     71.     71.
1413        KM   **********

1414        KK    PA25
1415        KM        This ponding area (Tract N - North and surroundings) was added to this m
1416        KM        after additional data was acquired from City of Mesa As-built records, a
1417        KM        from FCD of Maricopa County Letter of Map Revision regarding
1418        KM        Mesa Northgrove area.
1419        KM
1420        RS       1    STOR       0      -1
1421        SV    0.00    0.60    1.29    2.02    2.78    3.73    4.32
1422        SE  1288.0  1289.0  1290.0  1291.0  1292.0  1293.0  1293.5
1423        SQ    0.00    0.00    0.00    0.00   84.00  237.59  442.72
1424        KM   **********
1425        KM        This diversion represents possible breakout flows over the Eastern
1426        KM        Canal. This flow will not be retrieved into the model.

1427        KK   CPD25
1428        KM        DIVERT FLOW Over the Eastern Canal due to weiring over its banks.
1429        KM        The diversion was introduced in the model after the hydraulic modeling
1430        KM        had been completed. The nature of this is diversion is purely hydraulic
1431        KM        and it occurs due to the limited transport capacity of the concrete-line
1432        KM        drainage channel that connects Ponding Area PA25 and Ponding Area PA26.
1433        KM        FCD#98-36
1434        DT    PD25
```



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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1435        DI    0.00   50.00  100.00  150.00  200.00  236.00  250.00  300.00
1436        DQ    0.00    0.00   31.30   78.80  126.70  161.60  175.50  224.50
1437        KM   **********

1438        KK   RCP25
1439        KM
1440        KM        ROUTE PA25 TO COM26A (TYPE 5)
1441        KM
1442        KM        This route (Concrete-lined channel that connects Tract N - "North: and
1443        KM        Tract N - "South")was added to the model after additional data had been
1444        KM        acquired from City of Mesa As-built records, and from FCD of Maricopa Co
1445        KM        (Letter of Map Revision regarding Mesa Northgroove area).
1446        KM
1447        KM        NOTE: The NSTPS parameter in the RS card was decreased from 2 to 1 to
1448        KM              avoid routing instability for flows between 8.0 cfs and 1521.0 cfs
1449        KM              The routing is still unstable for flows between 114.0 cfs to 1521.
1450        KM              but these flows exceed 74 cfs, which represents the concrete-lined
1451        KM              transport capacity.
1452        KM
1453        RS       1    FLOW
1454        RC   0.014   0.014   0.014    1167  0.0025
1455        RX       1       5      10      19      21      30      30      30
1456        RY      13      13      13      10      10      13      16      16
1457        KM   **********

1458        KK      17
1459        KM   SUB-BASIN 17
1460        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1461        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1462        KM     L =  .79  Kb = .055  Adj. Slope =   36.0
1463        BA    .100
1464        LG    .300    .250   4.800    .360  15.000
1465        UC    .608    .656
1466        UA       0       5      16      30      65      77      84      90      94      97
1467        UA     100
1468        KM   **********

1469        KK   DSD17
1470        KM        DIVERT 24-INCH STORM DRAIN FLOW FROM SUB-BASIN 17
1471        KM      INTERCEPTION CAPACITY = 8.4 CFS (1 CATCH BASIN)
1472        KM      TOTAL TRANSPORT CAPACITY =16 CFS
1473        KM      TOTAL TRANSPORT = 8.4 CFS
1474        KM        FCD#98-36
1475        DT    SD17
1476        DI       0     8.4    100.   1000.
1477        DQ       0     8.4     8.4     8.4
```

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1478          KM   **********

1479          KK  DSD17A
1480          KM        DIVERT 30-INCH STORM DRAIN FLOW FROM SUB-BASIN 17 TO SUB-BASIN 19
1481          KM      INTERCEPTION CAPACITY = 0 CFS (NO CATCH BASINS)
1482          KM      TOTAL TRANSPORT CAPACITY =17 CFS
1483          KM      TOTAL TRANSPORT = 10 CFS
1484          KM        FCD#98-36
1485          DT   SD17A
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1486          DI       0     10.    100.   1000.
1487          DQ       0     10.     10.     10.
1488          KM   **********

1489          KK   DRMMR
1490          KM        RETRIEVE STREET INTERSECTION DIVERSION
1491          KM        FCD#98-36
1492          DR   DVDMR
1493          KM   **********

1494          KK    CP17
1495          KM
1496          KM        COMBINE 17 + DVDMR
1497          KM        FCD#98-36
1498          HC       2
1499          KM   **********

1500          KK   RCP17
1501          KM
1502          KM        ROUTE CP17 TO CP32 (TYPE 1)
1503          KM
1504          RS       1    FLOW
1505          RC   0.013   0.016   0.013     993  0.0039
1506          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
1507          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
1508          KM   **********

1509          KK      19
1510          KM   SUB-BASIN 19
1511          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1512          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1513          KM     L =  .42  Kb = .057  Adj. Slope =   31.0
1514          BA    .069
1515          LG    .300    .250   4.800    .360  15.000
1516          UC    .425    .328
1517          UA       0       5      16      30      65      77      84      90      94      97
1518          UA     100
1519          KM   **********

1520          KK  RSD17A
1521          KM        RETRIEVE FLOW FROM STORM DRAIN FLOW DIVERSION
1522          KM        FCD#98-36
1523          DR   SD17A
1524          KM   **********

1525          KK   TL17A
1526          KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 3
1527          RT       0       1       1
1528          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1529          KK    CP32
1530          KM
1531          KM        COMBINE CP17 + 19 + SD17A
1532          KM
1533          HC       3
1534          KM   **********

1535          KK   DMLVD
1536          KM        DIVERT STREET FLOW SOUTH OF MCLELLAN ROAD ON VAL VISTA DRIVE
1537          KM        DIVERT STORM DRAIN FLOW TO AREA 33
1538          KM        STORM DRAIN CAPACITY = 21 CFS SOUTH
1539          KM        FCD#98-36
1540          DT   DVDML
1541          DI       0     21.   113.3   265.1   671.2  1418.7
1542          DQ       0      0.      0.    48.8   187.2   419.7
1543          KM   **********

1544          KK   RCP19
1545          KM
1546          KM        ROUTE CP32 TO CP35 (SPECIAL TYPE)
1547          KM
1548          RS       4    FLOW
1549          RC   0.035   0.035   0.035    2600  0.0047
1550          RX    90.0    95.0   130.0   150.0   170.0   190.0   225.0   230.0
1551          RY      12      10      10     9.2     9.2      10      10      12
1552          KM   **********

1553          KK      21
1554          KM   SUB-BASIN 21
1555          KM      THIS BASIN WAS GENERATED BY COMBINING SUB-BASINS 21, 23, AND 24
1556          KM      FROM THE ORIGINAL MODEL. THE MODIFICATIONS WERE REQUIRED DUE TO
1557          KM      THE DEVELOPEMENT OF THE AREA.
1558          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1559          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1560          KM     L =  .52  Kb = .050  Adj. Slope =   29.0
1561          BA    .247
1562          LG    .300    .250   4.800    .360  15.000
1563          UC    .542    .246
```

```
1564        UA      0       5      16      30      65      77      84      90      94      97
1565        UA    100
1566        KM   **********

1567        KK    1B21
1568        KM
1569        KM        THIS RETENTION BASIN WAS ADDED TO THE MODEL AFTER SUB-BASIN 21 HAD BEEN
1570        KM        MODIFIED DUE TO DEVELOPMENT OF THE AREA.
1571        KM
1572        KM        Retention Basin Storage for Drainage area 21
1573        KM        FLOW DIVERTED INTO A 8.84 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
1574        KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
1575        KM         - 20% ESCAPES THE SUB BASIN.
1576        KM        FCD#98-36
1577        DT   OUT21    8.84
1578        DI      0      10     100    1000
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1579        DQ      0       8      80     800
1580        KM   **********

1581        KK    CP35
1582        KM
1583        KM        COMBINE RCP19 + 1B21
1584        KM
1585        HC      2
1586        KM   **********

1587        KK   RCP23
1588        KM
1589        KM        ROUTE CP35 TO CP37A (TYPE 2)
1590        KM
1591        RS      2    FLOW
1592        RC   0.013   0.016   0.013    1552  0.0069
1593        RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
1594        RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
1595        KM   **********

1596        KK     27
1597        KM   SUB-BASIN 27
1598        KM        The boundaries of this basin were modified compared to the original mode
1599        KM        to model better the existing conditions.
1600        KM        FCD#98-36
1601        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1602        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1603        KM     L =  .36  Kb = .055  Adj. Slope =   22.0
1604        BA    .109
1605        LG    .300    .250   5.100    .320  15.000
1606        UC    .496    .265
1607        UA      0       5      16      30      65      77      84      90      94      97
1608        UA    100
1609        KM   **********

1610        KK   CP37A
1611        KM
1612        KM        COMBINE 27 + RCP23
1613        KM        FCD#98-36
1614        KM
1615        HC      2
1616        KM   **********

1617        KK    1B27
1618        KM
1619        KM        Retention Basin Storage for Drainage area 27
1620        KM      THIS IS THE RETENTION BASIN FOR TRACT M OF MESA NORTHGROVE (16.83 AC.FT.)
1621        KM      THE ON-LOT RETENTION FOR THE 1-ACRE LOTS (1.24 AC.FT.) WAS ALSO INCLUDED.
1622        KM        FLOW DIVERTED INTO A 18.07 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
1623        KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
1624        KM         - 20% ESCAPES THE SUB BASIN.
1625        KM        FCD#98-36
1626        DT   OUT27   18.07
1627        DI      0      10     100    1000
1628        DQ      0       8      80     800
1                                        HEC-1 INPUT                                                    PAGE 35

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1629        KM   **********

1630        KK   RCP27
1631        KM
1632        KM        ROUTE FLOW FROM CP37A THAT DO NOT ENTER 1B27 TO COM26A (TYPE 2)
1633        KM
1634        RS      1    FLOW
1635        RC   0.013   0.016   0.013     790  0.0019
1636        RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
1637        RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
1638        KM   **********

1639        KK     26
1640        KM   SUB-BASIN 26
1641        KM        The boundaries of this basin were modified compared to the original mode
1642        KM        to model better the existing conditions.
1643        KM        FCD#98-36
1644        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1645        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1646        KM     L =  .30  Kb = .055  Adj. Slope =   22.0
1647        BA    .108
1648        LG    .300    .250   5.600    .260  15.000
1649        UC    .425    .194
1650        UA      0       5      16      30      65      77      84      90      94      97
1651        UA    100
1652        KM   **********
```

```
1653          KK   RSD25
1654          KM        RETRIEVE FLOW FROM STORM DRAIN FLOW DIVERSION
1655          KM        FCD#98-36
1656          DR    SD25
1657          KM   **********

1658          KK    TL25
1659          KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 25
1660          RT       0       1       2
1661          KM   **********

1662          KK  COM26A
1663          KM
1664          KM        COMBINE 26 + RCP27 + RCP25 + SD25
1665          KM
1666          HC       4
1667          KM   **********

1668          KK      38
1669          KM   SUB-BASIN 38
1670          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1671          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1672          KM     L =  .36  Kb = .059  Adj. Slope =   43.0
1673          BA    .049
1674          LG    .300    .250   4.800    .360  15.000
1675          UC    .342    .277
1676          UA       0       5      16      30      65      77      84      90      94      97
1677          UA     100
1                                          HEC-1 INPUT                                          PAGE 36

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1678          KM   **********

1679          KK    2B38
1680          KM
1681          KM        Retention Basin Storage for Drainage area 38
1682          KM        FLOW DIVERTED INTO A 3.65 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
1683          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
1684          KM         - 20% ESCAPES THE SUB BASIN.
1685          KM        FCD#98-36
1686          DT   OUT38    3.65
1687          DI       0      10     100    1000
1688          DQ       0       8      80     800
1689          KM   **********

1690          KK   RCP38
1691          KM
1692          KM        ROUTE 38 TO CP22 (TYPE 1)
1693          KM
1694          RS       1    FLOW
1695          RC   0.013   0.016   0.013    1410  0.0060
1696          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
1697          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
1698          KM   **********

1699          KK      37
1700          KM   SUB-BASIN 37
1701          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1702          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1703          KM     L =  .46  Kb = .057  Adj. Slope =   28.0
1704          BA    .069
1705          LG    .300    .250   4.800    .360  15.000
1706          UC    .467    .392
1707          UA       0       5      16      30      65      77      84      90      94      97
1708          UA     100
1709          KM   **********

1710          KK    CP22
1711          KM
1712          KM        COMBINE 38 + 37
1713          KM
1714          HC       2
1715          KM   **********

1716          KK   DBU40
1717          KM        DIVERT STREET FLOW WEST OF 40TH STREET
1718          KM        TRANSPORT CAPACITY = 40 CFS
1719          KM        INTERCEPTION CAPACITY = 32 CFS
1720          KM        STORM DRAIN FLOW TO SOUTH = 32 CFS
1721          KM        DIVERT SURFACE FLOW TO AREA 35
1722          KM        FCD#98-36
1723          DT   DHU40
1724          DI       0     32.    37.6   74.8    85.7    95.2   275.5   594.9
1725          DQ       0      0.      0.   19.0    25.0    30.8   107.3   257.8
1726          KM   **********
1                                          HEC-1 INPUT                                          PAGE 37

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1727          KK   RCP37
1728          KM
1729          KM        ROUTE CP22 TO CP24 (TYPE 1)
1730          KM
1731          RS       1    FLOW
1732          RC   0.013   0.016   0.013    1283  0.0039
1733          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
1734          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
1735          KM   **********

1736          KK      41
1737          KM   SUB-BASIN 41
1738          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
```

```
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
KM     L =  .27  Kb = .062  Adj. Slope =   37.0
BA    .031
LG    .300    .250   4.800    .360  15.000
UC    .308    .255
UA       0       5      16      30      65      77      84      90      94      97
UA     100
KM   **********

KK   DMRGR
KM        DIVERT STREET FLOW SOUTH OF BROWN ROAD TO AREA 52
KM       STORM DRAIN FLOW DIVERTED TO SOUTH = 16 CFS
KM         FCD#98-36
DT   DBRGR
DI     0.0    16.0   138.8   331.6   847.1  1779.6
DQ     0.0    16.0    16.0   116.1   288.4   615.2
KM   **********

KK   RCP41
KM
KM        ROUTE 41 TO CP23 (TYPE 3)
KM
RS       1    FLOW
RC   0.013   0.016   0.013    1073  0.0075
RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
KM   **********

KK      40
KM   SUB-BASIN 40
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
KM     L =  .40  Kb = .059  Adj. Slope =   31.0
BA    .055
LG    .300    .250   4.800    .360  15.000
UC    .421    .355
UA       0       5      16      30      65      77      84      90      94      97
UA     100
KM   **********
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK    CP23
KM
KM        COMBINE 41 + 40
KM
HC       2
KM   **********

KK   RCP40
KM
KM        ROUTE CP23 TO CP24 (TYPE 3)
KM
RS       1    FLOW
RC   0.013   0.016   0.013    1502  0.0059
RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
KM   **********

KK      39
KM   SUB-BASIN 39
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
KM     L =  .45  Kb = .057  Adj. Slope =   36.0
BA    .074
LG    .300    .250   4.800    .360  15.000
UC    .417    .326
UA       0       5      16      30      65      77      84      90      94      97
UA     100
KM   **********

KK    2B39
KM
KM        Retention Basin Storage for Drainage area 39
KM        FLOW DIVERTED INTO A 2.36 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
KM         - 20% ESCAPES THE SUB BASIN.
KM        FCD#98-36
DT   OUT39    2.36
DI       0      10     100    1000
DQ       0       8      80     800
KM   **********

KK    CP24
KM
KM        COMBINE CP22 + CP23 + 2B39
KM
HC       3
KM   **********

KK   DDR40
KM        DIVERT STREET FLOW SOUTH OF BROWN ROAD
KM        DIVERT SURFACE FLOW TO AREA 50
KM       STORM DRAIN FLOW TO WEST = 10 CFS
KM         FCD#98-36
DT   DBR40
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```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

DI     0.0    10.0   108.0   253.6   642.4  1330.5
DQ     0.0     0.0     0.0    45.8   159.5   341.9
KM   **********
```

```
1827        KK   RCP39
1828        KM
1829        KM        ROUTE CP24 TO CP27 (TYPE 3)
1830        KM
1831        RS       2    FLOW
1832        RC   0.013   0.016   0.013    2673  0.0055
1833        RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
1834        RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
1835        KM   **********

1836        KK      18
1837        KM   SUB-BASIN 18
1838        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1839        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1840        KM     L =  .63  Kb = .055  Adj. Slope =   39.0
1841        BA    .108
1842        LG    .300    .250   4.800    .360  15.000
1843        UC    .492    .413
1844        UA      0       5      16      30      65      77      84      90      94      97
1845        UA    100
1846        KM   **********

1847        KK    1B18
1848        KM
1849        KM        THIS RETENTION BASIN WAS ADDED TO THE MODEL AFTER SUB-BASIN 21 HAD BEEN
1850        KM        MODIFIED DUE TO DEVELOPMENT OF THE AREA.
1851        KM
1852        KM        Retention Basin Storage for Drainage area 18
1853        KM        FLOW DIVERTED INTO A 8.39 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
1854        KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
1855        KM         - 20% ESCAPES THE SUB BASIN.
1856        KM        FCD#98-36
1857        DT   OUT18    8.39
1858        DI      0      10     100    1000
1859        DQ      0       8      80     800
1860        KM   **********

1861        KK   RSD17
1862        KM        RETRIEVE FLOW FROM STORM DRAIN FLOW DIVERSION
1863        KM        FCD#98-36
1864        DR    SD17
1865        KM   **********

1866        KK   CP18A
1867        KM
1868        KM        COMBINE SD17 + 1B18
1869        KM        FCD#98-36
1870        KM
1871        HC       2
1872        KM   **********
```



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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1873        KK   RCP18
1874        KM
1875        KM        ROUTE CP18A TO CP31 (TYPE 1)
1876        KM
1877        RS       1    FLOW
1878        RC   0.013   0.016   0.013    1350  0.0018
1879        RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
1880        RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
1881        KM   **********

1882        KK      20
1883        KM   SUB-BASIN 20
1884        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1885        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1886        KM     L =  .66  Kb = .053  Adj. Slope =   36.0
1887        BA    .149
1888        LG    .300    .250   4.800    .360  15.000
1889        UC    .512    .374
1890        UA      0       5      16      30      65      77      84      90      94      97
1891        UA    100
1892        KM   **********

1893        KK    CP31
1894        KM
1895        KM        COMBINE 18 + 20
1896        KM
1897        HC       2
1898        KM   **********

1899        KK    1B20
1900        KM
1901        KM        Retention Basin Storage for Drainage area 20
1902        KM        FLOW DIVERTED INTO A 6.93 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
1903        KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
1904        KM         - 20% ESCAPES THE SUB BASIN.
1905        KM        FCD#98-36
1906        DT   OUT20    6.93
1907        DI      0      10     100    1000
1908        DQ      0       8      80     800
1909        KM   **********

1910        KK   RCP20
1911        KM
1912        KM        ROUTE CP31 TO CP33A (TYPE 1)
1913        KM
1914        RS       1    FLOW
1915        RC   0.013   0.016   0.013    1576  0.0072
1916        RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
1917        RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1918          KM   **********
1919          KK      33
1920          KM   SUB-BASIN 33
1921          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1922          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1923          KM     L =  .54  Kb = .097  Adj. Slope =   33.0
1924          BA    .062
1925          LG    .450    .250   4.800    .440   4.000
1926          UC    .846    .916
1927          UA       0       3       5       8      12      20      43      75      90      96
1928          UA     100
1929          KM   **********

1930          KK   DRMML
1931          KM        RETRIEVE STREET INTERSECTION DIVERSION
1932          KM        FCD#98-36
1933          DR   DVDML
1934          KM   **********

1935          KK   CP33A
1936          KM
1937          KM        COMBINE 33 + DVDML
1938          KM        FCD#98-36
1939          KM
1940          HC       3
1941          KM   **********

1942          KK  DBDHB1
1943          KM        DIVERT STREET FLOW WEST OF VAL VISTA DRIVE
1944          KM        DIVERT SURFACE FLOW TO AREA 29
1945          KM        STREET CAPACITY = 33.06 CFS
1946          KM        BEYOND STREET CAPACITY, A 50% DIVERSION IS CONSIDERED
1947          KM        FCD#98-36
1948          DT  DVDHB1
1949          DI       0   33.06     100    1000
1950          DQ       0       0      50     500
1951          KM   **********

1952          KK   RCP33
1953          KM
1954          KM        ROUTE CP33A TO CP25 (TYPE 3)
1955          KM
1956          RS       1    FLOW
1957          RC   0.013   0.016   0.013     667  0.0023
1958          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
1959          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
1960          KM   **********

1961          KK      34
1962          KM   SUB-BASIN 34
1963          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1964          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
1965          KM     L =  .54  Kb = .096  Adj. Slope =   32.0
1966          BA    .065
1967          LG    .450    .250   4.800    .440   4.000
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1968          UC    .850    .896
1969          UA       0       3       5       8      12      20      43      75      90      96
1970          UA     100
1971          KM   **********

1972          KK   DRU40
1973          KM        RETRIEVE FLOW FROM STREET INTERSECTION DIVERSION
1974          KM        FCD#98-36
1975          DR   DHU40
1976          KM   **********

1977          KK    CP25
1978          KM
1979          KM        COMBINE 33 + 34 + DHU40
1980          KM
1981          HC       3
1982          KM   **********

1983          KK   DBDHB
1984          KM        DIVERT STREET FLOW WEST OF VAL VISTA DRIVE
1985          KM        STORM DRAIN CAPACITY TO SOUTH = 20 CFS
1986          KM        DIVERT SURFACE FLOW TO AREA 29
1987          KM        FCD#98-36
1988          DT   DVDHB
1989          DI       0.0    20.0    92.9   218.5   554.8  1184.3
1990          DQ       0.0     0.0     0.0    46.9   174.1   397.4
1991          KM   **********

1992          KK   RCP34
1993          KM
1994          KM        ROUTE CP25 TO CP26 (TYPE 3)
1995          KM
1996          RS       1    FLOW
1997          RC   0.013   0.016   0.013     660  0.0032
1998          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
1999          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
2000          KM   **********

2001          KK      35
2002          KM   SUB-BASIN 35
2003          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
```

```
2004          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2005          KM     L =  .53  Kb = .083  Adj. Slope =   33.0
2006          BA    .062
2007          LG    .400    .250   4.800    .410   8.000
2008          UC    .696    .726
2009          UA       0       5      16      30      65      77      84      90      94      97
2010          UA     100
2011          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2012          KK    CP26
2013          KM
2014          KM        COMBINE CP25 + 35
2015          KM
2016          HC       2
2017          KM   **********

2018          KK   RCP35
2019          KM
2020          KM        ROUTE CP26 TO CP27 (TYPE 3)
2021          KM
2022          RS       1    FLOW
2023          RC   0.013   0.016   0.013     668  0.0034
2024          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
2025          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
2026          KM   **********

2027          KK      36
2028          KM   SUB-BASIN 36
2029          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2030          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2031          KM     L =  .51  Kb = .095  Adj. Slope =   32.0
2032          BA    .071
2033          LG    .450    .250   4.800    .440   4.000
2034          UC    .804    .766
2035          UA       0       3       5       8      12      20      43      75      90      96
2036          UA     100
2037          KM   **********

2038          KK    CP27
2039          KM
2040          KM        COMBINE RCP39 + RCP35 + 36
2041          KM
2042          HC       3
2043          KM   **********

2044          KK   DBRVD
2045          KM        DIVERT STREET FLOW SOUTH ON VAL VISTA DRIVE
2046          KM        DIVERT SURFACE FLOW TO AREA 45
2047          KM      STORM DRAIN FLOW TO WEST = 23 CFS
2048          KM        FCD#98-36
2049          DT   DVDBR
2050          DI       0     23.   123.1   285.4   719.5  1514.3
2051          DQ       0      0.      0.    90.3   248.9   554.8
2052          KM   **********

2053          KK   RCP36
2054          KM
2055          KM        ROUTE CP27 TO CP28 (TYPE 3)
2056          KM
2057          RS       1    FLOW
2058          RC   0.013   0.016   0.013    1288  0.0050
2059          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
2060          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2061          KM   **********

2062          KK   DSD32
2063          KM        DIVERT 42-INCH STORM DRAIN FLOW FROM SUB-BASIN 32 TO SUB-BASIN 30
2064          KM      INTERCEPTION CAPACITY = 16 CFS (4 CATCH BASINS)
2065          KM      TOTAL TRANSPORT CAPACITY = 82 CFS
2066          KM      TOTAL FROM DVDBR = 23 CFS
2067          KM      TOTAL FROM RCP39 = 15 CFS
2068          KM      TOTAL TRANSPORT = 23 + 15 + 16 = 54 CFS
2069          KM        FCD#98-36
2070          DT    SD32
2071          DI       0     54.    100.   1000.
2072          DQ       0     54.     54.     54.
2073          KM   **********

2074          KK      31
2075          KM   SUB-BASIN 31
2076          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2077          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2078          KM     L =  .31  Kb = .062  Adj. Slope =   25.0
2079          BA    .030
2080          LG    .300    .250   4.800    .360  15.000
2081          UC    .400    .387
2082          UA       0       5      16      30      65      77      84      90      94      97
2083          UA     100
2084          KM   **********

2085          KK    2B31
2086          KM
2087          KM        Retention Basin Storage for Drainage area 31
2088          KM        FLOW DIVERTED INTO A 0.93 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
2089          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
2090          KM         - 20% ESCAPES THE SUB BASIN.
2091          KM        FCD#98-36
```

```
2092          DT   OUT31    0.93
2093          DI       0      10     100    1000
2094          DQ       0       8      80     800
2095          KM   **********

2096          KK   RCP31
2097          KM
2098          KM        ROUTE 31 TO CP28 (SPECIAL TYPE)
2099          KM
2100          RS       1    FLOW
2101          RC   0.035   0.035   0.035     659  0.0047
2102          RX      90     100     110     112     113     145     146     241
2103          RY      13      10      10     9.8     9.8      10      10      13
2104          KM   **********

2105          KK      32
2106          KM   SUB-BASIN 32
2107          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2108          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2109          KM     L =  .28  Kb = .117  Adj. Slope =   31.0
2110          BA    .033
1                                   HEC-1 INPUT                                          PAGE 45

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2111          LG    .500    .250   4.800    .460    .000
2112          UC    .625    .554
2113          UA       0       3       5       8      12      20      43      75      90      96
2114          UA     100
2115          KM   **********

2116          KK    CP28
2117          KM
2118          KM        COMBINE CP27 + 31 + 32
2119          KM
2120          HC       3
2121          KM   **********

2122          KK   RCP32
2123          KM
2124          KM        ROUTE CP28 TO CP29 (TYPE 3)
2125          KM
2126          RS       1    FLOW
2127          RC   0.013   0.016   0.013    1288  0.0054
2128          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
2129          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
2130          KM   **********

2131          KK      29
2132          KM   SUB-BASIN 29
2133          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2134          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2135          KM     L =  .38  Kb = .110  Adj. Slope =   29.0
2136          BA    .063
2137          LG    .500    .250   4.800    .460    .000
2138          UC    .788    .633
2139          UA       0       3       5       8      12      20      43      75      90      96
2140          UA     100
2141          KM   **********

2142          KK   DRDHB
2143          KM        RETRIEVE FLOW FROM STREET INTERSECTION DIVERSION
2144          KM        FCD#98-36
2145          DR   DVDHB
2146          KM   **********

2147          KK  DRDHB1
2148          KM        RETRIEVE FLOW FROM STREET DIVERSION
2149          KM        FCD#98-36
2150          DR  DVDHB1
2151          KM   **********

2152          KK   CP29A
2153          KM
2154          KM        COMBINE DVDHB + DVDHB1 + 29
2155          KM        FCD#98-36
2156          KM
2157          HC       3
2158          KM   **********
1                                   HEC-1 INPUT                                          PAGE 46

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2159          KK   RCP29
2160          KM
2161          KM        ROUTE CP29A TO CP36 (SPECIAL TYPE)
2162          KM
2163          RS       2    FLOW
2164          RC   0.035   0.035   0.035    1288  0.0043
2165          RX      80      99     100     132     133     187     188     207
2166          RY    13.0    10.9    10.9    10.0    10.0    10.9    10.9    13.0
2167          KM   **********

2168          KK      28
2169          KM   SUB-BASIN 28
2170          KM        The boundaries of this basin were modified compared to the original mode
2171          KM        to better consider the existing conditions.
2172          KM        FCD#98-36
2173          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2174          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2175          KM     L =  .39  Kb = .058  Adj. Slope =   23.0
2176          BA    .062
2177          LG    .250    .250   5.700    .250  45.000
2178          UC    .479    .376
```

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2179          UA       0       5      16      30      65      77      84      90      94      97
2180          UA     100
2181          KM   **********

2182          KK    CP36
2183          KM
2184          KM        COMBINE 28 + 29
2185          KM
2186          HC       2
2187          KM   **********

2188          KK   RCP28
2189          KM
2190          KM        ROUTE CP36 TO CP29 (SPECIAL TYPE)
2191          KM
2192          RS       3   FLOW
2193          RC   0.035   0.035   0.035    1274  0.0043
2194          RX      80      99     100     119     395     424     425     444
2195          RY    13.0    11.0    11.0    10.8    10.8    11.0    11.0    13.0
2196          KM   **********

2197          KK      30
2198          KM   SUB-BASIN 30
2199          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2200          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2201          KM     L =  .38  Kb = .110  Adj. Slope =   31.0
2202          BA    .063
2203          LG    .500    .250   4.800    .460    .000
2204          UC   1.558   1.350
2205          UA       0       3       5       8      12      20      43      75      90      96
2206          UA     100
2207          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2208          KK   RSD32
2209          KM        RETRIEVE FLOW FROM STORM DRAIN FLOW DIVERSION
2210          KM        FCD#98-36
2211          DR    SD32
2212          KM   **********

2213          KK   TL32
2214          KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 32
2215          RT       0       1       1
2216          KM   **********

2217          KK    CP29
2218          KM
2219          KM        COMBINE RCP28 + 30 + RCP32 + SD32
2220          KM
2221          HC       4
2222          KM   **********

2223          KK   DSD30
2224          KM        DIVERT 42-INCH STORM DRAIN FLOW FROM SUB-BASIN 30 TO SUB-BASIN 26
2225          KM      INTERCEPTION CAPACITY = 16 CFS (4 CATCH BASINS)
2226          KM      TOTAL TRANSPORT CAPACITY = 71 CFS
2227          KM      TOTAL FROM SD32 = 54 CFS
2228          KM      TOTAL TRANSPORT = 54 + 16 = 70 CFS
2229          DT    SD30
2230          DI       0     70.    100.   1000.
2231          DQ       0     70.     70.     70.
2232          KM   **********

2233          KK   RCP30
2234          KM
2235          KM        ROUTE CP29A TO COM26B (TYPE 3)
2236          KM
2237          RS       1    FLOW
2238          RC   0.013   0.016   0.013     979  0.0026
2239          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
2240          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
2241          KM   **********

2242          KK   RSD30
2243          KM        RETRIEVE FLOW FROM STORM DRAIN FLOW DIVERSION
2244          KM        FCD#98-36
2245          DR    SD30
2246          KM   **********

2247          KK   REM30
2248          KM        DIVERT STREET FLOW SOUTH OF BROWN ROAD
2249          KM        DIVERT SURFACE FLOW TO BASIN 42
2250          KM        FCD#98-36
2251          DT    SF30
2252          DI       0    100.   1000.
2253          DQ       0     30.    300.
2254          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2255          KK  COM26B
2256          KM
2257          KM      COMBINE RCP30 + COM26A + SD30
2258          KM
2259          HC       3
2260          KM   **********

2261          KK   DSD26
2262          KM        DIVERT STORM DRAIN THAT LEAVES THE STUDY AREA AT VAL VISTA DR.
2263          KM      48-INCH SD. ALONG EASTERN CANAL
```

```
2264    KM      INTERCEPTION CAPACITY = 3 CFS (1 CATCH BASIN)
2265    KM      TRANSPORT CAPACITY    = 16 CFS
2266    KM      FLOW INTERCEPTED UPTREAM = 13 CFS
2267    KM      TOTAL TRANSPORT FOR 48-INCH = 16 CFS
2268    KM      42-INCH SD. ALONG BROWN RD.
2269    KM      INTERCEPTION CAPACITY = 27 CFS (5 CATCH BASINS IN SUMP-INLET CONDITION)
2270    KM      TOTAL TRANSPORT CAPACITY 16+27 = 43 CFS
2271    KM        FCD#98-36
2272    DT    SD26
2273    DI       0    43.0   100.0  1000.0  2000.0
2274    DQ       0    43.0    43.0    43.0    43.0
2275    KM   **********

2276    KK    PA26
2277    KM
2278    KM        This is a ponding area that containes some of the Mesa Northgrove retens
2279    KM        basins: Tract N - "South", Tract J and the old retention basin.
2280    KM        Tract N - "North" and Tract M retention basins have been modeled as 1B25
2281    KM        1B27, respectively.
2282    KM        FCD#98-36
2283    KM
2284    RS       1    STOR       0      -1
2285    SV    0.00    2.24    9.27   11.96   19.00   23.52   24.71   27.42   27.80   30.38
2286    SE  1284.5 1286.00 1288.00 1288.60 1290.00 1290.80 1291.00 1291.44 1291.50 1291.90
2287    SQ    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00   13.56 1109.44
2288    KM   **********
2289    KM
2290    KM        This diversion represents ppossible breakout flows over the Eastern
2291    KM        Canal. This flow will not be retrieved into the model.

2292    KK   CPD26
2293    KM        DIVERT FLOW Over the Eastern canal due to weiring over its banks
2294    DT    PD26
2295    DI    0.00   13.56 1109.44
2296    DQ    0.00   13.56  962.84
2297    KM   **********

2298    KK   RCP26
2299    KM
2300    KM        ROUTE COM26B TO CP38 (SPECIAL TYPE)
2301    KM
2302    RS       2    FLOW
2303    RC   0.035   0.035   0.035    1156  0.0026
2304    RX      90     110     150     155     160     165     205     225
```



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LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2305    RY      16      14      14      13      13      14      14      16
2306    KM   **********

2307    KK      42
2308    KM   SUB-BASIN 42
2309    KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2310    KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2311    KM     L =  .68  Kb = .057  Adj. Slope =   21.0
2312    BA    .073
2313    LG    .300    .250   4.800    .360  15.000
2314    UC    .721    .840
2315    UA       0       5      16      30      65      77      84      90      94      97
2316    UA     100
2317    KM   **********

2318    KK   RET30
2319    KM        RETRIEVE FLOW FROM STREET DIVERSION
2320    KM        FCD#98-36
2321    DR    SF30
2322    KM   **********

2323    KK    TL30
2324    KM        TIME LAG FOR FLOW DIVERTED FROM BASIN 26
2325    RT       0       1       2
2326    KM   **********

2327    KK   RSD26
2328    KM        RETRIEVE FLOW FROM STORM DRAIN FLOW DIVERSION
2329    KM        FCD#98-36
2330    DR    SD26
2331    KM   **********

2332    KK    TL26
2333    KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 26
2334    RT       0       1       1
2335    KM   **********

2336    KK    CP38
2337    KM
2338    KM        COMBINE COM26B + SF30 + 42 + SD26
2339    KM
2340    HC       4
2341    KM   **********

2342    KK   DOUTC
2343    KM        DIVERT FLOW OUT OF STUDY AREA AT EASTERN CANAL AND VAL VISTA DRIVE
2344    KM      48-INCH SD. ALONG EASTERN CANAL
2345    KM      INTERCEPTION CAPACITY = 5 CFS (2 CATCH BASINS)
2346    KM      TOTAL TRANSPORT CAPACITY =71 CFS
2347    KM      TRANSPORT FROM UPSTREAM (FROM SD26) = 43 CFS
2348    KM      TOTAL TRANSPORT = 5 + 43 = 48 CFS
2349    DT    OUTC
2350    DI     0.0    48.0   100.0  1000.0  2000.0
2351    DQ     0.0    48.0    48.0    48.0    48.0
2352    KM   **********
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2353          KK     155
2354          KM   SUB-BASIN 155
2355          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2356          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2357          KM     L =  .31  Kb = .056  Adj. Slope =   38.0
2358          BA    .043
2359          LG    .260    .250   4.800    .360  34.000
2360          UC    .304    .233
2361          UA       0       5      16      30      65      77      84      90      94      97
2362          UA     100
2363          KM   **********

2364          KK   2B155
2365          KM
2366          KM        Retention Basin Storage for Drainage area 155
2367          KM        FLOW DIVERTED INTO A 2.35 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
2368          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
2369          KM         - 20% ESCAPES THE SUB BASIN.
2370          KM        FCD#98-36
2371          DT  OUT155    2.35
2372          DI       0      10     100    1000
2373          DQ       0       8      80     800
2374          KM   **********

2375          KK  RCP155
2376          KM
2377          KM        ROUTE 2B155 TO CP39 (TYPE 1)
2378          KM
2379          RS       2    FLOW
2380          RC    .013    .016    .013    2238   .0041
2381          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
2382          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
2383          KM   **********

2384          KK      43
2385          KM   SUB-BASIN 43
2386          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2387          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2388          KM     L =  .48  Kb = .030  Adj. Slope =   25.0
2389          BA    .062
2390          LG    .300    .250   4.800    .360  15.000
2391          UC    .512    .478
2392          UA       0       5      16      30      65      77      84      90      94      97
2393          UA     100
2394          KM   **********

2395          KK      44
2396          KM   SUB-BASIN 44
2397          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2398          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2399          KM     L =  .63  Kb = .054  Adj. Slope =   21.0
2400          BA    .112
2401          LG    .300    .250   4.800    .360  15.000
2402          UC    .650    .552
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2403          UA       0       5      16      30      65      77      84      90      94      97
2404          UA     100
2405          KM   **********

2406          KK    CP39
2407          KM
2408          KM        COMBINE CP38 + RCP155 + 43 + 44
2409          KM
2410          HC       4
2411          KM   **********

2412          KK    PA44
2413          KM
2414          RS       1    STOR       0      -1       0       0       0       0       0       0
2415          SV    0.00    0.03    0.83    6.19          9.78   17.37   20.61   26.01
2416          SE  1283.7 1284.00 1286.00 1288.00 1288.50 1289.10 1289.30 1289.60
2417          SQ    0.00    0.00    0.00    0.00    0.00    0.00   68.20  595.60
2418          KM   **********
2419          KM
2420          KM        This diversion represents possible breakout flows over the Eastern
2421          KM        Canal. This flow will not be retrieved into the model.
2422          KM

2423          KK   CPD44
2424          KM        DIVERT FLOW Over the Eastern canal due to weiring over its banks
2425          DT    PD44
2426          DI    0.00   68.20  595.60
2427          DQ    0.00   68.20  595.60
2428          KM   **********

2429          KK   RCP44
2430          KM
2431          KM        ROUTE PA44 TO CP44 (TYPE 2)
2432          KM
2433          RS       1    FLOW
2434          RC   0.013   0.016   0.013     183  0.0005
2435          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
2436          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
2437          KM   **********

2438          KK      45
2439          KM   SUB-BASIN 45
2440          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2441          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
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2442          KM     L =  .54  Kb = .058  Adj. Slope =   37.0
2443          BA    .067
2444          LG    .300    .250   4.800    .360  15.000
2445          UC    .471    .457
2446          UA      0       5      16      30      65      77      84      90      94      97
2447          UA     100
2448          KM    **********
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2449          KK      46
2450          KM    SUB-BASIN 46
2451          KM    24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2452          KM    THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2453          KM     L =  .57  Kb = .058  Adj. Slope =   32.0
2454          BA    .058
2455          LG    .300    .250   4.800    .360  15.000
2456          UC    .521    .580
2457          UA      0       5      16      30      65      77      84      90      94      97
2458          UA     100
2459          KM    **********

2460          KK    DRMBR
2461          KM        RETRIEVE FLOW FROM STREET INTERSECTION DIVERSION
2462          KM        FCD#98-36
2463          DR    DVDBR
2464          KM    **********

2465          KK     CP41
2466          KM
2467          KM        COMBINE 45 + 46
2468          KM        FCD#98-36
2469          KM
2470          HC       3
2471          KM    **********

2472          KK    RCP46
2473          KM
2474          KM        ROUTE CP41 TO CP42 (TYPE 3)
2475          KM
2476          RS       1    FLOW
2477          RC    0.013   0.016   0.013    1294  0.0035
2478          RX    99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
2479          RY    20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
2480          KM    **********

2481          KK      52
2482          KM    SUB-BASIN 52
2483          KM    24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2484          KM    THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2485          KM     L =  .42  Kb = .083  Adj. Slope =   40.0
2486          BA    .085
2487          LG    .410    .250   4.800    .420   7.000
2488          UC    .533    .375
2489          UA      0       3       5       8      12      20      43      75      90      96
2490          UA     100
2491          KM    **********

2492          KK    DSD52
2493          KM        DIVERT STORM DRAIN FLOW FROM SUB-BASIN 52 TO SUB-BASIN 54.
2494          KM       24-INCH SD. ALONG GREENFIELD RD.
2495          KM       INTERCEPTION CAPACITY = 10.5 CFS (3 CATCH BASINS)
2496          KM       TOTAL TRANSPORT CAPACITY =13 CFS
2497          KM        FCD#98-36
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2498          DT    SD52
2499          DI       0    10.5    100.   1000.   2000.
2500          DQ       0    10.5    10.5    10.5    10.5
2501          KM    **********

2502          KK    DRRGR
2503          KM        RETRIEVE STREET INTERSECTION DIVERSION
2504          KM        FCD#98-36
2505          DR    DBRGR
2506          KM    **********

2507          KK    CP52A
2508          KM
2509          KM        COMBINE DBRGR + 52
2510          KM
2511          HC       2
2512          KM    **********

2513          KK    RCP52
2514          KM
2515          KM        ROUTE CP52A TO CP46 (TYPE 3)
2516          KM
2517          RS       1    FLOW
2518          RC    0.013   0.016   0.013     841  0.0036
2519          RX    99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
2520          RY    20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
2521          KM    **********

2522          KK    RSD52
2523          KM        RETRIEVE FLOW FROM STORM DRAIN FLOW DIVERSION
2524          KM        FCD#98-36
2525          DR    SD52
2526          KM    **********

2527          KK     TL52
```

```
2528          KM        TIME LAG FOR STORM DRAIN FLOW DIVERTED FROM BASIN 52
2529          RT       0       1       1
2530          KM   **********

2531          KK      54
2532          KM   SUB-BASIN 54
2533          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2534          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2535          KM     L =  .40  Kb = .058  Adj. Slope =   40.0
2536          BA    .060
2537          LG    .300    .250   4.800    .360  15.000
2538          UC    .375    .297
2539          UA       0       5      16      30      65      77      84      90      94      97
2540          UA     100
2541          KM   **********
1                                        HEC-1 INPUT                                                    PAGE 54

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


2542          KK    CP46
2543          KM
2544          KM        COMBINE RCP52 + SD52 + 54
2545          KM
2546          HC       3
2547          KM   **********

2548          KK   REM54
2549          KM        DIVERT STORM DRAIN FLOW TO DRAINAGE AREA 59
2550          DT   DIV54
2551          DI       0       4    1000
2552          DQ       0       4       4
2553          KM   **********

2554          KK    2B54
2555          KM
2556          KM        Retention Basin Storage for Drainage area 54
2557          KM        FLOW DIVERTED INTO A 2.98 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
2558          KM        12 CATCH BASINS AND SCUPPERS COLLECT FLOWS FROM SUB-BASINS 52 AND 54
2559          KM        INTO LOCAL STORM DRAIN SYSTEMS.
2560          KM         - 50% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
2561          KM         - 50% ESCAPES THE SUB BASIN.
2562          KM        FCD#98-36
2563          DT   OUT54    2.98
2564          DI       0      10     100    1000
2565          DQ       0       5      50     500
2566          KM   **********

2567          KK   DMRAS
2568          KM        DIVERT STREET FLOW WEST OF GREENFIELD ROAD TO AREA 55
2569          KM      STORM DRAIN FLOW DIVERTED TO WEST = 0 CFS
2570          KM        FCD#98-36
2571          DT   DGRAS
2572          DI     0.0    14.0    97.7   229.6   582.4  1221.4
2573          DQ     0.0     0.0     0.0    79.5   216.7   477.5
2574          KM   **********

2575          KK   RCP54
2576          KM
2577          KM        ROUTE 2B54 TO CP40 (TYPE 3)
2578          KM
2579          RS       2    FLOW
2580          RC   0.013   0.016   0.013    1948  0.0067
2581          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
2582          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
2583          KM   **********

2584          KK  DDIVE1
2585          KM        THIS DIVERSION DOES NOT HAVE OTHER PURPOSE THAN TO ACCOMODATE
2586          KM        DIVERSION DGRAS WHICH WOULD BE OTHERWISE DIVERTED IN THE
2587          KM        COMPUTATIONAL SEQUENCE AFTER ITS RETRIEVAL.
2588          KM        THE FLOW ROUTED BY RCP54 IS ENTIRELY DIVERTED TO CP47.
2589          KM        FCD#98-36
2590          DT   DIVE1
1                                        HEC-1 INPUT                                                    PAGE 55

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2591          DI     0.0    10.0   100.0  1000.0  2000.0
2592          DQ     0.0    10.0   100.0  1000.0  2000.0
2593          KM   **********

2594          KK      53
2595          KM   SUB-BASIN 53
2596          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2597          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2598          KM     L =  .40  Kb = .060  Adj. Slope =   35.0
2599          BA    .042
2600          LG    .300    .250   4.800    .360  15.000
2601          UC    .404    .396
2602          UA       0       5      16      30      65      77      84      90      94      97
2603          UA     100
2604          KM   **********

2605          KK    2B53
2606          KM
2607          KM        Retention Basin Storage for Drainage area 53
2608          KM        FLOW DIVERTED INTO A 4.78 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
2609          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
2610          KM         - 20% ESCAPES THE SUB BASIN.
2611          KM        FCD#98-36
2612          DT   OUT53    4.78
2613          DI       0      10     100    1000
2614          DQ       0       8      80     800
2615          KM   **********
```

```
2616        KK   RCP53
2617        KM
2618        KM        ROUTE 2B53 TO CP40 (TYPE 2)
2619        KM
2620        RS       1    FLOW
2621        RC   0.013   0.016   0.013     500  0.0080
2622        RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
2623        RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
2624        KM   **********

2625        KK      55
2626        KM   SUB-BASIN 55
2627        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2628        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2629        KM     L =  .34  Kb = .057  Adj. Slope =   31.0
2630        BA    .070
2631        LG    .300    .250   4.800    .360  15.000
2632        UC    .367    .233
2633        UA       0       5      16      30      65      77      84      90      94      97
2634        UA     100
2635        KM   **********
```



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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2636        KK   DRRAS
2637        KM        RETRIEVE STREET INTERSECTION DIVERSION
2638        KM        FCD#98-36
2639        DR   DGRAS
2640        KM   **********

2641        KK    CP40
2642        KM
2643        KM       RCP54 COMBINES HERE FOR MODELING PURPOSES. NO FLOW IS BROUGHT
2644        KM       IN THE COMBINE FROM RCP54 BECAUSE OF DIVE1 THAT DIVERTS IT TO
2645        KM       CP47
2646        KM
2647        KM        COMBINE RCP53 + 55 + DGRAS + (RCP54)
2648        KM
2649        HC       4
2650        KM   **********

2651        KK    2B55
2652        KM
2653        KM        Retention Basin Storage for Drainage area 55
2654        KM        FLOW DIVERTED INTO A 3.59 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
2655        KM         - 50% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
2656        KM         - 50% ESCAPES THE SUB BASIN.
2657        KM        FCD#98-36
2658        DT   OUT55    3.59
2659        DI       0      10     100    1000
2660        DQ       0       5      50     500
2661        KM   **********

2662        KK   RCP55
2663        KM
2664        KM        ROUTE 2B55 TO CP42 (TYPE 1)
2665        KM
2666        RS       2    FLOW
2667        RC   0.013   0.016   0.013    2711  0.0057
2668        RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
2669        RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
2670        KM   **********

2671        KK      50
2672        KM   SUB-BASIN 50
2673        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2674        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2675        KM     L =  .60  Kb = .109  Adj. Slope =   33.0
2676        BA    .071
2677        LG    .500    .250   4.800    .460    .000
2678        UC   1.058   1.183
2679        UA       0       3       5       8      12      20      43      75      90      96
2680        UA     100
2681        KM   **********
```



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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2682        KK      51
2683        KM   SUB-BASIN 51
2684        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2685        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2686        KM     L =  .51  Kb = .100  Adj. Slope =   40.0
2687        BA    .057
2688        LG    .460    .250   4.800    .440   3.000
2689        UC    .758    .813
2690        UA       0       3       5       8      12      20      43      75      90      96
2691        UA     100
2692        KM   **********

2693        KK   DRR40
2694        KM        RETRIEVE FLOW FROM STREET INTERSECTION DIVERSION
2695        KM        FCD#98-36
2696        DR   DBR40
2697        KM   **********

2698        KK   CP50A
2699        KM
2700        KM        COMBINE 50 + 51 + DBR40
2701        KM        FCD#98-36
2702        KM
```

```
2703          HC       3
2704          KM   **********

2705          KK   RCP50
2706          KM
2707          KM        ROUTE CP50A TO CP42 (SPECIAL TYPE)
2708          KM
2709          RS       4    FLOW
2710          RC   0.035   0.035   0.035    3176  0.0059
2711          RX      89      90      99     100     719     720     730     731
2712          RY    13.0    10.9    10.9    10.0    10.0    10.9    10.9    13.0
2713          KM   **********

2714          KK      48
2715          KM   SUB-BASIN 48
2716          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2717          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2718          KM     L =  .62  Kb = .103  Adj. Slope =   27.0
2719          BA    .123
2720          LG    .500    .250   4.800    .460    .000
2721          UC   1.146    .969
2722          UA       0       3       5       8      12      20      43      75      90      96
2723          UA     100
2724          KM   **********

2725          KK    CP42
2726          KM
2727          KM        COMBINE RCP46 + RCP50 + 48 + RCP55
2728          KM
2729          HC       4
2730          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2731          KK  DDVDAS
2732          KM        DIVERT FLOW FROM STREET INTERSECTION DIVERSION SOUTH ON VAL VISTA DRIVE
2733          KM        DIVERT FLOWS TO AREA 49
2734          KM        THE MAIN FLOW FOLLOWS VAL VISTA DRIVE WHICH IS A MAJOR COLLECTOR.
2735          KM        THE CROWN OF VAL VISTA DRIVE ACTS AS A WEIR FOR THE FLOWS THAT COMBINE A
2736          KM        THE DIVERSION SPREADSHEET GENERATED FOR DVDAS SHOWS:
2737          KM      DI   0.0     7.0    78.6   194.2   503.5  1069.1
2738          KM      DQ   0.0     0.0     0.0    54.5   159.1   354.3
2739          KM        TO MODEL THIS DIVERSION, DQ WERE SUBTRACTED FROM DI TO GENERATE THE NEW
2740          KM        THAT CONTROLS THE FLOW SOUTH, ALONG VAL VISTA DRIVE.
2741          KM      30-INCH SD. ALONG VAL VISTA DRIVE.
2742          KM      INTERCEPTION CAPACITY = 7 CFS (2 CATCH BASINS)
2743          KM      TOTAL TRANSPORT CAPACITY =17 CFS
2744          KM        FCD#98-36
2745          DT   DVDAS
2746          DI     0.0     7.0    78.6   194.2   503.5  1069.1
2747          DQ     0.0     7.0    78.6   139.7   344.4   714.8
2748          KM   **********

2749          KK   RCP48
2750          KM
2751          KM        ROUTE CP42 TO CP44 (TYPE 2)
2752          KM
2753          RS       2    FLOW
2754          RC   0.013   0.016   0.013    2050  0.0054
2755          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
2756          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
2757          KM   **********

2758          KK      47
2759          KM   SUB-BASIN 47
2760          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2761          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2762          KM     L =  .43  Kb = .060  Adj. Slope =   23.0
2763          BA    .048
2764          LG    .300    .250   4.800    .360  15.000
2765          UC    .504    .497
2766          UA       0       5      16      30      65      77      84      90      94      97
2767          UA     100
2768          KM   **********

2769          KK  TLVDAS
2770          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 48
2771          RT       0       1       1
2772          KM   **********

2773          KK    CP44
2774          KM
2775          KM        COMBINE RCP44 + RCP48 + 47
2776          KM
2777          HC       3
2778          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2779          KK    PA47
2780          KM
2781          RS       1    STOR       0      -1       0
2782          SV    0.00    0.32    1.15    4.38    5.68    7.18   15.17
2783          SE  1287.0 1287.50 1288.00 1288.80 1289.00 1289.20 1290.00
2784          SQ    0.00    0.13    1.39   70.55  113.45  181.60 2729.26
2785          KM   **********
2786          KM
2787          KM        This diversion represents possible breakout flows over the Eastern
2788          KM        Canal. This flow will not be retrieved into the model.
2789          KM
```

```
2790          KK   CPD47
2791          KM        DIVERT FLOW Over Eastern Canal due to weiring over its banks
2792          DT    PD47
2793          DI    0.00    0.13    1.39   70.55  113.45  181.60 2729.26
2794          DQ    0.00    0.00    0.00    0.00    0.00   21.64 2323.08
2795          KM   **********

2796          KK      49
2797          KM   SUB-BASIN 49
2798          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2799          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2800          KM     L =  .55  Kb = .054  Adj. Slope =   29.0
2801          BA    .126
2802          LG    .250    .250   6.000    .220  29.000
2803          UC    .533    .372
2804          UA      0       5      16      30      65      77      84      90      94      97
2805          UA     100
2806          KM   **********

2807          KK    3B49
2808          KM
2809          KM        Retention Basin Storage for Drainage area 49
2810          KM        FLOW DIVERTED INTO A 4.60 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
2811          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
2812          KM         - 20% ESCAPES THE SUB BASIN.
2813          KM        FCD#98-36
2814          DT   OUT49    4.60
2815          DI      0      10     100    1000
2816          DQ      0       8      80     800
2817          KM   **********

2818          KK  RDVDAS
2819          KM        RETRIEVE STREET INTERSECTION DIVERSION
2820          KM        FCD#98-36
2821          DR   DVDAS
2822          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2823          KK    CP49
2824          KM
2825          KM        COMBINE 3B49 + DVDAS
2826          KM        FCD#98-36
2827          HC       2
2828          KM   **********

2829          KK   REM49
2830          KM        STORM DRAIN FLOW THAT LEAVES THE STUDY AREA AT VAL VISTA DR.
2831          KM        FCD#98-36
2832          KM
2833          DT   DIV49
2834          DI      0      16    1000
2835          DQ      0      16      16
2836          KM   **********

2837          KK   RCP49
2838          KM
2839          KM        ROUTE CP49 TO CP60A (TYPE 3)
2840          KM
2841          RS       2    FLOW
2842          RC   0.013   0.016   0.013    1338  0.0033
2843          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
2844          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
2845          KM   **********

2846          KK      58
2847          KM   SUB-BASIN 58
2848          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2849          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2850          KM     L =  .56  Kb = .057  Adj. Slope =   37.0
2851          BA    .075
2852          LG    .250    .250   4.800    .360  30.000
2853          UC    .458    .428
2854          UA      0       5      16      30      65      77      84      90      94      97
2855          UA     100
2856          KM   **********

2857          KK   RCP58
2858          KM
2859          KM        ROUTE 58 TO CP50 (TYPE 1)
2860          KM
2861          RS       1    FLOW
2862          RC   0.013   0.016   0.013     328  0.0027
2863          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
2864          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
2865          KM   **********

2866          KK      70
2867          KM   SUB-BASIN 70
2868          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2869          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2870          KM     L =  .54  Kb = .059  Adj. Slope =   37.0
2871          BA    .055
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2872          LG    .250    .250   4.800    .360  30.000
2873          UC    .458    .497
2874          UA      0       5      16      30      65      77      84      90      94      97
2875          UA     100
2876          KM   **********
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```
2877          KK      71
2878          KM   SUB-BASIN 71
2879          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2880          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2881          KM     L =  .59  Kb = .051  Adj. Slope =   33.0
2882          BA    .101
2883          LG    .230    .250   5.800    .230  50.000
2884          UC    .438    .358
2885          UA       0       3       5       8      12      20      43      75      90      96
2886          UA     100
2887          KM   **********

2888          KK  REM110
2889          KM        DIVERT STREET FLOW OUTSIDE BASIN 71.
2890          KM        THREE LOCAL STORM DRAIN SYSTEMS CONVEY FLOWS FROM BASIN 71 TO BASIN 70.
2891          KM        THESE FLOWS ARE DIRECTED INTO 3B70
2892          KM        TOTAL STORM DRAIN TRANSPORT CAPACITY = 27 CFS NORTH
2893          KM        TOTAL STORM DRAIN INTERCEPTION CAPACITY = 27 CFS NORTH
2894          KM        FCD#98-36
2895          DT  DIV110
2896          DI       0      27     100    1000
2897          DQ       0       0      73     973
2898          KM   **********

2899          KK    CP50
2900          KM
2901          KM        COMBINE 58 + 70 + 71
2902          KM
2903          HC       3
2904          KM   **********

2905          KK    3B70
2906          KM
2907          KM        Retention Basin Storage for Drainage area 70
2908          KM        FLOW DIVERTED INTO A 9.37 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
2909          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
2910          KM         - 20% ESCAPES THE SUB BASIN.
2911          KM        FCD#98-36
2912          DT   OUT70    9.37
2913          DI       0      10     100    1000
2914          DQ       0       8      80     800
2915          KM   **********

2916          KK   RCP70
2917          KM
2918          KM        ROUTE CP50 TO CP51 (TYPE 1)
2919          KM
2920          RS       1    FLOW
2921          RC    .013    .016    .013     860  0.0029
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2922          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
2923          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
2924          KM   **********

2925          KK  RET110
2926          KM        RETRIEVE FLOW FROM SURFACE FLOW DIVERSION
2927          KM        FCD#98-36
2928          DR  DIV110
2929          KM   **********

2930          KK    CP51
2931          KM
2932          KM        COMBINE RCP50 + DIV110
2933          KM
2934          HC       2
2935          KM   **********

2936          KK    3B71
2937          KM
2938          KM        Retention Basin Storage for Drainage area 71
2939          KM        FLOW DIVERTED INTO A 2.28 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
2940          KM         - 50% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
2941          KM         - 50% ESCAPES THE SUB BASIN.
2942          KM        FCD#98-36
2943          DT   OUT71    2.28
2944          DI       0      10     100    1000
2945          DQ       0       8      80     800
2946          KM   **********

2947          KK  RDIVE1
2948          KM        RETRIEVE ENTIRE FLOW FROM RCP54
2949          KM        FCD#98-36
2950          DR   DIVE1
2951          KM   **********

2952          KK      56
2953          KM   SUB-BASIN 56
2954          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2955          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2956          KM     L =  .42  Kb = .059  Adj. Slope =   44.0
2957          BA    .049
2958          LG    .300    .250   4.800    .360  15.000
2959          UC    .375    .347
2960          UA       0       5      16      30      65      77      84      90      94      97
2961          UA     100
2962          KM   **********

2963          KK    CP47
2964          KM
2965          KM        COMBINE CP46 + 56
2966          KM
2967          HC       2
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2968          KM   **********
2969          KK   DSD56
2970          KM        DIVERT STORM DRAIN FLOW FROM SUB-BASIN 56 TO SUB-BASIN 59.
2971          KM      24-INCH SD. ALONG GREENFIELD RD.
2972          KM      INTERCEPTION CAPACITY = 7 CFS (2 CATCH BASINS)
2973          KM      TOTAL TRANSPORT CAPACITY =16 CFS
2974          KM        FCD#98-36
2975          DT    SD56
2976          DI       0     14.    100.   1000.   2000.
2977          DQ       0     14.    14.0    14.0    14.0
2978          KM   **********

2979          KK   RCP56
2980          KM
2981          KM        ROUTE CP47 TO COM59 (TYPE 3)
2982          KM
2983          RS       1    FLOW
2984          RC   0.013   0.016   0.013     872  0.0046
2985          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
2986          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
2987          KM   **********

2988          KK      76
2989          KM   SUB-BASIN 76
2990          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
2991          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
2992          KM     L =  .68  Kb = .049  Adj. Slope =   39.0
2993          BA    .132
2994          LG    .220    .250   4.800    .370  51.000
2995          UC    .446    .352
2996          UA       0       5      16      30      65      77      84      90      94      97
2997          UA     100
2998          KM   **********

2999          KK  REM109
3000          KM        DIVERT STREET FLOW OUTSIDE BASIN 76.
3001          KM        THREE STORM DRAIN SYSTEMS CONVEY FLOWS FROM BASIN 76 TO BASIN 59.
3002          KM        THESE FLOWS ARE DIRECTED INTO 3B59
3003          KM        TOTAL STORM DRAIN TRANSPORT CAPACITY = 71 CFS NORTH
3004          KM        TOTAL STORM DRAIN INTERCEPTION CAPACITY = 42 CFS NORTH
3005          KM        FCD#98-36
3006          DT  DIV109
3007          DI       0      42     100    1000
3008          DQ       0       0      58     958
3009          KM   **********

3010          KK      59
3011          KM   SUB-BASIN 59
3012          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3013          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3014          KM     L =  .44  Kb = .090  Adj. Slope =   50.0
3015          BA    .083
3016          LG    .420    .250   4.800    .440  15.000
3017          UC    .521    .384
3018          UA       0       3       5       8      12      20      43      75      90      96
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3019          UA     100
3020          KM   **********

3021          KK    CP48
3022          KM
3023          KM        COMBINE 76 + 59
3024          KM
3025          HC       2
3026          KM   **********

3027          KK    3B59
3028          KM
3029          KM        Retention Basin Storage for Drainage area 59
3030          KM        THE THREE RETENTION BASINS WERE MODELED AS ONE, SINCE THY ARE CONNECTED
3031          KM        BY BLEED-OFF LINES.
3032          KM        TOTAL RETENTION CAPACITY = 0.90 + 2.02 + 1.20 = 4.12 AC-FT
3033          KM        FLOW DIVERTED INTO A 4.12 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
3034          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
3035          KM         - 20% ESCAPES THE SUB BASIN.
3036          KM        FCD#98-36
3037          DT   OUT59    4.12
3038          DI       0      10     100    1000
3039          DQ       0       8      80     800
3040          KM   **********

3041          KK   RSD56
3042          KM        RETRIEVE FLOW FROM STORM DRAIN FLOW DIVERSION
3043          KM        FCD#98-36
3044          DR    SD56
3045          KM   **********

3046          KK    TL56
3047          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 56
3048          RT       0       1       1
3049          KM   **********

3050          KK   COM59
3051          KM
3052          KM        COMBINE 3B59 + RCP56 + SD56
3053          KM
3054          HC       3
```

```
3055          KM   **********

3056          KK   RCP59
3057          KM
3058          KM        ROUTE COM59 TO COM76 (TYPE 3)
3059          KM
3060          RS       1    FLOW
3061          RC   0.013   0.016   0.013    1120  0.0039
3062          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
3063          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
3064          KM   **********
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3065          KK  RTV109
3066          KM        RETRIEVE FLOW FROM STREET FLOW DIVERSION
3067          KM        FCD#98-36
3068          DR  DIV109
3069          KM   **********

3070          KK   COM76
3071          KM
3072          KM        COMBINE RCP59 + DIV109
3073          KM
3074          HC       2
3075          KM   **********

3076          KK   DGRUD
3077          KM        DIVERT STREET AND STORM DRAIN FLOWS SOUTH ON GREENFIELD ROAD
3078          KM        DIVERT FLOWS TO AREA 77
3079          KM      24-INCH SD. ALONG GREENFIELD RD.
3080          KM      INTERCEPTION CAPACITY = 31 CFS (9 CATCH BASINS)
3081          KM      TOTAL TRANSPORT CAPACITY =20 CFS
3082          KM        FCD#98-36
3083          DT   DUDGR
3084          DI     0.0    20.0   121.2   284.9   722.9  1524.3
3085          DQ     0.0    20.0    20.0   104.5   252.8   538.7
3086          KM   **********

3087          KK   RCP76
3088          KM
3089          KM        ROUTE COM76 TO CP71A (TYPE 3)
3090          KM
3091          RS       2    FLOW
3092          RC    .013    .016    .013    2650   .0062
3093          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
3094          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
3095          KM   **********

3096          KK   DSD71
3097          KM        DIVERT STORM DRAIN FLOW EAST ON UNIVERSITY DRIVE
3098          KM        DIVERT FLOWS TO AREA 61
3099          KM      24,30, AND 36-INCH SD. ALONG UNIVERSITY DRIVE.
3100          KM      INTERCEPTION CAPACITY = 32 CFS (8 CATCH BASINS)
3101          KM      TOTAL TRANSPORT CAPACITY =47 CFS
3102          KM        FCD#98-36
3103          DT    SD71
3104          DI     0.0    24.0   100.0  1000.0
3105          DQ     0.0    24.0    24.0    24.0
3106          KM   **********

3107          KK   CP71A
3108          KM
3109          KM        COMBINE 3B71 + RCP76
3110          KM
3111          HC       2
3112          KM   **********
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3113          KK   RCP71
3114          KM
3115          KM        ROUTE CP71A TO CP52 (TYPE 3)
3116          KM
3117          RS       1    FLOW
3118          RC    .013    .016    .013    1290   .0048
3119          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
3120          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
3121          KM   **********

3122          KK      61
3123          KM   SUB-BASIN 61
3124          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3125          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3126          KM     L =  .39  Kb = .044  Adj. Slope =   46.0
3127          BA    .071
3128          LG    .180    .230   6.200    .210  54.000
3129          UC    .267    .181
3130          UA       0       5      16      30      65      77      84      90      94      97
3131          UA     100
3132          KM   **********

3133          KK    3B61
3134          KM
3135          KM        Retention Basin Storage for Drainage area 61
3136          KM        FLOW DIVERTED INTO A 0.72 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
3137          KM         - 50% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
3138          KM         - 50% ESCAPES THE SUB BASIN.
3139          KM        FCD#98-36
3140          DT   OUT61    0.72
3141          DI       0      10     100    1000
```

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3142          DQ       0       5       50      500
3143          KM   **********

3144          KK   RSD71
3145          KM        RETRIEVE STORM DRAIN FLOW FROM BASIN 71
3146          KM        FCD#98-36
3147          DR    SD71
3148          KM   **********

3149          KK    TL71
3150          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 71
3151          RT       0       1       1
3152          KM   **********

3153          KK    CP52
3154          KM
3155          KM        COMBINE CP51 + 61 + SD71
3156          KM
3157          HC       3
3158          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3159          KK   DSD61
3160          KM        DIVERTS STORM DRAIN FLOW TO BASIN 60
3161          KM        FCD#98-36
3162          DT    SD61
3163          DI     0.0   28.00   100.0  1000.0  2000.0
3164          DQ     0.0   28.00   28.00   28.00   28.00
3165          KM   **********

3166          KK   RCP61
3167          KM
3168          KM        ROUTE CP52A TO CP60A (TYPE 3)
3169          KM
3170          RS       1    FLOW
3171          RC   0.013   0.016   0.013    1354  0.0043
3172          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
3173          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
3174          KM   **********

3175          KK      62
3176          KM   SUB-BASIN 62
3177          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3178          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3179          KM     L =  .29  Kb = .063  Adj. Slope =   31.0
3180          BA    .025
3181          LG    .250    .150   9.700    .060  45.000
3182          UC    .321    .319
3183          UA       0       5      16      30      65      77      84      90      94      97
3184          UA     100
3185          KM   **********

3186          KK    3B62
3187          KM
3188          KM        Retention Basin Storage for Drainage area 62
3189          KM        FLOW DIVERTED INTO A 1.56 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
3190          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
3191          KM         - 20% ESCAPES THE SUB BASIN.
3192          KM        FCD#98-36
3193          DT   OUT62    1.56
3194          DI       0      10     100    1000
3195          DQ       0       8      80     800
3196          KM   **********

3197          KK      60
3198          KM   SUB-BASIN 60
3199          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3200          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3201          KM     L =  .38  Kb = .033  Adj. Slope =   24.0
3202          BA    .064
3203          LG    .120    .150   8.000    .120  75.000
3204          UC    .300    .215
3205          UA       0       5      16      30      65      77      84      90      94      97
3206          UA     100
3207          KM   **********
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3208          KK   RSD61
3209          KM        RETRIEVE STORM DRAIN FLOW FROM BASIN 61
3210          KM        FCD#98-36
3211          DR    SD61
3212          KM   **********

3213          KK    TL61
3214          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 61
3215          RT       0       1       1
3216          KM   **********

3217          KK   CP60A
3218          KM
3219          KM        COMBINE RCP49 + 60 + RCP61 + 3B62 + SD61
3220          KM        FCD#98-36
3221          HC       5
3222          KM   **********

3223          KK   DOUTA
3224          KM        DIVERT STORM DRAIN FLOW OUT OF STUDY AREA
3225          KM        FCD#98-36
3226          DT    OUTA
```

```
3227          DI     0.0    64.0   100.0  1000.0  2000.0
3228          DQ     0.0    64.0    64.0    64.0    64.0
3229          KM   **********

3230          KK  DDUDVD
3231          KM        DIVERT FLOW FROM STREET INTERSECTION DIVERSION SOUTH VAL VISTA DRIVE
3232          KM        DIVERT FLOWS TO AREA 181
3233          KM        FCD#98-36
3234          DT   DUDVD
3235          DI     0.0     0.0   100.9   264.2   701.0  1500.4
3236          DQ     0.0     0.0     0.0    93.7   258.1   575.1
3237          KM   **********

3238          KK     180
3239          KM        FCD#98-36
3240          KM
3241          KM   SUB-BASIN 180
3242          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3243          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3244          KM     L =  .16  Kb = .063  Adj. Slope =   25.0
3245          BA    .021
3246          LG    .240    .150   9.700    .060  33.000
3247          UC    .262    .175
3248          UA       0       5      16      30      65      77      84      90      94      97
3249          UA     100
3250          KM   **********
1                                        HEC-1 INPUT                                                PAGE 69

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


3251          KK   CP180
3252          KM
3253          KM        COMBINE CP60A + 180
3254          KM        FCD#98-36
3255          HC       2
3256          KM   **********

3257          KK   PA180
3258          RS       1    STOR       0      -1       0       0       0       0       0       0
3259          SV    0.00    0.13    0.85    2.71    5.74    6.84   10.95   14.37
3260          SE  1284.2 1286.00 1287.00 1288.00 1288.80 1289.00 1289.60 1290.00
3261          SQ    0.00   10.10   18.40   89.99  210.99  334.89 2046.11 4459.85
3262          KM   **********

3263          KK  CPD180
3264          KM        This diversion represents possible breakout flows over the Eastern
3265          KM        Canal. This flow will not be retrieved into the model.
3266          KM        DIVERTS FLOW Over the Eastern canal due to weiring over its banks
3267          DT   PD180
3268          DI    0.00   10.10   18.40   89.99  210.99  334.89 2046.11 4459.85
3269          DQ    0.00    0.00    0.00    0.00    0.00   87.69 1407.51 3106.02
3270          KM   **********

3271          KK  DCD180
3272          KM        FLOW DIVERTED THROUGH THE 30 IN, 1700 LF CULVERT THAT RUNS ALONG EASTERN
3273          KM        AND DISCHARGES INTO BASIN 63
3274          DT   CD180
3275          DI    0.00   10.10   18.40   89.99  210.99  334.89 2046.11 4459.85
3276          DQ    0.00   10.10   18.40   26.80   32.00   33.20   37.60   41.20
3277          KM   **********

3278          KK  DWD180
3279          KM        WEIR FLOW OVER UNIVERSITY DRIVE DIVERTED TO PA181
3280          KM
3281          DT   WD180
3282          DI    0.00   10.10   18.40   89.99  210.99  334.89 2046.11 4459.85
3283          DQ    0.00    0.00    0.00    0.00    0.00    0.00  267.31  889.50
3284          KM   **********

3285          KK      57
3286          KM   SUB-BASIN 57
3287          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3288          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3289          KM     L =  .23  Kb = .056  Adj. Slope =   14.0
3290          BA    .086
3291          LG    .280    .210   6.400    .190  22.000
3292          UC    .412    .173
3293          UA       0       5      16      30      65      77      84      90      94      97
3294          UA     100
3295          KM   **********
1                                        HEC-1 INPUT                                                PAGE 70

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


3296          KK    CP45
3297          KM
3298          KM        COMBINE PA47 + PA180 + 57
3299          KM
3300          HC       3
3301          KM   **********

3302          KK    PA57
3303          RS       1    STOR       0      -1       0       0       0       0       0       0
3304          SV    0.00    0.37    0.64    3.03   11.54   19.04   20.26   21.54   22.88   37.81
3305          SE  1282.3 1283.60 1284.00 1286.00 1288.00 1288.80 1288.90 1289.00 1289.10 1290.00
3306          SQ    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00   22.28 1750.82
3307          KM   **********

3308          KK   CPD57
3309          KM        This diversion represents possible breakout flows over the Eastern
3310          KM        Canal. This flow will not be retrieved into the model.
3311          KM        DIVERT FLOW over Eastern Canal due to weiring over its banks
3312          DT    PD57
```

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3313          DI    0.00   22.28 1750.82
3314          DQ    0.00   22.28 1750.82
3315          KM   **********

3316          KK     181
3317          KM        FCD#98-36
3318          KM
3319          KM   SUB-BASIN 181
3320          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3321          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3322          KM     L =  .19  Kb = .039  Adj. Slope =   21.0
3323          BA    .024
3324          LG    .130    .150   9.700    .060  71.000
3325          UC    .233    .163
3326          UA       0       5      16      30      65      77      84      90      94      97
3327          UA     100
3328          KM   **********

3329          KK  RDUDVD
3330          KM        RETRIEVE FLOW FROM STREET INTERSECTION DIVERSION
3331          KM        FCD#98-36
3332          DR   DUDVD
3333          KM   **********

3334          KK  RWD180
3335          KM        RETRIEVE FLOW FROM WEIR DIVERSION OVER UNIVERSITY DRIVE
3336          KM        FCD#98-36
3337          DR   WD180
3338          KM   **********
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3339          KK    CP53
3340          KM
3341          KM        COMBINE DVDUV + PA57 + 181 + WD180
3342          KM        FCD#98-36
3343          HC       4
3344          KM   **********

3345          KK   DOUTB
3346          KM        DIVERT STORM DRAIN FLOW OUT OF STUDY AREA
3347          KM        TRANSPORT CAPACITY = 100 CFS
3348          KM        INTERCEPTION CAPACITY = 16 CFS
3349          KM        FCD#98-36
3350          DT    OUTB
3351          DI       0      16    1000
3352          DQ       0      16      16
3353          KM   **********

3354          KK   PA181
3355          RS       1    STOR       0      -1       0       0       0       0       0       0
3356          SV    0.00    0.33    2.41    8.97    9.89   10.84
3357          SE  1287.9 1288.00 1288.30 1289.10 1289.20 1289.30
3358          SQ    0.00    0.00   80.40 1506.90 1825.70 2200.30
3359          KM   **********

3360          KK  CPD181
3361          KM        This diversion represents possible breakout flows over the Eastern
3362          KM        Canal. This flow will not be retrieved into the model.
3363          KM        DIVERT FLOW over Eastern Canal due to weiring over its banks
3364          DT   PD181
3365          DI    0.00    0.00   80.40 1506.90 1825.70 2200.30
3366          DQ    0.00    0.00    0.00    0.00    9.40   45.70
3367          KM   **********

3368          KK  RCD180
3369          KM        RETRIEVE FLOW FROM CULVERT DIVERSION
3370          KM        FCD#98-36
3371          DR   CD180
3372          KM   **********

3373          KK    TL63
3374          KM        TIME LAG FOR CULVERT DIVERSION
3375          RT       0       1       1
3376          KM   **********

3377          KK      63
3378          KM   SUB-BASIN 63
3379          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3380          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3381          KM     L =  .63  Kb = .054  Adj. Slope =   21.0
3382          BA    .122
3383          LG    .250    .150   9.700    .060  45.000
3384          UC    .546    .433
3385          UA       0       5      16      30      65      77      84      90      94      97
3386          UA     100
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3387          KM   **********

3388          KK    CP54
3389          KM
3390          KM        COMBINE CP53 + 63
3391          KM
3392          HC       3
3393          KM   **********

3394          KK      80
3395          KM   SUB-BASIN 80
3396          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3397          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
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3398          KM     L =  .46  Kb = .053  Adj. Slope =   31.0
3399          BA    .108
3400          LG    .240    .250   4.800    .360  47.000
3401          UC    .404    .259
3402          UA       0       5      16      30      65      77      84      90      94      97
3403          UA     100
3404          KM   **********

3405          KK    3B80
3406          KM        Retention Basin Storage for Drainage area 80
3407          KM        FLOW DIVERTED INTO A 2.52 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
3408          KM         -100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
3409          KM         -  0% ESCAPES THE SUB BASIN.
3410          KM        FCD#98-36
3411          DT   OUT80    2.52
3412          DI       0      10     100    1000
3413          DQ       0      10     100    1000
3414          KM   **********

3415          KK   RCP80
3416          KM
3417          KM        ROUTE 3B80 TO CP60 (TYPE 4)
3418          KM
3419          RS       2    FLOW
3420          RC    .013    .016    .013    2654   .0068
3421          RX   99.99  100.00  104.00  104.00  200.15  200.15  204.15  204.15
3422          RY   20.43   10.43   10.43   10.00   10.00   10.43   10.43   20.43
3423          KM   **********

3424          KK      83
3425          KM   SUB-BASIN 83
3426          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3427          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3428          KM     L =  .44  Kb = .032  Adj. Slope =   32.0
3429          BA    .035
3430          LG    .100    .250   4.800    .430  80.000
3431          UC    .267    .299
3432          UA       0       5      16      30      65      77      84      90      94      97
3433          UA     100
3434          KM   **********
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3435          KK   RCP83
3436          KM
3437          KM        ROUTE 83 TO CP60 (TYPE 4)
3438          KM
3439          RS       2    FLOW
3440          RC    .013    .016    .013    2676   .0070
3441          RX   99.99  100.00  104.00  104.00  200.15  200.15  204.15  204.15
3442          RY   20.43   10.43   10.43   10.00   10.00   10.43   10.43   20.43
3443          KM   **********

3444          KK      77
3445          KM   SUB-BASIN 77
3446          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3447          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3448          KM     L = 1.18  Kb = .053  Adj. Slope =   22.0
3449          BA    .137
3450          LG    .250    .250   4.800    .360  45.000
3451          UC    .925   1.203
3452          UA       0       5      16      30      65      77      84      90      94      97
3453          UA     100
3454          KM   **********

3455          KK   RGRUD
3456          KM        RETRIEVE FLOW FROM STREET INTERSECTION DIVERSION
3457          KM        FCD#98-36
3458          DR   DUDGR
3459          KM   **********

3460          KK    TL76
3461          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 76
3462          RT       0       1       1
3463          KM   **********

3464          KK   COM77
3465          KM
3466          KM        COMBINE DIV76 + 77
3467          KM
3468          HC       2
3469          KM   **********

3470          KK   DSD77
3471          KM        DIVERT STORM DRAIN FLOW TO DRAINAGE AREA 79
3472          DT    SD77
3473          DI       0      42    1000
3474          DQ       0      42      42
3475          KM   **********

3476          KK    3B77
3477          KM        Retention Basin Storage for Drainage area 77
3478          KM        FLOW DIVERTED INTO A 13.54 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
3479          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
3480          KM         - 20% ESCAPES THE SUB BASIN.
3481          KM        FCD#98-36
3482          DT   OUT77   13.54
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3483          DI       0      10     100    1000
3484          DQ       0       8      80     800
```

```
3485          KM   **********

3486          KK   RCP77
3487          KM
3488          KM        ROUTE COM77 TO CP60 (TYPE 4)
3489          KM
3490          RS       1    FLOW
3491          RC    .013    .016    .013     800   .0031
3492          RX   99.99  100.00  104.00  104.00  200.15  200.15  204.15  204.15
3493          RY   20.43   10.43   10.43   10.00   10.00   10.43   10.43   20.43
3494          KM   **********

3495          KK      79
3496          KM   SUB-BASIN 79
3497          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3498          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3499          KM     L =  .55  Kb = .038  Adj. Slope =   36.0
3500          BA    .120
3501          LG    .160    .150   8.000    .110  66.000
3502          UC    .325    .221
3503          UA       0       5      16      30      65      77      84      90      94      97
3504          UA     100
3505          KM   **********

3506          KK   RSD77
3507          KM        RETRIEVE STORM DRAIN FLOW DIVERTED FROM BASIN 77
3508          DR    SD77
3509          KM   **********

3510          KK    TL77
3511          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 77
3512          RT       0       1       1
3513          KM   **********

3514          KK    CP60
3515          KM
3516          KM        COMBINE 80 + 83 + 77 + 79 + SD77
3517          KM
3518          HC       5
3519          KM   **********

3520          KK  DDMSGR
3521          KM        DIVERT FLOW FROM STREET INTERSECTION DIVERSION SOUTH MAIN STREET
3522          KM        DIVERT FLOWS TO AREA 77
3523          KM       54-INCH SD. ALONG GREENFIELD RD.
3524          KM        INTERCEPTION CAPACITY     = 42 CFS (12 CATCH BASINS)ALONG GREENFIELD RD.
3525          KM       INTERCEPTED UPSTREAM      = 20 CFS (FROM DUDGR)ALONG GREENFIELD RD.
3526          KM        INTERCEPTION CAPACITY     = 42 CFS (12 CATCH BASINS)ALONG MAIN ST.
3527          KM        TOTAL TRANSPORT           = 42 + 20 + 42 = 104 CFS
3528          KM        FCD#98-36
3529          DT   DMSGR
3530          DI     0.0   104.0   190.1   236.3  1034.0  1961.1
3531          DQ     0.0   104.0   104.0   104.0   446.4   816.1
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3532          KM   **********

3533          KK   RCP79
3534          KM
3535          KM        ROUTE CP60 TO CP98 (TYPE 4)
3536          KM
3537          RS       1    FLOW
3538          RC    .013    .016    .013    1268   .0056
3539          RX   99.99  100.00  104.00  104.00  200.15  200.15  204.15  204.15
3540          RY   20.43   10.43   10.43   10.00   10.00   10.43   10.43   20.43
3541          KM   **********

3542          KK      74
3543          KM   SUB-BASIN 74
3544          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3545          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3546          KM     L =  .34  Kb = .050  Adj. Slope =   34.0
3547          BA    .064
3548          LG    .210    .190   6.600    .180  55.000
3549          UC    .296    .194
3550          UA       0       5      16      30      65      77      84      90      94      97
3551          UA     100
3552          KM   **********

3553          KK    3B74
3554          KM        Retention Basin Storage for Drainage area 74
3555          KM        FLOW DIVERTED INTO A 0.82 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
3556          KM         - 50% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
3557          KM         - 50% ESCAPES THE SUB BASIN.
3558          KM        FCD#98-36
3559          DT   OUT74    0.82
3560          DI       0      10     100    1000
3561          DQ       0       5      50     500
3562          KM   **********

3563          KK    CP98
3564          KM
3565          KM        COMBINE CP60 + 74
3566          KM
3567          HC       2
3568          KM   **********

3569          KK   RCP74
3570          KM
3571          KM        ROUTE CP98 TO CP55 (TYPE 4)
3572          KM
3573          RS       1    FLOW
3574          RC    .013    .016    .013    1440   .0058
```

```
3575          RX   99.99  100.00  104.00  104.00  200.15  200.15  204.15  204.15
3576          RY   20.43   10.43   10.43   10.00   10.00   10.43   10.43   20.43
3577          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3578          KK      66
3579          KM   SUB-BASIN 66
3580          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3581          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3582          KM     L =  .37  Kb = .049  Adj. Slope =   32.0
3583          BA    .068
3584          LG    .200    .150   8.800    .070  56.000
3585          UC    .313    .213
3586          UA      0       5      16      30      65      77      84      90      94      97
3587          UA    100
3588          KM   **********

3589          KK    3B66
3590          KM        Retention Basin Storage for Drainage area 66
3591          KM        FLOW DIVERTED INTO A 1.75 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
3592          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
3593          KM         - 20% ESCAPES THE SUB BASIN.
3594          KM        FCD#98-36
3595          DT   OUT66    1.75
3596          DI      0      10     100    1000
3597          DQ      0       8      80     800
3598          KM   **********

3599          KK      73
3600          KM   SUB-BASIN 73
3601          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3602          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3603          KM     L =  .35  Kb = .048  Adj. Slope =   34.0
3604          BA    .059
3605          LG    .190    .170   6.800    .160  58.000
3606          UC    .292    .204
3607          UA      0       5      16      30      65      77      84      90      94      97
3608          UA    100
3609          KM   **********

3610          KK   RCP73
3611          KM
3612          KM        ROUTE 73 TO CP55 (SPECIAL TYPE)
3613          KM        FCD#98-36
3614          RS      3    FLOW
3615          RC   0.035   0.035   0.035    2095  0.0059
3616          RX     100     106     112     122     128     132     138     144
3617          RY      12      11      10      10      10      10      11      12
3618          KM   **********

3619          KK    CP55
3620          KM
3621          KM        COMBINE 3B66 + RCP74 + RCP73
3622          HC      3
3623          KM   **********
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3624          KK   RCP66
3625          KM
3626          KM        ROUTE CP55 TO CP56 (TYPE 4)
3627          KM
3628          RS      1    FLOW
3629          RC    .013    .016    .013    1823  0.0042
3630          RX   99.99  100.00  104.00  104.00  200.15  200.15  204.15  204.15
3631          RY   20.43   10.43   10.43   10.00   10.00   10.43   10.43   20.43
3632          KM   **********

3633          KK   DSD64
3634          KM        DIVERT STORM DRAIN FLOW TO DRAINAGE AREA 84
3635          KM       42-INCH STORM DRAIN ALONG GREENFIELD RD.
3636          KM       INTERCEPTION CAPACITY    = 49 CFS (14 CATCH BASINS)
3637          KM       TOTAL TRANSPORT CAPACITY = 46 CFS
3638          KM       TOTAL TRANSPORT          = 46 CFS
3639          KM
3640          DT    SD64
3641          DI      0      46    1000    2000
3642          DQ      0      46      46      46
3643          KM   **********

3644          KK      65
3645          KM   SUB-BASIN 65
3646          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3647          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3648          KM     L =  .47  Kb = .056  Adj. Slope =   32.0
3649          BA    .081
3650          LG    .250    .150   9.700    .060  45.000
3651          UC    .396    .303
3652          UA      0       5      16      30      65      77      84      90      94      97
3653          UA    100
3654          KM   **********

3655          KK    3B65
3656          KM        Retention Basin Storage for Drainage area 65
3657          KM        FLOW DIVERTED INTO A 0.49 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
3658          KM         - 50% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
3659          KM         - 50% ESCAPES THE SUB BASIN.
3660          KM        FCD#98-36
3661          DT   OUT65    0.49
3662          DI      0      10     100    1000
```

```
3663          DQ       0       5      50     500
3664          KM   **********

3665          KK   RCP65
3666          KM
3667          KM        ROUTE 3B65 TO CP56 (TYPE 1)
3668          KM
3669          RS       2    FLOW
3670          RC    .013    .016    .013    2123  0.0057
3671          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
3672          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
3673          KM   **********
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3674          KK      64
3675          KM   SUB-BASIN 64
3676          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3677          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3678          KM     L =  .49  Kb = .049  Adj. Slope =   24.0
3679          BA    .061
3680          LG    .200    .150   9.700    .060  56.000
3681          UC    .412    .385
3682          UA       0       5      16      30      65      77      84      90      94      97
3683          UA     100
3684          KM   **********

3685          KK    CP56
3686          KM
3687          KM        COMBINE CP54 + CP55 + 64 + 65
3688          KM
3689          HC       4
3690          KM   **********

3691          KK    PA64
3692          KM
3693          RS       1    STOR       0      -1       0       0       0       0       0       0
3694          SV    0.00    0.02    1.50   10.65   12.54   17.70   30.00   32.58   41.23
3695          SE  1283.9 1284.00 1286.00 1287.80 1288.00 1288.40 1289.00 1289.10 1289.40
3696          SQ    0.00    0.00   16.00   36.00   55.30  401.70 2118.60 2548.00 4217.40
3697          KM   **********
3698          KM
3699          KM        This diversion represents possible breakout flows over the Eastern
3700          KM        Canal. This flow will not be retrieved into the model.
3701          KM

3702          KK   CPD64
3703          KM        DIVERT FLOW Over the Eastern canal due to weiring over its banks
3704          DT    PD64
3705          DI    0.00   16.00   36.00   55.30  401.70 2118.60 2548.00 4217.40
3706          DQ    0.00    0.00    0.00   17.80  343.90 1897.40 2276.10 3688.50
3707          KM   **********

3708          KK   RCP63
3709          KM
3710          KM        ROUTE PA64 TO CP57 (TYPE 5)
3711          KM
3712          RS       1    FLOW
3713          RC    .027    .027    .027     680   .0002
3714          RX      90     110     150     155     160     165     205     225
3715          RY      30      18      18      13      13      18      18      30
3716          KM   **********

3717          KK      67
3718          KM   SUB-BASIN 67
3719          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3720          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3721          KM     L =  .68  Kb = .039  Adj. Slope =   30.0
3722          BA    .069
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3723          LG    .150    .150   9.700    .060  69.000
3724          UC    .400    .451
3725          UA       0       5      16      30      65      77      84      90      94      97
3726          UA     100
3727          KM   **********

3728          KK   RSD64
3729          KM        RETRIEVE STORM DRAIN FLOW DIVERTED FROM BASIN 64
3730          KM        THE STORM DRAIN FLOW OUTFALLS INTO THE DIRT CHANNEL NEXT TO EASTERN CANA
3731          DR    SD64
3732          KM   **********

3733          KK    TL64
3734          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 64
3735          RT       0       1       1
3736          KM   **********

3737          KK    CP57
3738          KM
3739          KM        COMBINE RCP63 + 67 + SD64
3740          KM
3741          HC       3
3742          KM   **********

3743          KK   RCP67
3744          KM
3745          KM        ROUTE CP57 TO CP58 (TYPE 5)
3746          KM
3747          RS       1    FLOW
3748          RC    .027    .027    .027     738  0.0002
```

```
3749          RX      90     110     150     155     160     165     205     225
3750          RY      30      18      18      13      13      18      18      30
3751          KM   **********

3752          KK      68
3753          KM   SUB-BASIN 68
3754          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3755          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3756          KM     L =  .62  Kb = .059  Adj. Slope =   23.0
3757          BA    .053
3758          LG    .250    .150   8.000    .100  45.000
3759          UC    .558    .705
3760          UA      0       5      16      30      65      77      84      90      94      97
3761          UA     100
3762          KM   **********

3763          KK    CP58
3764          KM
3765          KM        COMBINE CP57 + 68
3766          KM
3767          HC       2
3768          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3769          KK      81
3770          KM   SUB-BASIN 81
3771          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3772          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3773          KM     L =  .53  Kb = .041  Adj. Slope =   41.0
3774          BA    .054
3775          LG    .150    .210   6.400    .220  69.000
3776          UC    .321    .333
3777          UA      0       5      16      30      65      77      84      90      94      97
3778          UA     100
3779          KM   **********

3780          KK  RDMSGR
3781          KM        RETRIEVE FLOW FROM STREET INTERSECTION DIVERSION
3782          KM        FCD#98-36
3783          DR   DMSGR
3784          KM   **********

3785          KK   CP81A
3786          KM
3787          KM        COMBINE 81 + DMSGR
3788          KM
3789          HC       2
3790          KM   **********

3791          KK   DSD81
3792          KM        DIVERT STORM DRAIN FLOW TO DRAINAGE AREA 86
3793          KM       54-INCH STORM DRAIN ALONG GREENFIELD RD.
3794          KM       INTERCEPTION CAPACITY    = 35 CFS (10 CATCH BASINS)
3795          KM       INTERCEPTED UPSTREAM     = 104 CFS (FROM DMSGR)
3796          KM       TOTAL TRANSPORT          = 35 + 104 = 139 CFS > 125 CFS
3797          KM       TOTAL TRANSPORT CAPACITY = 125 CFS
3798          KM
3799          DT    SD81
3800          DI       0     125    1000    2000
3801          DQ       0     125     125     125
3802          KM   **********

3803          KK   RCP81
3804          KM
3805          KM        ROUTE CP81A TO CP62 (TYPE 4)
3806          KM
3807          RS       1    FLOW
3808          RC    .013    .016    .013     590   .0020
3809          RX   99.99  100.00  104.00  104.00  200.15  200.15  204.15  204.15
3810          RY   20.43   10.43   10.43   10.00   10.00   10.43   10.43   20.43
3811          KM   **********

3812          KK      82
3813          KM   SUB-BASIN 82
3814          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3815          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3816          KM     L =  .46  Kb = .060  Adj. Slope =   35.0
3817          BA    .047
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3818          LG    .250    .250   5.200    .300  45.000
3819          UC    .417    .430
3820          UA      0       5      16      30      65      77      84      90      94      97
3821          UA     100
3822          KM   **********

3823          KK    3B82
3824          KM        Retention Basin Storage for Drainage area 82
3825          KM        FLOW DIVERTED INTO A 3.48 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
3826          KM         - 80% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
3827          KM         - 20% ESCAPES THE SUB BASIN.
3828          KM        FCD#98-36
3829          DT   OUT82    3.48
3830          DI       0      10     100    1000
3831          DQ       0       8      80     800
3832          KM   **********

3833          KK    CP62
3834          KM
3835          KM        COMBINE RCP81 + 3B82
```

```
3836          KM
3837          HC       2
3838          KM   **********

3839          KK   RCP82
3840          KM
3841          KM        ROUTE CP62 TO CP66 (TYPE 3)
3842          KM
3843          RS       1    FLOW
3844          RC    .013    .016    .013    1325    .0038
3845          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
3846          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
3847          KM   **********

3848          KK      91
3849          KM   SUB-BASIN 91
3850          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3851          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3852          KM     L =  .36  Kb = .057  Adj. Slope =   34.0
3853          BA    .079
3854          LG    .250    .250   4.550    .420  45.000
3855          UC    .354    .219
3856          UA       0       5      16      30      65      77      84      90      94      97
3857          UA     100
3858          KM   **********

3859          KK    4B91
3860          KM        Retention Basin Storage for Drainage area 91
3861          KM        FLOW DIVERTED INTO A 3.94 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
3862          KM         -100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
3863          KM         -  0% ESCAPES THE SUB BASIN.
3864          KM        FCD#98-36
3865          DT   OUT91    3.94
3866          DI       0      10     100    1000
3867          DQ       0      10     100    1000
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3868          KM   **********

3869          KK  DDBOHR
3870          KM        DIVERT FLOW FROM STREET INTERSECTION DIVERSION SOUTH OF BROADWAY ROAD
3871          KM        DIVERT FLOWS TO AREA 112
3872          KM        FCD#98-36
3873          DT   DBOHR
3874          DI     0.0   105.7   275.5   729.7  1558.5
3875          DQ     0.0     0.0    95.8   263.0   584.2
3876          KM   **********

3877          KK   RCP91
3878          KM
3879          KM        ROUTE 4B91 TO CP63 (TYPE 3)
3880          KM
3881          RS       2    FLOW
3882          RC    .013    .016    .013    2613    .0060
3883          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
3884          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
3885          KM   **********

3886          KK      90
3887          KM   SUB-BASIN 90
3888          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3889          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3890          KM     L =  .63  Kb = .056  Adj. Slope =   38.0
3891          BA    .092
3892          LG    .250    .250   4.800    .360  45.000
3893          UC    .471    .432
3894          UA       0       5      16      30      65      77      84      90      94      97
3895          UA     100
3896          KM   **********

3897          KK      88
3898          KM   SUB-BASIN 88
3899          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3900          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3901          KM     L =  .62  Kb = .054  Adj. Slope =   35.0
3902          BA    .084
3903          LG    .240    .250   4.800    .360  48.000
3904          UC    .467    .445
3905          UA       0       5      16      30      65      77      84      90      94      97
3906          UA     100
3907          KM   **********

3908          KK   RCP88
3909          KM
3910          KM        ROUTE 88 TO CP64 (TYPE 1)
3911          KM
3912          RS       1    FLOW
3913          RC    .013    .016    .013     527    .0038
3914          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
3915          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
3916          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3917          KK      89
3918          KM   SUB-BASIN 89
3919          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3920          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3921          KM     L =  .69  Kb = .058  Adj. Slope =   41.0
3922          BA    .067
3923          LG    .250    .250   4.800    .360  45.000
```

```
3924          UC    .496    .589
3925          UA      0       5      16      30      65      77      84      90      94      97
3926          UA    100
3927          KM   **********

3928          KK    CP64
3929          KM
3930          KM        COMBINE RCP88 + 89 + 90
3931          KM
3932          HC       3
3933          KM   **********

3934          KK    4B89
3935          KM        Retention Basin Storage for Drainage area 89
3936          KM        FLOW DIVERTED INTO A 6.31 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
3937          KM         - 100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
3938          KM         -   0% ESCAPES THE SUB BASIN.
3939          KM        FCD#98-36
3940          DT   OUT89    6.31
3941          DI       0      10     100    1000
3942          DQ       0      10     100    1000
3943          KM   **********

3944          KK    CP63
3945          KM
3946          KM        COMBINE 4B89 + RCP91
3947          KM
3948          HC       2
3949          KM   **********

3950          KK   RCP89
3951          KM
3952          KM        ROUTE CP63 TO CP65 (TYPE 3)
3953          KM
3954          RS       1    FLOW
3955          RC    .013    .016    .013     785   .0066
3956          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
3957          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
3958          KM   **********

3959          KK      87
3960          KM   SUB-BASIN 87
3961          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3962          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3963          KM     L =  .44  Kb = .059  Adj. Slope =   28.0
3964          BA    .055
3965          LG    .250    .250   4.700    .380  45.000
1                                          HEC-1 INPUT                                          PAGE 84

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3966          UC    .442    .405
3967          UA      0       5      16      30      65      77      84      90      94      97
3968          UA    100
3969          KM   **********

3970          KK    CP65
3971          KM
3972          KM        COMBINE RCP89 + 87
3973          KM
3974          HC       2
3975          KM   **********

3976          KK   RCP87
3977          KM
3978          KM        ROUTE CP65 TO CP66 (TYPE 3)
3979          KM
3980          RS       2    FLOW
3981          RC    .013    .016    .013    1876   .0053
3982          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
3983          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
3984          KM   **********

3985          KK      86
3986          KM   SUB-BASIN 86
3987          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
3988          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
3989          KM     L =  .52  Kb = .055  Adj. Slope =   26.0
3990          BA    .095
3991          LG    .250    .250   4.800    .360  45.000
3992          UC    .479    .371
3993          UA      0       5      16      30      65      77      84      90      94      97
3994          UA    100
3995          KM   **********

3996          KK    CP66
3997          KM
3998          KM        COMBINE CP62 + CP65 + 86
3999          KM
4000          HC       3
4001          KM   **********

4002          KK   RSD81
4003          KM        RETRIEVE STORM DRAIN FLOW DIVERTED FROM BASIN 81
4004          DR    SD81
4005          KM   **********

4006          KK    TL81
4007          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 81
4008          RT       0       1       1
4009          KM   **********
1                                          HEC-1 INPUT                                          PAGE 85

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
4010          KK   COM86
4011          KM
4012          KM        COMBINE CP66 + SD81
4013          KM
4014          HC       2
4015          KM   **********

4016          KK  DDBOGR
4017          KM        DIVERT FLOW FROM STREET INTERSECTION DIVERSION SOUTH OF BROADWAY ROAD
4018          KM        DIVERT FLOWS TO AREA 98
4019          KM       54-INCH SD. ALONG GREENFIELD RD.
4020          KM        INTERCEPTION CAPACITY     = 21 CFS (6 CATCH BASINS)ALONG BROADWAY RD.
4021          KM        INTERCEPTED UPSTREAM      = 125 CFS (FROM SD81)
4022          KM        TOTAL TRANSPORT CAPACITY = 105 CFS
4023          KM        FCD#98-36
4024          DT   DBOGR
4025          DI     0.0   105.0   178.3   304.4   642.1  1274.0
4026          DQ     0.0   105.0   105.0   184.7   329.5   617.2
4027          KM   **********

4028          KK   RCP86
4029          KM
4030          KM        ROUTE COM86 TO CP67 (TYPE 3)
4031          KM
4032          RS       2    FLOW
4033          RC    .013    .016    .013    2597   .0047
4034          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
4035          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
4036          KM   **********

4037          KK      85
4038          KM   SUB-BASIN 85
4039          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4040          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4041          KM     L =  .56  Kb = .068  Adj. Slope =   29.0
4042          BA    .121
4043          LG    .320    .250   4.900    .410  32.000
4044          UC    .600    .440
4045          UA       0       5      16      30      65      77      84      90      94      97
4046          UA     100
4047          KM   **********

4048          KK    CP67
4049          KM
4050          KM        COMBINE CP66 + 85
4051          KM
4052          HC       2
4053          KM   **********
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4054          KK   RCP85
4055          KM
4056          KM        ROUTE CP67 TO CP68 (TYPE 3)
4057          KM
4058          RS       1    FLOW
4059          RC    .013    .016    .013     392   .0051
4060          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
4061          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
4062          KM   **********

4063          KK      69
4064          KM   SUB-BASIN 69
4065          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4066          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4067          KM     L =  .57  Kb = .054  Adj. Slope =   35.0
4068          BA    .075
4069          LG    .240    .150   8.800    .070  48.000
4070          UC    .421    .395
4071          UA       0       5      16      30      65      77      84      90      94      97
4072          UA     100
4073          KM   **********

4074          KK    3B69
4075          KM        Retention Basin Storage for Drainage area 69
4076          KM        FLOW DIVERTED INTO A 2.61 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
4077          KM         -100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
4078          KM         -  0% ESCAPES THE SUB BASIN.
4079          KM        FCD#98-36
4080          DT   OUT69    2.61
4081          DI       0      10     100    1000
4082          DQ       0      10     100    1000
4083          KM   **********

4084          KK   RCP69
4085          KM
4086          KM        ROUTE 3B69 TO CP68 (TYPE 2)
4087          KM
4088          RS       2    FLOW
4089          RC    .013    .016    .013    1601  0.0031
4090          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
4091          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
4092          KM   **********

4093          KK      84
4094          KM   SUB-BASIN 84
4095          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4096          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4097          KM     L =  .34  Kb = .054  Adj. Slope =    9.0
4098          BA    .047
4099          LG    .220    .250   5.700    .250  52.000
4100          UC    .538    .448
```

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4101          UA       0       5      16      30      65      77      84      90      94      97
4102          UA     100
4103          KM   **********
1                                          HEC-1 INPUT                                                    PAGE 87

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4104          KK    CP68
4105          KM
4106          KM        COMBINE CP58 + RCP85 + RCP69 + 84
4107          KM
4108          HC       4
4109          KM   **********

4110          KK    PA84
4111          KM
4112          RS       1    STOR       0      -1       0       0       0       0       0       0
4113          SV    0.00    0.00    0.00    0.00    9.63   30.81   33.45   39.12   45.34   48.65
4114          SE  1279.2 1281.00 1282.00 1284.00 1286.00 1287.20 1287.30 1287.50 1287.70 1287.80
4115          SQ    0.00   39.00   85.80  193.44  297.96  360.36  371.94  513.36  944.14 1281.46
4116          KM   **********
4117          KM
4118          KM        This diversion represents possible breakout flows over the Eastern
4119          KM        Canal. This flow will not be retrieved into the model.
4120          KM

4121          KK   CPD84
4122          KM        DIVERT FLOW Over the Eastern canal due to weiring over its banks
4123          DT    PD84
4124          DI    0.00   39.00   85.80  193.44  297.96  360.36  371.94  513.36  944.14 1281.46
4125          DQ    0.00    0.00    0.00    0.00    0.00    0.00    6.90  145.20  571.30  905.50
4126          KM   **********

4127          KK      92
4128          KM   SUB-BASIN 92
4129          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4130          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4131          KM     L =  .64  Kb = .053  Adj. Slope =   19.0
4132          BA    .074
4133          LG    .230    .250   4.550    .420  41.000
4134          UC    .637    .693
4135          UA       0       5      16      30      65      77      84      90      94      97
4136          UA     100
4137          KM   **********

4138          KK    CP69
4139          KM
4140          KM        COMBINE CP68 + 92
4141          KM
4142          HC       2
4143          KM   **********

4144          KK      93
4145          KM   SUB-BASIN 93
4146          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4147          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4148          KM     L =  .46  Kb = .059  Adj. Slope =   50.0
4149          BA    .048
4150          LG    .250    .250   4.800    .360  36.000
4151          UC    .363    .364
4152          UA       0       5      16      30      65      77      84      90      94      97
1                                          HEC-1 INPUT                                                    PAGE 88

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4153          UA     100
4154          KM   **********

4155          KK    CP70
4156          KM
4157          KM        COMBINE CP69 + 93
4158          KM
4159          HC       2
4160          KM   **********

4161          KK   RCP93
4162          KM
4163          KM        ROUTE CP70 TO CP77 (SPECIAL TYPE)
4164          KM
4165          RS       1    FLOW
4166          RC   0.027   0.027   0.027     904  0.0013
4167          RX      90   103.5   103.6   117.4   117.5   122.5   136.5     150
4168          RY   12.61       9       9       3       3       9       9   12.61
4169          KM   **********

4170          KK      99
4171          KM   SUB-BASIN 99
4172          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4173          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4174          KM     L =  .45  Kb = .057  Adj. Slope =   32.0
4175          BA    .075
4176          LG    .250    .250   4.800    .360  45.000
4177          UC    .412    .320
4178          UA       0       5      16      30      65      77      84      90      94      97
4179          UA     100
4180          KM   **********

4181          KK    4B99
4182          KM        Retention Basin Storage for Drainage area 99
4183          KM        FLOW DIVERTED INTO A 3.70 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
4184          KM         -100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
4185          KM         -  0% ESCAPES THE SUB BASIN.
4186          KM        FCD#98-36
4187          DT   OUT99    3.70
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4188          DI       0      10     100    1000
4189          DQ       0      10     100    1000
4190          KM   **********

4191          KK   RCP99
4192          KM
4193          KM        ROUTE 4B99 TO CP76 (TYPE 1)
4194          KM
4195          RS       1    FLOW
4196          RC    .013    .016    .013     980   .0056
4197          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
4198          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
4199          KM   **********
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4200          KK      98
4201          KM   SUB-BASIN 98
4202          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4203          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4204          KM     L =  .35  Kb = .056  Adj. Slope =   29.0
4205          BA    .045
4206          LG    .230    .250   4.800    .370  50.000
4207          UC    .358    .299
4208          UA       0       5      16      30      65      77      84      90      94      97
4209          UA     100
4210          KM   **********

4211          KK  RDBOGR
4212          KM        RETRIEVE FLOW FROM STREET INTERSECTION DIVERSION
4213          KM        FCD#98-36
4214          DR   DBOGR
4215          KM   **********

4216          KK    CP76
4217          KM
4218          KM        COMBINE 98 + 99 + DBOGR
4219          KM
4220          HC       3
4221          KM   **********

4222          KK   DSD98
4223          KM        DIVERTS STORM DRAIN FLOW FROM BASIN 98 TO BASIN 101
4224          KM       54-INCH SD. ALONG GREENFIELD RD.
4225          KM       INTERCEPTION CAPACITY    = 35 CFS (10 CATCH BASINS)ALONG BROADWAY RD.
4226          KM       INTERCEPTED UPSTREAM     = 105 CFS (FROM DBOGR)
4227          KM       TOTAL TRANSPORT CAPACITY = 118 CFS
4228          KM        FCD#98-36
4229          DT    SD98
4230          DI     0.0   118.0  1000.0  2000.0
4231          DQ     0.0   118.0   118.0   118.0
4232          KM   **********

4233          KK   RCP98
4234          KM
4235          KM        ROUTE CP76 TO CP75 (TYPE 1)
4236          KM        FCD#98-36
4237          RS       2    FLOW
4238          RC    .013    .016    .013     985   .0014
4239          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
4240          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
4241          KM   **********

4242          KK     105
4243          KM   SUB-BASIN 105
4244          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4245          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4246          KM     L =  .43  Kb = .061  Adj. Slope =   30.0
4247          BA    .036
4248          LG    .250    .250   4.800    .360  45.000
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4249          UC    .429    .490
4250          UA       0       5      16      30      65      77      84      90      94      97
4251          UA     100
4252          KM   **********

4253          KK  RCP105
4254          KM
4255          KM        ROUTE 105 TO CP75 (TYPE 1)
4256          KM
4257          RS       2    FLOW
4258          RC    .013    .016    .013    3180   .0047
4259          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
4260          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
4261          KM   **********

4262          KK     100
4263          KM   SUB-BASIN 100
4264          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4265          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4266          KM     L =  .58  Kb = .059  Adj. Slope =   30.0
4267          BA    .052
4268          LG    .250    .250   4.800    .360  45.000
4269          UC    .508    .609
4270          UA       0       5      16      30      65      77      84      90      94      97
4271          UA     100
4272          KM   **********

4273          KK    CP75
4274          KM
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4275          KM        COMBINE CP76 + 100 + 105
4276          KM
4277          HC        3
4278          KM    **********

4279          KK   RCP100
4280          KM
4281          KM        ROUTE CP75 TO CP74 (TYPE 2)
4282          KM        FCD#98-36
4283          RS        1    FLOW
4284          RC     .013    .016    .013     462   .0069
4285          RX    99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
4286          RY    20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
4287          KM    **********

4288          KK      110
4289          KM    SUB-BASIN 110
4290          KM    24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4291          KM    THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4292          KM      L =  .42  Kb = .055  Adj. Slope =   26.0
4293          BA     .072
4294          LG     .240    .250   4.800    .360  48.000
4295          UC     .417    .313
4296          UA        0       5      16      30      65      77      84      90      94      97
4297          UA      100
4298          KM    **********
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4299          KK    4B110
4300          KM        Retention Basin Storage for Drainage area 110
4301          KM        FLOW DIVERTED INTO A 3.72 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
4302          KM         - 50% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
4303          KM         - 50% ESCAPES THE SUB BASIN.
4304          KM        FCD#98-36
4305          DT   OUT110    3.72
4306          DI        0      10     100    1000
4307          DQ        0       5      50     500
4308          KM    **********

4309          KK   RCP110
4310          KM
4311          KM        ROUTE 4B110 TO CP73 (TYPE 1)
4312          KM
4313          RS        1    FLOW
4314          RC     .013    .016    .013    1202   .0023
4315          RX    99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
4316          RY    20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
4317          KM    **********

4318          KK      111
4319          KM    SUB-BASIN 111
4320          KM    24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4321          KM    THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4322          KM      L =  .40  Kb = .059  Adj. Slope =   28.0
4323          BA     .056
4324          LG     .250    .250   4.800    .360  45.000
4325          UC     .412    .344
4326          UA        0       5      16      30      65      77      84      90      94      97
4327          UA      100
4328          KM    **********

4329          KK    4B111
4330          KM        Retention Basin Storage for Drainage area 111
4331          KM        FLOW DIVERTED INTO A 3.52 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
4332          KM         - 100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
4333          KM         -   0% ESCAPES THE SUB BASIN.
4334          KM        FCD#98-36
4335          DT   OUT111    3.52
4336          DI        0      10     100    1000
4337          DQ        0      10     100    1000
4338          KM    **********

4339          KK   RCP111
4340          KM
4341          KM        ROUTE 4B111 TO CP73 (TYPE 2)
4342          KM
4343          RS        1    FLOW
4344          RC     .013    .016    .013     280   .0100
4345          RX    99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
4346          RY    20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
4347          KM    **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4348          KK      106
4349          KM    SUB-BASIN 106
4350          KM    24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4351          KM    THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4352          KM      L =  .54  Kb = .058  Adj. Slope =   22.0
4353          BA     .067
4354          LG     .250    .250   4.800    .360  45.000
4355          UC     .550    .543
4356          UA        0       5      16      30      65      77      84      90      94      97
4357          UA      100
4358          KM    **********

4359          KK     CP73
4360          KM
4361          KM        COMBINE CP72 + 106 + 110
4362          KM
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4363          HC       3
4364          KM   **********

4365          KK   4B106
4366          KM        Retention Basin Storage for Drainage area 106
4367          KM        FLOW DIVERTED INTO A 11.82 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
4368          KM         - 100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
4369          KM         -   0% ESCAPES THE SUB BASIN.
4370          KM        FCD#98-36
4371          DT  OUT106   11.82
4372          DI       0      10     100    1000
4373          DQ       0      10     100    1000
4374          KM   **********

4375          KK  RCP106
4376          KM
4377          KM        ROUTE CP73 TO CP74 (TYPE 2)
4378          KM
4379          RS       2    FLOW
4380          RC    .013    .016    .013    2830   .0061
4381          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
4382          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
4383          KM   **********

4384          KK     101
4385          KM   SUB-BASIN 101
4386          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4387          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4388          KM     L =  .63  Kb = .056  Adj. Slope =   31.0
4389          BA    .087
4390          LG    .250    .250   4.800    .360  45.000
4391          UC    .512    .490
4392          UA       0       5      16      30      65      77      84      90      94      97
4393          UA     100
4394          KM   **********
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4395          KK   RSD98
4396          KM        RETRIEVE STORM DRAIN FLOW FROM BASIN 98
4397          KM        FCD#98-36
4398          DR    SD98
4399          KM   **********

4400          KK    TL98
4401          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 98 (SDC98)
4402          RT       0       1       1
4403          KM   **********

4404          KK    CP74
4405          KM
4406          KM        COMBINE CP73 + CP75 + 101 + SD98
4407          KM        FCD#98-36
4408          KM
4409          HC       4
4410          KM   **********

4411          KK  DSD101
4412          KM        DIVERT STORM DRAIN FLOW SOUTH ON GREENFIELD ROAD TO BASIN 104
4413          KM        STORM DRAIN CAPACITY = 69 CFS SOUTH
4414          KM
4415          KM        FCD#98-36
4416          DT   SD101
4417          DI       0      69    100.   1000.
4418          DQ       0      69     69.     69.
4419          KM   **********

4420          KK  DSF101
4421          KM        DIVERT STREET FLOW SOUTH ON GREENFIELD ROAD TO BASIN 102
4422          KM        STREET FLOW CAPACITY = 129 CFS
4423          KM        FLOW GREATER THAN TOTAL STREET FLOW CAPACITY IS ASSUMED
4424          KM        TO OVERTOP THE CURB AND FLOW WEST INTO PONDING AREA PA94
4425          KM        FCD#98-36
4426          DT   SF101
4427          DI       0    129.  1000.   2000.
4428          DQ       0    129.   129.    129.
4429          KM   **********

4430          KK     102
4431          KM   SUB-BASIN 102
4432          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4433          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4434          KM     L =  .68  Kb = .055  Adj. Slope =   24.0
4435          BA    .097
4436          LG    .250    .250   4.800    .360  45.000
4437          UC    .604    .587
4438          UA       0       5      16      30      65      77      84      90      94      97
4439          UA     100
4440          KM   **********
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4441          KK     103
4442          KM   SUB-BASIN 103
4443          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4444          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4445          KM     L =  .63  Kb = .056  Adj. Slope =   27.0
4446          BA    .090
4447          LG    .250    .250   4.800    .360  45.000
4448          UC    .546    .515
4449          UA       0       5      16      30      65      77      84      90      94      97
```

```
4450          UA     100
4451          KM   **********

4452          KK   CP102
4453          KM
4454          KM        COMBINE 102 + 103
4455          KM        FCD#98-36
4456          HC       2
4457          KM   **********

4458          KK  DSF102
4459          KM        DIVERT STREET FLOW SOUTH ON GREENFIELD ROAD TO BASIN 97
4460          KM        A STORM DRAIN SYSTEM COLLECTS FLOWS FROM BASINS 102 AND 103 AND TRANSPOR
4461          KM        TO PA94. THE DIVERSION ACCOUNTS FOR THE REMAINING SURFACE FLOW THAT EXCE
4462          KM        THE STORM DRAIN CAPACITY.
4463          KM        STORM DRAIN CAPACITY = 66 CFS NORTH
4464          KM        FCD#98-36
4465          DT   SF102
4466          DI       0    100.   1000.
4467          DQ       0     34.    934.
4468          KM   **********

4469          KK   TL102
4470          KM        TIME LAG FOR STORM DRAIN FLOW FROM BASINS 102 AND 103
4471          RT       0       1       1
4472          KM   **********

4473          KK      94
4474          KM   SUB-BASIN 94
4475          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4476          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4477          KM     L =  .52  Kb = .055  Adj. Slope =   21.0
4478          BA    .102
4479          LG    .250    .250   4.800    .360  30.000
4480          UC    .542    .408
4481          UA       0       5      16      30      65      77      84      90      94      97
4482          UA     100
4483          KM   **********

4484          KK    CP77
4485          KM
4486          KM        COMBINE RCP93 + CP74 + CP102 + 94
4487          KM        FCD#98-36
4488          HC       4
4489          KM   **********
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4490          KK    PA94
4491          KM
4492          RS       1    STOR       0      -1       0       0       0       0       0       0
4493          SV    0.00    1.08    7.23   18.82   36.20   60.64   85.98   96.34  121.03
4494          SE  1275.2 1276.00 1278.00 1280.00 1282.00 1284.00 1285.50 1286.00 1286.90
4495          SQ    0.00    0.00    0.00    0.00    0.00    4.57   45.03  715.18 3697.04
4496          KM   **********
4497          KM
4498          KM        This diversion represents possible breakout flows over the Eastern
4499          KM        Canal. This flow will not be retrieved into the model.
4500          KM

4501          KK   CPD94
4502          KM        DIVERT FLOW Over the Eastern canal due to weiring over its banks
4503          DT    PD94
4504          DI    0.00    4.57   45.03  715.18 3697.04
4505          DQ    0.00    0.00    0.00  628.39 3492.00
4506          KM   **********

4507          KK     112
4508          KM   SUB-BASIN 112
4509          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4510          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4511          KM     L =  .36  Kb = .063  Adj. Slope =   30.0
4512          BA    .044
4513          LG    .260    .250   4.800    .410  46.000
4514          UC    .396    .347
4515          UA       0       5      16      30      65      77      84      90      94      97
4516          UA     100
4517          KM   **********

4518          KK  RDBOHR
4519          KM        RETRIEVE FLOW FROM STREET INTERSECTION DIVERSION
4520          KM        FCD#98-36
4521          DR   DBOHR
4522          KM   **********

4523          KK  COM112
4524          KM        COMBINE 112 + DBOHR
4525          KM        FCD#98-36
4526          HC       2
4527          KM   **********

4528          KK  RCP112
4529          KM
4530          KM        ROUTE COM112 TO CP61 (TYPE 1)
4531          KM
4532          RS       1    FLOW
4533          RC    .013    .016    .013     645   .0026
4534          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
4535          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
4536          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
4537          KK     113
4538          KM   SUB-BASIN 113
4539          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4540          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4541          KM     L =  .71  Kb = .063  Adj. Slope =   23.0
4542          BA    .092
4543          LG    .290    .250   4.800    .380  25.000
4544          UC    .758    .806
4545          UA       0       5      16      30      65      77      84      90      94      97
4546          UA     100
4547          KM   **********

4548          KK    CP61
4549          KM    COMBINE 112 + 113
4550          KM        FCD#98-36
4551          HC       2
4552          KM   **********

4553          KK  RCP113
4554          KM
4555          KM        ROUTE CP613 TO CP114A (TYPE 1)
4556          KM
4557          RS       1    FLOW
4558          RC    .013    .016    .013     545   .0020
4559          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
4560          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
4561          KM   **********

4562          KK     114
4563          KM   SUB-BASIN 114
4564          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4565          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4566          KM     L =  .63  Kb = .056  Adj. Slope =   25.0
4567          BA    .080
4568          LG    .250    .250   4.800    .360  30.000
4569          UC    .587    .598
4570          UA       0       5      16      30      65      77      84      90      94      97
4571          UA     100
4572          KM   **********

4573          KK  DSD114
4574          KM        DIVERT STORM DRAIN FLOW TO DRAINAGE AREA 115
4575          DT   SD114
4576          DI       0      27    1000
4577          DQ       0      27      27
4578          KM   **********

4579          KK  CP114a
4580          KM
4581          KM        COMBINE CP61 +  114
4582          KM
4583          HC       2
4584          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4585          KK   4B114
4586          KM        Retention Basin Storage for Drainage area 114
4587          KM        FLOW DIVERTED INTO A 5.32 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
4588          KM         -100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
4589          KM         -  0% ESCAPES THE SUB BASIN.
4590          KM        FCD#98-36
4591          DT  OUT114    5.32
4592          DI       0      10     100    1000
4593          DQ       0      10     100    1000
4594          KM   **********

4595          KK  RCP114
4596          KM
4597          KM        ROUTE CP114A TO COM115 (TYPE 3)
4598          KM
4599          RS       1    FLOW
4600          RC    .013    .016    .013     661   .0017
4601          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
4602          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
4603          KM   **********

4604          KK     115
4605          KM   SUB-BASIN 115
4606          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4607          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4608          KM     L =  .34  Kb = .089  Adj. Slope =   29.0
4609          BA    .042
4610          LG    .380    .250   4.800    .420  14.000
4611          UC    .542    .481
4612          UA       0       3       5       8      12      20      43      75      90      96
4613          UA     100
4614          KM   **********

4615          KK  RSD114
4616          KM        RETRIEVE STORM DRAIN FLOW DIVERTED FROM BASIN 114
4617          DR   SD114
4618          KM   **********

4619          KK   TL114
4620          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 114
4621          RT       0       1       1
4622          KM   **********

4623          KK  COM115
4624          KM
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4625          KM        COMBINE RCP114 + 115 + SD114
4626          KM
4627          HC       3
4628          KM   **********
1                                        HEC-1 INPUT                                                          PAGE 98

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4629          KK  DSD115
4630          KM        DIVERT STORM DRAIN FLOW TO DRAINAGE AREA 116
4631          DT   SD115
4632          DI       0      23    1000
4633          DQ       0      23      23
4634          KM   **********

4635          KK  RCP115
4636          KM
4637          KM        ROUTE COM115 TO CP80 (TYPE 4)
4638          KM
4639          RS       1    FLOW
4640          RC    .013    .016    .013     880   .0016
4641          RX   99.99  100.00  104.00  104.00  200.15  200.15  204.15  204.15
4642          RY   20.43   10.43   10.43   10.00   10.00   10.43   10.43   20.43
4643          KM   **********

4644          KK     118
4645          KM   SUB-BASIN 118
4646          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4647          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4648          KM     L =  .77  Kb = .044  Adj. Slope =   32.0
4649          BA    .158
4650          LG    .200    .250   4.550    .430  46.000
4651          UC    .492    .391
4652          UA       0       5      16      30      65      77      84      90      94      97
4653          UA     100
4654          KM   **********

4655          KK  DSF118
4656          KM
4657          KM        The hydrograph remaining as SF118 is the storm drain flow which
4658          KM        is time lag routed to detention basin 4B116, and combined with
4659          KM        the hydrograph for drainage sub-basin 116. Only flow from the
4660          KM        storm drain and the flow for drainage sub-basin 116 are
4661          KM        storage routed through detention basin 4B116.
4662          KM
4663          DT   SF118       0       0       0       0       0       0       0
4664          DI       0      39     100    1000
4665          DQ       0       0      61     961
4666          KM   **********

4667          KK  TL118A
4668          KM
4669          KM        Route the storm drain hydrograph using the time
4670          KM        lag option of the RT card. The time lag for SF118 hydrograph
4671          KM        is less than 5 minutes but at the request of the FCDMC to
4672          KM        route all hydrographs, the interger value of 1 will be
4673          KM        used in field 3 of the RT card to time lag the storm drain
4674          KM        flow one time increment of the IT card, 5-minutes, as it
4675          KM        flows through the 42-inch RGRCP at a velocity of 5.5 fps
4676          KM        to detention basin 4B116.
4677          KM
4678          RT       0       1       1
1                                        HEC-1 INPUT                                                          PAGE 99

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4679          KM   **********

4680          KK     116
4681          KM   SUB-BASIN 116
4682          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4683          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4684          KM     L =  .63  Kb = .053  Adj. Slope =   27.0
4685          BA    .140
4686          LG    .250    .250   4.800    .360  30.000
4687          UC    .542    .397
4688          UA       0       5      16      30      65      77      84      90      94      97
4689          UA     100
4690          KM   **********

4691          KK  SD+116
4692          KM
4693          KM        Combine the routed storm drain flow from drainage sub-basin 118,
4694          KM        SF118, with the hydrograph from drainage sub-basin 116.
4695          KM
4696          HC       2
4697          KM   **********

4698          KK   4B116
4699          KM        Retention Basin Storage for Drainage area 116
4700          KM        FLOW DIVERTED INTO A 14.19 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
4701          KM         -100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
4702          KM         -  0% ESCAPES THE SUB BASIN.
4703          KM        FCD#98-36
4704          DT  OUT116   14.19
4705          DI       0      10     100    1000
4706          DQ       0      10     100    1000
4707          KM   **********

4708          KK  RSD115
4709          KM        RETRIEVE STORM DRAIN FLOW DIVERTED FROM BASIN 115
4710          DR   SD115
4711          KM   **********
```

```
4712          KK   TL115
4713          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 115
4714          RT       0       1       1
4715          KM   **********

4716          KK    CP80
4717          KM
4718          KM        COMBINE 115 + 116 + DIV 115
4719          KM
4720          HC       3
4721          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4722          KK  DSD116
4723          KM        DIVERT STORM DRAIN FLOW TO DRAINAGE AREA 118
4724          DT   SD116
4725          DI       0      23    1000
4726          DQ       0      23      23
4727          KM   **********

4728          KK  RCP116
4729          KM
4730          KM        ROUTE CP80 TO CP81 (TYPE 4)
4731          KM
4732          RS       1    FLOW
4733          RC    .013    .016    .013    1192   .0020
4734          RX   99.99  100.00  104.00  104.00  200.15  200.15  204.15  204.15
4735          RY   20.43   10.43   10.43   10.00   10.00   10.43   10.43   20.43
4736          KM   **********

4737          KK   SF118
4738          KM
4739          KM        Recall the surface flow of drainage sub-basin 118, SF118.
4740          KM
4741          DR   SF118
4742          KM   **********

4743          KK  RSD116
4744          KM        RETRIEVE STORM DRAIN FLOW DIVERTED FROM BASIN 116
4745          DR   SD116
4746          KM   **********

4747          KK   TL116
4748          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 116
4749          RT       0       1       1
4750          KM   **********

4751          KK    CP81
4752          KM
4753          KM        COMBINE CP80 + SF118 + SD116
4754          KM
4755          HC       3
4756          KM   **********

4757          KK  DSD118
4758          KM        DIVERT STORM DRAIN FLOW TO DRAINAGE AREA 108
4759          DT   SD118
4760          DI       0      53    1000
4761          DQ       0      53      53
4762          KM   **********

4763          KK   DSAHR
4764          KM        DIVERT FLOW FROM STREET INTERSECTION DIVERSION SOUTH OF SOUTHERN AVENUE
4765          KM        FCD#98-36
4766          DT   DHRSA
4767          DI     0.0   107.7   271.9   710.6  1495.2
4768          DQ     0.0     0.0    84.8   228.0   494.8
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4769          KM   **********

4770          KK  RCP118
4771          KM
4772          KM        ROUTE CP81 TO CP83 (TYPE 3)
4773          KM
4774          RS       2    FLOW
4775          RC    .013    .016    .013    2513   .0058
4776          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
4777          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
4778          KM   **********

4779          KK     107
4780          KM   SUB-BASIN 107
4781          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4782          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4783          KM     L =  .56  Kb = .053  Adj. Slope =   27.0
4784          BA    .154
4785          LG    .250    .250   4.700    .380  45.000
4786          UC    .483    .302
4787          UA       0       5      16      30      65      77      84      90      94      97
4788          UA     100
4789          KM   **********

4790          KK   4B107
4791          KM        Retention Basin Storage for Drainage area 107
4792          KM        FLOW DIVERTED INTO A 7.05 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
4793          KM         -100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
4794          KM         -  0% ESCAPES THE SUB BASIN.
4795          KM        FCD#98-36
4796          DT  OUT107    7.05
```

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4797          DI       0      10     100    1000
4798          DQ       0      10     100    1000
4799          KM   **********

4800          KK     108
4801          KM   SUB-BASIN 108
4802          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4803          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4804          KM     L =  .64  Kb = .051  Adj. Slope =   25.0
4805          BA    .099
4806          LG    .220    .250   4.550    .430  51.000
4807          UC    .533    .482
4808          UA       0       5      16      30      65      77      84      90      94      97
4809          UA     100
4810          KM   **********

4811          KK  RSD118
4812          KM        RETRIEVE STORM DRAIN FLOW DIVERTED FROM BASIN 118
4813          DR   SD118
4814          KM   **********
1                                        HEC-1 INPUT                                          PAGE102

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4815          KK   TL118
4816          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 118
4817          RT       0       1       1
4818          KM   **********

4819          KK    CP82
4820          KM
4821          KM       COMBINE 107 + 108 + SD118
4822          KM
4823          HC       3
4824          KM   **********

4825          KK  DSD108
4826          KM        DIVERT STORM DRAIN FLOW TO DRAINAGE AREA 104
4827          DT   SD108
4828          DI       0      57    1000
4829          DQ       0      57      57
4830          KM   **********

4831          KK   4B108
4832          KM        Retention Basin Storage for Drainage area 108
4833          KM        FLOW DIVERTED INTO A 6.85 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
4834          KM         -100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
4835          KM         -  0% ESCAPES THE SUB BASIN.
4836          KM        FCD#98-36
4837          DT  OUT108    6.85
4838          DI       0      10     100    1000
4839          DQ       0      10     100    1000
4840          KM   **********

4841          KK    CP83
4842          KM
4843          KM        COMBINE CP81 + CP82
4844          KM
4845          HC       2
4846          KM   **********

4847          KK  RCP108
4848          KM
4849          KM        ROUTE CP83 TO CP84 (TYPE 3)
4850          KM
4851          RS       2    FLOW
4852          RC    .013    .016    .013    2700   .0048
4853          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
4854          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
4855          KM   **********

4856          KK  RSF101
4857          KM        RETRIEVE STREET FLOW DIVERSION FROM BASIN 94
4858          KM        FCD#98-36
4859          DR   SF101
4860          KM   **********
1                                        HEC-1 INPUT                                          PAGE103

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4861          KK  RSF102
4862          KM        RETRIEVE STREET FLOW DIVERSION FROM BASIN 102
4863          KM        FCD#98-36
4864          DR   SF102
4865          KM   **********

4866          KK  COM102
4867          KM
4868          KM        COMBINE SF101 + SF102
4869          KM
4870          HC       2
4871          KM   **********

4872          KK  RCP102
4873          KM
4874          KM        ROUTE COM102 TO CP103 (TYPE 3)
4875          KM
4876          RS       1    FLOW
4877          RC    .013    .016    .013    1340   .0012
4878          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
4879          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
4880          KM   **********
```

```
4881          KK  RSD101
4882          KM        RETRIEVE STORM DRAIN DIVERSION FROM BASIN 94
4883          KM        FCD#98-36
4884          DR   SD101
4885          KM   **********

4886          KK   TL101
4887          KM        TIME LAG FOR STORM DRAIN FLOW FROM BASIN 94
4888          RT       0       1       1
4889          KM   **********

4890          KK   CP103
4891          KM
4892          KM        COMBINE SD101 + RCP102
4893          KM        FCD#98-36
4894          HC       2
4895          KM   **********

4896          KK  RCP103
4897          KM
4898          KM        ROUTE CP103 TO CP84 (TYPE 3)
4899          KM
4900          RS       1    FLOW
4901          RC    .013    .016    .013     576   .0007
4902          RX      99     100     104   104.1  180.01  180.02  184.02  185.02
4903          RY   20.31   10.31   10.31      10      10   10.31   10.31   20.31
4904          KM   **********
1                                          HEC-1 INPUT                                                    PAGE104

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


4905          KK     104
4906          KM   SUB-BASIN 104
4907          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4908          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4909          KM     L =  .54  Kb = .056  Adj. Slope =   30.0
4910          BA    .073
4911          LG    .250    .250   4.800    .360  46.000
4912          UC    .467    .431
4913          UA       0       5      16      30      65      77      84      90      94      97
4914          UA     100
4915          KM   **********

4916          KK   4B104
4917          KM        Retention Basin Storage for Drainage area 104
4918          KM        FLOW DIVERTED INTO A 1.91 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
4919          KM         -100% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
4920          KM         -  0% ESCAPES THE SUB BASIN.
4921          KM        FCD#98-36
4922          DT  OUT104    1.91
4923          DI       0      10     100    1000
4924          DQ       0       5      50     500
4925          KM   **********

4926          KK    CP84
4927          KM
4928          KM        COMBINE CP83 + 103 + 104
4929          KM
4930          HC       3
4931          KM   **********

4932          KK  RSD108
4933          KM        RETRIEVE STORM DRAIN FLOW DIVERTED FROM BASIN 108
4934          DR   SD108
4935          KM   **********

4936          KK   TL108
4937          KM        TIME LAG FOR DIVERTED FLOW FROM BASIN 108
4938          RT       0       1       1
4939          KM   **********

4940          KK  COM104
4941          KM
4942          KM        COMBINE CP84 + SD108
4943          KM        FCD#98-36
4944          HC       2
4945          KM   **********

4946          KK  DDSAGR
4947          KM        DIVERT FLOW FROM STREET INTERSECTION DIVERSION SOUTH OF SOUTHERN AVENUE
4948          KM        DIVERT FLOWS TO AREA 121
4949          KM       72-INCH SD. ALONG GREENFIELD RD.
4950          KM        INTERCEPTION CAPACITY    = 18 CFS (5 CATCH BASINS)
4951          KM        INTERCEPTED UPSTREAM     = 57 CFS (FROM SD108)
4952          KM        INTERCEPTED UPSTREAM     = 69 CFS (FROM SD108)
1                                          HEC-1 INPUT                                                    PAGE105

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4953          KM        TOTAL TRANSPORT = 18 + 57 + 69 = 144 CFS
4954          KM        TOTAL TRANSPORT CAPACITY = 133 CFS
4955          KM        FCD#98-36
4956          DT   DSAGR
4957          DI     0.0   133.0   259.9   458.2   988.2  1945.4
4958          DQ     0.0   133.0   133.0   150.7   374.0   662.0
4959          KM   **********

4960          KK  DDIV97
4961          KM        DIVERT STREET FLOW SOUTH OF SOUTHERN AVENUE TO BASIN 120
4962          KM        FCD#98-36
4963          DT   DIV97
4964          DI       0     10.     100.    1000.
4965          DQ       0      6.      60.     600.
4966          KM   **********
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```
4967          KK      96
4968          KM   SUB-BASIN 96
4969          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4970          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4971          KM     L =  .42  Kb = .057  Adj. Slope =  28.00
4972          BA    .069
4973          LG    .300    .250   4.800    .310   5.000
4974          UC    .563    .448
4975          UA       0       5      16      30      65      77      84      90      94      97
4976          UA     100
4977          KM   **********

4978          KK      97
4979          KM   SUB-BASIN 97
4980          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
4981          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
4982          KM     L =  .28  Kb = .037  Adj. Slope =   14.0
4983          BA    .043
4984          LG    .140    .250   4.800    .360  64.000
4985          UC    .308    .218
4986          UA       0       5      16      30      65      77      84      90      94      97
4987          UA     100
4988          KM   **********

4989          KK    CP79
4990          KM
4991          KM        COMBINE PA94 + COM104 + 96 + 97
4992          KM
4993          HC       4
4994          KM   **********

4995          KK    PA97
4996          KM
4997          RS       1    STOR       0      -1       0       0       0
4998          SV    0.00    0.06    0.83    1.97    9.79   51.71   66.29   70.30   74.42   78.64
4999          SE  1279.0 1280.00 1282.00 1283.00 1284.00 1286.00 1286.40 1286.50 1286.60 1286.70
5000          SQ    0.00    0.00    0.00    0.00   15.20   26.30  461.42  665.73  951.12 1293.92
5001          KM   **********
5002          KM
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5003          KM        This diversion represents possible breakout flows over the Eastern
5004          KM        Canal. This flow will not be retrieved into the model.
5005          KM

5006          KK   CPD97
5007          KM        DIVERT FLOW over Eastern Canal due to weiring over its banks
5008          DT    PD97
5009          DI    0.00   15.20   26.30  461.42  665.73  951.12 1293.92 3119.44
5010          DQ    0.00    0.00    0.00    0.00   17.36   97.71  248.42  911.44
5011          KM   **********

5012          KK   DCD97
5013          KM        FLOW DIVERTED THROUGH THE 24 IN RCP, 160 LF CULVERT THAT RUNS ALONG EAST
5014          KM        AND DISCHARGES INTO BASIN 120
5015          DT    CD97
5016          DI    0.00   15.20   26.30  461.42  665.73  951.12 1293.92 3119.40
5017          DQ    0.00   15.20   26.30   27.80   29.00   29.70   30.50   32.00
5018          KM   **********

5019          KK   DWD97
5020          KM        WEIR FLOW OVER SOUTHERN AVENUE DIVERTED TO PA128
5021          KM
5022          DT    WD97
5023          DI    0.00   15.20   26.30  461.42  665.73  951.12 1293.92 3119.40
5024          DQ    0.00    0.00    0.00  433.62  619.37  823.70 1015.00 2176.00
5025          KM   **********

5026          KK   RCD97
5027          KM        RETRIEVE FLOW FROM CULVERT DIVERSION
5028          KM        FCD#98-36
5029          DR    CD97
5030          KM   **********

5031          KK   RWD97
5032          KM        RETRIEVE FLOW FROM WEIR DIVERSION OVER UNIVERSITY DRIVE
5033          KM        FCD#98-36
5034          DR    WD97
5035          KM   **********

5036          KK  RDIV97
5037          KM        RETRIEVE FLOW FROM STREET DIVERSION
5038          KM        FCD#98-36
5039          DR   DIV97
5040          KM   **********

5041          KK    TL97
5042          KM        TIME LAG FOR STREET FLOW DIVERTED FROM BASIN 97
5043          RT       0       1       1
5044          KM   **********
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5045          KK   CP120
5046          KM        COMBINE CD97 + WD97 + DIV97 + PA97(FALSE CONNECTION)
5047          KM        FCD#98-36
5048          HC       4
5049          KM   **********
5050          KM
5051          KM        THIS DIVERSION WAS ADDED AFTER THE HYDRAULIC MODELS HAD BEEN RUN.
```

```
5052          KK  CPD120
5053          KM        THE DIVERSION REPRESENTS POSSIBLE BREAKOUT FLOWS OVER THE EASTERN CANAL.
5054          KM        THIS FLOW WILL NOT BE RETRIEVED INTO THE MODEL.
5055          KM        THE DIVERSION CURVE WAS GENERATED USING A HEC-2 MODEL (CHN128.DAT) THAT
5056          KM        IS INCLUDED IN THE HYDRAULIC ANALYSIS SECTION, UNDER "HYDRAULIC MODELING
5057          KM        OF PA97 - PA128 CONVEYANCE CORRIDOR"
5058          KM        FCD#98-36
5059          DT   PD120
5060          DI    0.00   89.00  115.00  140.00  155.00  205.00  300.00
5061          DQ    0.00    0.00   14.00   34.00   46.50   94.70  185.00
5062          KM   **********

5063          KK   RCP97
5064          KM
5065          KM        ROUTE CP120 TO CP85 (TYPE 5)
5066          KM
5067          RS       3    FLOW
5068          RC    .027    .027    .027    1749   .0008
5069          RX      90     110     150     155     160     165     205     225
5070          RY      30      18      18      13      13      18      18      30
5071          KM   **********

5072          KK     120
5073          KM   SUB-BASIN 120
5074          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5075          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5076          KM     L =  .34  Kb = .111  Adj. Slope =   30.0
5077          BA    .057
5078          LG    .500    .250   4.800    .460    .000
5079          UC    .712    .548
5080          UA       0       3       5       8      12      20      43      75      90      96
5081          UA     100
5082          KM   **********

5083          KK    CP85
5084          KM
5085          KM        COMBINE CP79 + 120
5086          KM
5087          HC       2
5088          KM   **********
5089          KM
5090          KM        THIS DIVERSION WAS MODIFIED AFTER THE HYDRAULIC MODELS HAD BEEN RUN.
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5091          KK  CCD128
5092          KM        DIVERT CHANNEL/CULVERT CAPACITY TO SOUTH PAST PONDING AREA 128.
5093          KM        AN EXISTING CHANNEL COLLECTS AND CONVEYS FLOWS TO THE SOUTH PAST
5094          KM        PONDING AREA 128. IT APPEARS THAT THIS CHANNEL IS PART OF THE
5095          KM        REMAINING IRRIGATION SYSTEM. THE CAPACITY OF THE CHANNEL/CULVERT
5096          KM        IS ESTIMATED AT 60 CFS.
5097          DT   CD128
5098          DI    0.00   45.00   70.00   89.00  100.50  107.60  115.00 1000.00
5099          DQ    0.00   45.00   54.00   55.80   56.80   58.40   60.00   60.00
5100          KM   **********

5101          KK     121
5102          KM   SUB-BASIN 121
5103          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5104          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5105          KM     L =  .36  Kb = .031  Adj. Slope =   22.0
5106          BA    .040
5107          LG    .100    .250   4.800    .430  80.000
5108          UC    .267    .236
5109          UA       0       5      16      30      65      77      84      90      94      97
5110          UA     100
5111          KM   **********

5112          KK  RDSAGR
5113          KM        RETRIEVE FLOW FROM STREET INTERSECTION DIVERSION
5114          KM        FCD#98-36
5115          DR   DSAGR
5116          KM   **********

5117          KK  COM128
5118          KM
5119          KM        COMBINE 121 + DSAGR
5120          KM
5121          HC       2
5122          KM   **********

5123          KK   CP91A
5124          KM
5125          KM        COMBINE DCHAN + 121
5126          KM
5127          HC       2
5128          KM   **********

5129          KK     144
5130          KM   SUB-BASIN 144
5131          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5132          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5133          KM     L =  .49  Kb = .052  Adj. Slope =   37.0
5134          BA    .069
5135          LG    .220    .250   4.800    .370  43.000
5136          UC    .387    .335
5137          UA       0       5      16      30      65      77      84      90      94      97
5138          UA     100
5139          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
5140          KK     146
5141          KM   SUB-BASIN 146
5142          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5143          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5144          KM     L =  .51  Kb = .060  Adj. Slope =   83.0
5145          BA    .044
5146          LG    .250    .250   4.700    .380  30.000
5147          UC    .325    .368
5148          UA       0       5      16      30      65      77      84      90      94      97
5149          UA     100
5150          KM   **********

5151          KK   CP144
5152          KM
5153          KM        COMBINE 144 + 146
5154          KM
5155          HC       2
5156          KM   **********

5157          KK  RCP144
5158          KM
5159          KM        ROUTE CP144 TO CP86 (ADOT CHANNEL)
5160          KM
5161          RS       1    FLOW
5162          RC    .022    .022    .022    1323   .0047
5163          RX      90   117.9     118     141     142     185   185.1     237
5164          RY      21       9       9       3       3       9       9      21
5165          KM   **********

5166          KK     125
5167          KM   SUB-BASIN 125
5168          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5169          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5170          KM     L =  .70  Kb = .055  Adj. Slope =   37.0
5171          BA    .101
5172          LG    .250    .250   4.800    .360  30.000
5173          UC    .521    .498
5174          UA       0       5      16      30      65      77      84      90      94      97
5175          UA     100
5176          KM   **********

5177          KK     143
5178          KM   SUB-BASIN 143
5179          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5180          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5181          KM     L =  .62  Kb = .056  Adj. Slope =   39.0
5182          BA    .093
5183          LG    .250    .250   4.800    .360  31.000
5184          UC    .475    .428
5185          UA       0       5      16      30      65      77      84      90      94      97
5186          UA     100
5187          KM   **********
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5188          KK    CP86
5189          KM
5190          KM        COMBINE 125 + 143 + RCP144
5191          KM
5192          HC       3
5193          KM   **********

5194          KK  RCP143
5195          KM
5196          KM        ROUTE CP86 TO CP87 (ADOT CHANNEL)
5197          KM
5198          RS       1    FLOW
5199          RC    .022    .022    .022    1397   .0047
5200          RX      90   117.9     118     141     142     185   185.1     237
5201          RY      21       9       9       3       3       9       9      21
5202          KM   **********

5203          KK     124
5204          KM   SUB-BASIN 124
5205          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5206          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5207          KM     L =  .57  Kb = .095  Adj. Slope =   39.0
5208          BA    .072
5209          LG    .430    .250   4.600    .490   8.000
5210          UC    .792    .816
5211          UA       0       3       5       8      12      20      43      75      90      96
5212          UA     100
5213          KM   **********

5214          KK   DRMSA
5215          KM        RETRIEVE INTERSECTION FLOW DIVERSION DATA
5216          KM        FCD#98-36
5217          DR   DHRSA
5218          KM   **********

5219          KK   CP124
5220          KM
5221          KM        COMBINE 124 + DHRSA
5222          KM        FCD#98-36
5223          HC       2
5224          KM   **********

5225          KK  RCP124
5226          KM
5227          KM        ROUTE CP124 TO CP87 (TYPE 2)
5228          KM
```

```
5229          RS       1    FLOW
5230          RC    .013    .016    .013     916   .0080
5231          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
5232          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
5233          KM   **********
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5234          KK     136
5235          KM   SUB-BASIN 136
5236          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5237          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5238          KM     L =  .41  Kb = .062  Adj. Slope =   29.0
5239          BA    .066
5240          LG    .280    .250   4.800    .390  29.000
5241          UC    .446    .348
5242          UA       0       5      16      30      65      77      84      90      94      97
5243          UA     100
5244          KM   **********

5245          KK     137
5246          KM   SUB-BASIN 137
5247          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5248          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5249          KM     L =  .52  Kb = .062  Adj. Slope =   75.0
5250          BA    .032
5251          LG    .250    .250   4.800    .360  30.000
5252          UC    .350    .486
5253          UA       0       5      16      30      65      77      84      90      94      97
5254          UA     100
5255          KM   **********

5256          KK    CP87
5257          KM
5258          KM        COMBINE 136 + 137 + RCP143 + RCP124
5259          KM
5260          HC       4
5261          KM   **********

5262          KK  RCP136
5263          KM
5264          KM        ROUTE CP87 TO CP88 (ADOT CHANNEL)
5265          KM
5266          RS       1    FLOW
5267          RC    .022    .022    .022    2478   .0047
5268          RX      90   117.9     118     141     142     185   185.1     237
5269          RY      21       9       9       3       3       9       9      21
5270          KM   **********

5271          KK     133
5272          KM   SUB-BASIN 133
5273          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5274          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5275          KM     L =  .49  Kb = .059  Adj. Slope =   18.0
5276          BA    .051
5277          LG    .250    .250   4.450    .450  30.000
5278          UC    .608    .657
5279          UA       0       5      16      30      65      77      84      90      94      97
5280          UA     100
5281          KM   **********
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5282          KK     132
5283          KM   SUB-BASIN 132
5284          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5285          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5286          KM     L =  .54  Kb = .051  Adj. Slope =   22.0
5287          BA    .093
5288          LG    .220    .250   4.650    .400  39.000
5289          UC    .508    .413
5290          UA       0       5      16      30      65      77      84      90      94      97
5291          UA     100
5292          KM   **********

5293          KK    CP88
5294          KM
5295          KM        COMBINE 132 + 133 + RCP136
5296          KM
5297          HC       3
5298          KM   **********

5299          KK  RCP132
5300          KM
5301          KM        ROUTE CP88 TO CP91 (ADOT CHANNEL)
5302          KM
5303          RS       1    FLOW
5304          RC    .022    .022    .022    2902   .0047
5305          RX      90   117.9     118     141     142     185   185.1     237
5306          RY      21       9       9       3       3       9       9      21
5307          KM   **********

5308          KK     123
5309          KM   SUB-BASIN 123
5310          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5311          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5312          KM     L =  .54  Kb = .050  Adj. Slope =   33.0
5313          BA    .103
5314          LG    .250    .250   4.800    .360  30.000
5315          UC    .429    .323
5316          UA       0       5      16      30      65      77      84      90      94      97
```

```
5317          UA     100
5318          KM   **********

5319          KK  RCP123
5320          KM
5321          KM        ROUTE 123 TO CP89 (TYPE 1)
5322          KM
5323          RS       1    FLOW
5324          RC    .013    .016    .013    1538   .0052
5325          RX   99.99  100.00  104.00  104.00  138.40  138.40  142.40  142.41
5326          RY   20.39   10.39   10.33   10.00   10.00   10.33   10.39   20.39
5327          KM   **********
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5328          KK     122
5329          KM   SUB-BASIN 122
5330          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5331          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5332          KM     L =  .47  Kb = .056  Adj. Slope =   25.0
5333          BA    .093
5334          LG    .300    .250   4.800    .340  11.000
5335          UC    .492    .356
5336          UA       0       5      16      30      65      77      84      90      94      97
5337          UA     100
5338          KM   **********

5339          KK    CP89
5340          KM
5341          KM        COMBINE 122 + 123
5342          KM
5343          HC       2
5344          KM   **********

5345          KK  RCP122
5346          KM
5347          KM        ROUTE CP89 TO CP90 (TYPE 2)
5348          KM
5349          RS       1    FLOW
5350          RC    .013    .016    .013    1044   .0025
5351          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
5352          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
5353          KM   **********

5354          KK     131
5355          KM   SUB-BASIN 131
5356          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5357          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5358          KM     L =  .35  Kb = .056  Adj. Slope =   14.0
5359          BA    .051
5360          LG    .270    .250   4.800    .360  24.000
5361          UC    .504    .407
5362          UA       0       5      16      30      65      77      84      90      94      97
5363          UA     100
5364          KM   **********

5365          KK   SB131
5366          KM        Retention Basin Storage for Drainage area 131
5367          KM        FLOW DIVERTED INTO A 0.95 AC-FT RETENTION VOLUME AND NOT RETRIEVED:
5368          KM         - 50% DIVERTED INTO THE STORAGE FACILITY UNTIL THE BASIN IS FULL
5369          KM         - 50% ESCAPES THE SUB BASIN.
5370          KM        FCD#98-36
5371          DT  OUT131    0.95
5372          DI       0      10     100    1000
5373          DQ       0       5      50     500
5374          KM   **********
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5375          KK    CP90
5376          KM
5377          KM        COMBINE CP89 + 131
5378          KM
5379          HC       2
5380          KM   **********

5381          KK  RCP131
5382          KM
5383          KM        ROUTE CP90 TO CP91 (TYPE 3)
5384          KM
5385          RS       1    FLOW
5386          RC    .013    .016    .013     667   .0036
5387          RX   99.99  100.00  104.00  104.00  180.02  180.02  184.02  184.03
5388          RY   20.31   10.31   10.31   10.00   10.00   10.31   10.31   20.31
5389          KM   **********

5390          KK     128
5391          KM   SUB-BASIN 128
5392          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5393          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5394          KM     L =  .66  Kb = .060  Adj. Slope =   29.0
5395          BA    .114
5396          LG    .280    .250   4.800    .390  30.000
5397          UC    .608    .527
5398          UA       0       5      16      30      65      77      84      90      94      97
5399          UA     100
5400          KM   **********

5401          KK    CP91
5402          KM
5403          KM        COMBINE CP85 + CP88 + CP90 + 121 + 128
```

```
5404          KM
5405          HC       4
5406          KM   **********

5407          KK   PA128
5408          KM
5409          KM        FCD#98-36
5410          RS       1    STOR       0      -1       0       0       0       0       0       0
5411          SV    0.00  138.34  139.59  140.83
5412          SE  1265.6  1283.5  1283.6  1283.7
5413          SQ       0       0    10.9    61.6
5414          KM   **********
5415          KM
5416          KM        This diversion represents possible breakout flows over the Eastern
5417          KM        Canal. This flow will not be retrieved into the model.
5418          KM
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5419          KK  CPD128
5420          KM        DIVERT FLOW Over the Eastern canal due to weiring over its banks
5421          KM        FCD#98-36
5422          DT   PD128
5423          DI       0     11.     62.
5424          DQ       0     11.     62.
5425          KM   **********

5426          KK  RCD128
5427          KM        RETRIEVE CULVERT/CHANNEL FLOW
5428          KM        FCD#98-36
5429          DR   CD128
5430          KM   **********

5431          KK   CP128
5432          KM
5433          KM        COMBINE PD128 + CD128
5434          KM        FCD#98-36
5435          HC       2
5436          KM   **********

5437          KK  RCP128
5438          KM
5439          KM        ROUTE CP128 TO CP92 (TYPE 5)
5440          KM
5441          RS       4    FLOW
5442          RC    .027    .027    .027    2766   .0003
5443          RX      90     110     150     155     160     165     205     225
5444          RY      30      18      18      13      13      18      18      30
5445          KM   **********

5446          KK     129
5447          KM   SUB-BASIN 129
5448          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5449          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5450          KM     L =  .59  Kb = .043  Adj. Slope =   31.0
5451          BA    .116
5452          LG    .240    .250   4.800    .370  32.000
5453          UC    .421    .317
5454          UA       0       5      16      30      65      77      84      90      94      97
5455          UA     100
5456          KM   **********

5457          KK    CP92
5458          KM
5459          KM        COMBINE CP91 + 129
5460          KM
5461          HC       2
5462          KM   **********
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5463          KK  RCP129
5464          KM
5465          KM        ROUTE CP92 TO CP97 (TYPE 5)
5466          KM
5467          RS       1    FLOW
5468          RC    .027    .027    .027     790   .0003
5469          RX      90     110     150     155     160     165     205     225
5470          RY      30      18      18      13      13      18      18      30
5471          KM   **********

5472          KK     150
5473          KM   SUB-BASIN 150
5474          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5475          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5476          KM     L =  .59  Kb = .087  Adj. Slope =   41.0
5477          BA    .096
5478          LG    .410    .250   4.650    .490  18.000
5479          UC    .704    .625
5480          UA       0       3       5       8      12      20      43      75      90      96
5481          UA     100
5482          KM   **********

5483          KK  RCP150
5484          KM
5485          KM        ROUTE 150 TO CP93 (TYPE 2)
5486          KM
5487          RS       1    FLOW
5488          RC    .013    .016    .013     994   .0046
5489          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
5490          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
```

```
5491          KM   **********

5492          KK     149
5493          KM   SUB-BASIN 149
5494          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5495          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5496          KM     L =  .77  Kb = .106  Adj. Slope =   39.0
5497          BA    .087
5498          LG    .500    .250   4.650    .490    .000
5499          UC   1.179   1.450
5500          UA       0       3       5       8      12      20      43      75      90      96
5501          UA     100
5502          KM   **********

5503          KK    CP93
5504          KM
5505          KM        COMBINE 149 + 150
5506          KM
5507          HC       2
5508          KM   **********
1                                          HEC-1 INPUT                                          PAGE117

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5509          KK  RCP149
5510          KM
5511          KM        ROUTE CP93 TO CP94 (TYPE 2)
5512          KM
5513          RS       1    FLOW
5514          RC    .013    .016    .013    1144   .0075
5515          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
5516          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
5517          KM   **********

5518          KK     141
5519          KM   SUB-BASIN 141
5520          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5521          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5522          KM     L =  .32  Kb = .100  Adj. Slope =   31.0
5523          BA    .038
5524          LG    .430    .250   4.800    .440   9.000
5525          UC    .575    .519
5526          UA       0       3       5       8      12      20      43      75      90      96
5527          UA     100
5528          KM   **********

5529          KK  RCP141
5530          KM
5531          KM        ROUTE 141 TO CP94 (SPECIAL TYPE)
5532          KM
5533          RS       4    FLOW
5534          RC    .035    .035    .035    1345   .0037
5535          RX      80    99.9     100   126.5   127.5     154   154.1     174
5536          RY      21      11      11    10.6    10.6      11      11      21
5537          KM   **********

5538          KK     147
5539          KM   SUB-BASIN 147
5540          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5541          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5542          KM     L =  .60  Kb = .072  Adj. Slope =   33.0
5543          BA    .084
5544          LG    .330    .250   4.500    .480  20.000
5545          UC    .663    .639
5546          UA       0       5      16      30      65      77      84      90      94      97
5547          UA     100
5548          KM   **********

5549          KK  RCP147
5550          KM
5551          KM        ROUTE 147 TO CP94 (SPECIAL TYPE)
5552          KM
5553          RS       4    FLOW
5554          RC    .035    .035    .035    1896   .0069
5555          RX      90   143.9     144     154     191     211   211.1     332
5556          RY      21    10.6    10.6    10.4    10.4    10.6    10.6      21
5557          KM   **********
1                                          HEC-1 INPUT                                          PAGE118

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5558          KK     148
5559          KM   SUB-BASIN 148
5560          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5561          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5562          KM     L =  .48  Kb = .103  Adj. Slope =   42.0
5563          BA    .047
5564          LG    .450    .250   4.700    .460   6.000
5565          UC    .717    .812
5566          UA       0       3       5       8      12      20      43      75      90      96
5567          UA     100
5568          KM   **********

5569          KK  RCP148
5570          KM
5571          KM        ROUTE 148 TO RCP248 (SPECIAL TYPE)
5572          KM
5573          RS       2    FLOW
5574          RC    .035    .035    .035     925   .0063
5575          RX      90   143.9     144     154     191     211   211.1     332
5576          RY      21    10.6    10.6    10.4    10.4    10.6    10.6      21
5577          KM   **********
```

```
5578          KK  RCP248
5579          KM
5580          KM        ROUTE RCP148 TO CP94 (TYPE 2)
5581          KM
5582          RS       1    FLOW
5583          RC    .013    .016    .013     721   .0033
5584          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
5585          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
5586          KM   **********

5587          KK     142
5588          KM   SUB-BASIN 142
5589          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5590          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5591          KM     L =  .38  Kb = .107  Adj. Slope =   32.0
5592          BA    .084
5593          LG    .500    .250   4.400    .590    .000
5594          UC    .767    .521
5595          UA       0       3       5       8      12      20      43      75      90      96
5596          UA     100
5597          KM   **********

5598          KK    CP94
5599          KM
5600          KM        COMBINE CP93 + 141 + 142 + 147 + 148
5601          KM
5602          HC       5
5603          KM   **********
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5604          KK  RCP142
5605          KM
5606          KM        ROUTE CP94 TO CP95 (TYPE 2)
5607          KM
5608          RS       2    FLOW
5609          RC    .013    .016    .013    2238   .0022
5610          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
5611          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
5612          KM   **********

5613          KK     138
5614          KM   SUB-BASIN 138
5615          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5616          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5617          KM     L =  .56  Kb = .083  Adj. Slope =   27.0
5618          BA    .073
5619          LG    .370    .250   4.500    .500  15.000
5620          UC    .804    .812
5621          UA       0       5      16      30      65      77      84      90      94      97
5622          UA     100
5623          KM   **********

5624          KK  RCP138
5625          KM
5626          KM        ROUTE 138 TO CP95 (TYPE 2)
5627          KM
5628          RS       1    FLOW
5629          RC    .013    .016    .013    1587   .0054
5630          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
5631          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
5632          KM   **********

5633          KK     139
5634          KM   SUB-BASIN 139
5635          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5636          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5637          KM     L =  .54  Kb = .105  Adj. Slope =   28.0
5638          BA    .098
5639          LG    .500    .250   4.250    .640    .000
5640          UC   1.092    .936
5641          UA       0       3       5       8      12      20      43      75      90      96
5642          UA     100
5643          KM   **********

5644          KK    CP95
5645          KM
5646          KM        COMBINE CP94 + 138 + 139
5647          KM
5648          HC       3
5649          KM   **********
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5650          KK  DDBEHR
5651          KM        DIVERT FLOW FROM STREET INTERSECTION DIVERSION SOUTH OF BASELINE ROAD
5652          KM        DIVERT FLOWS OUT OF THE STUDY AREA
5653          KM        FCD#98-36
5654          DT   DBEHR
5655          DI     0.0    86.6   222.3   585.2  1241.5
5656          DQ     0.0     0.0    79.2   215.4   473.6
5657          KM   **********

5658          KK  RCP139
5659          KM
5660          KM        ROUTE CP95 TO CP96 (TYPE 2)
5661          KM
5662          RS       3    FLOW
5663          RC    .013    .016    .013    2402   .0041
5664          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
5665          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
```

```
5666          KM   **********

5667          KK     135
5668          KM   SUB-BASIN 135
5669          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5670          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5671          KM     L =  .65  Kb = .099  Adj. Slope =   25.0
5672          BA    .105
5673          LG    .470    .250   4.800    .460   6.000
5674          UC   1.146   1.102
5675          UA       0       3       5       8      12      20      43      75      90      96
5676          UA     100
5677          KM   **********

5678          KK    CP96
5679          KM
5680          KM        COMBINE CP95 + 135
5681          KM
5682          HC       2
5683          KM   **********

5684          KK  RCP135
5685          KM
5686          KM        ROUTE CP96 TO CP97 (TYPE 2)
5687          KM
5688          RS       1    FLOW
5689          RC    .013    .016    .013     741   .0035
5690          RX   99.99  100.00  104.00  104.00  152.00  152.00  156.00  156.01
5691          RY   20.32   10.32   10.26   10.00   10.00   10.26   10.32   20.32
5692          KM   **********

5693          KK     134
5694          KM   SUB-BASIN 134
5695          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5696          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5697          KM     L =  .51  Kb = .085  Adj. Slope =   35.0
5698          BA    .101
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5699          LG    .400    .250   4.600    .480  12.000
5700          UC    .679    .519
5701          UA       0       3       5       8      12      20      43      75      90      96
5702          UA     100
5703          KM   **********

5704          KK  RCP134
5705          KM
5706          KM        ROUTE 134 TO CP97 (SPECIAL TYPE)
5707          KM
5708          RS       4    FLOW
5709          RC    .035    .035    .035    2171   .0046
5710          RX      89      90      99     100     719     720     730     731
5711          RY    13.0    10.9    10.9    10.0    10.0    10.9    10.9    13.0
5712          KM   **********

5713          KK     130
5714          KM   SUB-BASIN 130
5715          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
5716          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .931
5717          KM     L =  .54  Kb = .079  Adj. Slope =   24.0
5718          BA    .087
5719          LG    .380    .250   4.000    .690  20.000
5720          UC    .808    .718
5721          UA       0       3       5       8      12      20      43      75      90      96
5722          UA     100
5723          KM   **********

5724          KK    CP97
5725          KM
5726          KM        COMBINE CP92 + CP96 + 130 + 134
5727          KM
5728          HC       4
5729          KM   **********

5730          KK   PA130
5731          KM
5732          KM        FCD#98-36
5733          RS       1    STOR       0      -1       0       0       0       0       0       0
5734          SV    0.00    0.00    0.64   13.49   16.75   33.41   46.02   64.95
5735          SE  1276.0 1278.00 1280.00 1281.80 1282.00 1282.70 1283.10 1283.60
5736          SQ    0.00   47.80  143.00  217.00  255.10 1107.70 1599.10 5420.90
5737          KM   **********
5738          KM
5739          KM        This diversion represents possible breakout flows over the Eastern
5740          KM        Canal. This flow will not be retrieved into the model.
5741          KM        FCD#98-36

5742          KK  CPD130
5743          KM        DIVERT FLOW Over the Eastern canal due to weiring over its banks
5744          DT   PD130
5745          DI    0.00   47.80  143.00  217.00  255.10 1107.70 1599.10 5420.90
5746          DQ    0.00    0.00    0.00    0.00   31.10  857.70 1339.10 5144.90
5747          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   19        164
              :
              :
```

```
 54          .-------> OUT164
 48      OB164
            V
            V
 58     RCP164
            .
            .
 67         .        163
            .          .
            .          .
 89         .          .-------> OUT163
 82         .      OB163
            .          .
            .          .
 93       CP1............
            V
            V
 99     RCP163
            .
            .
108         .        165
            .          .
            .          .
130         .          .-------> OUT165
123         .      OB165
            .          .
            .          .
134      CP2............
            .
            .
140         .        166
            .          .
            .          .
162         .          .-------> OUT166
155         .      OB166
            .          .
            .          .
166      CP3............
            V
            V
172      PA01
            V
            V
179      RCP1
            .
            .
188         .          4
            .          .
            .          .
207         .          .------->    SD4
202         .       DSD4
            .          .
            .          .
218         .          .------->   OUT4
211         .        1B4
            .          V
            .          V
222         .       RCP4
            .          .
            .          .
232         .          .          1
            .          .          .
            .          .          .
243         .          .          .          2
            .          .          .          .
            .          .          .          .
259      CP4.................................
            V
            V
265      PA02
            .
            .
278         .------->   PD02
276     CPD02
            V
            V
282      RCP2
            .
            .
291         .          3
            .          .
            .          .
312         .          .------->    SD3
305         .       DSD3
            .          .
            .          .
316         .          .        156
            .          .          V
            .          .          V
327         .          .     RCP156
            .          .          .
            .          .          .
336         .          .          .        157
            .          .          .          .
            .          .          .          .
347         .          .        CP5...........
            .          .          .
            .          .          .
356         .          .          .------->  DVDHV
353         .          .      DHVRV
            .          .          V
            .          .          V
360         .          .     RCP157
            .          .          .
            .          .          .
```

```
369                                  158
                                      .
                                      .
380                              CP6...........
                                  V
                                  V
386                           RCP158
                                      .
                                      .
395                                  160
                                      V
                                      V
406                                RCP160
                                      .
                                      .
415                                      .        159
                                      .          .
                                      .          .
426                              CP7.......................
                                      .
                                      .
439                                   .------->   SD159
432                           DSD159
                                  V
                                  V
443                           RCP159
                                      .
                                      .
452                                  12
                                      .
                                      .
466                                   .          .<-------   SD159
463                                   .      RSD159
                                      .          V
                                      .          V
468                                   .       TL159
                                      .          .
                                      .          .
478                                   .          .------->    SD12
472                                   .       DSD12
                                      .          .
                                      .          .
482                              CP9.......................
                                      .
                                      .
495                                   .------->   OUT12
488                             1B12
                                  V
                                  V
499                            RCP12
                                      .
                                      .
508                                DIS16
                                      .
                                      .
557                                   .          16
                                      .          .
                                      .          .
568                                CPA1...........
                                      .
                                      .
581                                   .------->   OUT16
574                                1B16
                                      .
                                      .
585                                   .       DO16A
                                      .          .
                                      .          .
634                                CPA2...........
                                      V
                                      V
640                                RCP16
                                      .
                                      .
649                                   .         152
                                      .          .
                                      .          .
663                                CP10...........
                                      .
                                      .
674                                   .------->   DVDMR
669                                DMRVD
                                      V
                                      V
678                               RCP152
                                      .
                                      .
687                                   .         170
                                      .          .
                                      .          .
705                               CP200...........
                                      V
                                      V
714                               RCP200
                                      .
                                      .
725                                   .          13
                                      .          .
                                      .          .
739                                   .          .          15
                                      .          .          .
                                      .          .          .
758                                   .          .          .------->    SF15
750                                   .          .       SF15
                                      .          .          V
```

```
762                                                  V
                                                 RSD15
775                                                                 151
789                                                                                .<-------   DVDHV
786                                                                          DRDHV
791                                                 SD+151.......................
806                                                                 .------->  OUT151
799                                                 1B151
814                                                                                .<-------   SF15
810                                                                        SF15
816                                                   CP8............
                                                       V
                                                       V
822                                                 RCP15
831                                            CP11............
844                                                             .------->   OUT13
837                                            1B13
851                                                                 .<-------   SD12
848                                                 RSD12
                                                       V
                                                       V
853                                                  TL12
857                        CP12A...................................
870                        .------->    SD13
863                        DSD13
                              V
                              V
874                        RCP13
883                                 11
901                                 .------->   OUT11
894                              1B11
905                         CP12............
                              V
                              V
911                        RCP11
920                                 161
936                                 .------->   SD161
931                              SD161
                                    V
                                    V
940                              RCP161
949                                            162
963                                                                 .<-------   SD161
960                                                 DS161
965                              CP13........................
981                                 .------->   SD162
971                              SD162
                                    V
                                    V
985                              RCP162
994                                            5
1013                                           .------->     SD5
1005                                           SD5
1017                             CP14............
1025                                                            .<-------   SD162
1023                                           DS162
                                                  V
```

```
                                                  V
1027                                           TL162
                                                  .
                                                  .
1033                                              .<-------     SD5
1031                                           DS5
                                                  .
                                                  .
1035                                           CP1B5............
                                                  .
                                                  .
1048                                              .------->    OUT5
1041                                            1B5
                                                  .
                                                  .
1052                                     CP14B............
                                                V
                                                V
1058                                      RCP5
                                                .
                                                .
1067                                            .          6
                                                .
                                                .
1081                                            .          .<-------    SD13
1078                                            .       RSD13
                                                .          V
                                                .          V
1083                                            .        TL13
                                                .          .
                                                .          .
1087                                CP15.................................
                                                .
                                                .
1102                                            .------->   DMRLR
1093                                 DIMRLR
                                                V
                                                V
1106                                RCP6
                                                .
                                                .
1115                                            .        153
                                                .          .
                                                .          .
1129                                            .          .<-------     SD4
1126                                            .        RSD4
                                                .          V
                                                .          V
1131                                            .         TL4
                                                .          .
                                                .          .
1135                                     CP153............
                                                .          .
                                                .          .
1148                                            .          .------->  OUT153
1142                                     1B153
                                                V
                                                V
1152                                    RCP153
                                                .
                                                .
1161                                            .          .          8
                                                .          .          .
                                                .          .          .
1175                                            .          .          .<-------     SD3
1172                                            .          .        RSD3
                                                .          .          V
                                                .          .          V
1177                                            .          .         TL3
                                                .          .          .
                                                .          .          .
1181                                RCP16.................................
                                                .
                                                .
1195                                            .------->     SD8
1187                                 DSD8
                                                V
                                                V
1199                                RCP8
                                                .
                                                .
1209                 CPMA.......................
                        V
                        V
1219                 PA03
                        .
                        .
1232                    .------->    PD03
1230                CPD03
                        V
                        V
1237                 RCP3
                        .
                        .
1246                    .          9
                        .
                        .
1257                    .        168
                        .
                        .
1268                 CP18.......................
                        V
                        V
1274                 PA09
                        .
```

```
                .
1287            .------->    PD09
1285        CPD09
                .
                .
1292            .          22
                .           V
                .           V
1306            .       RCP22
                .           .
                .           .
1318            .           .           .<-------   DMRLR
1315            .           .      RDMRLR
                .           .           .
                .           .           .
1323            .           .           .           .<-------     SD8
1320            .           .           .        RSD8
                .           .           .           V
                .           .           .           V
1325            .           .           .         TL8
                .           .           .           .
                .           .           .           .
1329            .           .           .           .          10
                .           .           .           .           .
                .           .           .           .           .
1343            .        CP19.................................
                .           .
                .           .
1359            .           .------->    SD10
1350            .       DSD10
                .           V
                .           V
1363            .       RCP10
                .           .
                .           .
1372            .           .          25
                .           .           .
                .           .           .
1389            .           .           .           .<-------    SD10
1386            .           .           .       RSD10
                .           .           .           V
                .           .           .           V
1391            .           .           .         TL8
                .           .           .           .
                .           .           .           .
1395        CP21.................................
                .
                .
1410            .------->    SD25
1401        DSD25
                V
                V
1414        PA25
                .
                .
1434            .------->    PD25
1427        CPD25
                V
                V
1438        RCP25
                .
                .
1458            .          17
                .           .
                .           .
1475            .           .------->    SD17
1469            .       DSD17
                .           .
                .           .
1485            .           .------->   SD17A
1479            .      DSD17A
                .           .
                .           .
1492            .           .           .<-------   DVDMR
1489            .           .       DRMMR
                .           .           .
                .           .           .
1494            .        CP17............
                .           V
                .           V
1500            .       RCP17
                .           .
                .           .
1509            .           .          19
                .           .           .
                .           .           .
1523            .           .           .           .<-------   SD17A
1520            .           .           .      RSD17A
                .           .           .           V
                .           .           .           V
1525            .           .           .       TL17A
                .           .           .           .
                .           .           .           .
1529            .        CP32........................
                .           .
                .           .
1540            .           .------->   DVDML
1535            .       DMLVD
                .           V
                .           V
1544            .       RCP19
                .           .
                .           .
1553            .           .          21
                .           .           .
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1577          .           .           .-------->   OUT21
1567          .           .       1B21
              .           .           .
              .           .           .
1581          .       CP35............
              .           V
              .           V
1587          .      RCP23
              .           .
              .           .
1596          .           .        27
              .           .           .
              .           .           .
1610          .      CP37A............
              .           .
              .           .
1626          .           .-------->   OUT27
1617          .       1B27
              .           V
              .           V
1630          .      RCP27
              .           .
              .           .
1639          .           .        26
              .           .           .
              .           .           .
1656          .           .           .          .<-------    SD25
1653          .           .           .     RSD25
              .           .           .         V
              .           .           .         V
1658          .           .           .      TL25
              .           .           .           .
              .           .           .           .
1662     COM26A...................................
              .
              .
1668          .        38
              .           .
              .           .
1686          .           .-------->   OUT38
1679          .       2B38
              .           V
              .           V
1690          .      RCP38
              .           .
              .           .
1699          .           .        37
              .           .           .
              .           .           .
1710          .       CP22............
              .           .
              .           .
1723          .           .-------->   DHU40
1716          .      DBU40
              .           V
              .           V
1727          .      RCP37
              .           .
              .           .
1736          .           .        41
              .           .           .
              .           .           .
1751          .           .           .-------->   DBRGR
1747          .           .      DMRGR
              .           .           V
              .           .           V
1755          .           .      RCP41
              .           .           .
              .           .           .
1764          .           .           .        40
              .           .           .           .
              .           .           .           .
1775          .           .       CP23............
              .           .           V
              .           .           V
1781          .           .      RCP40
              .           .           .
              .           .           .
1790          .           .           .        39
              .           .           .           .
              .           .           .           .
1808          .           .           .           .-------->   OUT39
1801          .           .           .      2B39
              .           .           .           .
              .           .           .           .
1812          .       CP24........................
              .           .
              .           .
1823          .           .-------->   DBR40
1818          .      DDR40
              .           V
              .           V
1827          .      RCP39
              .           .
              .           .
1836          .           .        18
              .           .           .
              .           .           .
1857          .           .           .-------->   OUT18
1847          .           .       1B18
              .           .           .
              .           .           .
1864          .           .           .          .<-------    SD17
1861          .           .           .     RSD17
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                .           .           .           .
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1866            .           .       CP18A...........
                .           .           V
                .           .           V
1873            .           .       RCP18
                .           .           .
                .           .           .
1882            .           .           .          20
                .           .           .           .
                .           .           .           .
1893            .           .        CP31...........
                .           .           .
                .           .           .
1906            .           .           .------->   OUT20
1899            .           .        1B20
                .           .           V
                .           .           V
1910            .           .       RCP20
                .           .           .
                .           .           .
1919            .           .           .          33
                .           .           .           .
                .           .           .           .
1933            .           .           .           .          .<-------   DVDML
1930            .           .           .           .       DRMML
                .           .           .           .           .
                .           .           .           .           .
1935            .           .       CP33A........................
                .           .           .
                .           .           .
1948            .           .           .------->  DVDHB1
1942            .           .      DBDHB1
                .           .           V
                .           .           V
1952            .           .       RCP33
                .           .           .
                .           .           .
1961            .           .           .          34
                .           .           .           .
                .           .           .           .
1975            .           .           .           .          .<-------   DHU40
1972            .           .           .           .       DRU40
                .           .           .           .           .
                .           .           .           .           .
1977            .           .        CP25........................
                .           .           .
                .           .           .
1988            .           .           .------->   DVDHB
1983            .           .       DBDHB
                .           .           V
                .           .           V
1992            .           .       RCP34
                .           .           .
                .           .           .
2001            .           .           .          35
                .           .           .           .
                .           .           .           .
2012            .           .        CP26...........
                .           .           V
                .           .           V
2018            .           .       RCP35
                .           .           .
                .           .           .
2027            .           .           .          36
                .           .           .           .
                .           .           .           .
2038            .        CP27........................
                .           .
                .           .
2049            .           .------->   DVDBR
2044            .       DBRVD
                .           V
                .           V
2053            .       RCP36
                .           .
                .           .
2070            .           .------->    SD32
2062            .       DSD32
                .           .
                .           .
2074            .           .          31
                .           .           .
                .           .           .
2092            .           .           .------->   OUT31
2085            .           .        2B31
                .           .           V
                .           .           V
2096            .           .       RCP31
                .           .           .
                .           .           .
2105            .           .           .          32
                .           .           .           .
                .           .           .           .
2116            .        CP28........................
                .           V
                .           V
2122            .       RCP32
                .           .
                .           .
2131            .           .          29
                .           .           .
                .           .           .
2145            .           .           .          .<-------   DVDHB
2142            .           .           .       DRDHB
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                .           .           .           .
                .           .           .           .
2150            .           .           .           .<-------  DVDHB1
2147            .           .           .       DRDHB1
                .           .           .           .
                .           .           .           .
2152            .           .       CP29A.......................
                .           .           V
                .           .           V
2159            .           .       RCP29
                .           .           .
                .           .           .
2168            .           .           .          28
                .           .           .           .
                .           .           .           .
2182            .           .        CP36............
                .           .           V
                .           .           V
2188            .           .       RCP28
                .           .           .
                .           .           .
2197            .           .           .          30
                .           .           .           .
                .           .           .           .
2211            .           .           .           .<-------    SD32
2208            .           .           .       RSD32
                .           .           .           V
                .           .           .           V
2213            .           .           .       TL32
                .           .           .           .
                .           .           .           .
2217            .        CP29.................................
                .           .
                .           .
2229            .           .------->    SD30
2223            .       DSD30
                .           V
                .           V
2233            .       RCP30
                .           .
                .           .
2245            .           .           .<-------    SD30
2242            .           .       RSD30
                .           .           .
                .           .           .
2251            .           .           .------->    SF30
2247            .           .       REM30
                .           .           .
                .           .           .
2255      COM26B.......................
                .
                .
2272            .------->    SD26
2261       DSD26
                V
                V
2276        PA26
                .
                .
2294            .------->    PD26
2292       CPD26
                V
                V
2298       RCP26
                .
                .
2307            .          42
                .           .
                .           .
2321            .           .           .<-------    SF30
2318            .           .       RET30
                .           .           V
                .           .           V
2323            .           .        TL30
                .           .           .
                .           .           .
2330            .           .           .           .<-------    SD26
2327            .           .           .       RSD26
                .           .           .           V
                .           .           .           V
2332            .           .           .        TL26
                .           .           .           .
                .           .           .           .
2336        CP38.................................
                .
                .
2349            .------->    OUTC
2342       DOUTC
                .
                .
2353            .         155
                .           .
                .           .
2371            .           .------->  OUT155
2364            .       2B155
                .           V
                .           V
2375            .      RCP155
                .           .
                .           .
2384            .           .          43
                .           .           .
                .           .           .
2395            .           .           .          44
                .           .           .
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2406        CP39.................................
               V
               V
2412        PA44
               .
               .
2425           .-------->    PD44
2423       CPD44
               V
               V
2429       RCP44
               .
               .
2438           .          45
               .           .
               .           .
2449           .           .          46
               .           .           .
               .           .           .
2463           .           .           .           .<-------   DVDBR
2460           .           .           .       DRMBR
               .           .           .           .
               .           .           .           .
2465           .        CP41.......................
               .           V
               .           V
2472           .       RCP46
               .           .
               .           .
2481           .           .         52
               .           .           .
               .           .           .
2498           .           .           .-------->    SD52
2492           .           .       DSD52
               .           .           .
               .           .           .
2505           .           .           .           .<-------   DBRGR
2502           .           .           .       DRRGR
               .           .           .           .
               .           .           .           .
2507           .           .       CP52A............
               .           .           V
               .           .           V
2513           .           .       RCP52
               .           .           .
               .           .           .
2525           .           .           .           .<-------    SD52
2522           .           .           .       RSD52
               .           .           .           V
               .           .           .           V
2527           .           .           .        TL52
               .           .           .           .
               .           .           .           .
2531           .           .           .           .          54
               .           .           .           .           .
               .           .           .           .           .
2542           .           .        CP46........................
               .           .           .
               .           .           .
2550           .           .           .-------->   DIV54
2548           .           .       REM54
               .           .           .
               .           .           .
2563           .           .           .-------->   OUT54
2554           .           .        2B54
               .           .           .
               .           .           .
2571           .           .           .-------->   DGRAS
2567           .           .       DMRAS
               .           .           V
               .           .           V
2575           .           .       RCP54
               .           .           .
               .           .           .
2590           .           .           .-------->   DIVE1
2584           .           .      DDIVE1
               .           .           .
               .           .           .
2594           .           .           .         53
               .           .           .           .
               .           .           .           .
2612           .           .           .           .-------->   OUT53
2605           .           .           .        2B53
               .           .           .           V
               .           .           .           V
2616           .           .           .       RCP53
               .           .           .           .
               .           .           .           .
2625           .           .           .           .          55
               .           .           .           .           .
               .           .           .           .           .
2639           .           .           .           .           .           .<-------   DGRAS
2636           .           .           .           .           .       DRRAS
               .           .           .           .           .           .
               .           .           .           .           .           .
2641           .           .        CP40.....................................
               .           .           .
               .           .           .
2658           .           .           .-------->   OUT55
2651           .           .        2B55
               .           .           V
               .           .           V
2662           .           .       RCP55
               .           .           .
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2671          .           .           .          50
              .           .           .           .
              .           .           .           .
2682          .           .           .           .          51
              .           .           .           .           .
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2696          .           .           .           .           .<-------   DBR40
2693          .           .           .           .       DRR40
              .           .           .           .           .
              .           .           .           .           .
2698          .           .       CP50A.......................
              .           .           .           V
              .           .           .           V
2705          .           .       RCP50
              .           .           .           .
              .           .           .           .
2714          .           .           .           .          48
              .           .           .           .           .
              .           .           .           .           .
2725          .        CP42.................................
              .           .
              .           .
2745          .           .------->   DVDAS
2731          .      DDVDAS
              .           V
              .           V
2749          .       RCP48
              .           .
              .           .
2758          .           .          47
              .           .           V
              .           .           V
2769          .           .      TLVDAS
              .           .           .
              .           .           .
2773       CP44......................
            V
            V
2779       PA47
              .
              .
2792          .------->    PD47
2790      CPD47
              .
              .
2796          .          49
              .           .
              .           .
2814          .           .------->   OUT49
2807          .        3B49
              .           .
              .           .
2821          .           .           .<-------   DVDAS
2818          .           .      RDVDAS
              .           .           .
              .           .           .
2823          .        CP49............
              .           .
              .           .
2833          .           .------->   DIV49
2829          .       REM49
              .           V
              .           V
2837          .       RCP49
              .           .
              .           .
2846          .           .          58
              .           .           V
              .           .           V
2857          .           .       RCP58
              .           .           .
              .           .           .
2866          .           .           .          70
              .           .           .           .
              .           .           .           .
2877          .           .           .           .          71
              .           .           .           .           .
              .           .           .           .           .
2895          .           .           .           .           .------->  DIV110
2888          .           .           .           .      REM110
              .           .           .           .           .
              .           .           .           .           .
2899          .           .        CP50.........................
              .           .           .
              .           .           .
2912          .           .           .------->   OUT70
2905          .           .        3B70
              .           .           V
              .           .           V
2916          .           .       RCP70
              .           .           .
              .           .           .
2928          .           .           .           .<-------  DIV110
2925          .           .           .      RET110
              .           .           .           .
              .           .           .           .
2930          .           .        CP51............
              .           .           .
              .           .           .
2943          .           .           .------->   OUT71
2936          .           .        3B71
              .           .           .
              .           .           .
2950          .           .           .           .<-------   DIVE1
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2947                    RDIVE1
                          .
2952                      .          56
                          .           .
2963                    CP47...........
                          .
2975                      .------->    SD56
2969                    DSD56
                          V
                          V
2979                    RCP56
                          .
2988                      .          76
                          .           .
3006                      .           .-------> DIV109
2999                      .      REM109
                          .           .
3010                      .           .          59
                          .           .           .
3021                      .        CP48...........
                          .           .
3037                      .           .------->   OUT59
3027                      .        3B59
                          .           .
3044                      .           .           .<-------    SD56
3041                      .           .       RSD56
                          .           .          V
                          .           .          V
3046                      .           .        TL56
                          .           .           .
3050                    COM59.......................
                          V
                          V
3056                    RCP59
                          .
3068                      .           .<-------  DIV109
3065                      .      RTV109
                          .           .
3070                    COM76...........
                          .
3083                      .------->   DUDGR
3076                    DGRUD
                          V
                          V
3087                    RCP76
                          .
3103                      .------->    SD71
3096                    DSD71
                          .
3107                CP71A...........
                      V
                      V
3113                RCP71
                      .
3122                      .          61
                          .
3140                      .------->   OUT61
3133                    3B61
                          .
3147                      .           .<-------    SD71
3144                      .       RSD71
                          .          V
                          .          V
3149                      .        TL71
                          .           .
3153                 CP52.......................
                      .
3162                  .------->    SD61
3159                DSD61
                      V
                      V
3166                RCP61
                      .
3175                      .          62
                          .
3193                      .------->   OUT62
3186                    3B62
                          .
3197                      .          60
                          .           .
3211                      .           .           .<-------    SD61
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3208          .           .           .           .           .       RSD61
              .           .           .           .           .           V
              .           .           .           .           .           V
3213          .           .           .           .           .        TL61
              .           .           .           .           .           .
              .           .           .           .           .           .
3217          .       CP60A.......................................................
              .           .
              .           .
3226          .           .------->    OUTA
3223          .       DOUTA
              .           .
              .           .
3234          .           .------->   DUDVD
3230          .      DDUDVD
              .           .
              .           .
3238          .           .         180
              .           .           .
              .           .           .
3251          .       CP180............
              .           V
              .           V
3257          .       PA180
              .           .
              .           .
3267          .           .------->   PD180
3263          .      CPD180
              .           .
              .           .
3274          .           .------->   CD180
3271          .      DCD180
              .           .
              .           .
3281          .           .------->   WD180
3278          .      DWD180
              .           .
              .           .
3285          .           .          57
              .           .           .
              .           .           .
3296       CP45........................
              V
              V
3302       PA57
              .
              .
3312          .------->    PD57
3308      CPD57
              .
              .
3316          .         181
              .           .
              .           .
3332          .           .           .<-------   DUDVD
3329          .           .      RDUDVD
              .           .           .
              .           .           .
3337          .           .           .           .<-------   WD180
3334          .           .           .      RWD180
              .           .           .           .
              .           .           .           .
3339       CP53.................................
              .
              .
3350          .------->    OUTB
3345      DOUTB
              V
              V
3354      PA181
              .
              .
3364          .------->   PD181
3360     CPD181
              .
              .
3371          .           .<-------   CD180
3368          .      RCD180
              .           V
              .           V
3373          .        TL63
              .           .
              .           .
3377          .           .          63
              .           .           .
              .           .           .
3388       CP54........................
              .
              .
3394          .          80
              .           .
              .           .
3411          .           .------->   OUT80
3405          .        3B80
              .           V
              .           V
3415          .       RCP80
              .           .
              .           .
3424          .           .          83
              .           .           V
              .           .           V
3435          .           .       RCP83
              .           .           .
              .           .           .
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3444          .           .           .          77
              .           .           .           .
              .           .           .           .
3458          .           .           .           .<-------   DUDGR
3455          .           .           .       RGRUD
              .           .           .           V
              .           .           .           V
3460          .           .           .        TL76
              .           .           .           .
              .           .           .           .
3464          .           .           .     COM77............
              .           .           .           .
              .           .           .           .
3472          .           .           .           .------->    SD77
3470          .           .           .     DSD77
              .           .           .           .
              .           .           .           .
3482          .           .           .           .------->   OUT77
3476          .           .           .      3B77
              .           .           .         V
              .           .           .         V
3486          .           .           .     RCP77
              .           .           .           .
              .           .           .           .
3495          .           .           .           .          79
              .           .           .           .           .
              .           .           .           .           .
3508          .           .           .           .           .<-------    SD77
3506          .           .           .           .       RSD77
              .           .           .           .           V
              .           .           .           .           V
3510          .           .           .           .        TL77
              .           .           .           .           .
              .           .           .           .           .
3514          .        CP60.......................................
              .           .
              .           .
3529          .           .------->   DMSGR
3520          .      DDMSGR
              .           V
              .           V
3533          .       RCP79
              .           .
              .           .
3542          .           .          74
              .           .           .
              .           .           .
3559          .           .           .------->   OUT74
3553          .           .        3B74
              .           .           .
              .           .           .
3563          .        CP98............
              .           V
              .           V
3569          .       RCP74
              .           .
              .           .
3578          .           .          66
              .           .           .
              .           .           .
3595          .           .           .------->   OUT66
3589          .           .        3B66
              .           .           .
              .           .           .
3599          .           .           .          73
              .           .           .           V
              .           .           .           V
3610          .           .           .     RCP73
              .           .           .           .
              .           .           .           .
3619          .        CP55........................
              .           V
              .           V
3624          .       RCP66
              .           .
              .           .
3640          .           .------->    SD64
3633          .       DSD64
              .           .
              .           .
3644          .           .          65
              .           .           .
              .           .           .
3661          .           .           .------->   OUT65
3655          .           .        3B65
              .           .           V
              .           .           V
3665          .           .       RCP65
              .           .           .
              .           .           .
3674          .           .           .          64
              .           .           .           .
              .           .           .           .
3685          .     CP56...................................
              .        V
              .        V
3691          .     PA64
              .        .
              .        .
3704          .------->    PD64
3702          .   CPD64
              .        V
              .        V
3708          .   RCP63
              .        .
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                .
3717            .          67
                .           .
                .           .
3731            .           .           .<-------    SD64
3728            .           .       RSD64
                .           .           V
                .           .           V
3733            .           .        TL64
                .           .           .
                .           .           .
3737        CP57.......................
                V
                V
3743       RCP67
                .
                .
3752            .          68
                .           .
                .           .
3763        CP58............
                .
                .
3769            .          81
                .           .
                .           .
3783            .           .           .<-------   DMSGR
3780            .           .      RDMSGR
                .           .           .
                .           .           .
3785            .       CP81A............
                .           .
                .           .
3799            .           .------->    SD81
3791            .       DSD81
                .           V
                .           V
3803            .       RCP81
                .           .
                .           .
3812            .           .          82
                .           .           .
                .           .           .
3829            .           .           .------->   OUT82
3823            .           .        3B82
                .           .           .
                .           .           .
3833            .        CP62............
                .           V
                .           V
3839            .       RCP82
                .           .
                .           .
3848            .           .          91
                .           .           .
                .           .           .
3865            .           .           .------->   OUT91
3859            .           .        4B91
                .           .           .
                .           .           .
3873            .           .           .------->   DBOHR
3869            .           .      DDBOHR
                .           .           V
                .           .           V
3877            .           .       RCP91
                .           .           .
                .           .           .
3886            .           .           .          90
                .           .           .           .
                .           .           .           .
3897            .           .           .           .          88
                .           .           .           .           V
                .           .           .           .           V
3908            .           .           .           .       RCP88
                .           .           .           .           .
                .           .           .           .           .
3917            .           .           .           .           .          89
                .           .           .           .           .           .
                .           .           .           .           .           .
3928            .           .           .        CP64........................
                .           .           .           .
                .           .           .           .
3940            .           .           .           .------->   OUT89
3934            .           .           .        4B89
                .           .           .           .
                .           .           .           .
3944            .           .        CP63............
                .           .           V
                .           .           V
3950            .           .       RCP89
                .           .           .
                .           .           .
3959            .           .           .          87
                .           .           .           .
                .           .           .           .
3970            .           .        CP65............
                .           .           V
                .           .           V
3976            .           .       RCP87
                .           .           .
                .           .           .
3985            .           .           .          86
                .           .           .           .
                .           .           .           .
3996            .        CP66........................
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                .           .
                .           .
4004            .           .<-------   SD81
4002            .       RSD81
                .           V
                .           V
4006            .        TL81
                .           .
                .           .
4010            .     COM86.........
                .           .
                .           .
4024            .           .------->  DBOGR
4016            .    DDBOGR
                .           V
                .           V
4028            .     RCP86
                .           .
                .           .
4037            .           .        85
                .           .        .
                .           .        .
4048            .      CP67.........
                .           V
                .           V
4054            .     RCP85
                .           .
                .           .
4063            .           .        69
                .           .        .
                .           .        .
4080            .           .        .------->  OUT69
4074            .        3B69
                .           V
                .           V
4084            .       RCP69
                .           .
                .           .
4093            .           .        .        84
                .           .        .        .
                .           .        .        .
4104         CP68.................................
                V
                V
4110         PA84
                .
                .
4123            .------->   PD84
4121        CPD84
                .
                .
4127            .        92
                .           .
                .           .
4138         CP69.........
                .
                .
4144            .        93
                .           .
                .           .
4155         CP70.........
                V
                V
4161        RCP93
                .
                .
4170            .        99
                .           .
                .           .
4187            .           .------->  OUT99
4181            .      4B99
                .           V
                .           V
4191            .     RCP99
                .           .
                .           .
4200            .           .        98
                .           .        .
                .           .        .
4214            .           .        .        .<-------   DBOGR
4211            .           .        .    RDBOGR
                .           .        .        .
                .           .        .        .
4216            .      CP76.......................
                .           .
                .           .
4229            .           .------->   SD98
4222            .     DSD98
                .           V
                .           V
4233            .     RCP98
                .           .
                .           .
4242            .           .       105
                .           .        V
                .           .        V
4253            .           .    RCP105
                .           .        .
                .           .        .
4262            .           .        .       100
                .           .        .        .
                .           .        .        .
4273            .      CP75.......................
                .           V
                .           V
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4279          .      RCP100
              .          .
              .          .
4288          .          .         110
              .          .           .
              .          .           .
4305          .          .           .-------> OUT110
4299          .          .       4B110
              .          .          V
              .          .          V
4309          .          .      RCP110
              .          .           .
              .          .           .
4318          .          .           .         111
              .          .           .           .
              .          .           .           .
4335          .          .           .           .-------> OUT111
4329          .          .           .       4B111
              .          .           .          V
              .          .           .          V
4339          .          .           .      RCP111
              .          .           .           .
              .          .           .           .
4348          .          .           .           .         106
              .          .           .           .           .
              .          .           .           .           .
4359          .          .        CP73.......................
              .          .           .
              .          .           .
4371          .          .           .-------> OUT106
4365          .          .       4B106
              .          .          V
              .          .          V
4375          .          .      RCP106
              .          .           .
              .          .           .
4384          .          .           .         101
              .          .           .           .
              .          .           .           .
4398          .          .           .           .         .<-------    SD98
4395          .          .           .           .      RSD98
              .          .           .           .          V
              .          .           .           .          V
4400          .          .           .           .       TL98
              .          .           .           .           .
              .          .           .           .           .
4404          .        CP74.................................
              .          .
              .          .
4416          .          .-------> SD101
4411          .      DSD101
              .          .
              .          .
4426          .          .-------> SF101
4420          .      DSF101
              .          .
              .          .
4430          .          .         102
              .          .           .
              .          .           .
4441          .          .           .         103
              .          .           .           .
              .          .           .           .
4452          .          .       CP102............
              .          .           .
              .          .           .
4465          .          .           .-------> SF102
4458          .          .      DSF102
              .          .          V
              .          .          V
4469          .          .       TL102
              .          .           .
              .          .           .
4473          .          .           .          94
              .          .           .           .
              .          .           .           .
4484       CP77.................................
              V
              V
4490       PA94
              .
              .
4503          .-------> PD94
4501       CPD94
              .
              .
4507          .         112
              .          .
              .          .
4521          .          .           .<-------  DBOHR
4518          .          .      RDBOHR
              .          .           .
              .          .           .
4523          .      COM112...........
              .          V
              .          V
4528          .      RCP112
              .          .
              .          .
4537          .          .         113
              .          .           .
              .          .           .
4548          .        CP61...........
              .          V
              .          V
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4553          .      RCP113
              .          .
              .          .
4562          .          .         114
              .          .           .
              .          .           .
4575          .          .           .-------->   SD114
4573          .          .      DSD114
              .          .           .
              .          .           .
4579          .      CP114a............
              .          .
              .          .
4591          .          .-------->  OUT114
4585          .       4B114
              .          V
              .          V
4595          .      RCP114
              .          .
              .          .
4604          .          .         115
              .          .           .
              .          .           .
4617          .          .           .           .<-------   SD114
4615          .          .           .      RSD114
              .          .           .           V
              .          .           .           V
4619          .          .           .       TL114
              .          .           .           .
              .          .           .           .
4623          .      COM115........................
              .          .
              .          .
4631          .          .-------->   SD115
4629          .      DSD115
              .          V
              .          V
4635          .      RCP115
              .          .
              .          .
4644          .          .         118
              .          .           .
              .          .           .
4663          .          .           .-------->   SF118
4655          .          .      DSF118
              .          .           V
              .          .           V
4667          .          .      TL118A
              .          .           .
              .          .           .
4680          .          .           .         116
              .          .           .           .
              .          .           .           .
4691          .          .      SD+116............
              .          .           .
              .          .           .
4704          .          .           .-------->  OUT116
4698          .          .       4B116
              .          .           .
              .          .           .
4710          .          .           .           .<-------   SD115
4708          .          .           .      RSD115
              .          .           .           V
              .          .           .           V
4712          .          .           .       TL115
              .          .           .           .
              .          .           .           .
4716          .        CP80........................
              .          .
              .          .
4724          .          .-------->   SD116
4722          .      DSD116
              .          V
              .          V
4728          .      RCP116
              .          .
              .          .
4741          .          .           .<-------   SF118
4737          .          .       SF118
              .          .           .
              .          .           .
4745          .          .           .           .<-------   SD116
4743          .          .           .      RSD116
              .          .           .           V
              .          .           .           V
4747          .          .           .       TL116
              .          .           .           .
              .          .           .           .
4751          .        CP81........................
              .          .
              .          .
4759          .          .-------->   SD118
4757          .      DSD118
              .          .
              .          .
4766          .          .-------->   DHRSA
4763          .       DSAHR
              .          V
              .          V
4770          .      RCP118
              .          .
              .          .
4779          .          .         107
              .          .           .
              .          .           .
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4796          .           .          .-------> OUT107
4790          .           .      4B107
              .           .          .
              .           .          .
4800          .           .          .        108
              .           .          .          .
              .           .          .          .
4813          .           .          .          .          .<-------   SD118
4811          .           .          .          .     RSD118
              .           .          .          .          V
              .           .          .          .          V
4815          .           .          .          .      TL118
              .           .          .          .          .
              .           .          .          .          .
4819          .           .       CP82.......................
              .           .          .
              .           .          .
4827          .           .          .------->   SD108
4825          .           .     DSD108
              .           .          .
              .           .          .
4837          .           .          .-------> OUT108
4831          .           .      4B108
              .           .          .
              .           .          .
4841          .        CP83............
              .          V
              .          V
4847          .      RCP108
              .           .
              .           .
4859          .           .          .<-------   SF101
4856          .           .     RSF101
              .           .          .
              .           .          .
4864          .           .          .          .<-------   SF102
4861          .           .          .     RSF102
              .           .          .          .
              .           .          .          .
4866          .           .     COM102............
              .           .          V
              .           .          V
4872          .           .     RCP102
              .           .          .
              .           .          .
4884          .           .          .          .<-------   SD101
4881          .           .          .     RSD101
              .           .          .          V
              .           .          .          V
4886          .           .          .      TL101
              .           .          .          .
              .           .          .          .
4890          .           .      CP103............
              .           .          V
              .           .          V
4896          .           .     RCP103
              .           .          .
              .           .          .
4905          .           .          .        104
              .           .          .          .
              .           .          .          .
4922          .           .          .          .-------> OUT104
4916          .           .          .      4B104
              .           .          .          .
              .           .          .          .
4926          .        CP84.......................
              .           .
              .           .
4934          .           .          .-------   SD108
4932          .           .     RSD108
              .           .          V
              .           .          V
4936          .           .      TL108
              .           .          .
              .           .          .
4940          .      COM104............
              .           .
              .           .
4956          .           .------->   DSAGR
4946          .      DDSAGR
              .           .
              .           .
4963          .           .------->   DIV97
4960          .      DDIV97
              .           .
              .           .
4967          .           .         96
              .           .          .
              .           .          .
4978          .           .          .         97
              .           .          .          .
              .           .          .          .
4989       CP79.....................................
              V
              V
4995       PA97
              .
              .
5008          .------->    PD97
5006       CPD97
              .
              .
5015          .------->    CD97
5012       DCD97
              .
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5022          .------->    WD97
5019      DWD97
              .
              .
5029          .           .<-------    CD97
5026          .       RCD97
              .           .
              .           .
5034          .           .           .<-------    WD97
5031          .           .       RWD97
              .           .           .
              .           .           .
5039          .           .           .           .<-------   DIV97
5036          .           .           .      RDIV97
              .           .           .          V
              .           .           .          V
5041          .           .           .        TL97
              .           .           .           .
              .           .           .           .
5045      CP120.................................
              .
              .
5059          .------->   PD120
5052     CPD120
             V
             V
5063      RCP97
              .
              .
5072          .         120
              .           .
              .           .
5083       CP85............
              .
              .
5097          .------->   CD128
5091     CCD128
              .
              .
5101          .         121
              .           .
              .           .
5115          .           .           .<-------   DSAGR
5112          .           .      RDSAGR
              .           .           .
              .           .           .
5117          .      COM128............
              .           .
              .           .
5123      CP91A............
              .
              .
5129          .         144
              .           .
              .           .
5140          .           .         146
              .           .           .
              .           .           .
5151          .       CP144............
              .           V
              .           V
5157          .      RCP144
              .           .
              .           .
5166          .           .         125
              .           .           .
              .           .           .
5177          .           .           .         143
              .           .           .           .
              .           .           .           .
5188          .        CP86........................
              .           V
              .           V
5194          .      RCP143
              .           .
              .           .
5203          .           .         124
              .           .           .
              .           .           .
5217          .           .           .           .<-------   DHRSA
5214          .           .           .       DRMSA
              .           .           .           .
              .           .           .           .
5219          .           .       CP124............
              .           .           V
              .           .           V
5225          .           .      RCP124
              .           .           .
              .           .           .
5234          .           .           .         136
              .           .           .           .
              .           .           .           .
5245          .           .           .           .         137
              .           .           .           .           .
              .           .           .           .           .
5256          .        CP87.....................................
              .           V
              .           V
5262          .      RCP136
              .           .
              .           .
5271          .           .         133
              .           .           .
              .           .           .
```

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5282          .           .           .         132
              .           .           .           .
              .           .           .           .
5293          .        CP88.......................
              .           V
              .           V
5299          .      RCP132
              .           .
              .           .
5308          .           .        123
              .           .          V
              .           .          V
5319          .           .     RCP123
              .           .           .
              .           .           .
5328          .           .           .         122
              .           .           .           .
              .           .           .           .
5339          .           .       CP89............
              .           .          V
              .           .          V
5345          .           .     RCP122
              .           .           .
              .           .           .
5354          .           .           .         131
              .           .           .           .
              .           .           .           .
5371          .           .           .           .-------> OUT131
5365          .           .           .      5B131
              .           .           .           .
              .           .           .           .
5375          .           .       CP90............
              .           .          V
              .           .          V
5381          .           .     RCP131
              .           .           .
              .           .           .
5390          .           .           .         128
              .           .           .           .
              .           .           .           .
5401       CP91.......................................
              V
              V
5407      PA128
              .
              .
5422          .-------> PD128
5419     CPD128
              .
              .
5429          .        .<-------  CD128
5426          .      RCD128
              .           .
              .           .
5431      CP128............
              V
              V
5437     RCP128
              .
              .
5446          .        129
              .           .
              .           .
5457       CP92............
              V
              V
5463     RCP129
              .
              .
5472          .        150
              .           V
              .           V
5483          .      RCP150
              .           .
              .           .
5492          .           .        149
              .           .           .
              .           .           .
5503          .        CP93............
              .           V
              .           V
5509          .      RCP149
              .           .
              .           .
5518          .           .        141
              .           .          V
              .           .          V
5529          .           .     RCP141
              .           .           .
              .           .           .
5538          .           .           .         147
              .           .           .           V
              .           .           .           V
5549          .           .           .     RCP147
              .           .           .           .
              .           .           .           .
5558          .           .           .           .        148
              .           .           .           .          V
              .           .           .           .          V
5569          .           .           .           .     RCP148
              .           .           .           .          V
              .           .           .           .          V
5578          .           .           .           .     RCP248
              .           .           .           .          .
              .           .           .           .          .
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5587          .          .          .          .          .        142
              .          .          .          .          .          .
              .          .          .          .          .          .
5598          .       CP94..............................................
              .          V
              .          V
5604          .     RCP142
              .          .
              .          .
5613          .          .        138
              .          .          V
              .          .          V
5624          .          .     RCP138
              .          .          .
              .          .          .
5633          .          .          .        139
              .          .          .          .
              .          .          .          .
5644          .       CP95......................
              .          .
              .          .
5654          .          .------->   DBEHR
5650          .     DDBEHR
              .          V
              .          V
5658          .     RCP139
              .          .
              .          .
5667          .          .        135
              .          .          .
              .          .          .
5678          .       CP96............
              .          V
              .          V
5684          .     RCP135
              .          .
              .          .
5693          .          .        134
              .          .          V
              .          .          V
5704          .          .     RCP134
              .          .          .
              .          .          .
5713          .          .          .        130
              .          .          .          .
              .          .          .          .
5724       CP97...................................
              V
              V
5730       PA130
              .
              .
5744          .------->   PD130
5742      CPD130
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1****************************************
****************************************
 *                                      *                                                    *
*
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS
*
 *              JUN   1998              *                                                    *    HYDROLOGIC ENGINEERING CENTER
*
 *           VERSION 4.1                *                                                    *          609 SECOND STREET
*
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616
*
 *  RUN DATE   03OCT01  TIME  14:52:56  *                                                    *           (916) 756-1104
*
 *                                      *                                                    *
*
 ****************************************
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```

THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
MFC015 - EASTERN CANAL NORTH FLOOD PLAIN DELINEATION STUDY : FCD # 98-36

EVENT: 100 YEAR - 24 HOUR
RAINFALL DISTRIBUTION: PER MARICOPA COUNTY FLOOD CONTROLD DISTRICT MAN
AREAL REDUCTION FACTORS: PER MARICOPA COUNTY FLOOD CONTROLD DISTRICT MAN
INPUT FILE NAME: EC10024Z.DAT
DATE: October 2001

PREPARED BY PRIMATECH LLC, ENGINEERS AND CONSULTATNS
ADDRESS: 1295 WEST WASHINGTON STREET, SUITE 115
TEMPE, ARIZONA 85281
TEL: (602)985-9009
FAX: (602)685-9015

```
 18 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

    IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
```

```
          NQ        500  NUMBER OF HYDROGRAPH ORDINATES
      NDDATE      2   0  ENDING DATE
      NDTIME       1735  ENDING TIME
       ICENT         19  CENTURY MARK

  COMPUTATION INTERVAL     .08 HOURS
      TOTAL TIME BASE   41.58 HOURS

ENGLISH UNITS
     DRAINAGE AREA          SQUARE MILES
     PRECIPITATION DEPTH    INCHES
     LENGTH, ELEVATION      FEET
     FLOW                   CUBIC FEET PER SECOND
     STORAGE VOLUME         ACRE-FEET
     SURFACE AREA           ACRES
     TEMPERATURE            DEGREES FAHRENHEIT
1
```

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	164	79.	12.17	10.	3.	2.	.09		
+	DIVERSION TO	OUT164	63.	12.25	4.	1.	1.	.09		
+	HYDROGRAPH AT	OB164	72.	12.25	6.	2.	1.	.09		
+	ROUTED TO	RCP164	60.	12.33	6.	2.	1.	.09		
+									10.37	12.33
+	HYDROGRAPH AT	163	164.	12.08	19.	6.	3.	.15		
+	DIVERSION TO	OUT163	131.	12.08	15.	5.	3.	.15		
+	HYDROGRAPH AT	OB163	33.	12.08	4.	1.	1.	.15		
+	2 COMBINED AT	CP1	81.	12.33	10.	3.	2.	.24		
+	ROUTED TO	RCP163	66.	12.50	10.	3.	2.	.24		
+									10.49	12.50
-	HYDROGRAPH AT	165	48.	12.25	10.	3.	2.	.10		
+	DIVERSION TO	OUT165	39.	12.25	8.	2.	1.	.10		
+	HYDROGRAPH AT	OB165	10.	12.25	2.	1.	0.	.10		
+	2 COMBINED AT	CP2	74.	12.50	12.	4.	2.	.34		
+	HYDROGRAPH AT	166	29.	12.42	8.	3.	1.	.08		
+	DIVERSION TO	OUT166	29.	.00	8.	3.	1.	.08		
+	HYDROGRAPH AT	OB166	0.	.00	0.	0.	0.	.08		
+	2 COMBINED AT	CP3	74.	12.50	12.	4.	2.	.42		
+	ROUTED TO	PA01	0.	.00	0.	0.	0.	.42		
+									1291.68	26.83
+	ROUTED TO	RCP1	0.	.00	0.	0.	0.	.42		
+									13.00	.00
+	HYDROGRAPH AT	4	56.	12.42	15.	4.	3.	.12		
+	DIVERSION TO	SD4	7.	12.42	5.	2.	1.	.12		
+	HYDROGRAPH AT	DSD4	49.	12.42	9.	2.	1.	.12		
+	DIVERSION TO	OUT4	39.	13.17	6.	1.	1.	.12		
.	HYDROGRAPH AT	1B4	23.	13.17	4.	1.	1.	.12		
+	ROUTED TO	RCP4	18.	13.42	4.	1.	1.	.12		
+									10.14	13.42

+	HYDROGRAPH AT	1	45.	12.08	5.	2.	1.	.04	
+	HYDROGRAPH AT	2	65.	12.25	11.	3.	2.	.09	
+	4 COMBINED AT	CP4	108.	12.17	20.	6.	3.	.67	
+ +	ROUTED TO	PA02	0.	.00	0.	0.	0.	.67	1285.60 25.42
+	DIVERSION TO	PD02	0.	.00	0.	0.	0.	.67	
+	HYDROGRAPH AT	CPD02	0.	.00	0.	0.	0.	.67	
+ +	ROUTED TO	RCP2	0.	.00	0.	0.	0.	.67	13.00 .00
+	HYDROGRAPH AT	3	34.	12.33	8.	2.	1.	.06	
+	DIVERSION TO	SD3	22.	12.33	7.	2.	1.	.06	
+	HYDROGRAPH AT	DSD3	12.	12.33	1.	0.	0.	.06	
+	HYDROGRAPH AT	156	81.	12.25	13.	4.	2.	.13	
+ +	ROUTED TO	RCP156	75.	12.42	13.	4.	2.	.13	10.54 12.42
+	HYDROGRAPH AT	157	67.	12.33	15.	4.	2.	.15	
+	2 COMBINED AT	CP5	142.	12.42	28.	8.	5.	.28	
+	DIVERSION TO	DVDHV	0.	12.42	0.	0.	0.	.28	
+	HYDROGRAPH AT	DHVRV	141.	12.42	28.	8.	4.	.28	
+ +	ROUTED TO	RCP157	142.	12.42	28.	8.	4.	.28	10.67 12.42
+	HYDROGRAPH AT	158	53.	12.25	9.	3.	1.	.09	
+	2 COMBINED AT	CP6	190.	12.42	37.	10.	6.	.37	
+ +	ROUTED TO	RCP158	188.	12.42	37.	10.	6.	.37	10.71 12.42
+	HYDROGRAPH AT	160	35.	12.33	7.	2.	1.	.08	
+ +	ROUTED TO	RCP160	34.	12.50	7.	2.	1.	.08	10.19 12.50
+	HYDROGRAPH AT	159	22.	12.58	7.	2.	1.	.08	
+	3 COMBINED AT	CP7	243.	12.42	52.	15.	8.	.52	
+	DIVERSION TO	SD159	3.	12.42	3.	2.	1.	.52	
+	HYDROGRAPH AT	DSD159	240.	12.42	49.	12.	7.	.52	
+ +	ROUTED TO	RCP159	242.	12.50	49.	12.	7.	.52	10.88 12.50
+	HYDROGRAPH AT	12	72.	12.25	13.	4.	2.	.13	
+	HYDROGRAPH AT	RSD159	3.	8.67	3.	2.	1.	.00	
+	ROUTED TO	TL159	3.	8.83	3.	2.	1.	.00	
+	DIVERSION TO	SD12	3.	.00	3.	2.	1.	.00	
+	HYDROGRAPH AT	DSD12	0.	.00	0.	0.	0.	.00	
+	3 COMBINED AT	CP9	303.	12.50	62.	16.	9.	.65	

+	DIVERSION TO	OUT12	150.	12.50	8.	2.	1.	.65	
+	HYDROGRAPH AT	1B12	303.	12.50	55.	14.	8.	.65	
+	ROUTED TO	RCP12	312.	12.50	55.	14.	8.	.65	11.16 12.50
+	HYDROGRAPH AT	DIS16	77.	15.17	56.	21.	12.	.89	
+	HYDROGRAPH AT	16	86.	12.17	10.	3.	2.	.10	
+	2 COMBINED AT	CPA1	86.	12.17	59.	24.	14.	.99	
+	DIVERSION TO	OUT16	47.	12.17	3.	1.	0.	.99	
+	HYDROGRAPH AT	1B16	86.	12.17	58.	23.	13.	.99	
+	HYDROGRAPH AT	DO16A	23.	12.08	17.	8.	5.	.02	
+	2 COMBINED AT	CPA2	109.	12.17	74.	31.	18.	1.01	
+	ROUTED TO	RCP16	95.	12.33	74.	31.	18.	1.01	10.41 12.33
+	HYDROGRAPH AT	152	66.	12.25	10.	3.	2.	.10	
+	2 COMBINED AT	CP10	157.	12.33	83.	33.	20.	1.11	
+	DIVERSION TO	DVDMR	41.	12.33	12.	8.	5.	1.11	
+	HYDROGRAPH AT	DMRVD	116.	12.33	71.	25.	15.	1.11	
+	ROUTED TO	RCP152	112.	12.42	71.	25.	15.	1.11	10.49 12.42
+	HYDROGRAPH AT	170	41.	12.25	6.	2.	1.	.06	
+	2 COMBINED AT	CP200	146.	12.42	76.	27.	16.	1.17	
+	ROUTED TO	RCP200	141.	12.50	76.	27.	16.	1.17	10.43 12.50
+	HYDROGRAPH AT	13	64.	12.17	5.	1.	1.	.06	
+	HYDROGRAPH AT	15	80.	12.25	15.	4.	2.	.14	
+	DIVERSION TO	SF15	62.	11.92	7.	2.	1.	.14	
+	HYDROGRAPH AT	SF15	18.	11.92	7.	2.	1.	.14	
+	ROUTED TO	RSD15	18.	11.92	7.	2.	1.	.14	
+	HYDROGRAPH AT	151	18.	12.17	2.	1.	0.	.02	
+	HYDROGRAPH AT	DRDHV	0.	.92	0.	0.	0.	.00	
+	3 COMBINED AT	SD+151	36.	12.17	10.	3.	2.	.16	
+	DIVERSION TO	OUT151	16.	12.17	2.	1.	0.	.16	
+	HYDROGRAPH AT	1B151	36.	12.17	9.	3.	2.	.16	
+	HYDROGRAPH AT	SF15	62.	12.25	7.	2.	1.	.00	
+	2 COMBINED AT	CP8	95.	12.25	16.	5.	3.	.16	
+	ROUTED TO	RCP15	90.	12.42	16.	5.	3.	.16	10.53 12.42
+	2 COMBINED AT	CP11	141.	12.25	21.	6.	3.	.23	

+	DIVERSION TO	OUT13	113.	12.25	17.	5.	3.	.23	
+	HYDROGRAPH AT	1B13	28.	12.25	4.	1.	1.	.23	
+	HYDROGRAPH AT	RSD12	3.	8.83	3.	2.	1.	.00	
+	ROUTED TO	TL12	3.	9.00	3.	2.	1.	.00	
+	4 COMBINED AT	CP12A	477.	12.50	137.	45.	26.	2.05	
+	DIVERSION TO	SD13	27.	12.50	27.	14.	8.	2.05	
+	HYDROGRAPH AT	DSD13	450.	12.50	110.	30.	18.	2.05	
+	ROUTED TO	RCP13	440.	12.58	110.	30.	18.	2.05	10.86 12.58
+	HYDROGRAPH AT	11	76.	12.08	13.	4.	3.	.06	
+	DIVERSION TO	OUT11	2.	12.08	1.	0.	0.	.06	
+	HYDROGRAPH AT	1B11	76.	12.08	13.	4.	2.	.06	
+	2 COMBINED AT	CP12	470.	12.58	121.	34.	20.	2.11	
+	ROUTED TO	RCP11	463.	12.67	121.	34.	20.	2.11	11.11 12.67
+	HYDROGRAPH AT	161	29.	12.58	11.	3.	2.	.09	
+	DIVERSION TO	SD161	18.	12.58	9.	3.	2.	.09	
+	HYDROGRAPH AT	SD161	11.	12.58	2.	0.	0.	.09	
+	ROUTED TO	RCP161	11.	12.75	2.	0.	0.	.09	10.06 12.75
+	HYDROGRAPH AT	162	90.	12.25	17.	5.	3.	.14	
+	HYDROGRAPH AT	DS161	18.	12.25	9.	3.	2.	.00	
+	3 COMBINED AT	CP13	108.	12.25	27.	8.	5.	.22	
+	DIVERSION TO	SD162	93.	12.25	26.	8.	5.	.22	
+	HYDROGRAPH AT	SD162	15.	12.25	1.	0.	0.	.22	
+	ROUTED TO	RCP162	11.	12.42	1.	0.	0.	.22	10.04 12.42
+	HYDROGRAPH AT	5	107.	12.25	18.	6.	3.	.15	
+	DIVERSION TO	SD5	83.	12.25	17.	5.	3.	.15	
+	HYDROGRAPH AT	SD5	24.	12.25	1.	0.	0.	.15	
+	2 COMBINED AT	CP14	31.	12.25	2.	0.	0.	.37	
+	HYDROGRAPH AT	DS162	93.	12.17	26.	8.	5.	.00	
+	ROUTED TO	TL162	93.	12.25	26.	8.	5.	.00	
+	HYDROGRAPH AT	DS5	83.	12.17	17.	5.	3.	.00	
+	2 COMBINED AT	CP1B5	176.	12.25	44.	14.	8.	.00	
+	DIVERSION TO	OUT5	141.	12.25	34.	10.	6.	.00	
+	HYDROGRAPH AT	1B5	35.	12.25	11.	4.	2.	.00	
+	2 COMBINED AT	CP14B	66.	12.25	13.	5.	3.	.37	

+	ROUTED TO	RCP5	61.	12.42	13.	5.	3.	.37	10.22	12.42
+										
+	HYDROGRAPH AT	6	55.	12.17	9.	3.	2.	.06		
+	HYDROGRAPH AT	RSD13	27.	12.00	27.	14.	8.	.00		
+	ROUTED TO	TL13	27.	12.08	27.	14.	8.	.00		
+	4 COMBINED AT	CP15	560.	12.58	168.	56.	32.	2.55		
+	DIVERSION TO	DMRLR	235.	12.58	61.	25.	14.	2.55		
+	HYDROGRAPH AT	DIMRLR	325.	12.58	107.	31.	18.	2.55		
+	ROUTED TO	RCP6	324.	12.67	107.	31.	18.	2.55	10.67	12.67
+										
+	HYDROGRAPH AT	153	29.	12.17	5.	1.	1.	.04		
+	HYDROGRAPH AT	RSD4	7.	11.83	5.	2.	1.	.00		
+	ROUTED TO	TL4	7.	11.92	5.	2.	1.	.00		
+	2 COMBINED AT	CP153	36.	12.17	10.	4.	2.	.04		
+	DIVERSION TO	OUT153	18.	12.17	3.	1.	1.	.04		
+	HYDROGRAPH AT	1B153	36.	12.17	9.	3.	1.	.04		
+	ROUTED TO	RCP153	35.	12.25	9.	3.	1.	.04	10.06	12.25
+										
+	HYDROGRAPH AT	8	38.	12.17	5.	2.	1.	.04		
+	HYDROGRAPH AT	RSD3	22.	12.08	7.	2.	1.	.00		
+	ROUTED TO	TL3	22.	12.17	7.	2.	1.	.00		
+	4 COMBINED AT	CP16	379.	12.67	127.	38.	22.	2.63		
+	DIVERSION TO	SD8	22.	12.67	22.	10.	6.	2.63		
+	HYDROGRAPH AT	DSD8	357.	12.67	105.	27.	16.	2.63		
+	ROUTED TO	RCP8	346.	12.75	105.	27.	16.	2.63	10.92	12.75
+										
+	3 COMBINED AT	CPMA	350.	12.67	105.	27.	16.	3.36		
+	ROUTED TO	PA03	271.	13.00	93.	24.	14.	3.36	1293.49	13.00
+										
+	DIVERSION TO	PD03	0.	13.00	0.	0.	0.	3.36		
+	HYDROGRAPH AT	CPD03	271.	13.00	93.	24.	14.	3.36		
+	ROUTED TO	RCP3	189.	13.83	91.	24.	14.	3.36	19.51	13.83
+										
+	HYDROGRAPH AT	9	71.	12.17	10.	3.	2.	.07		
+	HYDROGRAPH AT	168	35.	12.17	6.	2.	1.	.05		
+	3 COMBINED AT	CP18	195.	13.75	97.	29.	17.	3.48		
	ROUTED TO	PA09	24.	19.17	23.	21.	14.	3.48	1290.73	19.17
+	DIVERSION TO	PD09	0.	19.17	0.	0.	0.	3.48		
	HYDROGRAPH AT									

+		CPD09	24.	19.17	23.	21.	14.	3.48		
+	HYDROGRAPH AT	22	51.	12.17	7.	2.	1.	.06		
+	ROUTED TO	RCP22	47.	12.25	7.	2.	1.	.06	10.33	12.25
+	HYDROGRAPH AT	RDMRLR	235.	12.58	61.	25.	14.	.00		
+	HYDROGRAPH AT	RSD8	22.	11.83	22.	10.	6.	.00		
+	ROUTED TO	TL8	22.	12.00	22.	10.	6.	.00		
+	HYDROGRAPH AT	10	54.	12.17	8.	3.	1.	.06		
+	4 COMBINED AT	CP19	316.	12.58	97.	40.	23.	.12		
+	DIVERSION TO	SD10	78.	12.58	61.	31.	18.	.12		
+	HYDROGRAPH AT	DSD10	238.	12.58	36.	9.	5.	.12		
+	ROUTED TO	RCP10	230.	12.67	36.	9.	5.	.12	10.73	12.67
+	HYDROGRAPH AT	25	30.	12.58	10.	3.	2.	.10		
+	HYDROGRAPH AT	RSD10	78.	12.00	61.	31.	18.	.00		
+	ROUTED TO	TL8	78.	12.08	61.	31.	18.	.00		
+	4 COMBINED AT	CP21	346.	12.67	126.	60.	39.	3.70		
+	DIVERSION TO	SD25	71.	12.67	71.	46.	31.	3.70		
+	HYDROGRAPH AT	DSD25	275.	12.67	55.	14.	8.	3.70		
+	ROUTED TO	PA25	236.	12.83	47.	12.	7.	3.70	1292.99	12.83
+	DIVERSION TO	PD25	162.	12.83	21.	5.	3.	3.70		
+	HYDROGRAPH AT	CPD25	74.	12.83	26.	7.	4.	3.70		
+	ROUTED TO	RCP25	74.	12.92	26.	7.	4.	3.70	11.83	12.92
+	HYDROGRAPH AT	17	52.	12.25	10.	3.	2.	.10		
+	DIVERSION TO	SD17	8.	12.25	4.	1.	1.	.10		
+	HYDROGRAPH AT	DSD17	43.	12.25	6.	2.	1.	.10		
+	DIVERSION TO	SD17A	10.	12.25	3.	1.	0.	.10		
+	HYDROGRAPH AT	DSD17A	33.	12.25	4.	1.	1.	.10		
+	HYDROGRAPH AT	DRMMR	41.	12.33	12.	8.	5.	.00		
+	2 COMBINED AT	CP17	74.	12.33	15.	9.	6.	.10		
+	ROUTED TO	RCP17	69.	12.42	15.	9.	6.	.10	10.50	12.42
+	HYDROGRAPH AT	19	58.	12.17	7.	2.	1.	.07		
+	HYDROGRAPH AT	RSD17A	10.	12.00	3.	1.	0.	.00		
+	ROUTED TO	TL17A	10.	12.08	3.	1.	0.	.00		
+	3 COMBINED AT	CP32	120.	12.33	25.	11.	7.	.17		
+	DIVERSION TO	DVDML	2.	12.33	0.	0.	0.	.17		

+	HYDROGRAPH AT	DMLVD	118.	12.33	25.	11.	7.	.17	
+	ROUTED TO	RCP19	105.	12.67	24.	11.	7.	.17	10.16 12.67
+	HYDROGRAPH AT	21	225.	12.17	26.	7.	4.	.25	
+	DIVERSION TO	OUT21	180.	12.58	17.	4.	3.	.25	
+	HYDROGRAPH AT	1B21	64.	12.58	10.	3.	2.	.25	
+	2 COMBINED AT	CP35	169.	12.67	34.	14.	9.	.42	
+	ROUTED TO	RCP23	166.	12.67	34.	14.	9.	.42	10.58 12.67
+	HYDROGRAPH AT	27	101.	12.17	12.	3.	2.	.11	
+	2 COMBINED AT	CP37A	194.	12.67	45.	17.	11.	.52	
+	DIVERSION TO	OUT27	155.	12.67	34.	9.	5.	.52	
+	HYDROGRAPH AT	1B27	39.	12.67	13.	9.	6.	.52	
+	ROUTED TO	RCP27	37.	12.75	13.	9.	6.	.52	10.27 12.75
+	HYDROGRAPH AT	26	120.	12.17	12.	3.	2.	.11	
+	HYDROGRAPH AT	RSD25	71.	12.00	71.	46.	31.	.00	
+	ROUTED TO	TL25	71.	12.17	71.	46.	31.	.00	
+	4 COMBINED AT	COM26A	216.	12.17	119.	65.	43.	4.34	
+	HYDROGRAPH AT	38	46.	12.17	5.	1.	1.	.05	
+	DIVERSION TO	OUT38	37.	12.17	4.	1.	1.	.05	
+	HYDROGRAPH AT	2B38	9.	12.17	1.	0.	0.	.05	
+	ROUTED TO	RCP38	8.	12.25	1.	0.	0.	.05	10.05 12.25
+	HYDROGRAPH AT	37	51.	12.17	7.	2.	1.	.07	
+	2 COMBINED AT	CP22	60.	12.17	8.	2.	1.	.12	
+	DIVERSION TO	DHU40	11.	12.17	1.	0.	0.	.12	
+	HYDROGRAPH AT	DBU40	48.	12.17	8.	2.	1.	.12	
+	ROUTED TO	RCP37	46.	12.33	8.	2.	1.	.12	10.33 12.33
+	HYDROGRAPH AT	41	31.	12.08	3.	1.	1.	.03	
+	DIVERSION TO	DBRGR	16.	12.08	3.	1.	0.	.03	
+	HYDROGRAPH AT	DMRGR	15.	12.08	1.	0.	0.	.03	
+	ROUTED TO	RCP41	14.	12.17	1.	0.	0.	.03	10.03 12.17
+	HYDROGRAPH AT	40	45.	12.17	6.	2.	1.	.05	
+	2 COMBINED AT	CP23	59.	12.17	6.	2.	1.	.09	
+	ROUTED TO	RCP40	53.	12.25	6.	2.	1.	.09	10.14 12.25
	HYDROGRAPH AT								

+		39	63.	12.17	8.	2.	1.	.07		
+	DIVERSION TO	OUT39	50.	12.50	5.	1.	1.	.07		
+	HYDROGRAPH AT	2B39	28.	12.50	4.	1.	1.	.07		
+	3 COMBINED AT	CP24	109.	12.25	18.	5.	3.	.28		
+	DIVERSION TO	DBR40	0.	12.25	0.	0.	0.	.28		
+	HYDROGRAPH AT	DDR40	109.	12.25	18.	5.	3.	.28		
+	ROUTED TO	RCP39	99.	12.50	18.	5.	3.	.28	10.28	12.50
+	HYDROGRAPH AT	18	77.	12.25	11.	3.	2.	.11		
+	DIVERSION TO	OUT18	61.	12.25	9.	3.	1.	.11		
+	HYDROGRAPH AT	1B18	15.	12.25	2.	1.	0.	.11		
+	HYDROGRAPH AT	RSD17	8.	11.92	4.	1.	1.	.00		
+	2 COMBINED AT	CP18A	24.	12.25	7.	2.	1.	.11		
+	ROUTED TO	RCP18	22.	12.33	7.	2.	1.	.11	10.23	12.33
+	HYDROGRAPH AT	20	111.	12.25	16.	4.	3.	.15		
+	2 COMBINED AT	CP31	132.	12.25	22.	7.	4.	.26		
+	DIVERSION TO	OUT20	105.	12.83	13.	3.	2.	.26		
+	HYDROGRAPH AT	1B20	48.	12.83	10.	3.	2.	.26		
+	ROUTED TO	RCP20	40.	12.92	10.	3.	2.	.26	10.21	12.92
+	HYDROGRAPH AT	33	20.	12.67	5.	1.	1.	.06		
+	HYDROGRAPH AT	DRMML	2.	12.33	0.	0.	0.	.00		
+	3 COMBINED AT	CP33A	57.	12.92	15.	4.	2.	.32		
+	DIVERSION TO	DVDHB1	18.	12.92	1.	0.	0.	.32		
+	HYDROGRAPH AT	DBDHB1	39.	12.92	13.	4.	2.	.32		
+	ROUTED TO	RCP33	39.	13.00	13.	4.	2.	.32	10.17	13.00
+	HYDROGRAPH AT	34	21.	12.67	5.	1.	1.	.06		
+	HYDROGRAPH AT	DRU40	11.	12.17	1.	0.	0.	.00		
+	3 COMBINED AT	CP25	56.	12.58	19.	5.	3.	.38		
+	DIVERSION TO	DVDHB	0.	12.58	0.	0.	0.	.38		
+	HYDROGRAPH AT	DBDHB	56.	12.58	19.	5.	3.	.38		
+	ROUTED TO	RCP34	55.	12.67	19.	5.	3.	.38	10.20	12.67
+	HYDROGRAPH AT	35	25.	12.33	5.	1.	1.	.06		
+	2 COMBINED AT	CP26	76.	12.58	24.	7.	4.	.45		
+	ROUTED TO	RCP35	76.	12.67	24.	7.	4.	.45	10.27	12.67
	HYDROGRAPH AT									

+		36	27.	12.58	5.	1.	1.	.07		
+	3 COMBINED AT	CP27	199.	12.58	47.	13.	8.	.80		
+	DIVERSION TO	DVDBR	42.	12.58	4.	1.	1.	.80		
+	HYDROGRAPH AT	DBRVD	157.	12.58	43.	12.	7.	.80		
+	ROUTED TO	RCP36	155.	12.67	43.	12.	7.	.80	10.45	12.67
+	DIVERSION TO	SD32	54.	12.67	26.	8.	5.	.80		
+	HYDROGRAPH AT	DSD32	101.	12.67	17.	4.	2.	.80		
+	HYDROGRAPH AT	31	23.	12.17	3.	1.	1.	.03		
+	DIVERSION TO	OUT31	19.	12.58	2.	0.	0.	.03		
+	HYDROGRAPH AT	2B31	10.	12.58	1.	0.	0.	.03		
+	ROUTED TO	RCP31	8.	12.75	1.	0.	0.	.03	10.08	12.75
+	HYDROGRAPH AT	32	15.	12.42	2.	1.	0.	.03		
+	3 COMBINED AT	CP28	120.	12.67	21.	5.	3.	.86		
+	ROUTED TO	RCP32	118.	12.75	21.	5.	3.	.86	10.33	12.75
+	HYDROGRAPH AT	29	25.	12.58	4.	1.	1.	.06		
+	HYDROGRAPH AT	DRDHB	0.	10.50	0.	0.	0.	.00		
+	HYDROGRAPH AT	DRDHB1	18.	12.92	1.	0.	0.	.00		
+	3 COMBINED AT	CP29A	34.	12.92	5.	1.	1.	.06		
+	ROUTED TO	RCP29	30.	13.08	5.	1.	1.	.06	10.66	13.08
+	HYDROGRAPH AT	28	58.	12.17	10.	3.	2.	.06		
+	2 COMBINED AT	CP36	58.	12.17	15.	5.	3.	.13		
+	ROUTED TO	RCP28	51.	12.58	15.	5.	3.	.13	10.98	12.58
+	HYDROGRAPH AT	30	12.	13.17	4.	1.	1.	.06		
+	HYDROGRAPH AT	RSD32	54.	12.17	26.	8.	5.	.00		
+	ROUTED TO	TL32	54.	12.25	26.	8.	5.	.00		
+	4 COMBINED AT	CP29	226.	12.75	65.	19.	11.	1.05		
+	DIVERSION TO	SD30	70.	12.75	36.	11.	7.	1.05		
+	HYDROGRAPH AT	DSD30	156.	12.75	29.	7.	4.	1.05		
+	ROUTED TO	RCP30	155.	12.75	29.	7.	4.	1.05	10.58	12.75
+	HYDROGRAPH AT	RSD30	70.	12.25	36.	11.	7.	.00		
+	DIVERSION TO	SF30	21.	12.25	11.	3.	2.	.00		
+	HYDROGRAPH AT	REM30	49.	12.25	25.	8.	5.	.00		
+	3 COMBINED AT	COM26B	398.	12.75	174.	79.	51.	5.38		
	DIVERSION TO									

+		SD26	43.	12.75	43.	36.	27.	5.38		
+	HYDROGRAPH AT	DSD26	355.	12.75	131.	43.	25.	5.38		
+	ROUTED TO	PA26	58.	15.92	49.	15.	9.	5.38	1291.52	15.92
+										
+	DIVERSION TO	PD26	52.	15.92	44.	14.	8.	5.38		
+	HYDROGRAPH AT	CPD26	6.	15.92	5.	1.	1.	5.38		
+	ROUTED TO	RCP26	6.	16.33	5.	1.	1.	5.38	13.57	16.33
+										
+	HYDROGRAPH AT	42	31.	12.33	8.	2.	1.	.07		
+	HYDROGRAPH AT	RET30	21.	12.25	11.	3.	2.	.00		
+	ROUTED TO	TL30	21.	12.42	11.	3.	2.	.00		
+	HYDROGRAPH AT	RSD26	43.	11.58	43.	36.	27.	.00		
+	ROUTED TO	TL26	43.	11.67	43.	36.	27.	.00		
+	4 COMBINED AT	CP38	95.	12.42	63.	43.	31.	5.45		
+	DIVERSION TO	OUTC	48.	12.42	48.	39.	28.	5.45		
+	HYDROGRAPH AT	DOUTC	47.	12.42	15.	4.	2.	5.45		
+	HYDROGRAPH AT	155	50.	12.08	6.	2.	1.	.04		
+	DIVERSION TO	OUT155	40.	12.08	4.	1.	1.	.04		
+	HYDROGRAPH AT	2B155	10.	12.08	2.	1.	0.	.04		
+	ROUTED TO	RCP155	8.	12.25	2.	1.	0.	.04	10.06	12.25
+										
+	HYDROGRAPH AT	43	41.	12.25	6.	2.	1.	.06		
+	HYDROGRAPH AT	44	64.	12.25	12.	3.	2.	.11		
+	4 COMBINED AT	CP39	153.	12.33	34.	10.	6.	5.67		
+	ROUTED TO	PA44	0.	.00	0.	0.	0.	5.67	1288.48	25.83
+										
+	DIVERSION TO	PD44	0.	.00	0.	0.	0.	5.67		
+	HYDROGRAPH AT	CPD44	0.	.00	0.	0.	0.	5.67		
+	ROUTED TO	RCP44	0.	.00	0.	0.	0.	5.67	10.00	.00
+										
+	HYDROGRAPH AT	45	45.	12.17	7.	2.	1.	.07		
+	HYDROGRAPH AT	46	34.	12.25	6.	2.	1.	.06		
+	HYDROGRAPH AT	DRMBR	42.	12.58	4.	1.	1.	.00		
+	3 COMBINED AT	CP41	102.	12.42	17.	5.	3.	.13		
+	ROUTED TO	RCP46	98.	12.50	17.	5.	3.	.13	10.34	12.50
+										
+	HYDROGRAPH AT	52	58.	12.33	7.	2.	1.	.09		
+	DIVERSION TO	SD52	11.	12.33	3.	1.	1.	.09		
+	HYDROGRAPH AT	DSD52	47.	12.33	4.	1.	1.	.09		
	HYDROGRAPH AT									

+	DRRGR	16.	12.00	3.	1.	0.	.00		
+ 2 COMBINED AT	CP52A	63.	12.33	6.	2.	1.	.09		
+ ROUTED TO	RCP52	60.	12.42	6.	2.	1.	.09	10.21	12.42
+ HYDROGRAPH AT	RSD52	11.	12.08	3.	1.	1.	.00		
+ ROUTED TO	TL52	11.	12.17	3.	1.	1.	.00		
+ HYDROGRAPH AT	54	54.	12.17	6.	2.	1.	.06		
+ 3 COMBINED AT	CP46	104.	12.33	16.	4.	3.	.14		
+ DIVERSION TO	DIV54	4.	12.33	3.	1.	1.	.14		
+ HYDROGRAPH AT	REM54	100.	12.33	13.	3.	2.	.14		
+ DIVERSION TO	OUT54	50.	12.33	6.	2.	1.	.14		
+ HYDROGRAPH AT	2B54	50.	12.33	7.	2.	1.	.14		
+ DIVERSION TO	DGRAS	0.	12.33	0.	0.	0.	.14		
+ HYDROGRAPH AT	DMRAS	50.	12.33	7.	2.	1.	.14		
+ ROUTED TO	RCP54	48.	12.42	7.	2.	1.	.14	10.12	12.42
+ DIVERSION TO	DIVE1	48.	.00	7.	2.	1.	.14		
+ HYDROGRAPH AT	DDIVE1	0.	.00	0.	0.	0.	.14		
+ HYDROGRAPH AT	53	32.	12.17	4.	1.	1.	.04		
+ DIVERSION TO	OUT53	26.	12.17	4.	1.	1.	.04		
+ HYDROGRAPH AT	2B53	6.	12.17	1.	0.	0.	.04		
+ ROUTED TO	RCP53	6.	12.17	1.	0.	0.	.04	10.02	12.17
+ HYDROGRAPH AT	55	70.	12.08	7.	2.	1.	.07		
+ HYDROGRAPH AT	DRRAS	0.	.00	0.	0.	0.	.00		
+ 4 COMBINED AT	CP40	76.	12.17	8.	2.	1.	.26		
+ DIVERSION TO	OUT55	38.	12.17	4.	1.	1.	.26		
+ HYDROGRAPH AT	2B55	38.	12.17	4.	1.	1.	.26		
+ ROUTED TO	RCP55	33.	12.33	4.	1.	1.	.26	10.19	12.33
+ HYDROGRAPH AT	50	17.	12.83	5.	1.	1.	.07		
+ HYDROGRAPH AT	51	20.	12.58	4.	1.	1.	.06		
+ HYDROGRAPH AT	DRR40	0.	12.25	0.	0.	0.	.00		
+ 3 COMBINED AT	CP50A	35.	12.67	9.	2.	1.	.13		
+ ROUTED TO	RCP50	24.	13.75	9.	2.	1.	.13	10.04	13.75
+ HYDROGRAPH AT	48	33.	12.83	8.	2.	1.	.12		
+ 4 COMBINED AT	CP42	137.	12.58	37.	10.	6.	.63		
+ DIVERSION TO	DVDAS	110.	12.58	34.	9.	5.	.63		

+	HYDROGRAPH AT	DDVDAS	28.	12.58	3.	1.	0.	.63		
+	ROUTED TO	RCP48	27.	12.67	3.	1.	0.	.63	10.12	12.67
+	HYDROGRAPH AT	47	31.	12.25	5.	1.	1.	.05		
+	ROUTED TO	TLVDAS	31.	12.33	5.	1.	1.	.05		
+	3 COMBINED AT	CP44	48.	12.50	8.	2.	1.	6.35		
+	ROUTED TO	PA47	12.	13.17	4.	2.	1.	6.35	1288.12	13.17
+	DIVERSION TO	PD47	0.	13.17	0.	0.	0.	6.35		
+	HYDROGRAPH AT	CPD47	12.	13.17	4.	2.	1.	6.35		
+	HYDROGRAPH AT	49	110.	12.25	17.	5.	3.	.13		
+	DIVERSION TO	OUT49	88.	12.50	8.	2.	1.	.13		
+	HYDROGRAPH AT	3B49	74.	12.50	10.	3.	2.	.13		
+	HYDROGRAPH AT	RDVDAS	110.	12.58	34.	9.	5.	.00		
+	2 COMBINED AT	CP49	183.	12.50	44.	12.	7.	.13		
+	DIVERSION TO	DIV49	16.	12.50	13.	4.	3.	.13		
+	HYDROGRAPH AT	REM49	167.	12.50	31.	8.	5.	.13		
+	ROUTED TO	RCP49	156.	12.67	31.	8.	5.	.13	10.55	12.67
+	HYDROGRAPH AT	58	58.	12.17	10.	3.	2.	.08		
+	ROUTED TO	RCP58	58.	12.25	10.	3.	2.	.08	10.50	12.25
+	HYDROGRAPH AT	70	39.	12.17	7.	2.	1.	.05		
+	HYDROGRAPH AT	71	104.	12.25	17.	5.	3.	.10		
+	DIVERSION TO	DIV110	77.	11.92	6.	2.	1.	.10		
+	HYDROGRAPH AT	REM110	27.	11.92	10.	4.	2.	.10		
+	3 COMBINED AT	CP50	124.	12.25	27.	9.	5.	.23		
+	DIVERSION TO	OUT70	99.	12.92	17.	5.	3.	.23		
+	HYDROGRAPH AT	3B70	59.	12.92	13.	4.	2.	.23		
+	ROUTED TO	RCP70	52.	13.00	13.	4.	2.	.23	10.43	13.00
+	HYDROGRAPH AT	RET110	77.	12.25	6.	2.	1.	.00		
+	2 COMBINED AT	CP51	101.	12.25	19.	6.	3.	.23		
+	DIVERSION TO	OUT71	81.	12.33	4.	1.	1.	.23		
+	HYDROGRAPH AT	3B71	85.	12.33	16.	5.	3.	.23		
+	HYDROGRAPH AT	RDIVE1	48.	12.42	7.	2.	1.	.00		
+	HYDROGRAPH AT	56	41.	12.17	5.	1.	1.	.05		
+	2 COMBINED AT	CP47	78.	12.25	12.	3.	2.	.05		

+	DIVERSION TO	SD56	14.	12.25	5.	1.	1.	.05	
+	HYDROGRAPH AT	DSD56	64.	12.25	8.	2.	1.	.05	
+	ROUTED TO	RCP56	63.	12.33	8.	2.	1.	.05	10.19 12.33
+									
+	HYDROGRAPH AT	76	128.	12.17	21.	7.	4.	.13	
+	DIVERSION TO	DIV109	86.	11.92	7.	2.	1.	.13	
+	HYDROGRAPH AT	REM109	42.	11.92	15.	5.	3.	.13	
+	HYDROGRAPH AT	59	58.	12.33	8.	2.	1.	.08	
+	2 COMBINED AT	CP48	100.	12.33	22.	8.	4.	.22	
+	DIVERSION TO	OUT59	50.	12.33	7.	2.	1.	.22	
+	HYDROGRAPH AT	3B59	100.	12.33	18.	5.	3.	.22	
+	HYDROGRAPH AT	RSD56	14.	11.92	5.	1.	1.	.00	
+	ROUTED TO	TL56	14.	12.00	5.	1.	1.	.00	
+	3 COMBINED AT	COM59	177.	12.33	30.	9.	5.	.26	
+	ROUTED TO	RCP59	172.	12.42	30.	9.	5.	.26	10.55 12.42
+									
+	HYDROGRAPH AT	RTV109	86.	12.17	7.	2.	1.	.00	
+	2 COMBINED AT	COM76	222.	12.33	37.	10.	6.	.26	
+	DIVERSION TO	DUDGR	72.	12.33	14.	5.	3.	.26	
+	HYDROGRAPH AT	DGRUD	150.	12.33	23.	6.	3.	.26	
+	ROUTED TO	RCP76	143.	12.50	23.	6.	3.	.26	10.38 12.50
+									
+	DIVERSION TO	SD71	24.	12.50	7.	2.	1.	.26	
+	HYDROGRAPH AT	DSD71	119.	12.50	16.	4.	2.	.26	
+	2 COMBINED AT	CP71A	195.	12.42	32.	9.	5.	.50	
+	ROUTED TO	RCP71	180.	12.50	32.	9.	5.	.50	10.54 12.50
+									
+	HYDROGRAPH AT	61	105.	12.08	12.	4.	2.	.07	
+	DIVERSION TO	OUT61	3.	12.08	1.	0.	0.	.07	
+	HYDROGRAPH AT	3B61	105.	12.08	12.	4.	2.	.07	
+	HYDROGRAPH AT	RSD71	24.	12.08	7.	2.	1.	.00	
+	ROUTED TO	TL71	24.	12.17	7.	2.	1.	.00	
+	3 COMBINED AT	CP52	229.	12.50	50.	14.	8.	.57	
+	DIVERSION TO	SD61	28.	12.50	16.	6.	3.	.57	
+	HYDROGRAPH AT	DSD61	201.	12.50	34.	9.	5.	.57	
+	ROUTED TO	RCP61	197.	12.58	34.	9.	5.	.57	10.58 12.58
+	HYDROGRAPH AT	62	30.	12.17	5.	1.	1.	.03	
	DIVERSION TO								

+		OUT62	24.	12.58	3.	1.	0.	.03		
+	HYDROGRAPH AT	3B62	11.	12.58	2.	1.	0.	.03		
+	HYDROGRAPH AT	60	95.	12.08	13.	5.	3.	.06		
+	HYDROGRAPH AT	RSD61	28.	11.75	16.	6.	3.	.00		
+	ROUTED TO	TL61	28.	11.83	16.	6.	3.	.00		
+	5 COMBINED AT	CP60A	417.	12.58	96.	27.	16.	.78		
+	DIVERSION TO	OUTA	64.	12.58	36.	12.	7.	.78		
+	HYDROGRAPH AT	DOUTA	353.	12.58	61.	15.	9.	.78		
+	DIVERSION TO	DUDVD	127.	12.58	17.	4.	2.	.78		
+	HYDROGRAPH AT	DDUDVD	226.	12.58	44.	11.	6.	.78		
+	HYDROGRAPH AT	180	33.	12.08	4.	1.	1.	.02		
+	2 COMBINED AT	CP180	232.	12.58	48.	12.	7.	.80		
+	ROUTED TO	PA180	152.	13.00	47.	12.	7.	.80	1288.41	13.00
+	DIVERSION TO	PD180	0.	13.00	0.	0.	0.	.80		
+	HYDROGRAPH AT	CPD180	152.	13.00	47.	12.	7.	.80		
+	DIVERSION TO	CD180	29.	13.00	16.	4.	2.	.80		
+	HYDROGRAPH AT	DCD180	122.	13.00	31.	8.	5.	.80		
+	DIVERSION TO	WD180	0.	13.00	0.	0.	0.	.80		
+	HYDROGRAPH AT	DWD180	122.	13.00	31.	8.	5.	.80		
+	HYDROGRAPH AT	57	112.	12.08	11.	3.	2.	.09		
+	3 COMBINED AT	CP45	137.	13.00	46.	12.	7.	7.24		
+	ROUTED TO	PA57	0.	.00	0.	0.	0.	7.24	1288.13	41.58
+	DIVERSION TO	PD57	0.	.00	0.	0.	0.	7.24		
+	HYDROGRAPH AT	CPD57	0.	.00	0.	0.	0.	7.24		
+	HYDROGRAPH AT	181	40.	12.08	5.	2.	1.	.02		
+	HYDROGRAPH AT	RDUDVD	127.	12.58	17.	4.	2.	.00		
+	HYDROGRAPH AT	RWD180	0.	.00	0.	0.	0.	.00		
+	4 COMBINED AT	CP53	135.	12.58	22.	6.	3.	7.26		
+	DIVERSION TO	OUTB	16.	12.58	6.	2.	1.	7.26		
+	HYDROGRAPH AT	DOUTB	119.	12.58	16.	4.	2.	7.26		
+	ROUTED TO	PA181	68.	12.92	15.	4.	2.	7.26	1288.26	12.92
+	DIVERSION TO	PD181	0.	12.92	0.	0.	0.	7.26		
	HYDROGRAPH AT	CPD181	68.	12.92	15.	4.	2.	7.26		
+	HYDROGRAPH AT	RCD180	29.	13.00	16.	4.	2.	.00		
	ROUTED TO									

+		TL63	29.	13.08	16.	4.	2.	.00		
+	HYDROGRAPH AT	63	119.	12.25	23.	7.	4.	.12		
+	3 COMBINED AT	CP54	159.	12.42	54.	15.	9.	7.39		
+	HYDROGRAPH AT	80	120.	12.17	17.	5.	3.	.11		
+	DIVERSION TO	OUT80	24.	12.17	4.	1.	1.	.11		
+	HYDROGRAPH AT	3B80	120.	12.17	15.	4.	2.	.11		
+	ROUTED TO	RCP80	107.	12.25	15.	4.	2.	.11	10.21	12.25
+	HYDROGRAPH AT	83	44.	12.08	7.	2.	1.	.04		
+	ROUTED TO	RCP83	39.	12.25	7.	2.	1.	.04	10.08	12.25
+	HYDROGRAPH AT	77	55.	12.50	20.	7.	4.	.14		
+	HYDROGRAPH AT	RGRUD	72.	12.33	14.	5.	3.	.00		
+	ROUTED TO	TL76	72.	12.42	14.	5.	3.	.00		
+	2 COMBINED AT	COM77	127.	12.50	34.	11.	7.	.14		
+	DIVERSION TO	SD77	42.	12.50	25.	9.	5.	.14		
+	HYDROGRAPH AT	DSD77	85.	12.50	10.	2.	1.	.14		
+	DIVERSION TO	OUT77	68.	12.50	8.	2.	1.	.14		
+	HYDROGRAPH AT	3B77	17.	12.50	2.	0.	0.	.14		
+	ROUTED TO	RCP77	16.	12.50	2.	0.	0.	.14	10.05	12.50
+	HYDROGRAPH AT	79	172.	12.08	24.	8.	5.	.12		
+	HYDROGRAPH AT	RSD77	42.	12.08	25.	9.	5.	.00		
+	ROUTED TO	TL77	42.	12.17	25.	9.	5.	.00		
+	5 COMBINED AT	CP60	338.	12.17	72.	24.	14.	.40		
+	DIVERSION TO	DMSGR	148.	12.17	53.	19.	11.	.40		
+	HYDROGRAPH AT	DDMSGR	190.	12.17	19.	5.	3.	.40		
+	ROUTED TO	RCP79	181.	12.25	19.	5.	3.	.40	10.40	12.25
+	HYDROGRAPH AT	74	94.	12.08	12.	4.	2.	.06		
+	DIVERSION TO	OUT74	5.	12.08	1.	0.	0.	.06		
+	HYDROGRAPH AT	3B74	94.	12.08	11.	3.	2.	.06		
+	2 COMBINED AT	CP98	251.	12.17	30.	8.	5.	.46		
+	ROUTED TO	RCP74	236.	12.33	30.	8.	5.	.46	10.51	12.33
+	HYDROGRAPH AT	66	100.	12.08	13.	4.	2.	.07		
+	DIVERSION TO	OUT66	22.	12.08	3.	1.	1.	.07		
+	HYDROGRAPH AT	3B66	100.	12.08	12.	3.	2.	.07		
+	HYDROGRAPH AT	73	86.	12.08	11.	4.	2.	.06		

+	ROUTED TO	RCP73	79.	12.25	11.	4.	2.	.06	11.01	12.25
+										
+	3 COMBINED AT	CP55	389.	12.25	53.	15.	9.	.59		
+	ROUTED TO	RCP66	375.	12.33	53.	15.	9.	.59	10.73	12.33
+										
+	DIVERSION TO	SD64	46.	12.33	18.	6.	4.	.59		
+	HYDROGRAPH AT	DSD64	329.	12.33	35.	9.	5.	.59		
+	HYDROGRAPH AT	65	98.	12.17	15.	5.	3.	.08		
+	DIVERSION TO	OUT65	1.	12.17	1.	0.	0.	.08		
+	HYDROGRAPH AT	3B65	98.	12.17	15.	4.	3.	.08		
+	ROUTED TO	RCP65	91.	12.25	15.	4.	3.	.08	10.54	12.25
+										
+	HYDROGRAPH AT	64	67.	12.17	12.	4.	2.	.06		
+	4 COMBINED AT	CP56	634.	12.33	116.	32.	19.	8.12		
+	ROUTED TO	PA64	272.	12.92	81.	31.	18.	8.12	1288.25	12.92
+										
+	DIVERSION TO	PD64	221.	12.92	43.	11.	6.	8.12		
+	HYDROGRAPH AT	CPD64	50.	12.92	38.	21.	12.	8.12		
+	ROUTED TO	RCP63	50.	13.08	38.	21.	12.	8.12	17.06	13.08
+										
+	HYDROGRAPH AT	67	71.	12.17	15.	5.	3.	.07		
+	HYDROGRAPH AT	RSD64	46.	11.92	18.	6.	4.	.00		
+	ROUTED TO	TL64	46.	12.00	18.	6.	4.	.00		
+	3 COMBINED AT	CP57	136.	12.17	68.	31.	19.	8.19		
+	ROUTED TO	RCP67	129.	12.50	67.	31.	19.	8.19	18.59	12.50
+										
+	HYDROGRAPH AT	68	38.	12.25	9.	3.	2.	.05		
+	2 COMBINED AT	CP58	165.	12.42	76.	34.	20.	8.24		
+	HYDROGRAPH AT	81	62.	12.17	11.	4.	2.	.05		
+	HYDROGRAPH AT	RDMSGR	148.	12.17	53.	19.	11.	.00		
+	2 COMBINED AT	CP81A	210.	12.17	63.	23.	13.	.05		
+	DIVERSION TO	SD81	125.	12.17	58.	22.	12.	.05		
+	HYDROGRAPH AT	DSD81	85.	12.17	5.	1.	1.	.05		
+	ROUTED TO	RCP81	78.	12.25	5.	1.	1.	.05	10.29	12.25
+										
+	HYDROGRAPH AT	82	41.	12.17	7.	2.	1.	.05		
+	DIVERSION TO	OUT82	33.	12.17	6.	2.	1.	.05		
+	HYDROGRAPH AT	3B82	8.	12.17	1.	1.	0.	.05		
+	2 COMBINED AT	CP62	86.	12.25	7.	2.	1.	.10		
	ROUTED TO									

+		RCP82	76.	12.33	7.	2.	1.	.10	10.25	12.33
+										
+	HYDROGRAPH AT	91	93.	12.08	12.	4.	2.	.08		
+	DIVERSION TO	OUT91	93.	12.25	7.	2.	1.	.08		
+	HYDROGRAPH AT	4B91	74.	12.25	6.	2.	1.	.08		
+	DIVERSION TO	DBOHR	0.	12.25	0.	0.	0.	.08		
+	HYDROGRAPH AT	DDBOHR	74.	12.25	6.	2.	1.	.08		
+	ROUTED TO	RCP91	49.	12.42	6.	2.	1.	.08	10.13	12.42
+										
+	HYDROGRAPH AT	90	76.	12.17	14.	5.	3.	.09		
+	HYDROGRAPH AT	88	70.	12.17	13.	4.	2.	.08		
+	ROUTED TO	RCP88	70.	12.25	13.	4.	2.	.08	10.51	12.25
+										
+	HYDROGRAPH AT	89	47.	12.25	10.	3.	2.	.07		
+	3 COMBINED AT	CP64	192.	12.25	38.	12.	7.	.24		
+	DIVERSION TO	OUT89	89.	12.25	10.	3.	2.	.24		
+	HYDROGRAPH AT	4B89	192.	12.25	32.	9.	5.	.24		
+	2 COMBINED AT	CP63	217.	12.33	39.	11.	6.	.32		
+	ROUTED TO	RCP89	215.	12.42	39.	11.	6.	.32	10.55	12.42
+										
+	HYDROGRAPH AT	87	48.	12.17	8.	3.	2.	.05		
+	2 COMBINED AT	CP65	254.	12.33	46.	13.	8.	.38		
+	ROUTED TO	RCP87	253.	12.42	46.	13.	8.	.38	10.62	12.42
+										
+	HYDROGRAPH AT	86	86.	12.17	15.	5.	3.	.09		
+	3 COMBINED AT	CP66	402.	12.33	67.	20.	12.	.57		
+	HYDROGRAPH AT	RSD81	125.	11.92	58.	22.	12.	.00		
+	ROUTED TO	TL81	125.	12.00	58.	22.	12.	.00		
+	2 COMBINED AT	COM86	527.	12.33	125.	42.	24.	.57		
+	DIVERSION TO	DBOGR	280.	12.33	88.	32.	19.	.57		
+	HYDROGRAPH AT	DDBOGR	247.	12.33	37.	9.	5.	.57		
+	ROUTED TO	RCP86	235.	12.50	37.	9.	5.	.57	10.62	12.50
+										
+	HYDROGRAPH AT	85	86.	12.25	15.	5.	3.	.12		
+	2 COMBINED AT	CP67	302.	12.50	52.	14.	8.	.69		
+	ROUTED TO	RCP85	307.	12.50	52.	14.	8.	.69	10.69	12.50
+										
+	HYDROGRAPH AT	69	80.	12.17	14.	4.	3.	.08		
+	DIVERSION TO	OUT69	58.	12.17	4.	1.	1.	.08		
+	HYDROGRAPH AT	3B69	80.	12.17	11.	3.	2.	.08		

+	ROUTED TO	RCP69	71.	12.33	11.	3.	2.	.08	10.41	12.33
+										
+	HYDROGRAPH AT	84	41.	12.25	8.	3.	1.	.05		
+	4 COMBINED AT	CP68	564.	12.50	146.	53.	32.	9.06		
+	ROUTED TO	PA84	284.	13.25	146.	53.	32.	9.06	1285.72	13.25
+										
+	DIVERSION TO	PD84	0.	13.25	0.	0.	0.	9.06		
+	HYDROGRAPH AT	CPD84	284.	13.25	146.	53.	32.	9.06		
+	HYDROGRAPH AT	92	43.	12.33	11.	3.	2.	.07		
+	2 COMBINED AT	CP69	303.	13.00	157.	57.	34.	9.13		
+	HYDROGRAPH AT	93	44.	12.17	7.	2.	1.	.05		
+	2 COMBINED AT	CP70	312.	12.92	163.	59.	35.	9.18		
+	ROUTED TO	RCP93	312.	12.92	163.	59.	35.	9.18	9.70	12.92
+										
+	HYDROGRAPH AT	99	75.	12.17	11.	4.	2.	.08		
+	DIVERSION TO	OUT99	75.	12.33	7.	2.	1.	.08		
+	HYDROGRAPH AT	4B99	59.	12.33	6.	2.	1.	.08		
+	ROUTED TO	RCP99	50.	12.42	6.	2.	1.	.08	10.30	12.42
+										
+	HYDROGRAPH AT	98	48.	12.17	7.	2.	1.	.05		
+	HYDROGRAPH AT	RDBOGR	280.	12.33	88.	32.	19.	.00		
+	3 COMBINED AT	CP76	351.	12.42	101.	37.	21.	.12		
+	DIVERSION TO	SD98	118.	12.42	74.	30.	17.	.12		
+	HYDROGRAPH AT	DSD98	233.	12.42	27.	7.	4.	.12		
+	ROUTED TO	RCP98	235.	12.42	27.	7.	4.	.12	11.37	12.42
+										
+	HYDROGRAPH AT	105	29.	12.17	5.	2.	1.	.04		
+	ROUTED TO	RCP105	25.	12.42	5.	2.	1.	.04	10.16	12.42
+										
+	HYDROGRAPH AT	100	36.	12.25	8.	3.	1.	.05		
+	3 COMBINED AT	CP75	291.	12.42	40.	11.	6.	.21		
+	ROUTED TO	RCP100	293.	12.42	40.	11.	6.	.21	10.79	12.42
+										
+	HYDROGRAPH AT	110	74.	12.17	11.	4.	2.	.07		
+	DIVERSION TO	OUT110	37.	12.17	6.	2.	1.	.07		
+	HYDROGRAPH AT	4B110	37.	12.17	6.	2.	1.	.07		
+	ROUTED TO	RCP110	33.	12.25	6.	2.	1.	.07	10.31	12.25
+										
-	HYDROGRAPH AT	111	54.	12.17	9.	3.	2.	.06		
+	DIVERSION TO	OUT111	54.	12.58	6.	2.	1.	.06		
	HYDROGRAPH AT									

+		4B111	25.	12.58	3.	1.	1.	.06	
+	ROUTED TO	RCP111	24.	12.67	3.	1.	1.	.06	10.08 12.67
+	HYDROGRAPH AT	106	48.	12.25	10.	3.	2.	.07	
+	3 COMBINED AT	CP73	81.	12.25	19.	6.	4.	.19	
+	DIVERSION TO	OUT106	81.	22.25	19.	6.	3.	.19	
+	HYDROGRAPH AT	4B106	2.	22.25	1.	0.	0.	.19	
+	ROUTED TO	RCP106	2.	23.00	1.	0.	0.	.19	10.01 23.17
+	HYDROGRAPH AT	101	67.	12.25	13.	4.	2.	.09	
+	HYDROGRAPH AT	RSD98	118.	11.83	74.	30.	17.	.00	
+	ROUTED TO	TL98	118.	11.92	74.	30.	17.	.00	
+	4 COMBINED AT	CP74	468.	12.42	127.	45.	26.	.49	
+	DIVERSION TO	SD101	69.	12.42	59.	28.	16.	.49	
+	HYDROGRAPH AT	DSD101	399.	12.42	69.	17.	10.	.49	
+	DIVERSION TO	SF101	129.	12.42	42.	11.	6.	.49	
+	HYDROGRAPH AT	DSF101	270.	12.42	27.	7.	4.	.49	
+	HYDROGRAPH AT	102	66.	12.25	15.	5.	3.	.10	
+	HYDROGRAPH AT	103	67.	12.25	14.	4.	3.	.09	
+	2 COMBINED AT	CP102	133.	12.25	29.	9.	5.	.19	
+	DIVERSION TO	SF102	67.	12.08	11.	3.	2.	.19	
+	HYDROGRAPH AT	DSF102	66.	12.08	18.	6.	3.	.19	
+	ROUTED TO	TL102	66.	12.17	18.	6.	3.	.19	
+	HYDROGRAPH AT	94	80.	12.25	13.	4.	2.	.10	
+	4 COMBINED AT	CP77	697.	12.42	219.	75.	45.	9.96	
+	ROUTED TO	PA94	18.	26.17	17.	13.	8.	9.96	1284.49 26.17
+	DIVERSION TO	PD94	0.	26.17	0.	0.	0.	9.96	
+	HYDROGRAPH AT	CPD94	18.	26.17	17.	13.	8.	9.96	
+	HYDROGRAPH AT	112	42.	12.17	7.	2.	1.	.04	
+	HYDROGRAPH AT	RDBOHR	0.	.00	0.	0.	0.	.00	
+	2 COMBINED AT	COM112	42.	12.17	7.	2.	1.	.04	
+	ROUTED TO	RCP112	40.	12.25	7.	2.	1.	.04	10.35 12.25
+	HYDROGRAPH AT	113	42.	12.33	11.	3.	2.	.09	
+	2 COMBINED AT	CP61	79.	12.25	17.	5.	3.	.14	
+	ROUTED TO	RCP113	79.	12.33	17.	5.	3.	.14	10.65 12.33
+	HYDROGRAPH AT	114	50.	12.25	10.	3.	2.	.08	

+	DIVERSION TO	SD114	27.	12.25	9.	3.	2.	.08		
+	HYDROGRAPH AT	DSD114	23.	12.25	2.	0.	0.	.08		
+	2 COMBINED AT	CP114a	101.	12.25	19.	6.	3.	.22		
+	DIVERSION TO	OUT114	101.	12.58	10.	3.	2.	.22		
+	HYDROGRAPH AT	4B114	74.	12.58	12.	3.	2.	.22		
+	ROUTED TO	RCP114	64.	12.67	12.	3.	2.	.22	10.32	12.67
+	HYDROGRAPH AT	115	26.	12.33	4.	1.	1.	.04		
+	HYDROGRAPH AT	RSD114	27.	12.08	9.	3.	2.	.00		
+	ROUTED TO	TL114	27.	12.17	9.	3.	2.	.00		
+	3 COMBINED AT	COM115	108.	12.67	24.	7.	4.	.26		
+	DIVERSION TO	SD115	23.	12.67	13.	4.	3.	.26		
+	HYDROGRAPH AT	DSD115	85.	12.67	11.	3.	2.	.26		
+	ROUTED TO	RCP115	77.	12.75	11.	3.	2.	.26	10.32	12.75
+	HYDROGRAPH AT	118	135.	12.17	24.	8.	4.	.16		
+	DIVERSION TO	SF118	96.	11.92	9.	2.	1.	.16		
+	HYDROGRAPH AT	DSF118	39.	11.92	15.	6.	3.	.16		
+	ROUTED TO	TL118A	39.	12.00	15.	6.	3.	.16		
+	HYDROGRAPH AT	116	111.	12.25	18.	6.	3.	.14		
+	2 COMBINED AT	SD+116	150.	12.25	33.	11.	6.	.30		
+	DIVERSION TO	OUT116	150.	12.92	25.	7.	4.	.30		
+	HYDROGRAPH AT	4B116	72.	12.92	13.	4.	2.	.30		
+	HYDROGRAPH AT	RSD115	23.	12.08	13.	4.	3.	.00		
+	ROUTED TO	TL115	23.	12.17	13.	4.	3.	.00		
+	3 COMBINED AT	CP80	165.	12.92	36.	11.	6.	.56		
+	DIVERSION TO	SD116	23.	12.92	16.	6.	4.	.56		
+	HYDROGRAPH AT	DSD116	142.	12.92	19.	5.	3.	.56		
+	ROUTED TO	RCP116	123.	13.00	19.	5.	3.	.56	10.46	13.00
+	HYDROGRAPH AT	SF118	96.	12.17	9.	2.	1.	.00		
+	HYDROGRAPH AT	RSD116	23.	12.08	16.	6.	4.	.00		
+	ROUTED TO	TL116	23.	12.17	16.	6.	4.	.00		
+	3 COMBINED AT	CP81	146.	13.00	45.	13.	8.	.56		
	DIVERSION TO	SD118	53.	13.00	28.	9.	5.	.56		
+	HYDROGRAPH AT	DSD118	93.	13.00	16.	4.	2.	.56		
+	DIVERSION TO	DHRSA	0.	13.00	0.	0.	0.	.56		

+	HYDROGRAPH AT	DSAHR	93.	13.00	16.	4.	2.	.56		
+	ROUTED TO	RCP118	86.	13.17	16.	4.	2.	.56	10.23	13.17
+	HYDROGRAPH AT	107	152.	12.17	23.	8.	4.	.15		
+	DIVERSION TO	OUT107	152.	12.33	12.	4.	2.	.15		
+	HYDROGRAPH AT	4B107	127.	12.33	14.	4.	2.	.15		
+	HYDROGRAPH AT	108	77.	12.25	16.	5.	3.	.10		
+	HYDROGRAPH AT	RSD118	53.	12.00	28.	9.	5.	.00		
+	ROUTED TO	TL118	53.	12.08	28.	9.	5.	.00		
+	3 COMBINED AT	CP82	254.	12.33	57.	18.	11.	.25		
+	DIVERSION TO	SD108	57.	12.33	35.	13.	7.	.25		
+	HYDROGRAPH AT	DSD108	197.	12.33	22.	5.	3.	.25		
+	DIVERSION TO	OUT108	197.	12.75	14.	3.	2.	.25		
+	HYDROGRAPH AT	4B108	83.	12.75	8.	2.	1.	.25		
+	2 COMBINED AT	CP83	130.	12.75	24.	6.	3.	.81		
+	ROUTED TO	RCP108	121.	13.25	24.	6.	3.	.81	10.36	13.25
+	HYDROGRAPH AT	RSF101	129.	12.08	42.	11.	6.	.00		
+	HYDROGRAPH AT	RSF102	67.	12.25	11.	3.	2.	.00		
+	2 COMBINED AT	COM102	196.	12.25	53.	14.	8.	.00		
+	ROUTED TO	RCP102	189.	12.33	53.	14.	8.	.00	10.80	12.33
+	HYDROGRAPH AT	RSD101	69.	11.75	59.	28.	16.	.00		
+	ROUTED TO	TL101	69.	11.83	59.	28.	16.	.00		
+	2 COMBINED AT	CP103	258.	12.33	112.	42.	24.	.00		
+	ROUTED TO	RCP103	258.	12.42	112.	42.	24.	.00	11.16	12.42
+	HYDROGRAPH AT	104	61.	12.17	11.	4.	2.	.07		
+	DIVERSION TO	OUT104	31.	12.50	3.	1.	1.	.07		
+	HYDROGRAPH AT	4B104	42.	12.50	8.	3.	2.	.07		
+	3 COMBINED AT	CP84	349.	13.00	144.	51.	29.	.88		
+	HYDROGRAPH AT	RSD108	57.	12.00	35.	13.	7.	.00		
+	ROUTED TO	TL108	57.	12.08	35.	13.	7.	.00		
+	2 COMBINED AT	COM104	406.	13.00	179.	64.	37.	.88		
+	DIVERSION TO	DSAGR	146.	13.00	104.	45.	26.	.88		
.	HYDROGRAPH AT	DDSAGR	260.	13.00	75.	19.	11.	.88		
+	DIVERSION TO	DIV97	156.	13.00	45.	11.	6.	.88		
	HYDROGRAPH AT									

+		DDIV97	104.	13.00	30.	7.	4.	.88		
+	HYDROGRAPH AT	96	46.	12.25	6.	2.	1.	.07		
+	HYDROGRAPH AT	97	58.	12.08	8.	3.	2.	.04		
+	4 COMBINED AT	CP79	168.	12.25	46.	23.	15.	10.95		
+	ROUTED TO	PA97	15.	14.42	15.	14.	10.	10.95	1284.02	14.42
+										
+	DIVERSION TO	PD97	0.	14.42	0.	0.	0.	10.95		
+	HYDROGRAPH AT	CPD97	15.	14.42	15.	14.	10.	10.95		
+	DIVERSION TO	CD97	15.	.00	15.	14.	10.	10.95		
+	HYDROGRAPH AT	DCD97	0.	.00	0.	0.	0.	10.95		
+	DIVERSION TO	WD97	0.	.00	0.	0.	0.	10.95		
+	HYDROGRAPH AT	DWD97	0.	.00	0.	0.	0.	10.95		
+	HYDROGRAPH AT	RCD97	15.	14.42	15.	14.	10.	.00		
+	HYDROGRAPH AT	RWD97	0.	.00	0.	0.	0.	.00		
+	HYDROGRAPH AT	RDIV97	156.	13.00	45.	11.	6.	.00		
+	ROUTED TO	TL97	156.	13.08	45.	11.	6.	.00		
+	4 COMBINED AT	CP120	167.	13.25	58.	25.	16.	10.95		
+	DIVERSION TO	PD120	58.	13.25	11.	3.	2.	10.95		
+	HYDROGRAPH AT	CPD120	109.	13.25	47.	22.	15.	10.95		
+	ROUTED TO	RCP97	109.	13.33	46.	22.	15.	10.95	17.27	13.33
+										
+	HYDROGRAPH AT	120	25.	12.50	4.	1.	1.	.06		
+	2 COMBINED AT	CP85	130.	12.58	50.	23.	15.	11.01		
+	DIVERSION TO	CD128	60.	12.58	32.	19.	13.	11.01		
+	HYDROGRAPH AT	CCD128	70.	12.58	18.	4.	3.	11.01		
+	HYDROGRAPH AT	121	56.	12.08	8.	3.	2.	.04		
+	HYDROGRAPH AT	RDSAGR	146.	13.00	104.	45.	26.	.00		
+	2 COMBINED AT	COM128	189.	12.08	112.	48.	28.	.04		
+	2 COMBINED AT	CP91A	233.	12.50	130.	52.	30.	11.05		
+	HYDROGRAPH AT	144	67.	12.17	10.	3.	2.	.07		
+	HYDROGRAPH AT	146	39.	12.17	6.	2.	1.	.04		
+	2 COMBINED AT	CP144	107.	12.17	16.	5.	3.	.11		
+	ROUTED TO	RCP144	101.	12.25	16.	5.	3.	.11	4.91	12.25
+										
+	HYDROGRAPH AT	125	71.	12.25	13.	4.	2.	.10		
+	HYDROGRAPH AT	143	72.	12.17	12.	4.	2.	.09		
+	3 COMBINED AT	CP86	243.	12.25	41.	13.	7.	.31		
	ROUTED TO									

+	RCP143	237.	12.25	41.	13.	7.	.31	5.62	12.25
+									
+ HYDROGRAPH AT	124	26.	12.58	6.	2.	1.	.07		
+ HYDROGRAPH AT	DRMSA	0.	.00	0.	0.	0.	.00		
+ 2 COMBINED AT	CP124	26.	12.58	6.	2.	1.	.07		
+ ROUTED TO	RCP124	26.	12.67	6.	2.	1.	.07	10.09	12.67
+									
+ HYDROGRAPH AT	136	56.	12.17	8.	3.	1.	.07		
+ HYDROGRAPH AT	137	24.	12.17	4.	1.	1.	.03		
+ 4 COMBINED AT	CP87	320.	12.25	59.	18.	10.	.48		
+ ROUTED TO	RCP136	302.	12.33	59.	18.	10.	.48	5.91	12.33
+									
+ HYDROGRAPH AT	133	28.	12.25	6.	2.	1.	.05		
+ HYDROGRAPH AT	132	75.	12.25	13.	4.	2.	.09		
+ 3 COMBINED AT	CP88	399.	12.33	78.	24.	14.	.62		
+ ROUTED TO	RCP132	377.	12.42	78.	24.	14.	.62	6.14	12.42
+									
+ HYDROGRAPH AT	123	95.	12.17	13.	4.	2.	.10		
+ ROUTED TO	RCP123	87.	12.25	13.	4.	2.	.10	10.54	12.25
+									
+ HYDROGRAPH AT	122	72.	12.17	9.	3.	1.	.09		
+ 2 COMBINED AT	CP89	157.	12.25	23.	7.	4.	.20		
+ ROUTED TO	RCP122	154.	12.25	23.	7.	4.	.20	10.73	12.25
+									
+ HYDROGRAPH AT	131	39.	12.25	6.	2.	1.	.05		
+ DIVERSION TO	OUT131	19.	12.42	2.	0.	0.	.05		
+ HYDROGRAPH AT	5B131	27.	12.42	5.	1.	1.	.05		
+ 2 COMBINED AT	CP90	173.	12.25	27.	8.	5.	.25		
+ ROUTED TO	RCP131	174.	12.33	27.	8.	5.	.25	10.57	12.33
+									
+ HYDROGRAPH AT	128	73.	12.25	14.	4.	3.	.11		
+ 4 COMBINED AT	CP91	831.	12.42	249.	89.	52.	12.03		
+ ROUTED TO	PA128	0.	.00	0.	0.	0.	12.03	1277.06	29.25
+									
+ DIVERSION TO	PD128	0.	.00	0.	0.	0.	12.03		
+ HYDROGRAPH AT	CPD128	0.	.00	0.	0.	0.	12.03		
+ HYDROGRAPH AT	RCD128	60.	12.50	32.	19.	13.	.00		
+ 2 COMBINED AT	CP128	60.	12.50	32.	19.	13.	12.03		
+ ROUTED TO	RCP128	60.	13.50	32.	19.	12.	12.03	17.03	13.50
+ HYDROGRAPH AT	129	109.	12.17	15.	5.	3.	.12		
2 COMBINED AT									

+		CP92	109.	12.17	44.	22.	15.	12.15		
+	ROUTED TO	RCP129	92.	12.33	44.	22.	15.	12.15	17.82	12.33
+	HYDROGRAPH AT	150	47.	12.50	9.	3.	2.	.10		
+	ROUTED TO	RCP150	46.	12.58	9.	3.	2.	.10	10.22	12.58
+	HYDROGRAPH AT	149	17.	12.92	5.	1.	1.	.09		
+	2 COMBINED AT	CP93	56.	12.67	14.	4.	2.	.18		
+	ROUTED TO	RCP149	56.	12.75	14.	4.	2.	.18	10.21	12.75
+	HYDROGRAPH AT	141	21.	12.42	3.	1.	1.	.04		
+	ROUTED TO	RCP141	18.	12.75	3.	1.	1.	.04	10.99	12.75
+	HYDROGRAPH AT	147	40.	12.33	9.	3.	1.	.08		
+	ROUTED TO	RCP147	38.	12.58	9.	3.	1.	.08	10.67	12.58
+	HYDROGRAPH AT	148	17.	12.50	4.	1.	1.	.05		
+	ROUTED TO	RCP148	17.	12.67	4.	1.	1.	.05	10.52	12.67
+	ROUTED TO	RCP248	16.	12.75	4.	1.	1.	.05	10.09	12.75
+	HYDROGRAPH AT	142	34.	12.50	5.	1.	1.	.08		
+	5 COMBINED AT	CP94	156.	12.67	34.	10.	6.	.44		
+	ROUTED TO	RCP142	152.	12.75	34.	10.	6.	.44	10.76	12.75
+	HYDROGRAPH AT	138	27.	12.42	7.	2.	1.	.07		
+	ROUTED TO	RCP138	26.	12.50	7.	2.	1.	.07	10.11	12.50
+	HYDROGRAPH AT	139	24.	12.83	5.	1.	1.	.10		
+	3 COMBINED AT	CP95	200.	12.75	47.	13.	8.	.61		
+	DIVERSION TO	DBEHR	66.	12.75	7.	2.	1.	.61		
+	HYDROGRAPH AT	DDBEHR	134.	12.75	40.	11.	7.	.61		
+	ROUTED TO	RCP139	135.	12.83	40.	11.	7.	.61	10.60	12.83
+	HYDROGRAPH AT	135	28.	12.83	8.	2.	1.	.10		
+	2 COMBINED AT	CP96	163.	12.83	47.	13.	8.	.71		
+	ROUTED TO	RCP135	162.	12.92	47.	13.	8.	.71	10.69	12.92
+	HYDROGRAPH AT	134	54.	12.50	9.	2.	1.	.10		
+	ROUTED TO	RCP134	34.	13.25	9.	2.	1.	.10	10.07	13.25
+	HYDROGRAPH AT	130	36.	12.58	8.	2.	1.	.09		
+	4 COMBINED AT	CP97	288.	12.92	108.	39.	26.	13.05		
	ROUTED TO									

+	PA130	171.	14.08	108.	39.	26.	13.05		
+								1280.68	14.08
DIVERSION TO									
+	PD130	0.	14.08	0.	0.	0.	13.05		
HYDROGRAPH AT									
+	CPD130	171.	14.08	108.	39.	26.	13.05		

*** NORMAL END OF HEC-1 ***

Appendix D.6.2

Indirect Methods of Discharge Verification

- Summary Table
- Method 1 - "Unit Peak Discharge Curves", Suggested by *Highway Drainage Design Manual* (ADOT)
- Method 2 - "Generalized Least-Squares Regression Equation for Central Arizona Region12", Suggested by *Methods for estimating Magnitude and Frequency of Floods in the Southwest United States* (USGS)
- Method 3 - "Regression Equation for Arizona Region 2", Suggested by *Nationwide Summary of U.S. Geological Survey Regional Regression Equations for Estimating Magnitude and Frequency of Floods for Ungaged Sites, 1993* (USGS)
- Comparison of Basin Runoff Estimated for Roosevelt Water Conservation District Canal and Eastern Canal

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Peak Flows Verification Methods

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Precipitation (in)		3.39		Verification by Method 1	Verification by Method 2	Verification by Method 3
Basin ID	Area (mi^2)	Elevation (ft)	Q_{100} (cfs)	Q_{100} (cfs)	Q_{100} (cfs)	Q_{100} (cfs)
1	0.040	1294	**45**	43	96	221
2	0.090	1295	**65**	97	233	331
3	0.060	1296	**34**	65	151	270
4	0.120	1303	**56**	130	313	382
5	0.150	1312	**107**	158	390	427
6	0.060	1305	**55**	65	151	270
8	0.040	1298	**38**	43	96	221
9	0.070	1292	**71**	76	179	292
10	0.060	1300	**54**	65	151	270
11	0.060	1310	**76**	65	150	270
12	0.130	1322	**72**	139	337	397
13	0.060	1310	**64**	65	150	270
15	0.140	1338	**80**	150	361	412
16	0.100	1342	**86**	108	256	349
17	0.100	1328	**52**	108	257	349
18	0.110	1338	**77**	119	283	366
19	0.070	1322	**58**	76	177	292
20	0.150	1336	**111**	158	387	427
21	0.250	1313	**225**	253	637	551
22	0.060	1304	**51**	65	151	270
25	0.100	1297	**30**	108	260	349
26	0.110	1291	**120**	119	287	366
27	0.110	1300	**101**	119	286	366
28	0.060	1304	**58**	65	151	270
29	0.060	1310	**25**	65	150	270
30	0.060	1299	**12**	65	151	270
31	0.030	1308	**23**	32	68	191
32	0.030	1305	**15**	32	68	191
33	0.060	1322	**20**	65	150	270
34	0.060	1320	**21**	65	150	270
35	0.060	1318	**25**	65	150	270
36	0.070	1316	**27**	76	177	292
37	0.070	1334	**51**	76	176	292
38	0.050	1342	**46**	54	122	247

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Peak Flows Verification Methods
Eastern Canal North: Floodplain Delineation Study
FCD#98-36

Precipitation (in)		3.39		Verification by Method 1	Verification by Method 2	Verification by Method 3
Basin ID	Area (mi^2)	Elevation (ft)	Q_{100} (cfs)	Q_{100} (cfs)	Q_{100} (cfs)	Q_{100} (cfs)
1	0.040	1294	**45**	43	96	221
39	0.070	1330	**63**	76	176	292
40	0.050	1338	**45**	54	122	247
41	0.030	1342	**31**	32	68	191
42	0.070	1295	**31**	76	179	292
43	0.060	1293	**41**	65	151	270
44	0.110	1296	**64**	119	287	366
45	0.070	1309	**45**	76	178	292
46	0.060	1315	**34**	65	150	270
47	0.050	1292	**31**	54	124	247
48	0.120	1314	**33**	130	312	382
49	0.130	1304	**110**	139	339	397
50	0.070	1330	**17**	76	176	292
51	0.060	1330	**20**	65	149	270
52	0.090	1340	**58**	97	230	331
53	0.040	1330	**32**	43	95	221
54	0.060	1340	**54**	65	149	270
55	0.070	1320	**70**	76	177	292
56	0.050	1340	**41**	54	122	247
57	0.090	1290	**112**	97	234	331
58	0.080	1320	**58**	86	204	312
59	0.080	1340	**58**	86	203	312
60	0.060	1296	**95**	65	151	270
61	0.070	1300	**105**	76	178	292
62	0.030	1290	**30**	32	69	191
63	0.120	1290	**119**	130	314	382
64	0.060	1290	**67**	65	151	270
65	0.080	1300	**98**	86	206	312
66	0.070	1300	**100**	76	178	292
67	0.070	1290	**71**	76	179	292
68	0.050	1290	**38**	54	124	247
69	0.080	1300	**80**	86	206	312
70	0.050	1320	**39**	54	122	247
71	0.100	1310	**104**	108	259	349

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Peak Flows Verification Methods

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Precipitation (in)		3.39		Verification by Method 1	Verification by Method 2	Verification by Method 3
Basin ID	Area (mi^2)	Elevation (ft)	Q_{100} (cfs)	Q_{100} (cfs)	Q_{100} (cfs)	Q_{100} (cfs)
1	0.040	1294	**45**	43	96	221
73	0.060	1310	**86**	65	150	270
74	0.060	1310	**94**	65	150	270
76	0.130	1330	**128**	139	336	397
77	0.140	1330	**55**	150	362	412
79	0.120	1320	**172**	130	311	382
80	0.110	1340	**120**	119	283	366
81	0.050	1320	**62**	54	122	247
82	0.050	1310	**41**	54	123	247
83	0.040	1330	**44**	43	95	221
84	0.050	1290	**41**	54	124	247
85	0.120	1300	**86**	130	313	382
86	0.090	1310	**86**	97	232	331
87	0.050	1320	**48**	54	122	247
88	0.080	1330	**70**	86	203	312
89	0.070	1330	**47**	76	176	292
90	0.090	1330	**76**	97	230	331
91	0.080	1330	**93**	86	203	312
92	0.070	1290	**43**	76	179	292
93	0.050	1290	**44**	54	124	247
94	0.100	1290	**80**	108	261	349
96	0.070	1290	**46**	76	179	292
97	0.040	1290	**58**	43	96	221
98	0.050	1300	**48**	54	123	247
99	0.080	1310	**75**	86	205	312
100	0.050	1300	**36**	54	123	247
101	0.090	1300	**67**	97	233	331
102	0.100	1300	**66**	108	260	349
103	0.090	1300	**67**	97	233	331
104	0.070	1300	**61**	76	178	292
105	0.040	1310	**29**	43	95	221
106	0.070	1320	**48**	76	177	292
107	0.150	1310	**152**	158	390	427
108	0.100	1310	**77**	108	259	349

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Peak Flows Verification Methods

Eastern Canal North: Floodplain Delineation Study

FCD#98-36

Precipitation (in)		3.39		Verification by Method 1	Verification by Method 2	Verification by Method 3
Basin ID	Area (mi^2)	Elevation (ft)	Q_{100} (cfs)	Q_{100} (cfs)	Q_{100} (cfs)	Q_{100} (cfs)
1	0.040	1294	**45**	43	96	221
110	0.070	1320	**74**	76	177	292
111	0.060	1320	**54**	65	150	270
112	0.040	1330	**42**	43	95	221
113	0.090	1330	**42**	97	230	331
114	0.080	1330	**50**	86	203	312
115	0.040	1320	**26**	43	95	221
116	0.140	1330	**111**	150	362	412
118	0.160	1330	**135**	168	413	441
120	0.060	1290	**25**	65	151	270
121	0.040	1290	**56**	43	96	221
122	0.090	1300	**72**	97	233	331
123	0.100	1310	**95**	108	259	349
124	0.070	1320	**26**	76	177	292
125	0.100	1330	**71**	108	257	349
128	0.110	1280	**73**	119	289	366
129	0.120	1280	**109**	130	315	382
130	0.090	1280	**36**	97	234	331
131	0.050	1290	**39**	54	124	247
132	0.090	1300	**75**	97	233	331
133	0.050	1290	**28**	54	124	247
134	0.100	1300	**54**	108	260	349
135	0.100	1290	**28**	108	261	349
136	0.070	1310	**56**	76	178	292
137	0.030	1310	**24**	32	68	191
138	0.070	1310	**27**	76	178	292
139	0.100	1300	**24**	108	260	349
141	0.040	1310	**21**	43	95	221
142	0.080	1310	**34**	86	205	312
143	0.090	1330	**72**	97	230	331
144	0.070	1330	**67**	76	176	292
146	0.040	1330	**39**	43	95	221
147	0.080	1320	**40**	86	204	312
148	0.050	1320	**17**	54	122	247

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Peak Flows Verification Methods
Eastern Canal North: Floodplain Delineation Study
FCD#98-36

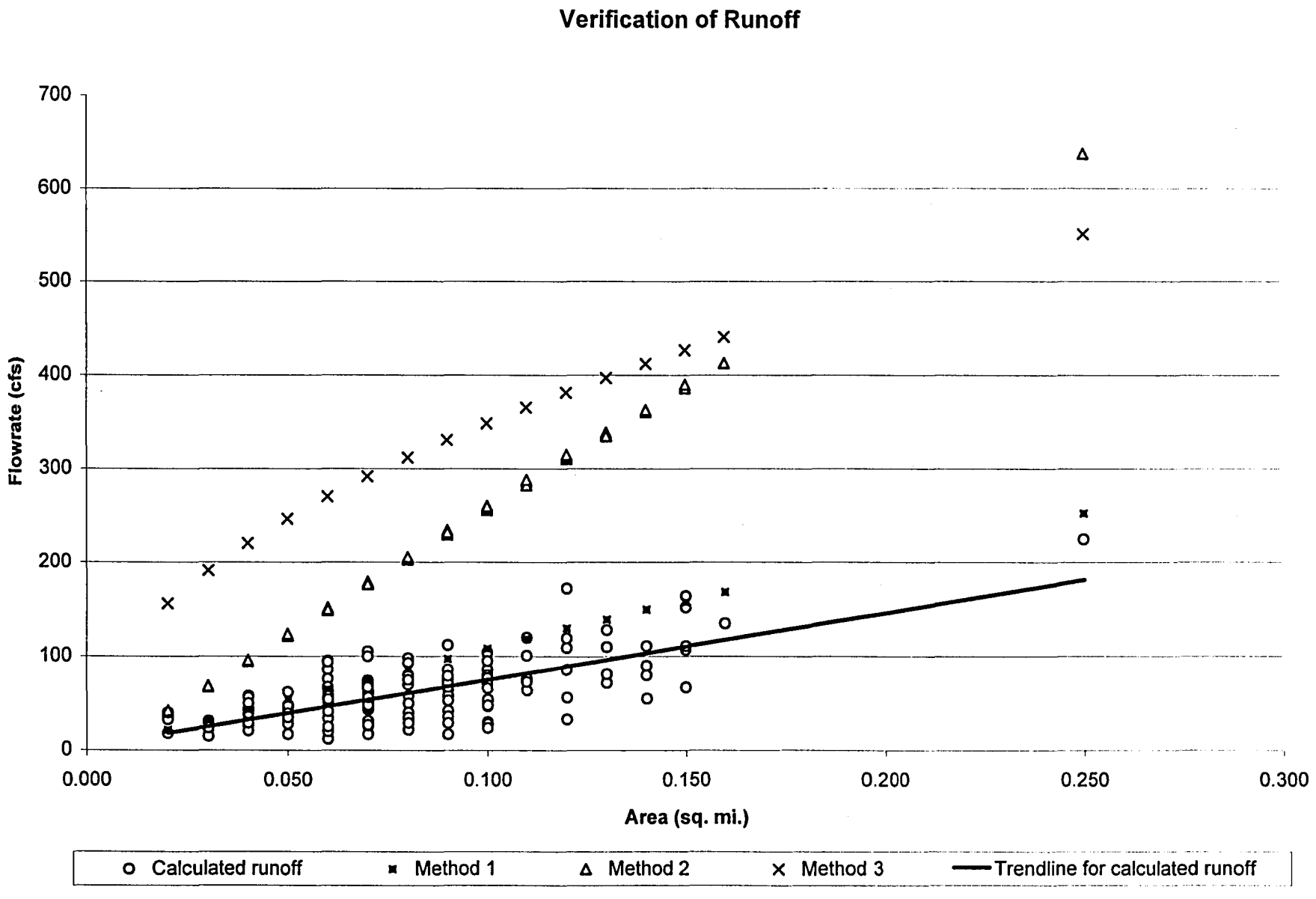
Precipitation (in)		3.39		Verification by Method 1	Verification by Method 2	Verification by Method 3
Basin ID	Area (mi^2)	Elevation (ft)	Q_{100} (cfs)	Q_{100} (cfs)	Q_{100} (cfs)	Q_{100} (cfs)
1	0.040	1294	**45**	43	96	221
149	0.090	1320	**17**	97	231	331
150	0.100	1330	**47**	108	257	349
151	0.020	1320	**18**	22	42	156
152	0.100	1330	**66**	108	257	349
153	0.040	1300	**29**	43	96	221
155	0.040	1300	**50**	43	96	221
156	0.130	1338	**81**	139	335	397
157	0.150	1338	**67**	158	386	427
158	0.090	1332	**53**	97	230	331
159	0.080	1325	**22**	86	204	312
160	0.080	1334	**35**	86	203	312
161	0.090	1324	**29**	97	231	331
162	0.140	1320	**90**	150	363	412
163	0.150	1310	**164**	158	390	427
164	0.090	1310	**79**	97	232	331
165	0.100	1298	**48**	108	260	349
166	0.080	1300	**29**	86	206	312
168	0.050	1290	**35**	54	124	247
170	0.060	1322	**41**	65	150	270
180	0.020	1290	**33**	22	42	156
181	0.020	1288	**40**	22	42	156

VERIFICATION METHODS

Method 1 "Unit Peak Discharge Curves", Suggested by *Highway Drainage Design Manual* (ADOT)
"Generalized Least Squares Regression Equation for Central Arizona Region 12",

Method 2 Suggested by *Methods for estimating Magnitude and Frequency of Floods in the Southwest United States* (USGS)

Method 3 Method 3 - "Regression Equation for Arizona Region 2", Suggested by *Nationwide Summary of U.S. Geological Survey Regional Regression Equations for Estimating Magnitude and Frequency of Floods for Ungaged Sites*, 1993 (USGS)


Verification of Runoff
Flowrate (cfs)
700
600
500
400
300
200
100
0
0.000
0.050
0.100
0.150
0.200
0.250
0.300
Area (sq. mi.)
Calculated runoff
Method 1
Method 2
Method 3
Trendline for calculated runoff

ARIZONA DEPARTMENT OF TRANSPORTATION

REPORT NUMBER: FHWA-AZ93-281

HIGHWAY DRAINAGE DESIGN MANUAL
HYDROLOGY

Final Report

Prepared by:
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March, 1993

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in cooperation with
U.S. Department of Transportation
Federal Highway Administration

In this chapter, three indirect methods are presented for "verifying" flood discharges that are obtained by either analytic methods or by flood frequency analyses. Results by either analytic methods or flood frequency analysis should always be compared and evaluated by indirect methods. There may be cases, for certain watersheds, where the flood discharges by all three methods (analytic, flood frequency analysis, and indirect) can be obtained and compared prior to making a selection of design discharge.

10.2 PROCEDURE

10.2.1 General Considerations

Three procedures are provided for obtaining indirect estimates of peak discharges for watersheds in Arizona:

1. A graph of numerous unit peak discharge versus drainage area curves,

2. Five graphs of estimated 100-year discharges and maximum recorded discharges versus drainage area for gaged watersheds in Arizona, and

3. Regression equations and data graphs for seven flood regions in Arizona.

In general, all three procedures should be used when verifying the results of analytic methods and/or flood frequency analyses.

10.2.2 Indirect Method No. 1 - Unit Peak Discharge Curves

Figure 10-1 presents 10 unit peak discharge relations and envelope curves. A brief description of each of those curves follows:

A - An envelope curve, based on a compilation of unusual flood discharges in the United States and abroad (data prior to 1941), by Craeger and others (1945).

B - An envelope curve of extreme floods in Arizona and the Rocky Mountain region developed by Matthai and published by Roeske (1978).

C - A 100-year peak discharge relation developed for Arizona from an analysis by Malvick (1980).

D - An envelope curve of peak streamflow data developed for Arizona by Malvick (1980).

E - An envelope curve of peak streamflow data for the Little Colorado River basin in Northern Arizona developed by Crippen (1982).

F - An envelope curve of peak streamflow data for Central and Southern Arizona developed by Crippen (1982).

G - A 100-year peak discharge relation for Southeastern Arizona developed by Eychaner (1984).

H - A 100-year peak discharge envelope curve for Southeastern Arizona developed by Boughton and others (1987).

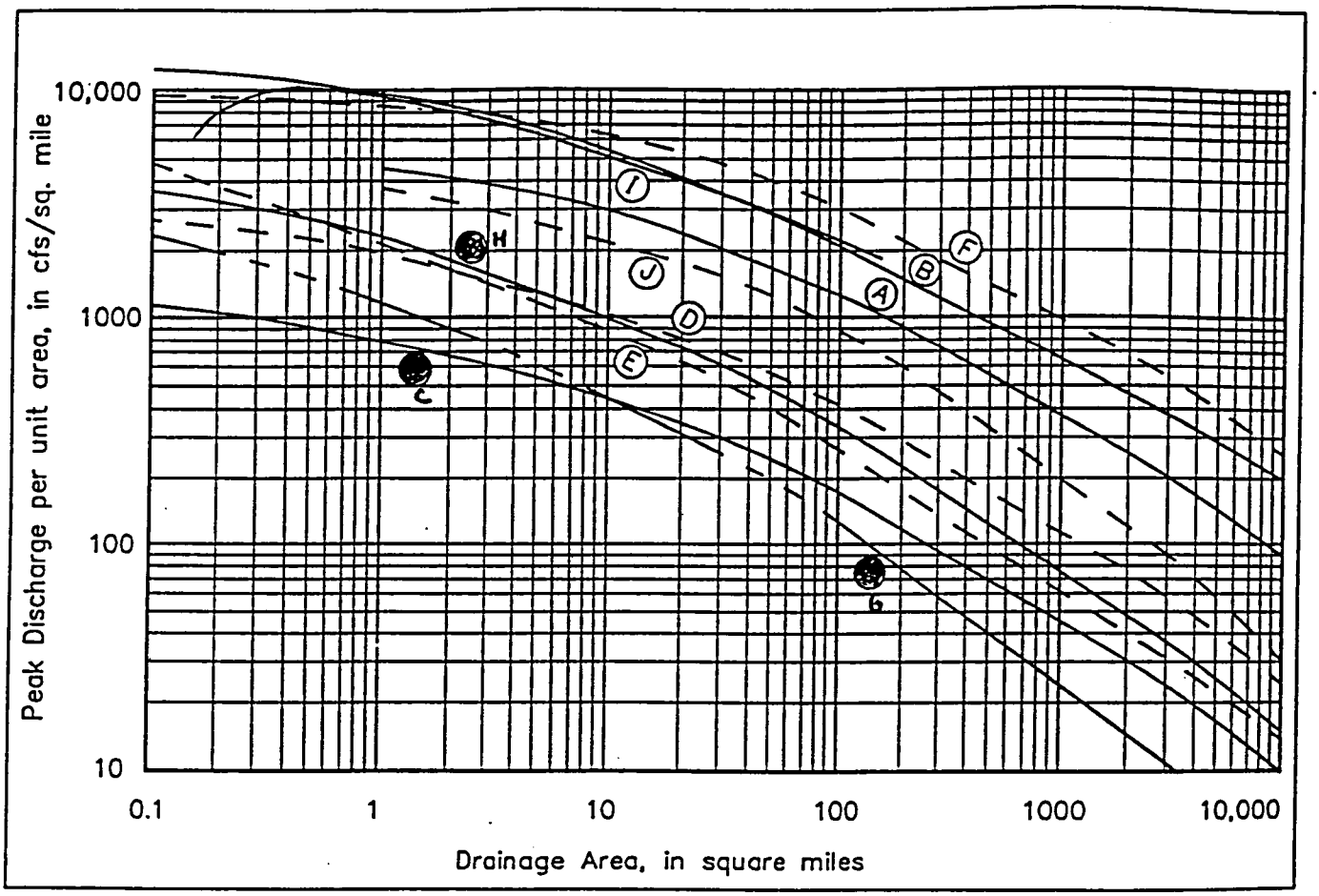
I - An envelope curve of the largest floods in the semi-arid Western United States developed by Costa (1987).

J - An envelope curve of peak discharges for Arizona, Nevada and New Mexico developed by the U.S. Army Corps of Engineers (1988).

When using **Figure 10-1**, it must be noted that the curves represent different data sets for different hydrologic regions. Seven of the curves represent envelopes of maximum observed flood discharges (Curves A, B, D, E, F, I and J), one is a 100-year discharge envelope (Curve H), and two are 100-year discharge relations (Curves C and G). The curves of most interest in evaluating 100-year peak discharges for Arizona are C, G, and H.

FIGURE 10-1

PEAK DISCHARGE RELATIONS AND ENVELOPE CURVES



Curve "C" has been considered for this method.

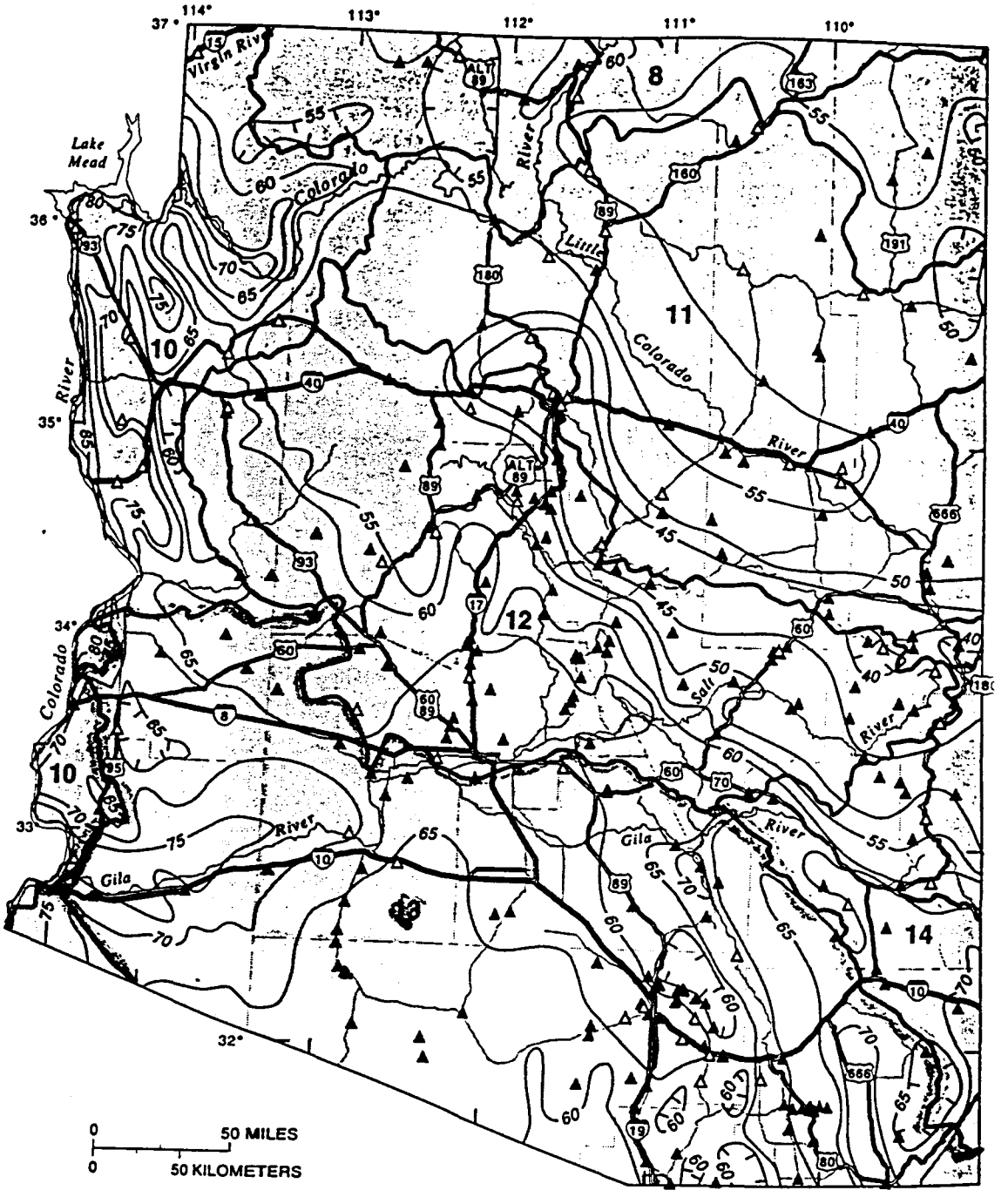
Methods for Estimating Magnitude and Frequency of Floods in the Southwestern United States

By BLAKEMORE E. THOMAS, H.W. HJALMARSON, and S.D. WALTEMEYER

U.S. GEOLOGICAL SURVEY
Open-File Report 93—419

Prepared in cooperation with the
COLORADO DEPARTMENT OF HIGHWAYS,
ARIZONA DEPARTMENT OF TRANSPORTATION,
CALIFORNIA DEPARTMENT OF TRANSPORTATION,
IDAHO DEPARTMENT OF TRANSPORTATION,
NEVADA DEPARTMENT OF TRANSPORTATION,
NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT,
OREGON DEPARTMENT OF TRANSPORTATION,
TEXAS DEPARTMENT OF TRANSPORTATION, and
UTAH DEPARTMENT OF TRANSPORTATION

Tucson, Arizona
1994



EXPLANATION

BOUNDARY OF FLOOD REGIONS

11 FLOOD-REGION NUMBER

INTERSTATE HIGHWAY

U.S. HIGHWAY

STATE HIGHWAY

60 LINE OF EQUAL FREE WATER-SURFACE EVAPORATION—Interval 5 inches (Farnsworth and others, 1982)

STREAMFLOW-GAGING STATION

▲ Station relation defined

△ Station relation undefi

Figure 7. Flood regions in Arizona.

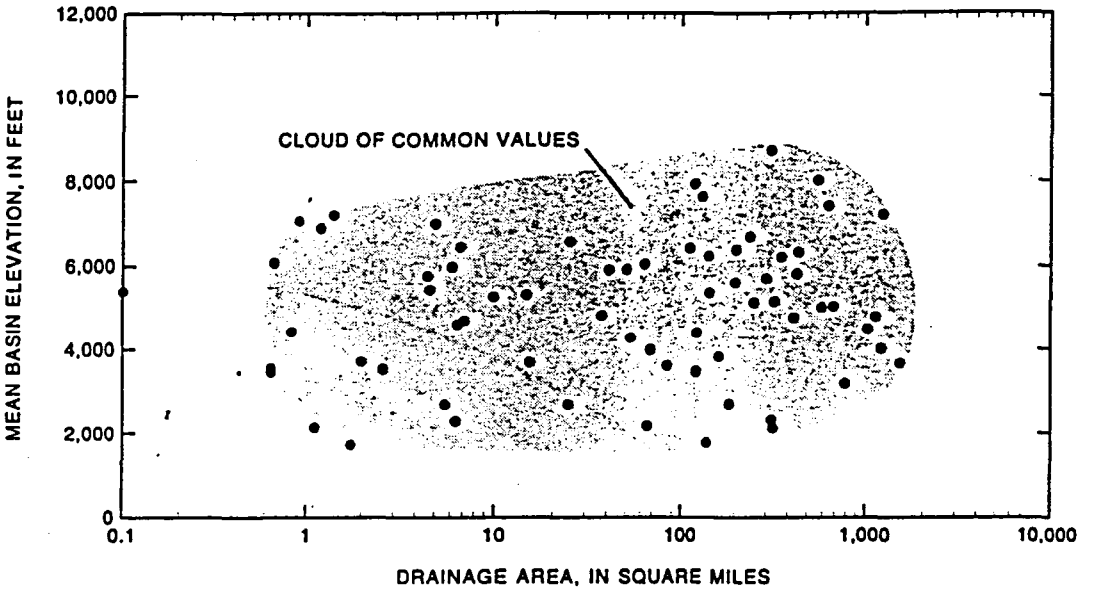


Figure 40. Joint distribution of mean basin elevation and drainage area for gaged sites in the Central Arizona Region 12.

Table 16. Generalized least-squares regression equations for estimating regional flood-frequency relations for the Central Arizona Region 12

Equation: Q, peak discharge, in cubic feet per second; AREA, drainage area, in square miles; and ELEV, mean basin elevation, in feet. Data were based on 68 stations. Average number of years of systematic record is 21.

Recurrence interval, in years	Equation	Average standard error of prediction, in percent	Equivalent years of record
2	$Q=41.1\text{AREA}^{0.629}$	105	0.23
5	$Q=238\text{AREA}^{0.687}(\text{ELEV}/1{,}000)^{-0.358}$	68	1.90
10	$Q=479\text{AREA}^{0.661}(\text{ELEV}/1{,}000)^{-0.398}$	52	6.24
25	$Q=942\text{AREA}^{0.630}(\text{ELEV}/1{,}000)^{-0.383}$	40	17.8
50	$Q=10^{(7.36-4.17\text{AREA}^{-0.08})}(\text{ELEV}/1000)^{-0.440}$	37	27.5
100	$Q=10^{(6.55-3.17\text{AREA}^{-0.11})}(\text{ELEV}/1{,}000)^{-0.454}$	39	32.1

SEE NEXT PAGE

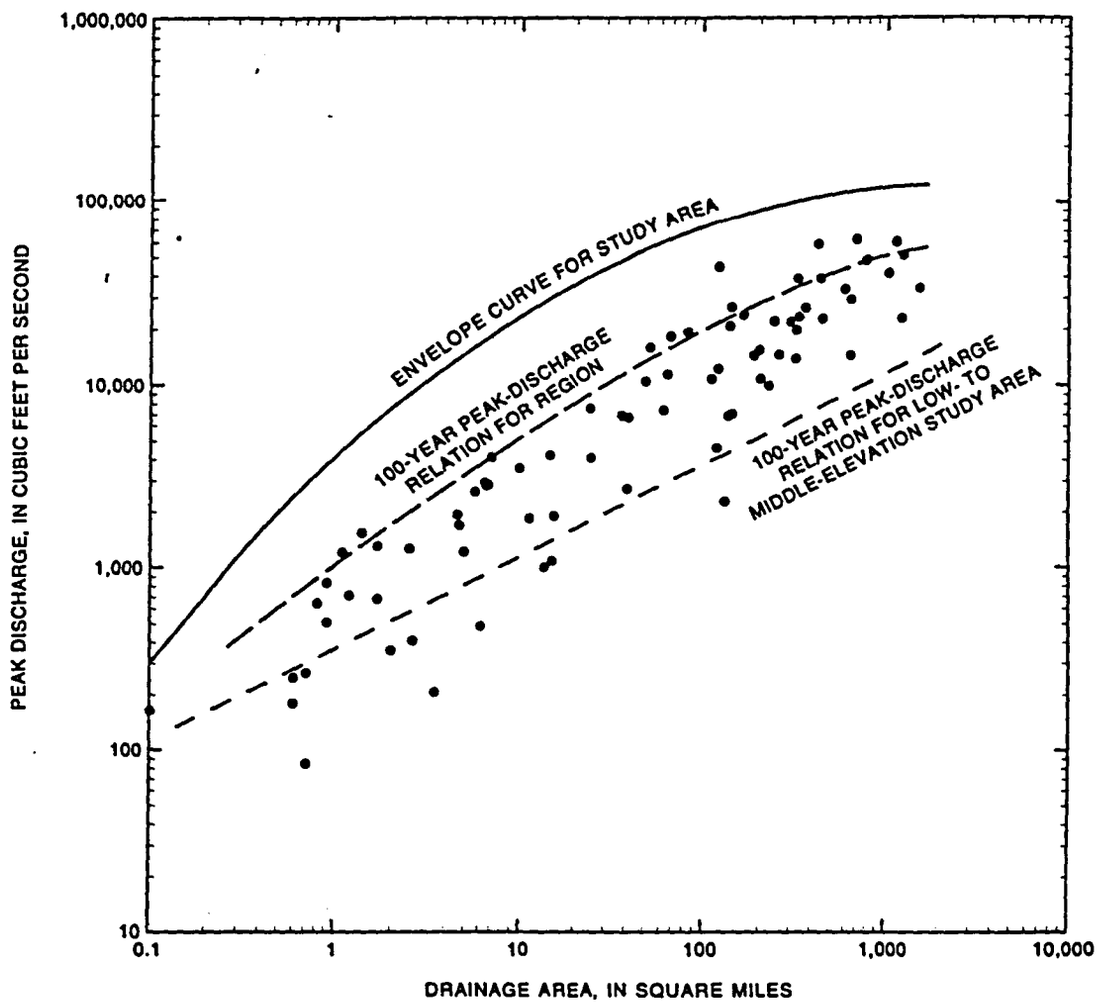


Figure 41. Relations between 100-year peak discharge and drainage area and plot of maximum peak discharge of record and drainage area for gaged sites in the Central Arizona Region 12.

Nationwide Summary of U.S. Geological Survey Regional Regression Equations for Estimating Magnitude and Frequency of Floods for Ungaged Sites, 1993

Compiled By M.E. Jennings, W.O. Thomas, Jr., and H.C. Riggs

U.S. GEOLOGICAL SURVEY
Water-Resources Investigations Report 94-4002

Prepared in cooperation with the
FEDERAL HIGHWAY ADMINISTRATION
and the
FEDERAL EMERGENCY MANAGEMENT AGENCY

Reston, Virginia
1994

ARIZONA

STATEWIDE RURAL

Summary

Arizona is divided into six hydrologic regions (fig. 1). The regression equations developed for these hydrologic regions are for estimating peak discharges (QT) having recurrence intervals T that range from 2 to 500 years. The explanatory basin variables used in the equations are drainage area (A), in square miles; mean basin elevation (E), in thousands of feet; and mean annual precipitation (P), in inches. The variables A and E can be measured from topographic maps, and P can be determined from figure 2. The regression equations were developed from peak-discharge records available through 1975 at 110 continuous-record gaging stations and 111 crest-stage gaging stations, and are applicable to unregulated streams that drain nonurban areas. The standard errors of estimate of the regression equations for the various T-year regression equations range from about 40 to 85 percent. The report by Roeske (1978) includes graphs relating flood characteristics to drainage area on the Little Colorado and Gila Rivers.

Procedure

Topographic maps, the hydrologic regions map (fig. 1), the map of mean annual precipitation (fig. 2), and the following equations are used to estimate the needed peak discharges QT, in cubic feet per second, having selected recurrence intervals T.

Region 1

$$Q2 = 19.0A^{0.660}$$
$$Q = 66.3A^{0.600}$$
$$Q10 = 127A^{0.566}$$
$$Q25 = 252A^{0.532}$$
$$Q50 = 393A^{0.510}$$
$$Q100 = 584A^{0.490}$$
$$Q500 = 1{,}300A^{0.451}$$

Region 2

$$Q2 = 87.0A^{0.433}$$
$$Q5 = 218A^{0.462}$$
$$Q10 = 352A^{0.475}$$
$$Q25 = 586A^{0.487}$$
$$Q50 = 815A^{0.494}$$
$$Q100 = 1{,}100A^{0.499}$$
$$Q500 = 2{,}000A^{0.509}$$

Region 3

$$Q2 = 5.66A^{0.673}E^{-0.605}P^{1.03}$$
$$Q5 = 31.6A^{0.650}E^{-0.868}P^{0.987}$$
$$Q10 = 74.7A^{0.638}E^{-1.00}P^{0.971}$$
$$Q25 = 186A^{0.626}E^{-1.14}P^{0.944}$$
$$Q50 = 329A^{0.617}E^{-1.22}P^{0.933}$$
$$Q100 = 553A^{0.610}E^{-1.30}P^{0.915}$$
$$Q500 = 1{,}530A^{0.595}E^{-1.45}P^{0.886}$$

Region 4

$$Q2 = 1.38A^{0.491}E^{2.25}$$
$$Q5 = 0.319A^{0.446}E^{3.60}$$
$$Q10 = 0.143A^{0.423}E^{4.31}$$
$$Q25 = 0.0590A^{0.398}E^{5.10}$$
$$Q50 = 0.0327A^{0.383}E^{5.60}$$
$$Q100 = 0.0188A^{0.369}E^{6.09}$$
$$Q500 = 0.0062A^{0.342}E^{7.04}$$

Region 5

$$Q2 = 96.6A^{0.555}$$
$$Q5 = 256A^{0.513}$$
$$Q10 = 416A^{0.492}$$
$$Q25 = 685A^{0.471}$$
$$Q50 = 937A^{0.458}$$
$$Q100 = 1{,}230A^{0.447}$$
$$Q500 = 2{,}120A^{0.425}$$

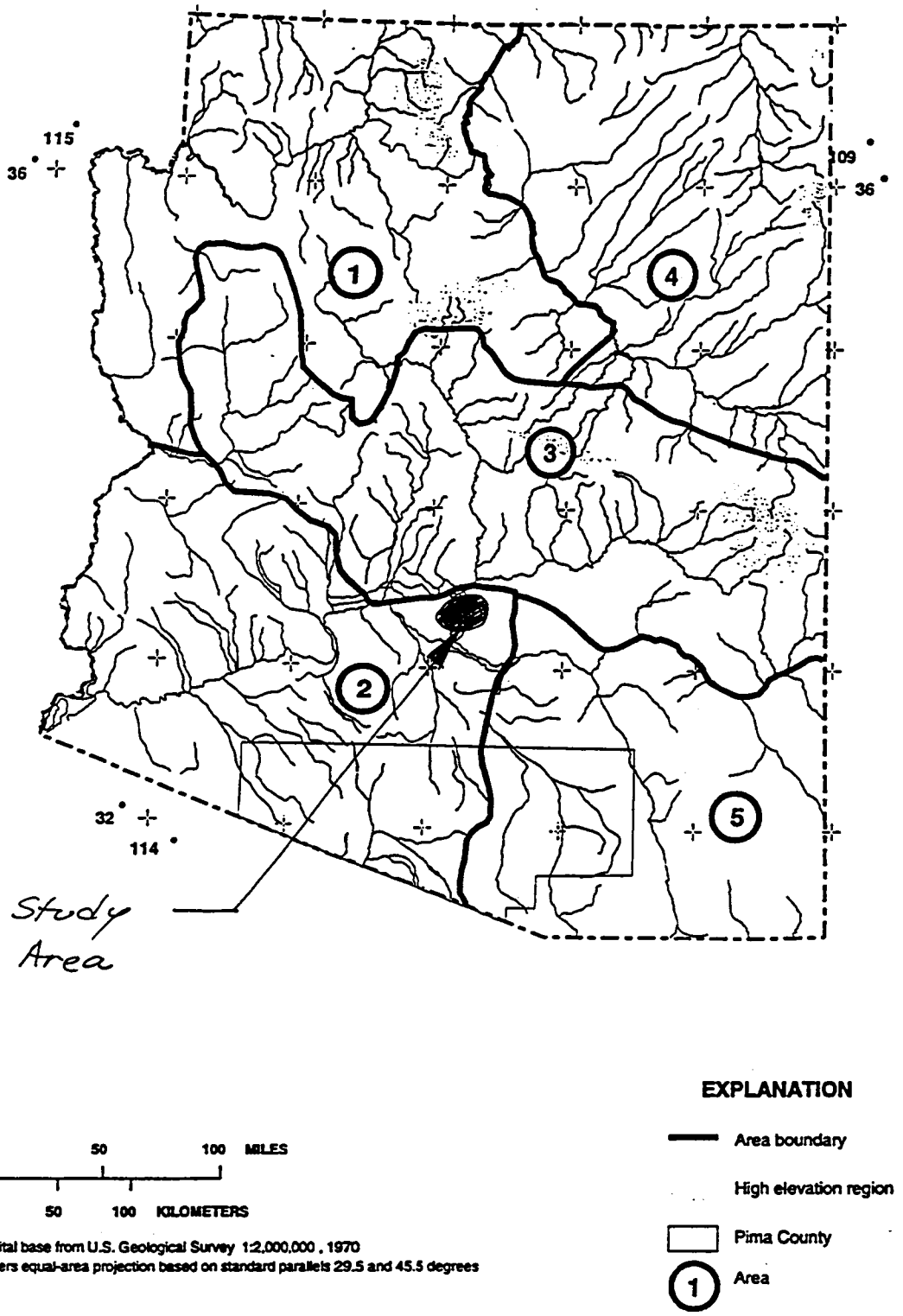


Figure 1. Flood-frequency region map for Arizona.

RWCD Canal Study

STATION	HEC-1 ID	100 year-24 hr. Peak Discharge (cfs)	Basin Area (mi^2)	Unit Peak Flow (cfs/sq.mi.)
1	SB1	38	0.02	1900.0
2	RS1	12	0.02	600.0
3	SB2	29	0.01	2900.0
4	CP2	29	0.04	725.0
5	RS2	14	0.04	350.0
6	SB3	50	0.03	1666.7
7	CP3	50	0.07	714.3
8	RS3	50	0.07	714.3
9	DI4	25	0.07	357.1
10	D3	25	0.07	357.1
11	SB5	18	0.01	1800.0
12	CP5	44	0.08	550.0
13	RS5	16	0.08	200.0
14	R5	16	0.08	200.0
15	SB6	27	0.02	1350.0
16	CP6	29	0.11	263.6
17	RS6	28	0.11	254.5
18	SB4	31	0.02	1550.0
19	CP4	45	0.02	2250.0
20	DOS4	6	0.02	300.0
21	DIS4	39	0.02	1950.0
22	SB7	62	0.08	775.0
23	SB8	39	0.06	650.0
24	R8	38	0.06	633.3
25	CP7	92	0.13	707.7
26	CP10A	152	0.26	584.6
27	R10A	151	0.26	580.8
28	SB10	150	0.12	1250.0
29	CP10	239	0.38	628.9
30	R10	238	0.38	626.3
31	SB9	177	0.13	1361.5
32	DOS9	66	0.13	507.7
33	DIS9	111	0.13	853.8
34	R9	106	0.13	815.4
35	SB11	103	0.17	605.9
36	CP11	443	0.68	651.5
37	RS11	305	0.68	448.5
38	R11	210	0.68	308.8
39	SB12	282	0.21	1342.9
40	CP12	282	0.89	316.9
41	SB13	103	0.08	1287.5
42	SB14	55	0.04	1375.0
43	CP13	440	1.00	440.0

STATION	HEC-1 ID	100 year-24 hr. Peak Discharge (cfs)	Basin Area (mi^2)	Unit Peak Flow (cfs/sq.mi.)
44	RS13	86	1.00	86.0
45	DCP16	10	1.00	10.0
46	DIS16	77	1.00	77.0
47	SB15	21	0.02	1050.0
48	CP15	21	0.02	1050.0
49	RS15	0	0.02	0.0
50	CP16	42	0.02	2100.0
51	DO16A	23	0.02	1150.0
52	DO16	19	0.02	950.0

Eastern Canal FDS

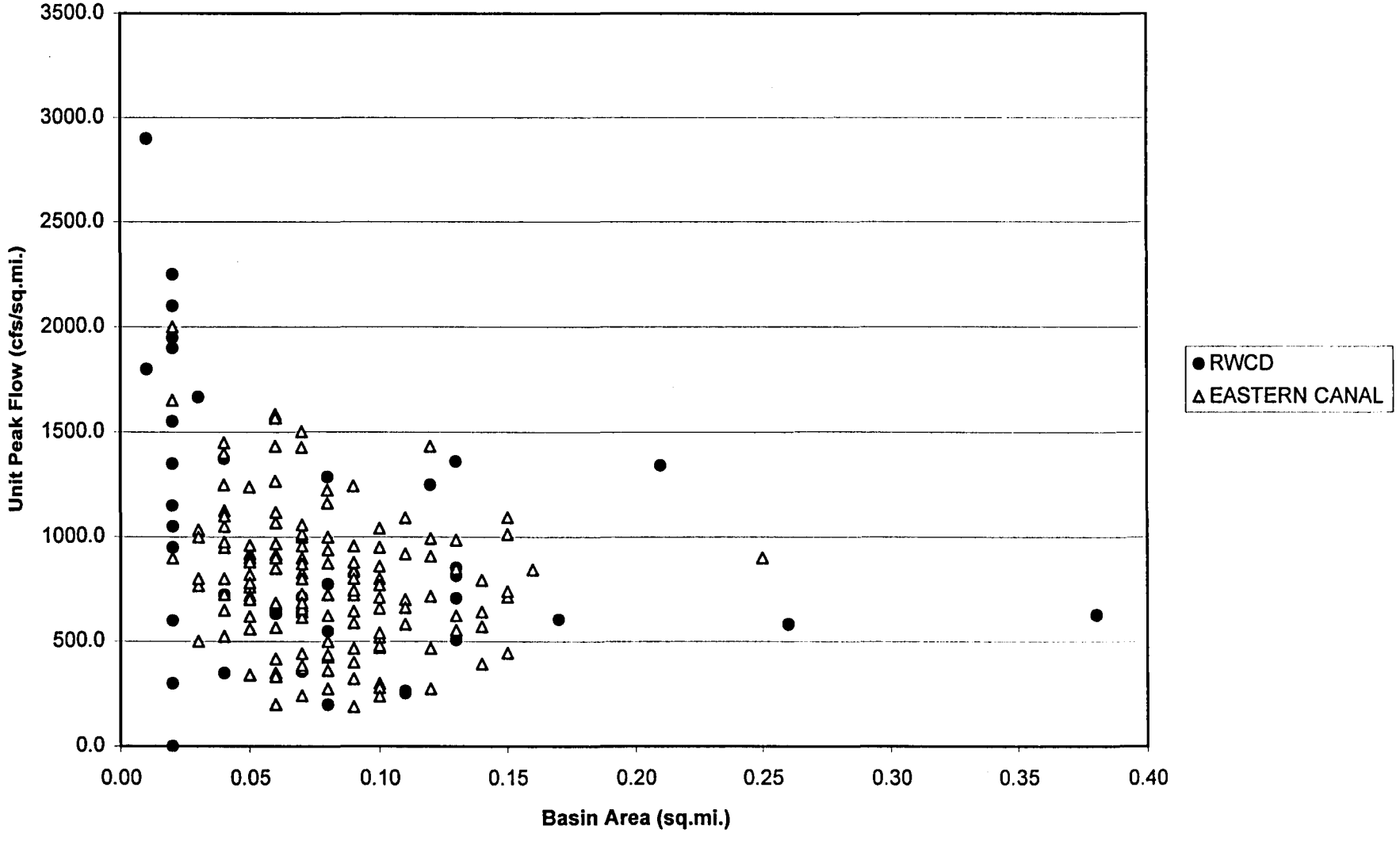
STATION	HEC-1 ID	100 year-24 hr. Peak Discharge (cfs)	Basin Area (mi^2)	Unit Peak Flow (cfs/sq.mi.)
1	1	45	0.04	1125.0
2	2	65	0.09	722.2
3	3	34	0.06	566.7
4	4	56	0.12	466.7
5	5	107	0.15	713.3
6	6	55	0.06	916.7
7	8	38	0.04	950.0
8	9	71	0.07	1014.3
9	10	54	0.06	900.0
10	11	76	0.06	1266.7
11	12	72	0.13	553.8
12	13	64	0.06	1066.7
13	15	80	0.14	571.4
14	16	86	0.10	860.0
15	17	52	0.10	520.0
16	18	77	0.11	700.0
17	19	58	0.07	828.6
18	20	111	0.15	740.0
19	21	225	0.25	900.0
20	22	51	0.06	850.0
21	25	30	0.10	300.0
22	26	120	0.11	1090.9
23	27	101	0.11	918.2
24	28	58	0.06	966.7
25	29	25	0.06	416.7
26	30	12	0.06	200.0
27	31	23	0.03	766.7
28	32	15	0.03	500.0
29	33	20	0.06	333.3
30	34	21	0.06	350.0
31	35	25	0.06	416.7
32	36	27	0.07	385.7
33	37	51	0.07	728.6
34	38	46	0.05	920.0
35	39	63	0.07	900.0
36	40	45	0.05	900.0
37	41	31	0.03	1033.3
38	42	31	0.07	442.9
39	43	41	0.06	683.3
40	44	64	0.11	581.8
41	45	45	0.07	642.9
42	46	34	0.06	566.7
43	47	31	0.05	620.0
44	48	33	0.12	275.0
45	49	110	0.13	846.2

STATION	HEC-1 ID	100 year-24 hr. Peak Discharge (cfs)	Basin Area (mi^2)	Unit Peak Flow (cfs/sq.mi.)
46	50	17	0.07	242.9
47	51	20	0.06	333.3
48	52	58	0.09	644.4
49	53	32	0.04	800.0
50	54	54	0.06	900.0
51	55	70	0.07	1000.0
52	56	41	0.05	820.0
53	57	112	0.09	1244.4
54	58	58	0.08	725.0
55	59	58	0.08	725.0
56	60	95	0.06	1583.3
57	61	105	0.07	1500.0
58	62	30	0.03	1000.0
59	63	119	0.12	991.7
60	64	67	0.06	1116.7
61	65	98	0.08	1225.0
62	66	100	0.07	1428.6
63	67	71	0.07	1014.3
64	68	38	0.05	760.0
65	69	80	0.08	1000.0
66	70	39	0.05	780.0
67	71	104	0.10	1040.0
68	73	86	0.06	1433.3
69	74	94	0.06	1566.7
70	76	128	0.13	984.6
71	77	55	0.14	392.9
72	79	172	0.12	1433.3
73	80	120	0.11	1090.9
74	81	62	0.05	1240.0
75	82	41	0.05	820.0
76	83	44	0.04	1100.0
77	84	41	0.05	820.0
78	85	86	0.12	716.7
79	86	86	0.09	955.6
80	87	48	0.05	960.0
81	88	70	0.08	875.0
82	89	47	0.07	671.4
83	90	76	0.09	844.4
84	91	93	0.08	1162.5
85	92	43	0.07	614.3
86	93	44	0.05	880.0
87	94	80	0.10	800.0
88	96	46	0.07	657.1
89	97	58	0.04	1450.0
90	98	48	0.05	960.0
91	99	75	0.08	937.5

STATION	HEC-1 ID	100 year-24 hr. Peak Discharge (cfs)	Basin Area (mi^2)	Unit Peak Flow (cfs/sq.mi.)
92	100	36	0.05	720.0
93	101	67	0.09	744.4
94	102	66	0.10	660.0
95	103	67	0.09	744.4
96	104	61	0.07	871.4
97	105	29	0.04	725.0
98	106	48	0.07	685.7
99	107	152	0.15	1013.3
100	108	77	0.10	770.0
101	110	74	0.07	1057.1
102	111	54	0.06	900.0
103	112	42	0.04	1050.0
104	113	42	0.09	466.7
105	114	50	0.08	625.0
106	115	26	0.04	650.0
107	116	111	0.14	792.9
108	118	135	0.16	843.8
109	120	25	0.06	416.7
110	121	56	0.04	1400.0
111	122	72	0.09	800.0
112	123	95	0.10	950.0
113	124	26	0.07	371.4
114	125	71	0.10	710.0
115	128	73	0.11	663.6
116	129	109	0.12	908.3
117	130	36	0.09	400.0
118	131	39	0.05	780.0
119	132	75	0.09	833.3
120	133	28	0.05	560.0
121	134	54	0.10	540.0
122	135	28	0.10	280.0
123	136	56	0.07	800.0
124	137	24	0.03	800.0
125	138	27	0.07	385.7
126	139	24	0.10	240.0
127	141	21	0.04	525.0
128	142	34	0.08	425.0
129	143	72	0.09	800.0
130	144	67	0.07	957.1
131	146	39	0.04	975.0
132	147	40	0.08	500.0
133	148	17	0.05	340.0
134	149	17	0.09	188.9
135	150	47	0.10	470.0
136	151	18	0.02	900.0
137	152	66	0.10	660.0

STATION	HEC-1 ID	100 year-24 hr. Peak Discharge (cfs)	Basin Area (mi^2)	Unit Peak Flow (cfs/sq.mi.)
138	153	29	0.04	725.0
139	155	50	0.04	1250.0
140	156	81	0.13	623.1
141	157	67	0.15	446.7
142	158	53	0.09	588.9
143	159	22	0.08	275.0
144	160	35	0.08	437.5
145	161	29	0.09	322.2
146	162	90	0.14	642.9
147	163	164	0.15	1093.3
148	164	79	0.09	877.8
149	165	48	0.10	480.0
150	166	29	0.08	362.5
151	168	35	0.05	700.0
152	170	41	0.06	683.3
153	180	33	0.02	1650.0
154	181	40	0.02	2000.0

Unit Peak Flow Comparison Between RWCD Canal and Eastern Canal



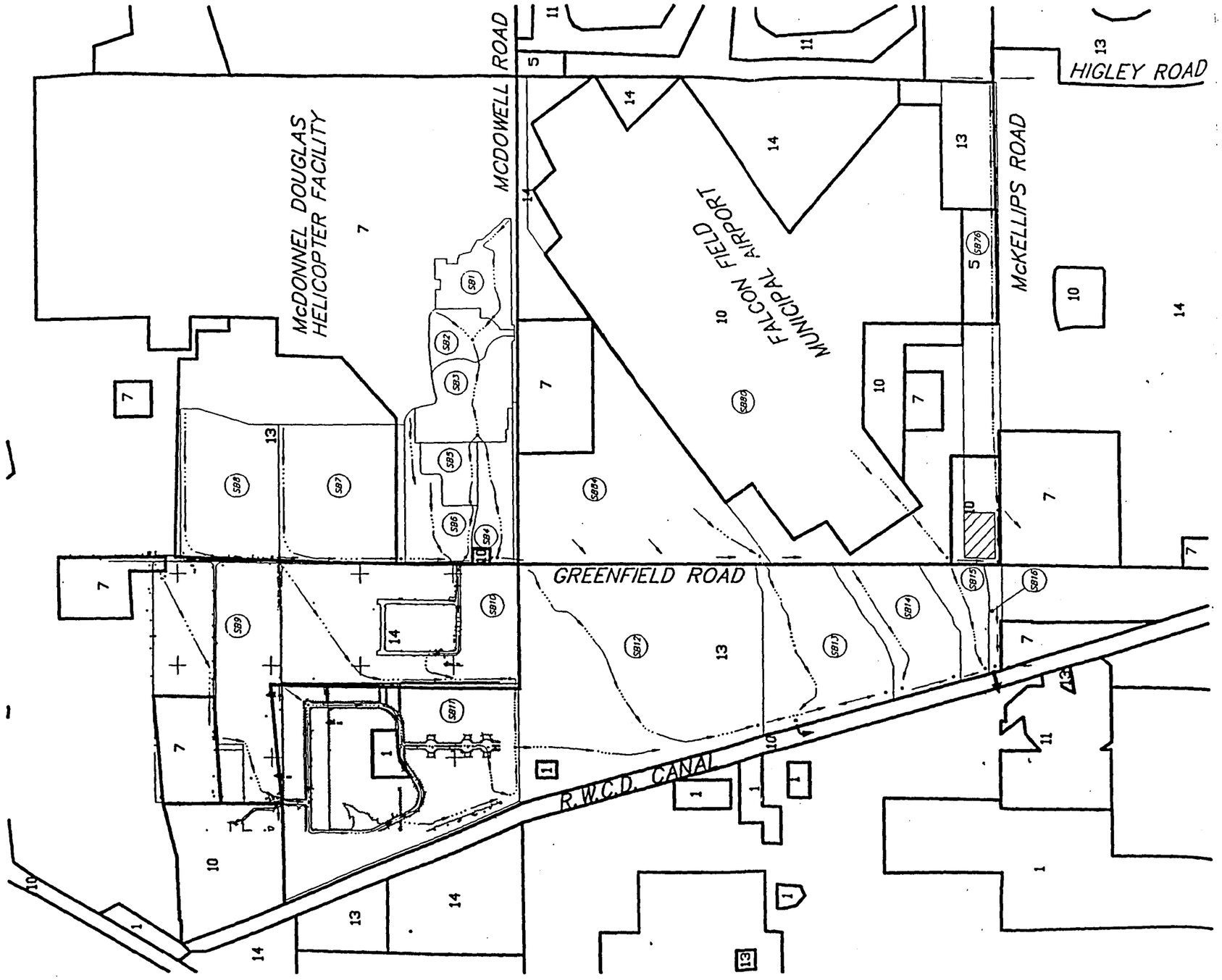
Section 4.1

Hec-1 ID	100 year-24 hr. Peak Discharge (cfs)	Runoff Volume (ac-ft)	Time to Peak (hr)	Basin Area (mi^2)	Peak stage (ft)	Time to Peak Stage (hr)
SB1	38	3	12	0.02		
RS1	12	1	12.42	0.02	1376.12	12.42
SB2	29	2	12	0.01		
CP2	29	3	12	0.04		
RS2	14	2	12.5	0.04	1374.64	12.5
SB3	50	4	12.08	0.03		
CP3	50	6	12.08	0.07		
RS3	50	5	12.08	0.07	1373.46	12.08
DI4	25	3	12.08	0.07		
D3	25	3	12.08	0.07		
SB5	18	1	12.08	0.01		
CP5	44	4	12.08	0.08		
RS5	16	2	12.5	0.08	1370.08	12.5
R5	16	2	12.58	0.08		
SB6	27	3	12.17	0.02		
CP6	29	5	12.58	0.11		
RS6	28	5	12.58	0.11	1366.33	12.58
DR3	25	3	12.08	0		
RD3	26	3	12.25	0		
SB4	31	2	12.08	0.02		
CP4	45	5	12.25	0.02		
DOS4	6	3	12.25	0.02		
DIS4	39	2	12.25	0.02		
SB7	62	5	12.25	0.08		
SB8	39	4	12.25	0.06		
R8	38	4	12.5	0.06		
CP7	92	9	12.33	0.13		
CP10A	152	16	12.25	0.26		
R10A	151	16	12.5	0.26		
SB10	150	13	12.08	0.12		
CP10	239	29	12.17	0.38		
R10	238	29	12.25	0.38		
SB9	177	14	12.08	0.13		
DOS9	66	2	12.08	0.13		
DIS9	111	12	12.08	0.13		
R9	106	11	12.33	0.13		
SB11	103	12	12.33	0.17		
CP11	443	52	12.33	0.68		

Table 7.1 continued

RS11	305	42	12.67	0.68	1353.75	12.67
R11	210	40	13.67	0.68		
SB12	282	14	12.08	0.21		
CP12	282	54	12.08	0.89		
SB13	103	5	12.08	0.08		
DRS84	66	3	12.42	0		
R84	38	3	13.33	0		
SB14	55	3	12.08	0.04		
CP13	440	65	12.08	1		
RS13	86	47	15.17	1	1352.17	15.17
DCP16	10		15.17	1		
DIS16	77	41	15.17	1		
SB15	21	1	12.08	0.02		
DRS15	0	0	0	0		
CP15	21	1	12.08	0.02		
RS15	0	0	0	0.02	1351.37	24.58
SB16	4	0	12.17	0		
DRCP16	10	7	15.17	0		
RDCP16	10	7	15.42	0	1353.67	15.42
DIS16A	36	8	12.17	0		
CP16	42	15	13	0.02		
DO16A	23	13	13	0.02		
DO16	19	2	13	0.02		

Note: Data was copied from HEC-1 file, Hec-1 has rounded the areas and runoff volumes.



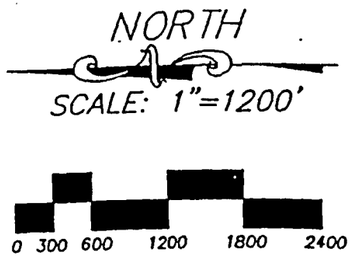


FIGURE 2

LAND USE MAP
(INDEX FROM HIS: DATA DELIVERY SPECIFICATIONS– REV. 2.0. LOOK UP TABLE: LDUSEMOD.LUT)

LEGEND:

(SB13) = SUBBASIN I.D.
10 = LANDUSE I.D.
—— = LANDUSE BOUNDARY
—— = SUBBASIN BOUNDARY

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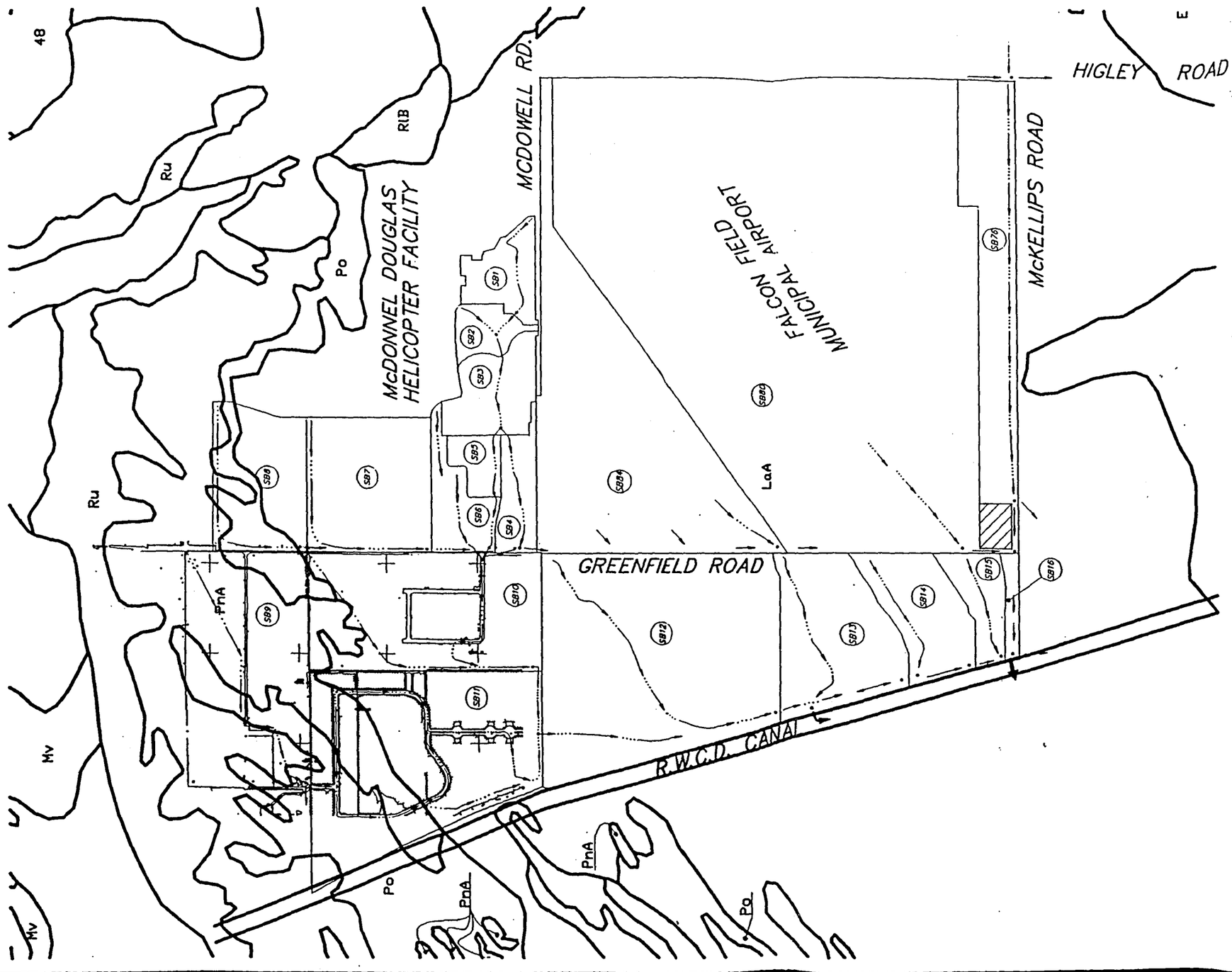
Phoenix, Arizona 85012 (602) 279-1010

Project: FLOODPLAIN DELINEATION FOR THE UPPER ROOSEVELT WATER CONSERVATION DISTRICT CANAL FCD 96-07

Sheet Title: LAND USE MAP FIGURE # 2

Scale: 1" = 1200'
Job No. 296025A1
Date: 5-6-97
Drawn By: DVA
Checked By: MJR

Sheet 17 of



NORTH

SCALE: 1"=1200'

0 300 600 1200 1800 2400

FIGURE 3

SOIL TYPES

LEGEND:

(SB13) = SUBBASIN I.D.

— = SUBBASIN BOUNDARY

▬ = SOIL TYPE BOUNDARY

LaA = (FROM: SOIL SURVEY EASTERN MARICOPA CO., AND NORTHERN, PINAL CO., ARIZONA)

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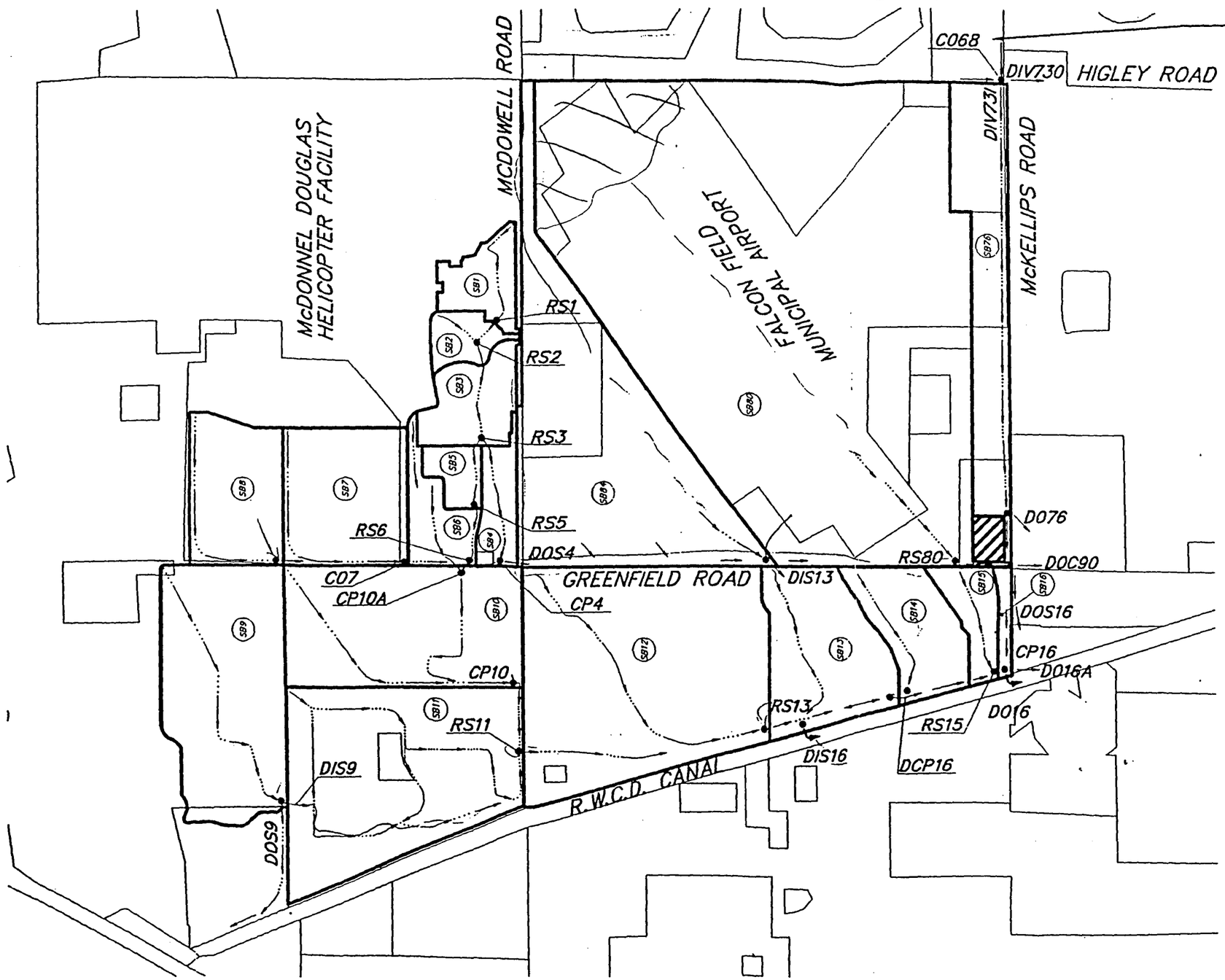
FLOODPLAIN DELINEATION FOR
THE UPPER ROOSEVELT WATER CONSERVATION DISTRICT CANAL
FCD 96-07

SOIL TYPES
FIGURE #

Scale 1" = 1200'
Job No. 296025A1
Date 5-6-97
Drawn By DVA
Checked By MJR

REFER TO "HYDROLOGY REPORT FOR UPPER EAST MARICOPA FLOODWAY FLOODPLAIN DELINEATION STUDY" FCD NO. 94-26 FOR CONTRIBUTING DRAINAGE AREAS UPSTREAM OF C068.



NORTH

SCALE: 1"=1200'

0 300 600 1200 1800 2400

FIGURE 4

HEC-1 SCHEMATIC AND DRAINAGE AREA MAP

LEGEND:

(SB13) = SUBBASIN I.D.

—— = SUBBASIN BOUNDARY

• RS15 = HEC-1 I.D. POINT

—— = LANDUSE BOUNDARY

▨ = NON CONTRIBUTING AREA

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Project: FLOODPLAIN DELINEATION FOR THE UPPER ROOSEVELT WATER CONSERVATION DISTRICT CANAL FCD 96-07

Sheet Title: HEC-1 FLOW PATH SCHEMATIC FIGURE # 4

Scale: 1" = 1200'
Job No. 296025A1
Date 5-21-97
Drawn By DVA
Checked By WJR

Sheet 17 of