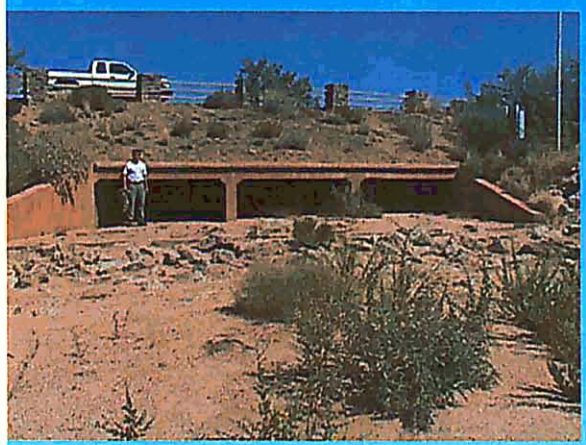

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

Report and Technical Data Notebook

MAIN REPORT

VOLUME 3 of 4

FCD CONTRACT

NO. 2003C008

Submitted April 2005

PREPARED FOR:

Flood Control District of Maricopa County
2801 W. Durango Street
Phoenix, AZ 85009
(602) 506-1501

A FEMA Cooperative Technical Partner

IN CONJUNCTION WITH:

City of Scottsdale
3939 N. Drinkwater Boulevard
Scottsdale, AZ 85251

and

City of Carefree
100 Easy St.
Carefree, AZ 85377

PREPARED BY:

DEI Professional Services, LLC
6225 North 24th Street, Suite 200
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TECHNICAL DATA NOTEBOOK
for
NORTH SCOTTSDALE
FLOODPLAIN DELINEATION STUDY
FCD 2003C008

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VOLUME 3 OF 4

Hydrology Submitted: May 08, 2002
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Revised: April 2005

Prepared for:

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
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CERTIFICATE NO. 16379
HAL E. MARRON
Date Signed
ARIZONA, U.S.A.

\\MAIN\DATA\Projects\03062\Reports\FINAL\VOL3-TITLE.doc

D.1 PRECIPITATION DATA

PERCENT OF TOTAL AREA

Percent of TC	Urban	Natural Default	HEC1	Manual
0				
10	5.0	3.0	4.5	
20	16.0	5.0	12.6	
30	30.0	8.0	23.2	
40	65.0	12.0	35.8	
50	77.0	20.0	50.0	
60	84.0	43.0	64.2	
70	90.0	75.0	76.8	
80	94.0	90.0	87.4	
90	97.0	96.0	95.5	
100	100.0	100.0	100.0	

Rainfall Pattern

9/3/02

Minutes	Area	Pattern Rainfall	Percent of
0	12.24	2.81	0.00
15	12.24	2.81	1.40
30	12.24	2.81	1.90
45	12.24	2.81	2.90
60	12.24	2.81	4.50
75	12.24	2.81	5.90
90	12.24	2.81	7.10
105	12.24	2.81	8.40
120	12.24	2.81	9.80
135	12.24	2.81	11.10
150	12.24	2.81	12.60
165	12.24	2.81	14.20
180	12.24	2.81	16.50
195	12.24	2.81	21.10
210	12.24	2.81	29.40
225	12.24	2.81	46.80
240	12.24	2.81	67.50
255	12.24	2.81	80.40
270	12.24	2.81	87.40
285	12.24	2.81	91.70
300	12.24	2.81	94.70
315	12.24	2.81	96.10
330	12.24	2.81	97.30
345	12.24	2.81	98.70
360	12.24	2.81	100.00

Distributions
Page 1

9/3/02

Duration (min)	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5
0	0.00	0.00	0.00	0.00	0.00
15	0.80	0.90	1.50	2.10	2.40
30	1.60	1.60	2.00	3.50	4.30
45	2.50	2.50	3.00	5.10	5.90
60	3.30	3.40	4.80	7.10	7.80
75	4.10	4.20	6.30	8.70	9.80
90	5.00	5.10	7.60	10.50	11.90
105	5.80	5.90	9.00	12.50	14.10
120	6.60	6.70	10.50	14.30	16.20
135	7.40	7.60	11.90	16.00	18.60
150	8.70	8.70	13.50	17.90	21.20
165	9.90	10.00	15.20	20.10	23.90
180	11.80	12.00	17.50	23.20	27.10
195	13.80	16.30	22.20	28.10	32.10
210	21.60	25.20	30.40	36.40	40.80
225	37.70	45.10	47.20	50.00	51.50
240	83.40	69.40	67.00	65.80	62.70
255	91.10	83.70	79.60	77.30	73.50
270	93.10	90.00	86.80	84.10	81.40
285	95.00	93.80	91.20	88.80	86.40
300	96.20	95.00	94.60	92.70	90.70
315	97.20	96.30	96.00	94.50	93.00
330	98.30	97.50	97.30	96.40	95.40
345	99.10	98.80	98.70	98.20	97.70
360	100.00	100.00	100.00	100.00	100.00

Primary Zone Number:	7	Latitude:	0.0	Elevation:	0
Short Duration Zone Number:	8	Longitude:	0.0		

5 MIN	0.41	0.48	0.53	0.60	0.67	0.73
10 MIN	0.61	0.72	0.80	0.92	1.02	1.11
15 MIN	0.74	0.90	1.01	1.17	1.30	1.43
30 MIN	0.98	1.20	1.36	1.58	1.76	1.94
1 HOUR	1.19	1.48	1.68	1.97	2.20	2.42
2 HOUR	1.33	1.67	1.91	2.26	2.52	2.79
3 HOUR	1.43	1.81	2.07	2.45	2.74	3.03
6 HOUR	1.60	2.05	2.37	2.81	3.16	3.50
12 HOUR	1.80	2.37	2.76	3.30	3.73	4.15
24 HOUR	2.00	2.68	3.15	3.80	4.30	4.80

D.2 PHYSICAL PARAMETER CALCULATIONS

Basin ID	Description
NS	NORTH SCOTTSDALE DELINEATION STUDY

Soil Data

	Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
Major Basin 01								
	SCP-14	Aguila/Carefree	33	0.003	5.3	0.23		
		Aguila/Carefree	61	0.043	69.0	0.15		
		Aguila/Carefree	96	0.013	20.3	0.07		
		Aguila/Carefree	33	0.003	5.3	0.23		
	SCP-13	Aguila/Carefree	33	0.001	0.8	0.23		
		Aguila/Carefree	61	0.066	82.8	0.15		
		Aguila/Carefree	96	0.013	16.5	0.07		
	SCP-12	Aguila/Carefree	33	0.015	51.6	0.23		
		Aguila/Carefree	96	0.014	48.4	0.07		
	SCP-11	Aguila/Carefree	33	0.026	100.0	0.23		
	SCP-10	Aguila/Carefree	33	0.068	61.5	0.23		
		Aguila/Carefree	61	0.014	12.3	0.15		
		Aguila/Carefree	96	0.029	26.2	0.07		
	SCP-09	Aguila/Carefree	33	0.102	95.0	0.23		
		Aguila/Carefree	96	0.005	5.0	0.07		
	SCP-08	Aguila/Carefree	6	0.000	0.1	0.40 *		
		Aguila/Carefree	33	0.127	99.9	0.23		
	SCP-06	Aguila/Carefree	6	0.025	24.7	0.40 *		
		Aguila/Carefree	33	0.076	75.3	0.23		
	SCP-03	Aguila/Carefree	6	0.018	23.4	0.40 *		
		Aguila/Carefree	33	0.032	42.7	0.23		
		Aguila/Carefree	93	0.026	33.9	0.33		
	SCP-01	Aguila/Carefree	6	0.074	22.7	0.40 *		
		Aguila/Carefree	33	0.096	29.7	0.23		
		Aguila/Carefree	61	0.124	38.3	0.15		
		Aguila/Carefree	63	0.014	4.4	0.14	25.0	100
		Aguila/Carefree	93	0.016	4.9	0.33		
	UB-12	Aguila/Carefree	33	0.059	100.0	0.23		
	UB-11	Aguila/Carefree	33	0.201	97.5	0.23		
		Aguila/Carefree	96	0.005	2.5	0.07		
	UB-10	Aguila/Carefree	33	0.090	96.2	0.23		
		Aguila/Carefree	96	0.004	3.8	0.07		
	UB-09	Aguila/Carefree	33	0.159	46.5	0.23		
		Aguila/Carefree	61	0.054	15.8	0.15		
		Aguila/Carefree	96	0.129	37.7	0.07		
	UB-07	Aguila/Carefree	33	0.012	6.3	0.23		
		Aguila/Carefree	61	0.179	93.5	0.15		
		Aguila/Carefree	96	0.000	0.2	0.07		
	UB-04	Aguila/Carefree	6	0.001	0.2	0.40 *		
		Aguila/Carefree	33	0.018	5.1	0.23		
		Aguila/Carefree	61	0.260	74.2	0.15		

* Custom Value (not default value)

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
UB-04	Aguila/Carefree	63	0.072	20.6	0.14	25.0	100
UB-03	Aguila/Carefree	6	0.001	2.9	0.40 *		
	Aguila/Carefree	33	0.020	73.9	0.23		
	Aguila/Carefree	61	0.006	23.2	0.15		
UB-02	Aguila/Carefree	33	0.038	75.8	0.23		
	Aguila/Carefree	63	0.012	24.2	0.14	25.0	100
UB-01	Aguila/Carefree	6	0.022	41.5	0.40 *		
	Aguila/Carefree	33	0.031	58.5	0.23		
F6C-6	Aguila/Carefree	6	0.010	1.1	0.40 *		
	Aguila/Carefree	33	0.566	63.8	0.23		
	Aguila/Carefree	61	0.231	26.0	0.15		
	Aguila/Carefree	96	0.081	9.1	0.07		
F6C-5	Aguila/Carefree	33	0.137	100.0	0.23		
F6C-4	Aguila/Carefree	33	0.025	100.0	0.23		
F6C-3	Aguila/Carefree	33	0.044	94.8	0.23		
	Aguila/Carefree	96	0.002	5.2	0.07		
F6C-2	Aguila/Carefree	6	0.002	2.5	0.40 *		
	Aguila/Carefree	33	0.025	28.0	0.23		
	Aguila/Carefree	61	0.041	46.4	0.15		
	Aguila/Carefree	96	0.020	23.2	0.07		
F6AN-8	Aguila/Carefree	6	0.016	6.8	0.40 *		
	Aguila/Carefree	61	0.219	93.2	0.15		
F6AN-7	Aguila/Carefree	6	0.003	1.1	0.40 *		
	Aguila/Carefree	33	0.180	63.2	0.23		
	Aguila/Carefree	61	0.102	35.7	0.15		
F6AN-6	Aguila/Carefree	6	0.063	58.7	0.40 *		
	Aguila/Carefree	33	0.034	31.6	0.23		
	Aguila/Carefree	61	0.011	9.8	0.15		
F6AN-5	Aguila/Carefree	6	0.031	29.7	0.40 *		
	Aguila/Carefree	33	0.073	70.3	0.23		
F6AN-4	Aguila/Carefree	33	0.244	97.4	0.23		
	Aguila/Carefree	61	0.002	0.8	0.15		
	Aguila/Carefree	96	0.005	1.8	0.07		
F6AN-3	Aguila/Carefree	6	0.001	0.8	0.40 *		
	Aguila/Carefree	33	0.113	82.1	0.23		
	Aguila/Carefree	96	0.024	17.1	0.07		
F6AN-2	Aguila/Carefree	33	0.136	90.8	0.23		
	Aguila/Carefree	61	0.004	2.9	0.15		
	Aguila/Carefree	96	0.009	6.1	0.07		
	Aguila/Carefree	34	0.000	0.2	0.10 *		
F6AN-1	Aguila/Carefree	26	0.001	0.2	0.01		

* Custom Value (not default value)

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
F6AN-1	Aguila/Carefree	33	0.111	26.6	0.23		
	Aguila/Carefree	61	0.074	17.8	0.15		
	Aguila/Carefree	72	0.008	1.9	0.09	30.0	100
	Aguila/Carefree	93	0.080	19.2	0.33		
	Aguila/Carefree	34	0.142	34.3	0.10 *		
F6AS-5	Aguila/Carefree	33	0.215	34.1	0.23		
	Aguila/Carefree	61	0.301	47.6	0.15		
	Aguila/Carefree	96	0.115	18.3	0.07		
F6AS-4	Aguila/Carefree	33	0.393	90.8	0.23		
	Aguila/Carefree	61	0.040	9.2	0.15		
F6AS-3	Aguila/Carefree	33	0.231	72.8	0.23		
	Aguila/Carefree	96	0.086	27.2	0.07		
F6AS-2	Aguila/Carefree	33	0.056	95.4	0.23		
	Aguila/Carefree	96	0.003	4.6	0.07		
F6AS-1	Aguila/Carefree	26	0.055	19.6	0.01		
	Aguila/Carefree	33	0.063	22.5	0.23		
	Aguila/Carefree	61	0.013	4.6	0.15		
	Aguila/Carefree	72	0.033	11.9	0.09	30.0	100
	Aguila/Carefree	93	0.020	7.3	0.33		
	Aguila/Carefree	96	0.017	6.0	0.07		
	Aguila/Carefree	34	0.078	28.1	0.10 *		
F6A-1	Aguila/Carefree	6	0.007	5.3	0.40 *		
	Aguila/Carefree	33	0.012	9.2	0.23		
	Aguila/Carefree	61	0.107	85.5	0.15		
RHW-1	Aguila/Carefree	33	0.384	36.6	0.23		
	Aguila/Carefree	61	0.546	52.0	0.15		
	Aguila/Carefree	72	0.121	11.5	0.09	30.0	100
UF5-5	Aguila/Carefree	33	0.153	51.9	0.23		
	Aguila/Carefree	61	0.141	48.1	0.15		
UF5-4	Aguila/Carefree	26	0.003	1.1	0.01		
	Aguila/Carefree	33	0.198	77.6	0.23		
	Aguila/Carefree	61	0.026	10.3	0.15		
	Aguila/Carefree	96	0.028	10.9	0.07		
UF5-3	Aguila/Carefree	6	0.004	0.4	0.40 *		
	Aguila/Carefree	26	0.013	1.5	0.01		
	Aguila/Carefree	33	0.151	18.0	0.23		
	Aguila/Carefree	61	0.599	71.2	0.15		
	Aguila/Carefree	72	0.044	5.2	0.09	30.0	100
	Aguila/Carefree	93	0.031	3.7	0.33		
UF5-2	Aguila/Carefree	6	0.001	0.2	0.40 *		
	Aguila/Carefree	26	0.042	6.7	0.01		
	Aguila/Carefree	33	0.085	13.5	0.23		

* Custom Value (not default value)

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
UF5-2	Aguila/Carefree	61	0.415	66.5	0.15		
	Aguila/Carefree	72	0.029	4.6	0.09	30.0	100
	Aguila/Carefree	93	0.052	8.4	0.33		
	Aguila/Carefree	96	0.001	0.1	0.07		
UF5-1	Aguila/Carefree	6	0.022	26.7	0.40 *		
	Aguila/Carefree	33	0.004	5.0	0.23		
	Aguila/Carefree	61	0.057	68.2	0.15		
SCP-5C	Aguila/Carefree	33	0.150	98.3	0.23		
	Aguila/Carefree	96	0.003	1.7	0.07		
SCP-5B	Aguila/Carefree	33	0.027	100.0	0.23		
SCP-5A	Aguila/Carefree	6	0.001	1.0	0.40 *		
	Aguila/Carefree	33	0.087	95.4	0.23		
	Aguila/Carefree	93	0.003	3.6	0.33		
SCP-4B	Aguila/Carefree	33	0.140	100.0	0.23		
SCP-4A	Aguila/Carefree	6	0.034	45.7	0.40 *		
	Aguila/Carefree	33	0.041	54.3	0.23		
SCP-2B	Aguila/Carefree	6	0.011	20.1	0.40 *		
	Aguila/Carefree	33	0.032	59.5	0.23		
	Aguila/Carefree	93	0.011	20.4	0.33		
SCP-2A	Aguila/Carefree	6	0.021	39.5	0.40 *		
	Aguila/Carefree	33	0.028	51.8	0.23		
	Aguila/Carefree	61	0.001	2.4	0.15		
	Aguila/Carefree	93	0.003	6.3	0.33		
UB-08C	Aguila/Carefree	33	0.009	97.9	0.23		
	Aguila/Carefree	96	0.000	2.1	0.07		
UB-08B	Aguila/Carefree	33	0.010	29.4	0.23		
	Aguila/Carefree	96	0.024	70.6	0.07		
UB-08A	Aguila/Carefree	33	0.074	61.3	0.23		
	Aguila/Carefree	61	0.047	38.7	0.15		
UB-06C	Aguila/Carefree	61	0.037	100.0	0.15		
UB-06B	Aguila/Carefree	61	0.053	100.0	0.15		
UB-06A	Aguila/Carefree	33	0.005	12.8	0.23		
	Aguila/Carefree	61	0.037	87.2	0.15		
UB-05B	Aguila/Carefree	61	0.022	100.0	0.15		
UB-05A	Aguila/Carefree	61	0.089	100.0	0.15		
F6C-1D	Aguila/Carefree	6	0.001	3.0	0.40 *		
	Aguila/Carefree	61	0.038	97.0	0.15		
F6C-1C	Aguila/Carefree	6	0.018	23.8	0.40 *		
	Aguila/Carefree	61	0.059	76.2	0.15		
F6C-1B	Aguila/Carefree	33	0.087	44.4	0.23		
	Aguila/Carefree	61	0.109	55.6	0.15		

* Custom Value (not default value)

Soil Data

Sub Basin ID	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
F6C-1A	Aguila/Carefree	6	0.038	20.6	0.40 *		
	Aguila/Carefree	61	0.145	79.4	0.15		
SCP-7E	Aguila/Carefree	6	0.019	38.8	0.40 *		
	Aguila/Carefree	33	0.030	61.2	0.23		
SCP-7D	Aguila/Carefree	6	0.000	1.5	0.40 *		
	Aguila/Carefree	33	0.027	98.5	0.23		
SCP-7C	Aguila/Carefree	33	0.177	100.0	0.23		
SCP-7B	Aguila/Carefree	33	0.088	100.0	0.23		
SCP-7A	Aguila/Carefree	6	0.001	0.5	0.40 *		
	Aguila/Carefree	33	0.135	99.5	0.23		

* Custom Value (not default value)

Sub Basin Data

Basin: NS | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
SCP-14	0.06	0.99	237.1	232.0	Natural	0.030	0.30	0.23	6.20	0.15	17	Tc (hrs)	0.25	0.22	0.20	0.19	0.18	0.17
												Vel (f/s)	5.90	6.69	7.12	7.72	8.11	8.49
												R (hrs)	0.39	0.34	0.32	0.29	0.27	0.26
SCP-13	0.08	1.05	228.8	225.0	Natural	0.029	0.30	0.21	6.40	0.14	17	Tc (hrs)	0.25	0.22	0.21	0.19	0.18	0.18
												Vel (f/s)	6.16	6.97	7.40	8.02	8.42	8.80
												R (hrs)	0.35	0.30	0.29	0.26	0.25	0.24
SCP-12	0.03	0.41	190.8	190.8	Natural	0.032	0.30	0.21	6.40	0.14	17	Tc (hrs)	0.17	0.15	0.14	0.13	0.13	0.12
												Vel (f/s)	3.52	4.01	4.23	4.52	4.81	4.97
												R (hrs)	0.20	0.17	0.16	0.15	0.14	0.13
SCP-11	0.03	0.42	174.2	174.2	Urban	0.033	0.31	0.25	5.00	0.26	16	Tc (hrs)	0.19	0.17	0.15	0.14	0.13	0.13
												Vel (f/s)	3.21	3.69	4.00	4.34	4.63	4.78
												R (hrs)	0.24	0.20	0.19	0.17	0.16	0.15
SCP-10	0.11	1.09	165.0	165.0	Urban	0.030	0.24	0.29	5.80	0.17	12	Tc (hrs)	0.31	0.26	0.24	0.22	0.21	0.20
												Vel (f/s)	5.11	6.20	6.72	7.23	7.69	7.99
												R (hrs)	0.38	0.31	0.28	0.26	0.24	0.23
SCP-09	0.11	0.91	150.1	150.1	Urban	0.030	0.30	0.25	5.10	0.25	18	Tc (hrs)	0.30	0.24	0.23	0.21	0.20	0.19
												Vel (f/s)	4.51	5.52	5.93	6.42	6.67	6.95
												R (hrs)	0.32	0.25	0.23	0.22	0.21	0.20
SCP-08	0.13	1.01	131.3	131.3	Urban	0.030	0.30	0.25	5.00	0.32	25	Tc (hrs)	0.35	0.28	0.25	0.23	0.22	0.21
												Vel (f/s)	4.28	5.39	5.93	6.47	6.70	7.12
												R (hrs)	0.37	0.29	0.26	0.24	0.23	0.21
SCP-7E	0.05	0.59	144.1	144.1	Urban	0.032	0.30	0.25	4.55	0.40	21	Tc (hrs)	0.25	0.21	0.20	0.18	0.17	0.16
												Vel (f/s)	3.46	4.16	4.41	4.83	5.06	5.31
												R (hrs)	0.29	0.24	0.22	0.20	0.19	0.18
SCP-06	0.10	1.03	113.2	113.2	Urban	0.032	0.25	0.25	4.70	0.35	37	Tc (hrs)	0.37	0.30	0.28	0.25	0.24	0.23
												Vel (f/s)	4.07	4.97	5.49	6.04	6.35	6.60

* Non default value

Sub Basin Data

Basin: NS | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
												R (hrs)	0.47	0.37	0.33	0.30	0.28	0.27
SCP-03	0.08	0.71	114.2	114.2	Urban	0.032	0.30	0.25	4.50	0.37	17	Tc (hrs)	0.31	0.25	0.23	0.21	0.20	0.19
												Vel (f/s)	3.33	4.17	4.55	4.89	5.21	5.42
												R (hrs)	0.34	0.26	0.24	0.22	0.21	0.20
SCP-01	0.32	2.18	112.0	112.0	Urban	0.031	0.31	0.25	5.10	0.29	20	Tc (hrs)	0.69	0.55	0.48	0.42	0.38	0.36
												Vel (f/s)	4.65	5.86	6.68	7.67	8.35	8.93
												R (hrs)	0.87	0.67	0.58	0.50	0.45	0.42
UB-12	0.06	0.76	119.6	119.6	Natural	0.032	0.30	0.25	5.00	0.32	26	Tc (hrs)	0.30	0.25	0.23	0.21	0.20	0.19
												Vel (f/s)	3.67	4.46	4.87	5.23	5.57	5.81
												R (hrs)	0.40	0.32	0.29	0.27	0.25	0.24
UB-11	0.21	1.36	114.4	114.4	Natural	0.029	0.27	0.25	5.10	0.31	35	Tc (hrs)	0.43	0.35	0.31	0.28	0.26	0.25
												Vel (f/s)	4.69	5.76	6.37	7.15	7.58	8.11
												R (hrs)	0.45	0.36	0.32	0.28	0.26	0.25
UB-10	0.09	1.11	110.3	110.3	Natural	0.032	0.28	0.25	5.10	0.29	28	Tc (hrs)	0.41	0.33	0.30	0.27	0.25	0.24
												Vel (f/s)	3.99	4.95	5.50	6.10	6.51	6.84
												R (hrs)	0.57	0.45	0.40	0.36	0.33	0.31
UB-09	0.34	1.66	105.5	105.5	Urban	0.028	0.28	0.23	6.20	0.20	32	Tc (hrs)	0.48	0.39	0.35	0.32	0.30	0.28
												Vel (f/s)	5.08	6.21	6.88	7.68	8.23	8.73
												R (hrs)	0.45	0.36	0.32	0.29	0.27	0.25
UB-07	0.19	1.34	104.9	104.9	Natural	0.029	0.30	0.25	6.00	0.17	15	Tc (hrs)	0.44	0.35	0.32	0.28	0.27	0.25
												Vel (f/s)	4.45	5.55	6.20	6.94	7.36	7.74
												R (hrs)	0.49	0.38	0.34	0.30	0.28	0.26
UB-04	0.35	1.82	94.9	94.9	Urban	0.028	0.26	0.28	6.00	0.17	23	Tc (hrs)	0.55	0.45	0.40	0.35	0.33	0.31
												Vel (f/s)	4.82	5.99	6.67	7.54	8.02	8.53
												R (hrs)	0.56	0.44	0.39	0.34	0.32	0.30

* Non default value

Sub Basin Data

Basin: NS | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
UB-03	0.03	0.37	106.0	106.0	Urban	0.034	0.18	0.30	5.20	0.26	23	Tc (hrs)	0.21	0.18	0.17	0.16	0.15	0.14
												Vel (f/s)	2.61	2.97	3.17	3.43	3.62	3.82
												R (hrs)	0.23	0.20	0.18	0.17	0.16	0.15
UB-02	0.05	0.63	445.2	299.0	Urban	0.033	0.24	0.27	5.30	0.27	51	Tc (hrs)	0.19	0.17	0.15	0.15	0.14	0.13
												Vel (f/s)	4.91	5.53	6.00	6.33	6.70	6.95
												R (hrs)	0.22	0.19	0.18	0.17	0.16	0.15
UB-01	0.05	0.60	100.8	100.8	Urban	0.033	0.20	0.27	4.55	0.39	47	Tc (hrs)	0.27	0.23	0.22	0.20	0.19	0.18
												Vel (f/s)	3.30	3.84	4.06	4.40	4.58	4.81
												R (hrs)	0.30	0.25	0.24	0.22	0.21	0.20
F6C-6	0.89	3.88	162.0	162.0	Urban	0.027	0.33	0.25	5.40	0.25	14	Tc (hrs)	1.50	0.70	0.60	0.52	0.48	0.45
												Vel (f/s)	3.67	8.08	9.42	10.92	11.98	12.76
												R (hrs)	1.91	0.79	0.67	0.57	0.51	0.48
F6C-5	0.14	1.71	117.5	117.5	Urban	0.031	0.32	0.25	5.00	0.33	22	Tc (hrs)	0.57	0.45	0.40	0.35	0.32	0.30
												Vel (f/s)	4.42	5.57	6.33	7.25	7.81	8.36
												R (hrs)	0.94	0.73	0.63	0.54	0.50	0.46
F6C-4	0.03	0.48	137.8	137.8	Urban	0.036	0.31	0.25	5.00	0.33	23	Tc (hrs)	0.24	0.20	0.19	0.17	0.16	0.16
												Vel (f/s)	2.96	3.52	3.74	4.12	4.32	4.46
												R (hrs)	0.34	0.28	0.26	0.24	0.22	0.22
F6C-3	0.05	0.63	64.8	64.8	Urban	0.034	0.33	0.25	5.10	0.33	24	Tc (hrs)	0.38	0.30	0.27	0.24	0.23	0.22
												Vel (f/s)	2.44	3.08	3.46	3.82	4.03	4.18
												R (hrs)	0.50	0.39	0.34	0.31	0.29	0.28
F6C-2	0.09	0.83	108.2	108.2	Natural	0.031	0.29	0.25	6.00	0.21	29	Tc (hrs)	0.31	0.26	0.24	0.23	0.21	0.20
												Vel (f/s)	3.89	4.72	5.03	5.41	5.72	5.97
												R (hrs)	0.35	0.28	0.26	0.24	0.23	0.22
F6AN-8	0.24	1.12	180.7	180.7	Natural	0.026	0.30	0.25	5.80	0.18	6	Tc (hrs)	0.28	0.24	0.22	0.20	0.19	0.18
												Vel (f/s)	5.89	6.90	7.43	8.05	8.56	8.98

* Non default value

Sub Basin Data

Basin: NS | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
												R (hrs)	0.22	0.19	0.17	0.16	0.15	0.14
F6AN-7	0.28	2.09	169.6	169.6	Urban	0.029	0.32	0.25	5.30	0.24	10	Tc (hrs)	0.54	0.42	0.36	0.32	1.50	0.28
												Vel (f/s)	5.70	7.35	8.44	9.55	1.94	10.99
												R (hrs)	0.69	0.52	0.44	0.39	2.27	0.33
F6AN-6	0.11	1.30	176.9	176.9	Urban	0.031	0.33	0.25	4.45	0.39	13	Tc (hrs)	0.42	0.32	0.28	0.25	0.23	0.23
												Vel (f/s)	4.57	6.01	6.93	7.75	8.18	8.47
												R (hrs)	0.62	0.46	0.39	0.34	0.32	0.31
F6AN-5	0.10	0.98	135.4	135.4	Urban	0.031	0.33	0.25	4.65	0.38	15	Tc (hrs)	0.38	0.29	0.25	0.23	0.22	0.21
												Vel (f/s)	3.83	4.99	5.66	6.17	6.50	6.91
												R (hrs)	0.45	0.33	0.29	0.26	0.25	0.23
F6AN-4	0.25	2.15	129.9	129.9	Natural	0.029	0.30	0.25	5.00	0.32	24	Tc (hrs)	0.60	0.48	0.42	0.37	0.34	0.32
												Vel (f/s)	5.29	6.64	7.49	8.59	9.22	9.82
												R (hrs)	0.85	0.66	0.57	0.49	0.46	0.43
F6AN-3	0.14	1.98	130.3	130.3	Urban	0.031	0.30	0.25	5.40	0.25	22	Tc (hrs)	0.58	0.46	0.41	0.36	0.33	0.31
												Vel (f/s)	5.05	6.34	7.12	8.11	8.72	9.28
												R (hrs)	1.07	0.83	0.73	0.63	0.58	0.54
F6AN-2	0.15	1.67	132.7	132.7	Urban	0.031	0.34	0.25	5.20	0.30	18	Tc (hrs)	0.54	0.42	0.37	0.33	0.30	0.28
												Vel (f/s)	4.55	5.82	6.67	7.54	8.16	8.78
												R (hrs)	0.83	0.63	0.54	0.47	0.43	0.40
F6AN-1	0.42	1.89	104.0	104.0	Urban	0.030	0.31	0.25	5.70	0.24	26	Tc (hrs)	0.59	0.48	0.43	0.38	0.35	0.33
												Vel (f/s)	4.68	5.84	6.52	7.39	8.01	8.53
												R (hrs)	0.57	0.45	0.39	0.34	0.31	0.29
F6AS-5	0.63	2.40	162.4	162.4	Natural	0.038	0.32	0.32	6.00	0.18	6	Tc (hrs)	0.83	0.62	0.53	0.46	0.42	0.39
												Vel (f/s)	4.27	5.67	6.60	7.69	8.36	8.98
												R (hrs)	0.78	0.57	0.48	0.41	0.37	0.34

* Non default value

Sub Basin Data

Basin: NS | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
F6AS-4	0.43	3.17	130.4	130.4	Natural	0.035	0.31	0.28	5.10	0.29	18	Tc (hrs)	0.96	0.76	0.67	0.57	0.52	0.48
												Vel (f/s)	4.83	6.09	6.93	8.14	8.99	9.71
												R (hrs)	1.44	1.11	0.96	0.81	0.72	0.66
F6AS-3	0.32	2.25	119.3	119.3	Natural	0.028	0.30	0.25	5.70	0.23	24	Tc (hrs)	0.60	0.48	0.43	0.38	0.35	0.33
												Vel (f/s)	5.50	6.83	7.69	8.71	9.43	10.03
												R (hrs)	0.77	0.61	0.53	0.46	0.43	0.40
F6AS-2	0.06	0.72	111.9	111.9	Natural	0.032	0.29	0.25	5.10	0.31	29	Tc (hrs)	0.30	0.25	0.23	0.21	0.20	0.19
												Vel (f/s)	3.57	4.29	4.61	4.96	5.28	5.50
												R (hrs)	0.37	0.30	0.28	0.26	0.24	0.23
F6AS-1	0.28	1.80	95.3	95.3	Urban	0.029	0.29	0.15	7.60	0.11	38	Tc (hrs)	0.50	0.42	0.38	0.35	0.33	0.31
												Vel (f/s)	5.28	6.27	6.89	7.54	8.02	8.57
												R (hrs)	0.57	0.47	0.42	0.38	0.36	0.33
F6A-1	0.13	0.73	101.6	101.6	Natural	0.031	0.30	0.25	5.70	0.20	13	Tc (hrs)	0.30	0.25	0.23	0.22	0.20	0.20
												Vel (f/s)	3.52	4.28	4.60	4.93	5.25	5.46
												R (hrs)	0.25	0.20	0.19	0.17	0.16	0.15
RHW-1	1.05	2.51	130.1	130.1	Natural	0.037	0.33	0.35	5.70	0.21	12	Tc (hrs)	1.04	0.76	0.65	0.55	0.50	0.47
												Vel (f/s)	3.55	4.82	5.70	6.65	7.36	7.88
												R (hrs)	0.78	0.56	0.46	0.39	0.35	0.32
UF5-5	0.29	3.06	1132.4	315.0	Natural	0.045	0.34	0.35	5.40	0.24	6	Tc (hrs)	0.86	0.64	0.55	0.46	0.42	0.39
												Vel (f/s)	5.23	6.99	8.16	9.69	10.66	11.45
												R (hrs)	1.54	1.11	0.94	0.77	0.70	0.64
UF5-4	0.26	1.86	104.4	104.4	Natural	0.028	0.29	0.25	5.40	0.27	29	Tc (hrs)	0.55	0.45	0.40	0.35	0.33	0.31
												Vel (f/s)	5.00	6.12	6.89	7.79	8.39	8.86
												R (hrs)	0.68	0.54	0.47	0.41	0.38	0.36
UF5-3	0.84	4.08	82.9	82.9	Natural	0.025	0.25	0.25	5.80	0.23	38	Tc (hrs)	0.98	1.50	0.72	0.63	0.59	0.55
												Vel (f/s)	6.09	3.84	8.35	9.45	10.18	10.88

* Non default value

Sub Basin Data

Basin: NS | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
												R (hrs)	1.23	2.06	0.87	0.76	0.70	0.65
UF5-2	0.62	3.15	97.3	97.3	Natural	0.026	0.27	0.23	6.20	0.20	32	Tc (hrs)	0.78	0.63	0.56	0.50	0.46	0.43
												Vel (f/s)	5.96	7.34	8.28	9.31	10.09	10.67
												R (hrs)	0.91	0.73	0.64	0.56	0.51	0.48
UF5-1	0.08	0.64	111.6	111.6	Natural	0.032	0.29	0.25	5.30	0.26	21	Tc (hrs)	0.28	0.23	0.22	0.20	0.19	0.18
												Vel (f/s)	3.41	4.10	4.33	4.69	4.99	5.24
												R (hrs)	0.26	0.21	0.20	0.18	0.17	0.16
SCP-5C	0.15	1.10	105.2	105.2	Natural	0.029	0.27	0.25	5.00	0.29	27	Tc (hrs)	0.38	0.31	0.28	0.25	0.24	0.23
												Vel (f/s)	4.21	5.24	5.78	6.35	6.78	7.05
												R (hrs)	0.40	0.32	0.28	0.26	0.24	0.23
SCP-5B	0.03	0.55	112.9	112.9	Natural	0.034	0.24	0.25	5.00	0.30	38	Tc (hrs)	0.25	0.22	0.20	0.19	0.18	0.17
												Vel (f/s)	3.28	3.72	3.95	4.29	4.51	4.72
												R (hrs)	0.38	0.33	0.31	0.28	0.27	0.25
SCP-5A	0.09	0.77	121.6	121.6	Urban	0.031	0.30	0.25	4.90	0.31	19	Tc (hrs)	0.30	0.25	0.23	0.21	0.20	0.19
												Vel (f/s)	3.71	4.59	4.93	5.43	5.65	5.88
												R (hrs)	0.31	0.25	0.23	0.21	0.20	0.19
SCP-4B	0.14	1.13	123.0	123.0	Urban	0.028	0.30	0.25	5.00	0.32	22	Tc (hrs)	0.37	0.30	0.27	0.24	0.23	0.22
												Vel (f/s)	4.47	5.60	6.21	6.85	7.24	7.64
												R (hrs)	0.42	0.32	0.29	0.26	0.24	0.23
SCP-4A	0.08	0.89	115.5	115.5	Urban	0.031	0.26	0.25	4.50	0.37	31	Tc (hrs)	0.34	0.27	0.25	0.23	0.22	0.21
												Vel (f/s)	3.86	4.82	5.31	5.70	6.02	6.28
												R (hrs)	0.44	0.35	0.31	0.29	0.27	0.26
SCP-2B	0.05	0.96	106.8	106.8	Urban	0.033	0.30	0.25	4.60	0.32	13	Tc (hrs)	0.41	0.32	0.28	0.25	0.24	0.23
												Vel (f/s)	3.41	4.39	4.98	5.54	5.82	6.15
												R (hrs)	0.71	0.54	0.47	0.41	0.39	0.37

Sub Basin Data

3/30/2005

Basin: NS | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

Sub Basin ID	Sub Basin Parameters: Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	Rainfall Losses: IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		Return Period (Years): 2	5	10	25	50	100
SCP-2A	0.05	0.77	137.1	137.1	Urban	0.032	0.30	0.25	4.55	0.32	14	Tc (hrs)	0.30	0.24	0.23	0.21	0.20	0.19
												Vel (f/s)	3.76	4.67	5.02	5.43	5.76	6.01
												R (hrs)	0.42	0.33	0.30	0.28	0.26	0.25
UB-08C	0.01	0.24	118.6	118.6	Natural	0.035	0.25	0.25	5.00	0.32	36	Tc (hrs)	0.16	0.14	0.13	0.13	0.12	0.11
												Vel (f/s)	2.16	2.48	2.65	2.82	3.01	3.12
												R (hrs)	0.22	0.19	0.17	0.16	0.15	0.14
UB-08B	0.03	0.42	110.8	110.8	Natural	0.032	0.25	0.15	7.00	0.14	36	Tc (hrs)	0.20	0.18	0.17	0.16	0.15	0.14
												Vel (f/s)	3.08	3.44	3.69	3.90	4.11	4.34
												R (hrs)	0.22	0.19	0.18	0.17	0.16	0.15
UB-08A	0.12	1.34	93.6	93.6	Urban	0.031	0.30	0.25	5.30	0.24	14	Tc (hrs)	0.52	0.41	0.36	0.32	0.30	0.28
												Vel (f/s)	3.80	4.82	5.49	6.20	6.64	7.04
												R (hrs)	0.75	0.58	0.50	0.44	0.40	0.38
UB-06C	0.04	0.53	119.5	119.5	Urban	0.031	0.30	0.25	6.00	0.17	17	Tc (hrs)	0.23	0.20	0.19	0.17	0.16	0.16
												Vel (f/s)	3.45	3.89	4.13	4.55	4.77	4.92
												R (hrs)	0.28	0.24	0.23	0.21	0.19	0.19
UB-06B	0.05	0.90	115.1	115.1	Urban	0.032	0.30	0.25	6.00	0.17	18	Tc (hrs)	0.34	0.27	0.25	0.23	0.22	0.21
												Vel (f/s)	3.91	4.87	5.28	5.67	5.97	6.20
												R (hrs)	0.54	0.43	0.39	0.36	0.34	0.33
UB-06A	0.04	0.56	108.1	108.1	Urban	0.034	0.24	0.28	5.80	0.20	23	Tc (hrs)	0.25	0.22	0.21	0.19	0.18	0.18
												Vel (f/s)	3.23	3.72	3.95	4.28	4.49	4.69
												R (hrs)	0.31	0.27	0.25	0.23	0.22	0.21
UB-05B	0.02	0.33	116.6	116.6	Urban	0.033	0.30	0.25	6.00	0.17	17	Tc (hrs)	0.19	0.16	0.15	0.14	0.13	0.13
												Vel (f/s)	2.57	2.97	3.14	3.41	3.64	3.75
												R (hrs)	0.21	0.18	0.17	0.15	0.14	0.14
UB-05A	0.09	0.93	116.8	116.8	Urban	0.033	0.29	0.25	6.00	0.19	24	Tc (hrs)	0.35	0.28	0.26	0.24	0.23	0.22
												Vel (f/s)	3.90	4.82	5.29	5.73	6.06	6.29

* Non default value

Sub Basin Data

Basin: NS | Storms: Multiple | Duration: 6 Hour | Loss Method: Green-Ampt | Unit Hydrograph: Clark

	Sub Basin Parameters						Rainfall Losses						Return Period (Years)					
Sub Basin ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	Adj Slope	Time-Area	Kb	IA (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)		2	5	10	25	50	100
												R (hrs)	0.43	0.34	0.31	0.28	0.27	0.25
F6C-1D	0.04	0.41	122.5	122.5	Urban	0.031	0.30	0.25	5.80	0.18	17	Tc (hrs)	0.20	0.18	0.16	0.15	0.14	0.14
												Vel (f/s)	3.01	3.44	3.69	4.01	4.23	4.36
												R (hrs)	0.19	0.16	0.15	0.14	0.13	0.13
F6C-1C	0.08	0.56	121.6	121.6	Urban	0.031	0.29	0.25	5.40	0.22	21	Tc (hrs)	0.23	0.20	0.19	0.18	0.17	0.16
												Vel (f/s)	3.53	4.03	4.28	4.59	4.92	5.04
												R (hrs)	0.20	0.17	0.16	0.15	0.14	0.13
F6C-1B	0.20	1.65	95.8	95.8	Urban	0.030	0.30	0.25	5.60	0.26	28	Tc (hrs)	0.55	0.45	0.40	0.35	0.33	0.31
												Vel (f/s)	4.37	5.43	6.11	6.84	7.36	7.86
												R (hrs)	0.73	0.57	0.50	0.44	0.41	0.38
F6C-1A	0.18	1.11	109.4	109.4	Urban	0.027	0.30	0.25	5.60	0.20	17	Tc (hrs)	0.36	0.29	0.26	0.24	0.23	0.22
												Vel (f/s)	4.55	5.65	6.19	6.73	7.11	7.50
												R (hrs)	0.34	0.27	0.24	0.22	0.21	0.19
SCP-7D	0.03	0.45	141.6	141.6	Urban	0.032	0.30	0.25	5.00	0.32	21	Tc (hrs)	0.21	0.18	0.17	0.15	0.15	0.14
												Vel (f/s)	3.10	3.61	3.95	4.29	4.52	4.65
												R (hrs)	0.27	0.23	0.21	0.19	0.18	0.18
SCP-7C	0.18	1.83	129.5	129.5	Urban	0.030	0.30	0.25	5.00	0.29	21	Tc (hrs)	0.54	0.43	0.38	0.34	0.31	0.29
												Vel (f/s)	4.95	6.20	7.08	7.94	8.58	9.19
												R (hrs)	0.82	0.64	0.55	0.48	0.44	0.41
SCP-7B	0.09	1.24	133.8	133.8	Urban	0.032	0.30	0.25	5.00	0.29	20	Tc (hrs)	0.42	0.33	0.30	0.27	0.25	0.24
												Vel (f/s)	4.32	5.46	6.14	6.81	7.27	7.64
												R (hrs)	0.67	0.52	0.45	0.41	0.38	0.36
SCP-7A	0.14	1.48	122.2	122.2	Urban	0.030	0.30	0.25	5.00	0.31	22	Tc (hrs)	0.48	0.38	0.34	0.30	0.28	0.26
												Vel (f/s)	4.53	5.73	6.42	7.24	7.78	8.25
												R (hrs)	0.70	0.54	0.47	0.42	0.38	0.36

D.3 HYDROGRAPH ROUTING DATA

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
N S	RSCP14	1	0.064	0.044	0.064	1086	0.0322		Sta	812.0	844.1	955.0	977.5	1000.0	1009.0	1017.6	1031.5
									Elev	957.3	957.0	956.0	955.0	954.0	956.0	958.0	960.0
N S	RSCP12	4	0.064	0.044	0.064	3465	0.0268		Sta	870.5	892.9	951.4	993.0	1049.1	1067.0	1124.7	1164.5
									Elev	886.0	884.0	882.0	880.0	880.0	882.0	884.0	886.0
N S	RSCP10	5	0.064	0.044	0.064	4424	0.0255		Sta	814.2	853.2	899.7	949.5	1052.9	1130.7	1232.4	1257.1
									Elev	820.0	815.3	816.0	812.0	812.0	814.0	818.0	820.0
N S	RSCP09	3	0.064	0.044	0.064	2968	0.0230		Sta	865.1	910.6	932.1	961.1	1066.2	1091.4	1109.0	1125.3
									Elev	724.0	722.0	718.0	714.0	714.0	718.0	722.0	724.0
N S	RSCP08	3	0.064	0.044	0.064	2847	0.0204		Sta	850.9	901.3	954.4	979.4	1000.0	1062.3	1114.0	1201.2
									Elev	668.0	666.0	664.0	662.0	660.0	662.0	664.0	666.0
N S	RSCP07	4	0.056	0.038	0.076	3297	0.0179		Sta	857.9	951.0	966.1	972.2	1006.8	1087.4	1125.8	1266.4
									Elev	578.0	574.0	572.0	568.0	568.0	571.5	569.3	578.0
N S	RSCP06	4	0.064	0.044	0.064	3157	0.0196		Sta	627.2	683.7	977.3	987.0	1012.1	1029.7	1045.2	1079.6
									Elev	538.0	534.0	536.0	530.0	530.0	534.0	536.0	538.0
N S	RSCP04	2	0.056	0.038	0.086	1499	0.0180		Sta	850.6	870.5	971.1	987.9	1027.2	1050.7	1218.9	1240.9
									Elev	492.0	490.0	486.0	484.0	484.0	486.0	488.0	492.0
N S	RSCP03	2	0.061	0.038	0.056	1378	0.0181		Sta	966.2	984.0	990.6	997.6	1003.9	1019.0	1048.1	1065.0
									Elev	447.7	446.0	444.0	442.0	442.0	444.0	446.0	448.0
N S	RSCP02	7	0.056	0.038	0.056	5949	0.0212		Sta	623.1	687.8	904.9	959.7	1000.0	1016.9	1082.0	1122.3
									Elev	290.0	286.8	289.6	286.0	284.0	286.0	288.0	290.0
N S	RUB12	6	0.056	0.044	0.056	5388	0.0182		Sta	849.6	861.9	926.8	975.3	1017.2	1046.5	1060.3	1074.7
									Elev	650.0	648.0	648.0	642.0	642.0	646.0	648.0	650.0
N S	RUB10	4	0.056	0.044	0.056	3907	0.0179		Sta	810.4	844.8	959.8	972.8	1005.9	1035.5	1109.8	1164.3
									Elev	564.0	562.0	560.0	556.0	556.0	560.0	560.0	562.0
N S	RUB09	5	0.061	0.038	0.061	4450	0.0187		Sta	865.9	913.3	986.7	990.5	1009.0	1014.7	1037.1	1056.8
									Elev	492.0	489.0	488.0	486.0	486.0	488.0	490.0	492.0

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
N S	RUB07	2	0.061	0.038	0.061	1441	0.0187		Sta	802.8	896.1	939.4	977.6	1023.6	1036.2	1071.8	1144.8
									Elev	420.0	415.1	416.5	416.0	416.0	418.0	416.4	420.0
N S	RUB06	2	0.076	0.038	0.076	1436	0.0202		Sta	924.2	953.8	984.0	988.7	1020.6	1078.2	1087.4	1126.5
									Elev	336.0	334.0	332.0	330.0	330.0	332.0	334.0	336.0
N S	RUB05	2	0.076	0.038	0.076	1527	0.0216		Sta	924.2	953.8	984.0	988.7	1020.6	1078.2	1087.4	1126.5
									Elev	336.0	334.0	332.0	330.0	330.0	332.0	334.0	336.0
N S	RUB03	3	0.076	0.038	0.076	2425	0.0177		Sta	785.3	899.0	967.3	981.0	1004.3	1011.0	1258.0	1351.4
									Elev	312.0	306.6	308.0	306.0	306.0	308.0	310.0	312.0
N S	RF6C6	2	0.050	0.035	0.050	1780	0.0185		Sta	864.4	924.1	983.8	985.5	1015.1	1025.5	1034.0	1042.4
									Elev	626.0	625.0	624.0	622.0	622.0	624.0	625.0	626.0
N S	RF6C4	3	0.050	0.035	0.050	2707	0.0070		Sta	697.3	735.7	986.9	990.6	1012.9	1106.1	1185.2	1250.7
									Elev	596.0	592.0	592.0	590.0	590.0	592.0	594.0	596.0
N S	RF6C3	4	0.058	0.038	0.058	3172	0.0284		Sta	731.4	760.4	943.4	993.9	1019.8	1057.8	1074.8	1160.5
									Elev	552.0	550.0	548.0	548.0	548.0	550.0	550.0	552.0
N S	RF6C2	3	0.058	0.038	0.058	2486	0.0193		Sta	963.5	971.8	977.4	981.8	1009.3	1024.9	1079.5	1115.0
									Elev	464.0	462.0	460.0	458.0	458.0	460.0	462.0	462.4
N S	RF6AN8	8	0.056	0.039	0.056	6862	0.0331		Sta	942.1	950.5	958.9	988.7	1010.7	1028.3	1056.8	1085.2
									Elev	950.0	949.0	948.0	946.0	946.0	948.0	949.0	950.0
N S	RF6AN6	5	0.056	0.038	0.053	4132	0.0225		Sta	962.5	970.6	978.4	991.0	1006.8	1227.5	1256.1	1279.4
									Elev	806.0	804.0	802.0	800.0	800.0	802.0	804.0	806.0
N S	RF6AN5	3	0.056	0.038	0.053	3137	0.0217		Sta	978.0	983.5	989.4	1007.0	1029.9	1143.3	1284.4	1331.4
									Elev	732.0	730.0	728.0	728.0	729.3	729.0	726.7	732.0
N S	RF6AN3	1	0.056	0.038	0.053	876	0.0171		Sta	978.9	986.9	991.1	995.6	1017.5	1098.7	1195.1	1228.0
									Elev	690.0	688.0	686.0	684.0	684.0	686.0	688.0	690.0
N S	RF6AN2	27	0.056	0.038	0.053	7999	0.0176		Sta	897.4	913.8	927.5	971.8	1023.5	1071.1	1152.0	1224.7
									Elev	685.0	656.0	654.0	652.0	652.0	654.0	652.7	658.0

Routing Data - Normal Depth

		RS Card	RC Card						RX and RY Cards								
Basin	Reach ID	NSTPS	ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX		1	2	LB	4	5	RB	7	8
N	RF6AN1	3	0.063	0.038	0.063	2859	0.0161		Sta	879.7	894.2	947.2	979.7	1018.2	1032.6	1044.2	1055.2
S									Elev	540.0	538.0	536.0	534.0	534.0	536.0	538.0	540.0
N	RF6AS5	9	0.064	0.044	0.064	8083	0.0192		Sta	877.0	887.9	915.7	986.3	1151.0	1210.3	1238.3	1261.5
S									Elev	780.0	778.0	776.0	774.0	774.0	776.0	778.0	780.0
N	RF6AS3	3	0.064	0.044	0.064	2438	0.0160		Sta	830.7	866.0	931.0	995.0	1017.3	1026.5	1076.2	1104.9
S									Elev	652.0	650.0	648.0	646.0	646.0	648.0	650.0	652.0
N	RF6AS2	7	0.064	0.044	0.064	5914	0.0167		Sta	850.1	874.8	889.0	953.7	1000.0	1016.4	1036.5	1067.1
S									Elev	602.0	600.0	598.0	596.4	595.5	596.0	598.0	602.0
N	RRHW1	9	0.068	0.043	0.068	8155	0.0180		Sta	766.3	889.6	954.5	973.4	1000.0	1007.8	1108.1	1188.8
S									Elev	736.0	730.4	730.8	730.0	728.7	730.0	732.0	736.0
N	RUF55	9	0.068	0.043	0.068	8318	0.0174		Sta	766.3	889.6	954.5	973.4	1000.0	1007.8	1108.1	1188.8
S									Elev	736.0	730.4	730.8	730.0	728.7	730.0	732.0	736.0
N	RUF54	13	0.071	0.038	0.071	11314	0.0175		Sta	931.9	946.9	961.7	982.9	1012.6	1048.2	1068.2	1079.1
S									Elev	518.0	516.0	514.0	512.0	512.0	516.6	516.0	518.0
N	RUF52	2	0.071	0.038	0.071	2113	0.0170		Sta	904.8	916.9	925.7	945.0	1017.8	1042.5	1074.4	1089.9
S									Elev	420.0	418.0	416.0	414.0	414.0	416.0	418.0	420.0
N	RSCP5C	3	0.064	0.044	0.064	2696	0.0185		Sta	903.8	943.5	972.7	996.7	1005.3	1068.4	1099.0	1112.6
S									Elev	542.0	540.0	538.0	536.0	536.0	538.0	540.0	542.0
N	RSCP5B	3	0.064	0.044	0.064	2870	0.0209		Sta	788.3	815.7	850.1	990.6	1008.8	1019.8	1037.3	1075.2
S									Elev	522.0	520.0	518.0	516.0	516.0	518.0	520.0	522.0
N	RSCP4B	4	0.064	0.044	0.064	3614	0.0183		Sta	627.2	683.7	977.3	987.0	1012.1	1029.7	1045.2	1079.6
S									Elev	538.0	534.0	536.0	530.0	530.0	534.0	536.0	538.0
N	RSCP2B	2	0.061	0.038	0.056	1827	0.0230		Sta	930.6	951.8	959.8	985.0	1023.8	1033.5	1198.5	1217.1
S									Elev	414.0	412.0	410.0	408.0	408.0	410.0	412.0	412.7
N	RUB08C	7	0.061	0.038	0.061	5952	0.0190		Sta	975.3	981.7	986.9	991.0	1009.2	1073.1	1118.9	1137.7
S									Elev	498.0	496.0	494.0	492.0	492.0	494.0	496.0	498.0

Routing Data - Normal Depth

Basin	Reach ID	RS Card NSTPS	RC Card ANL	ANCH	ANR	RLNTH (ft)	SEL (ft/ft)	ELMAX	RX and RY Cards	1	2	LB	4	5	RB	7	8
N S	RUB08B	7	0.061	0.038	0.061	6656	0.0173		Sta	975.3	981.7	986.9	991.0	1009.2	1073.1	1118.9	1137.7
									Elev	498.0	496.0	494.0	492.0	492.0	494.0	496.0	498.0
N S	RUB05B	3	0.076	0.038	0.076	2325	0.0206		Sta	874.5	885.3	983.5	990.7	1012.0	1019.9	1042.6	1086.1
									Elev	370.1	370.0	368.0	366.0	366.0	368.0	369.0	369.5
N S	RUB06C	2	0.076	0.038	0.076	2022	0.0183		Sta	921.6	939.8	960.8	993.3	1002.3	1033.8	1053.5	1122.0
									Elev	366.0	364.0	362.0	360.0	360.0	362.0	364.0	366.0
N S	RUB06B	2	0.076	0.038	0.076	1719	0.0180		Sta	921.6	939.8	960.8	993.3	1002.3	1033.8	1053.5	1122.0
									Elev	366.0	364.0	362.0	360.0	360.0	362.0	364.0	366.0
N S	RF6C1B	2	0.058	0.038	0.058	1607	0.0162		Sta	963.5	971.8	977.4	981.8	1009.3	1024.9	1079.5	1115.0
									Elev	464.0	462.0	460.0	458.0	458.0	460.0	462.0	462.4
N S	RF6C1C	5	0.063	0.039	0.063	4158	0.0180		Sta	909.7	984.0	987.5	990.5	1009.6	1023.1	1039.2	1182.5
									Elev	446.0	444.0	442.0	440.0	440.0	442.0	444.0	445.2
N S	RF6C1D	4	0.063	0.039	0.063	3718	0.0169		Sta	717.1	850.7	987.4	994.7	1006.6	1013.0	1206.6	1234.5
									Elev	426.0	424.0	422.0	420.0	420.0	422.0	424.0	425.3
N S	RSCP7B	3	0.064	0.044	0.064	2275	0.0224		Sta	947.0	967.3	977.1	990.7	1013.1	1024.4	1047.5	1074.1
									Elev	646.0	644.0	642.0	640.0	640.0	642.0	644.0	646.0
N S	RSCP7C	1	0.064	0.044	0.064	821	0.0207		Sta	827.0	845.3	898.0	993.5	1008.9	1024.0	1042.1	1057.6
									Elev	640.0	638.0	636.0	634.0	634.0	636.0	638.0	640.0
N S	RSCP7D	1	0.064	0.044	0.064	217	0.0276		Sta	956.3	969.1	987.2	991.1	1012.9	1019.5	1030.2	1044.8
									Elev	620.0	618.0	616.0	614.0	614.0	616.0	618.0	619.0

Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP14
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	003200	ft/ft
Water Surface Elev	,957.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	54.00 to 2,960.00	
Discharge	456.27	cfs
Flow Area	165.5	ft²
Wetted Perimeter	169.56	ft
Top Width	169.18	ft
Actual Depth	3.00	ft
Critical Elevation	2,956.43	ft
Critical Slope	0.013912	ft/ft
Velocity	2.76	ft/s
Velocity Head	0.12	ft
Specific Energy	2,957.12	ft
Froude Number	0.49	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+11.97	100+31.5	0.030

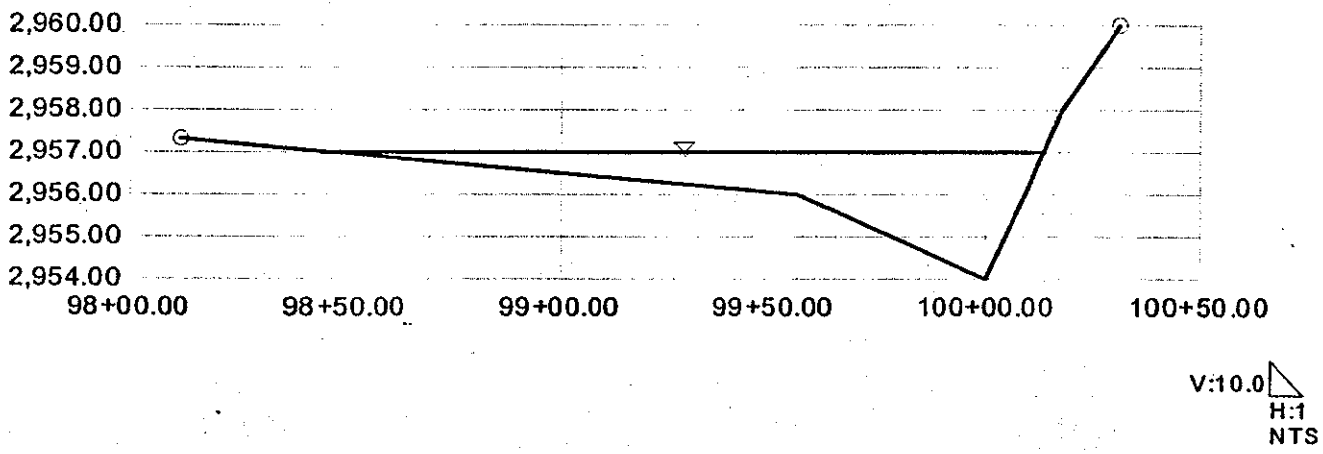
Natural Channel Points

Station (ft)	Elevation (ft)
98+11.97	2,957.29
99+55.04	2,956.00
100+00.00	2,954.00
100+08.98	2,956.00
100+17.64	2,958.00
100+31.52	2,960.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP14
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.003200	ft/ft
Water Surface Elev	2,957.00	ft
Elevation Range	54.00 to 2,960.00	
Discharge	456.27	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP12
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	027000	ft/ft
Water Surface Elev	,886.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	78.00 to 2,888.00	
Discharge	21,570.91	cfs
Flow Area	1,100.9	ft²
Wetted Perimete	294.69	ft
Top Width	294.00	ft
Actual Depth	8.00	ft
Critical Elevation	2,887.86	ft
Critical Slope	0.007686	ft/ft
Velocity	19.59	ft/s
Velocity Head	5.97	ft
Specific Energy	2,891.97	ft
Froude Number	1.79	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+34.56	101+64.4	0.030

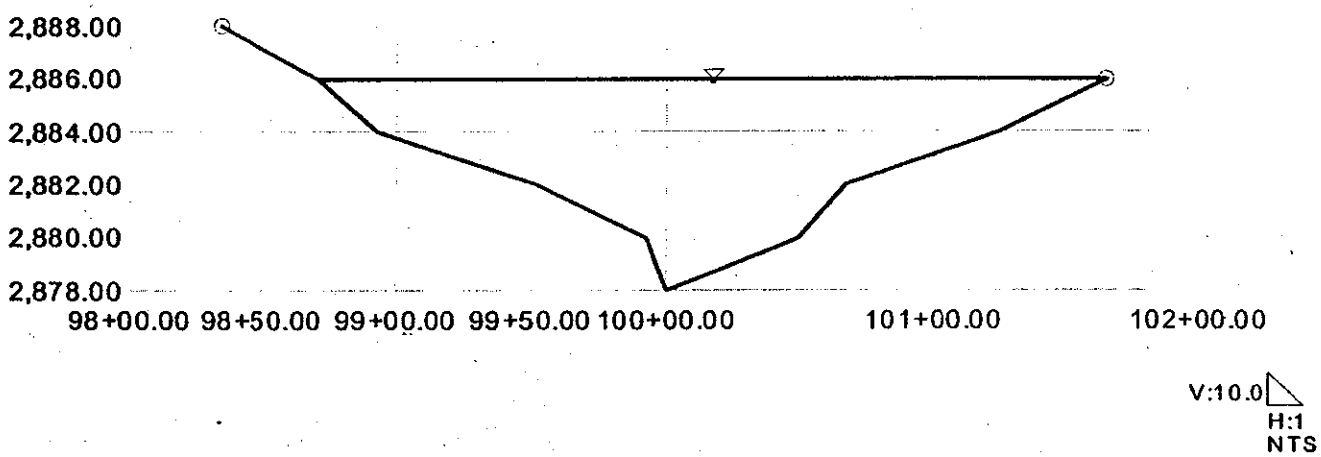
Natural Channel Points

Station (ft)	Elevation (ft)
98+34.56	2,888.00
98+70.48	2,886.00
98+92.93	2,884.00
99+51.43	2,882.00
99+92.97	2,880.00
00+00.00	2,878.00
00+49.08	2,880.00
00+67.00	2,882.00
01+24.68	2,884.00
01+64.48	2,886.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP12
Flow Element	Irregular Chani
Method	Manning's Forr
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.027000	ft/ft
Water Surface Elev	2,886.00	ft
Elevation Range	78.00 to 2,888.00	
Discharge	21,570.91	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP10
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	026000	ft/ft
Water Surface Elev.	,820.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	10.00 to 2,820.00	
Discharge	62,967.84	cfs
Flow Area	2,493.8	ft²
Wetted Perimeter	443.62	ft
Top Width	442.90	ft
Actual Depth	10.00	ft
Critical Elevation	2,822.93	ft
Critical Slope	0.006537	ft/ft
Velocity	25.25	ft/s
Velocity Head	9.91	ft
Specific Energy	2,829.91	ft
Froude Number	1.88	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+14.23	102+57.1	0.030

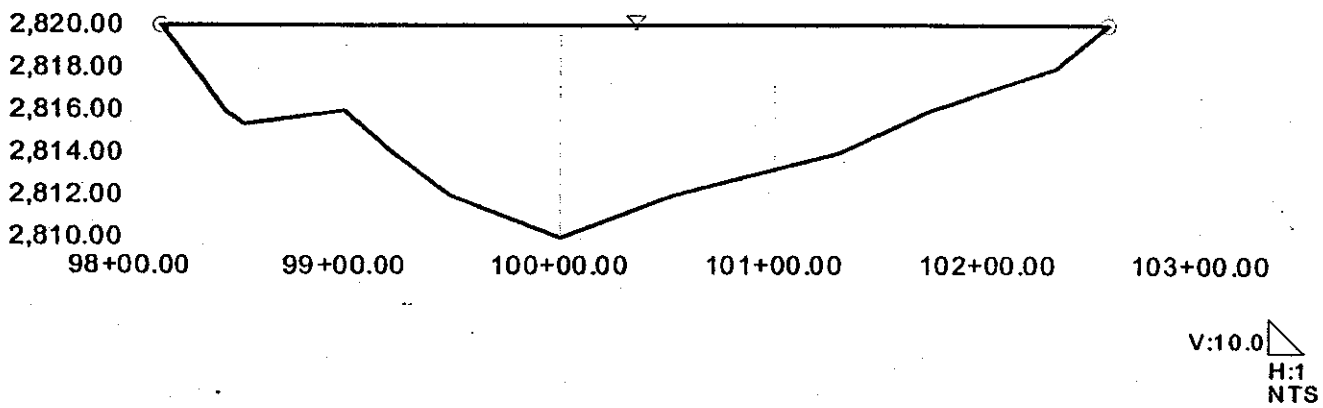
Natural Channel Points

Station (ft)	Elevation (ft)
98+14.23	2,820.00
98+29.36	2,818.00
98+44.22	2,816.00
98+53.23	2,815.30
98+99.70	2,816.00
99+22.20	2,814.00
99+49.45	2,812.00
00+00.00	2,810.00
00+52.94	2,812.00
01+30.65	2,814.00
01+72.72	2,816.00
02+32.40	2,818.00
02+57.13	2,820.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP10
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.026000	ft/ft
Water Surface Elev	2,820.00	ft
Elevation Range	10.00 to 2,820.00	
Discharge	62,967.84	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP09
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	023000	ft/ft
Water Surface Elev	,724.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	12.00 to 2,724.00	
Discharge	49,494.31	cfs
Flow Area	1,813.7	ft²
Wetted Perimete	261.92	ft
Top Width	260.26	ft
Actual Depth	12.00	ft
Critical Elevation	2,727.43	ft
Critical Slope	0.006272	ft/ft
Velocity	27.29	ft/s
Velocity Head	11.57	ft
Specific Energy	2,735.57	ft
Froude Number	1.82	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+65.07	101+25.3	0.030

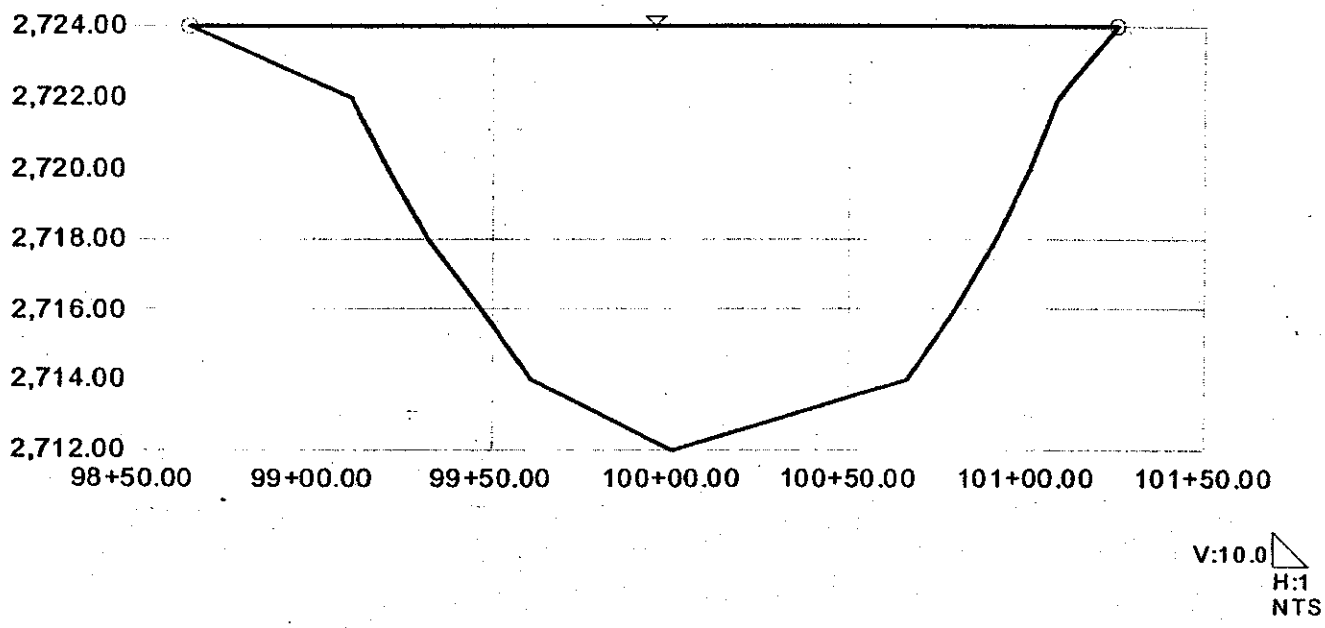
Natural Channel Points

Station (ft)	Elevation (ft)
98+65.07	2,724.00
99+10.55	2,722.00
99+20.60	2,720.00
99+32.14	2,718.00
99+46.58	2,716.00
99+61.06	2,714.00
00+00.00	2,712.00
00+66.17	2,714.00
00+79.87	2,716.00
00+91.39	2,718.00
01+01.22	2,720.00
01+08.99	2,722.00
01+25.33	2,724.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP09
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.023000	ft/ft
Water Surface Elev	2,724.00	ft
Elevation Range	12.00 to 2,724.00	
Discharge	49,494.31	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP08
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	021000	ft/ft
Water Surface Elev	,666.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	30.00 to 2,668.00	
Discharge	10,694.35	cfs
Flow Area	784.9	ft²
Wetted Perimete	300.14	ft
Top Width	299.83	ft
Actual Depth	6.00	ft
Critical Elevation	2,666.84	ft
Critical Slope	0.008891	ft/ft
Velocity	13.62	ft/s
Velocity Head	2.88	ft
Specific Energy	2,668.88	ft
Froude Number	1.48	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+50.86	102+01.1	0.030

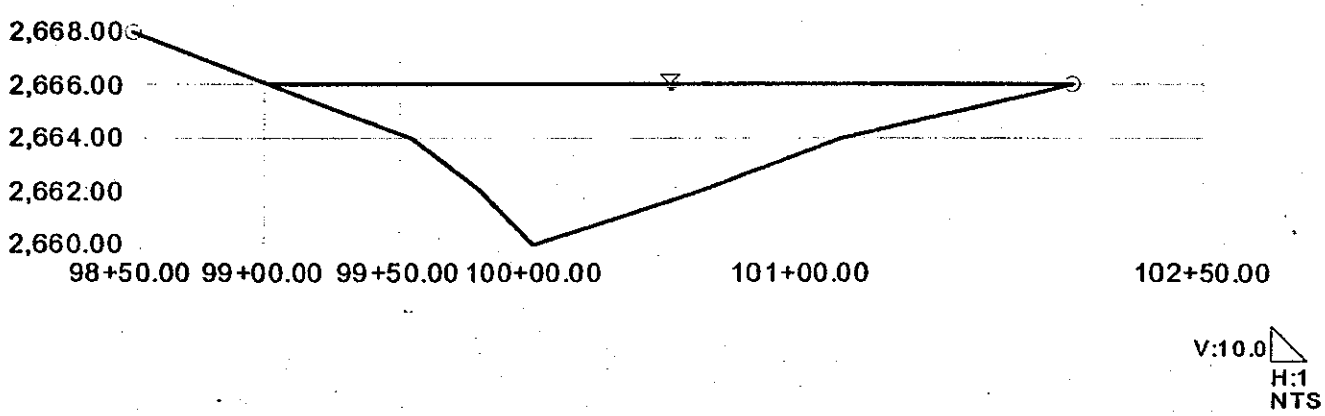
Natural Channel Points

Station (ft)	Elevation (ft)
98+50.86	2,668.00
99+01.33	2,666.00
99+54.40	2,664.00
99+79.41	2,662.00
100+00.00	2,660.00
100+62.33	2,662.00
101+14.03	2,664.00
102+01.16	2,666.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP08
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.021000	ft/ft
Water Surface Elev	2,666.00	ft
Elevation Range	30.00 to 2,668.00	
Discharge	10,694.35	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP07
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	019000	ft/ft
Water Surface Elev	,578.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	36.00 to 2,578.00	
Discharge	52,155.08	cfs
Flow Area	2,373.1	ft²
Wetted Perimeter	410.89	ft
Top Width	408.56	ft
Actual Depth	12.00	ft
Critical Elevation	2,580.16	ft
Critical Slope	0.006708	ft/ft
Velocity	21.98	ft/s
Velocity Head	7.51	ft
Specific Energy	2,585.51	ft
Froude Number	1.61	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+57.87	102+66.4	0.030

Natural Channel Points

Station (ft)	Elevation (ft)
98+57.87	2,578.00
98+95.39	2,576.00
99+51.04	2,574.00
99+66.06	2,572.00
99+69.18	2,570.00
99+72.21	2,568.00
100+00.00	2,566.00
100+06.84	2,568.00
100+72.05	2,570.00
100+87.43	2,571.54
101+09.99	2,570.00
101+25.78	2,569.30
101+39.03	2,570.00

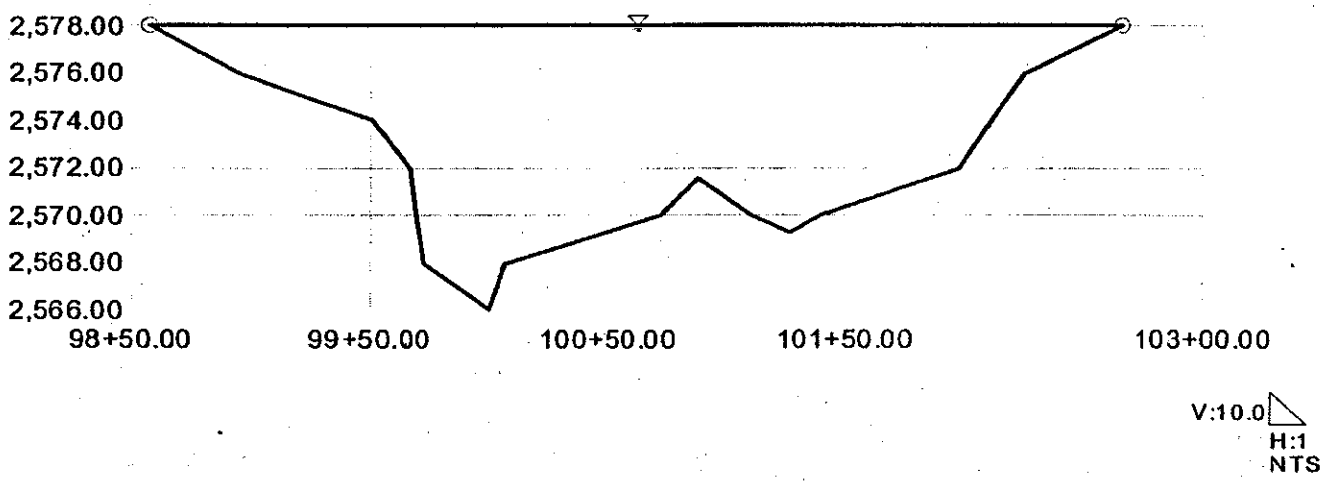
Worksheet
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
101+97.25	2,572.00
102+11.08	2,574.00
102+24.97	2,576.00
102+66.43	2,578.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP07
Flow Element	Irregular Chani
Method	Manning's Forr
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.019000	ft/ft
Water Surface Elev	2,578.00	ft
Elevation Range	36.00 to 2,578.00	
Discharge	52,155.08	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP06
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	020000	ft/ft
Water Surface Elev	,538.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	29.72 to 2,538.00	
Discharge	21,133.53	cfs
Flow Area	1,416.1	ft²
Wetted Perimeter	455.34	ft
Top Width	452.43	ft
Actual Depth	8.28	ft
Critical Elevation	2,538.95	ft
Critical Slope	0.008325	ft/ft
Velocity	14.92	ft/s
Velocity Head	3.46	ft
Specific Energy	2,541.46	ft
Froude Number	1.49	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
96+27.17	100+79.6	0.030

Natural Channel Points

Station (ft)	Elevation (ft)
96+27.17	2,538.00
96+48.72	2,536.00
96+83.72	2,534.00
96+93.25	2,534.00
97+18.11	2,536.00
98+23.46	2,534.00
98+62.54	2,534.00
98+99.61	2,536.00
99+31.79	2,536.00
99+77.26	2,536.00
99+82.72	2,534.00
99+84.87	2,532.00
99+87.03	2,530.00

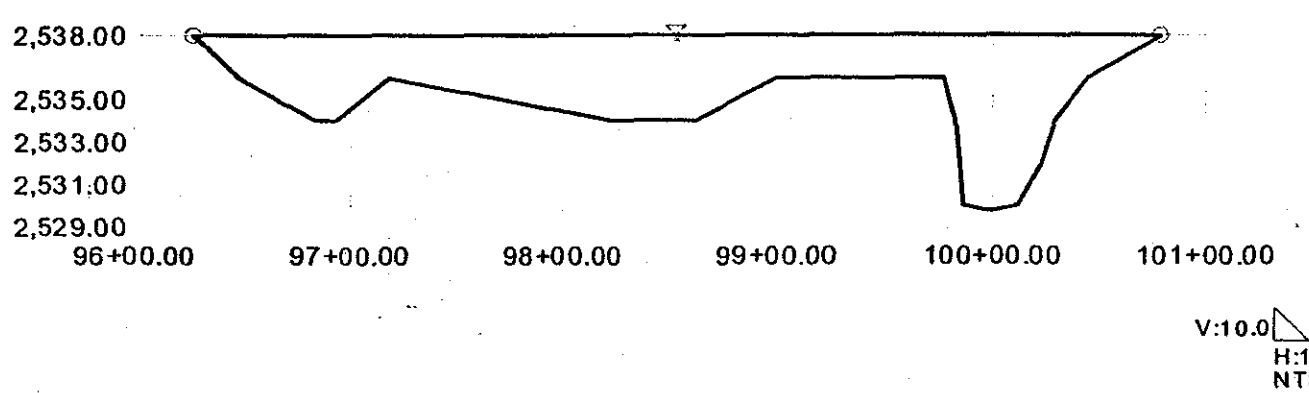
Worksheet
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
100+00.00	2,529.72
100+12.08	2,530.00
100+23.47	2,532.00
100+29.68	2,534.00
100+45.22	2,536.00
100+79.60	2,538.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP06
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.020000	ft/ft
Water Surface Elev	2,538.00	ft
Elevation Range	29.72 to 2,538.00	
Discharge	21,133.53	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP05c
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018500	ft/ft
Water Surface Elev	,542.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	36.00 to 2,542.00	
Discharge	9,472.94	cfs
Flow Area	719.9	ft²
Wetted Perimete	209.28	ft
Top Width	208.84	ft
Actual Depth	6.00	ft
Critical Elevation	2,542.55	ft
Critical Slope	0.011357	ft/ft
Velocity	13.16	ft/s
Velocity Head	2.69	ft
Specific Energy	2,544.69	ft
Froude Number	1.25	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+03.80	101+12.6	0.035

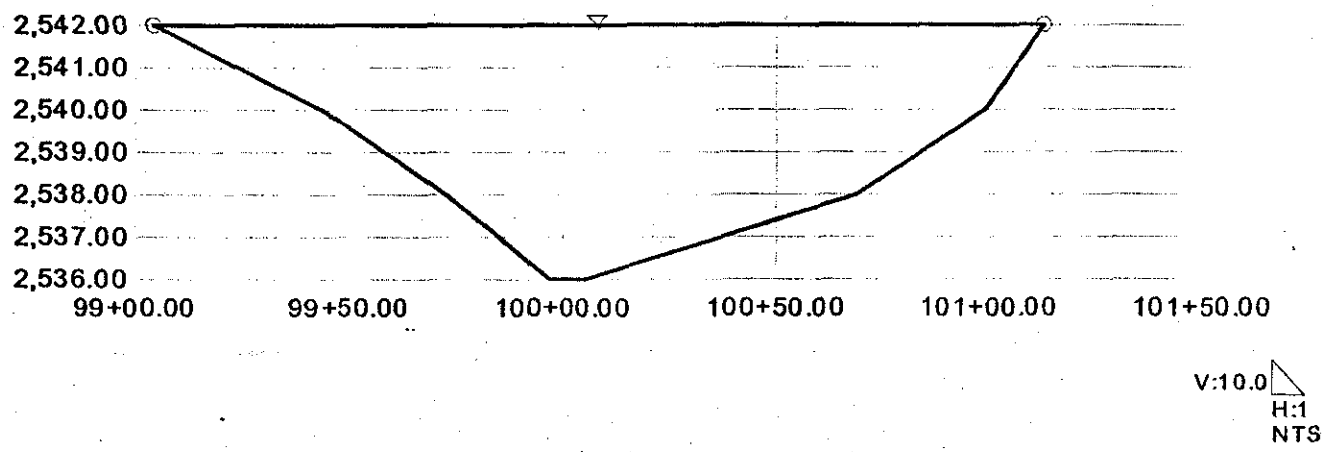
Natural Channel Points

Station (ft)	Elevation (ft)
99+03.80	2,542.00
99+43.50	2,540.00
99+72.65	2,538.00
99+96.73	2,536.00
00+05.28	2,536.00
00+68.37	2,538.00
00+99.04	2,540.00
01+12.64	2,542.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP05c
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.018500	ft/ft
Water Surface Elev	2,542.00	ft
Elevation Range	36.00 to 2,542.00	
Discharge	9,472.94	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP05b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	020900	ft/ft
Water Surface Elev	,522.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	16.00 to 2,522.00	
Discharge	16,215.42	cfs
Flow Area	1,087.9	ft²
Wetted Perimete	287.46	ft
Top Width	286.97	ft
Actual Depth	6.00	ft
Critical Elevation	2,522.84	ft
Critical Slope	0.010818	ft/ft
Velocity	14.91	ft/s
Velocity Head	3.45	ft
Specific Energy	2,525.45	ft
Froude Number	1.35	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
97+88.25	100+75.2	0.035

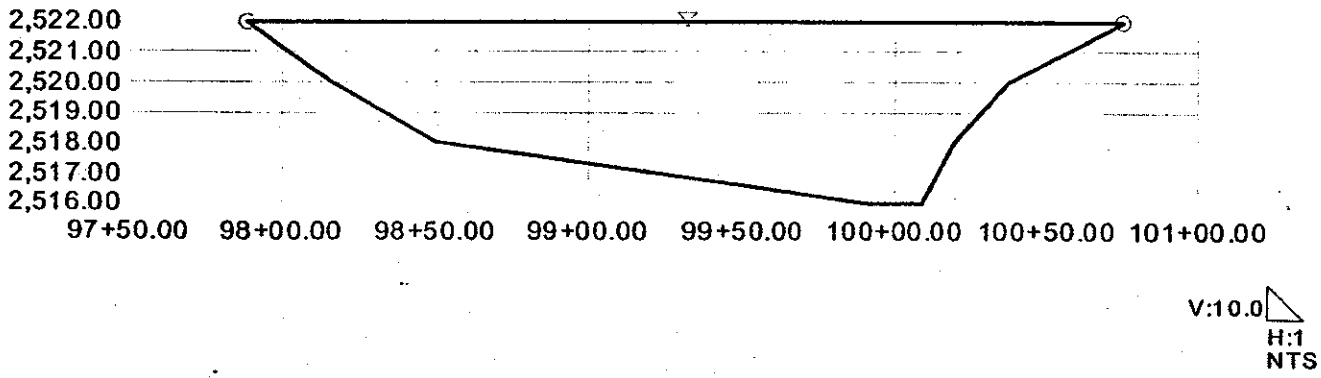
Natural Channel Points

Station (ft)	Elevation (ft)
97+88.25	2,522.00
98+15.72	2,520.00
98+50.06	2,518.00
99+90.60	2,516.00
100+08.81	2,516.00
100+19.82	2,518.00
100+37.32	2,520.00
100+75.22	2,522.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP05b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.020900	ft/ft
Water Surface Elev	2,522.00	ft
Elevation Range	16.00 to 2,522.00	
Discharge	16,215.42	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP04b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018800	ft/ft
Water Surface Elev	,538.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	29.72 to 2,538.00	
Discharge	20,489.72	cfs
Flow Area	1,416.1	ft²
Wetted Perimete	455.34	ft
Top Width	452.43	ft
Actual Depth	8.28	ft
Critical Elevation	2,538.86	ft
Critical Slope	0.008379	ft/ft
Velocity	14.47	ft/s
Velocity Head	3.25	ft
Specific Energy	2,541.25	ft
Froude Number	1.44	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
96+27.17	100+79.6	0.030

Natural Channel Points

Station (ft)	Elevation (ft)
96+27.17	2,538.00
96+48.72	2,536.00
96+83.72	2,534.00
96+93.25	2,534.00
97+18.11	2,536.00
98+23.46	2,534.00
98+62.54	2,534.00
98+99.61	2,536.00
99+31.79	2,536.00
99+77.26	2,536.00
99+82.72	2,534.00
99+84.87	2,532.00
99+87.03	2,530.00

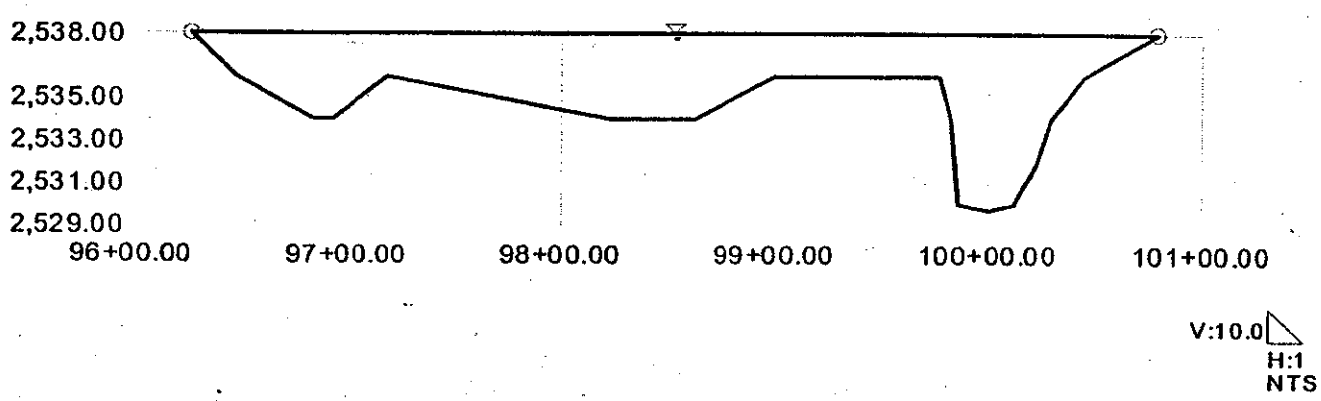
Worksheet
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
00+00.00	2,529.72
00+12.08	2,530.00
00+23.47	2,532.00
00+29.68	2,534.00
00+45.22	2,536.00
00+79.60	2,538.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP04b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.018800	ft/ft
Water Surface Elev	2,538.00	ft
Elevation Range	29.72 to 2,538.00	
Discharge	20,489.72	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP04
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018000	ft/ft
Water Surface Elev	,492.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	32.77 to 2,492.00	
Discharge	37,207.66	cfs
Flow Area	1,931.0	ft²
Wetted Perimete	391.11	ft
Top Width	390.26	ft
Actual Depth	9.23	ft
Critical Elevation	2,493.61	ft
Critical Slope	0.007103	ft/ft
Velocity	19.27	ft/s
Velocity Head	5.77	ft
Specific Energy	2,497.77	ft
Froude Number	1.53	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+50.63	102+40.8	0.030

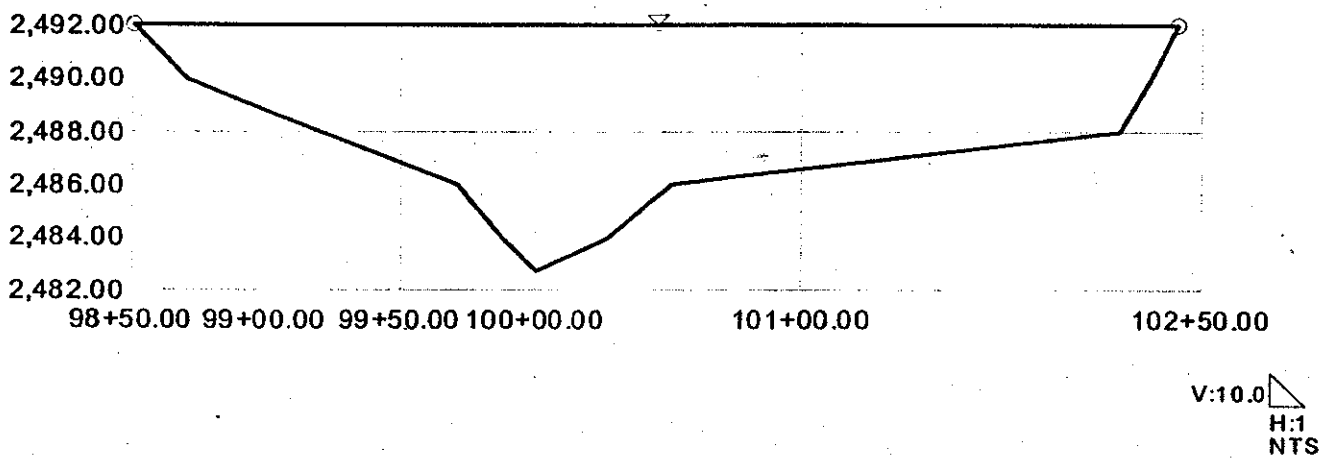
Natural Channel Points

Station (ft)	Elevation (ft)
98+50.63	2,492.00
98+70.49	2,490.00
99+20.27	2,488.00
99+71.05	2,486.00
99+87.91	2,484.00
100+00.00	2,482.77
100+27.17	2,484.00
100+50.73	2,486.00
102+18.92	2,488.00
102+30.85	2,490.00
102+40.89	2,492.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP04
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.018000	ft/ft
Water Surface Elev	2,492.00	ft
Elevation Range	32.77 to 2,492.00	
Discharge	37,207.66	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP03
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	021000	ft/ft
Water Surface Elev	,447.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	11.99 to 2,448.00	
Discharge	2,581.42	cfs
Flow Area	201.0	ft²
Wetted Perimete	83.95	ft
Top Width	83.06	ft
Actual Depth	5.01	ft
Critical Elevation	2,447.78	ft
Critical Slope	0.009437	ft/ft
Velocity	12.84	ft/s
Velocity Head	2.56	ft
Specific Energy	2,449.56	ft
Froude Number	1.46	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+66.16	100+65.0	0.030

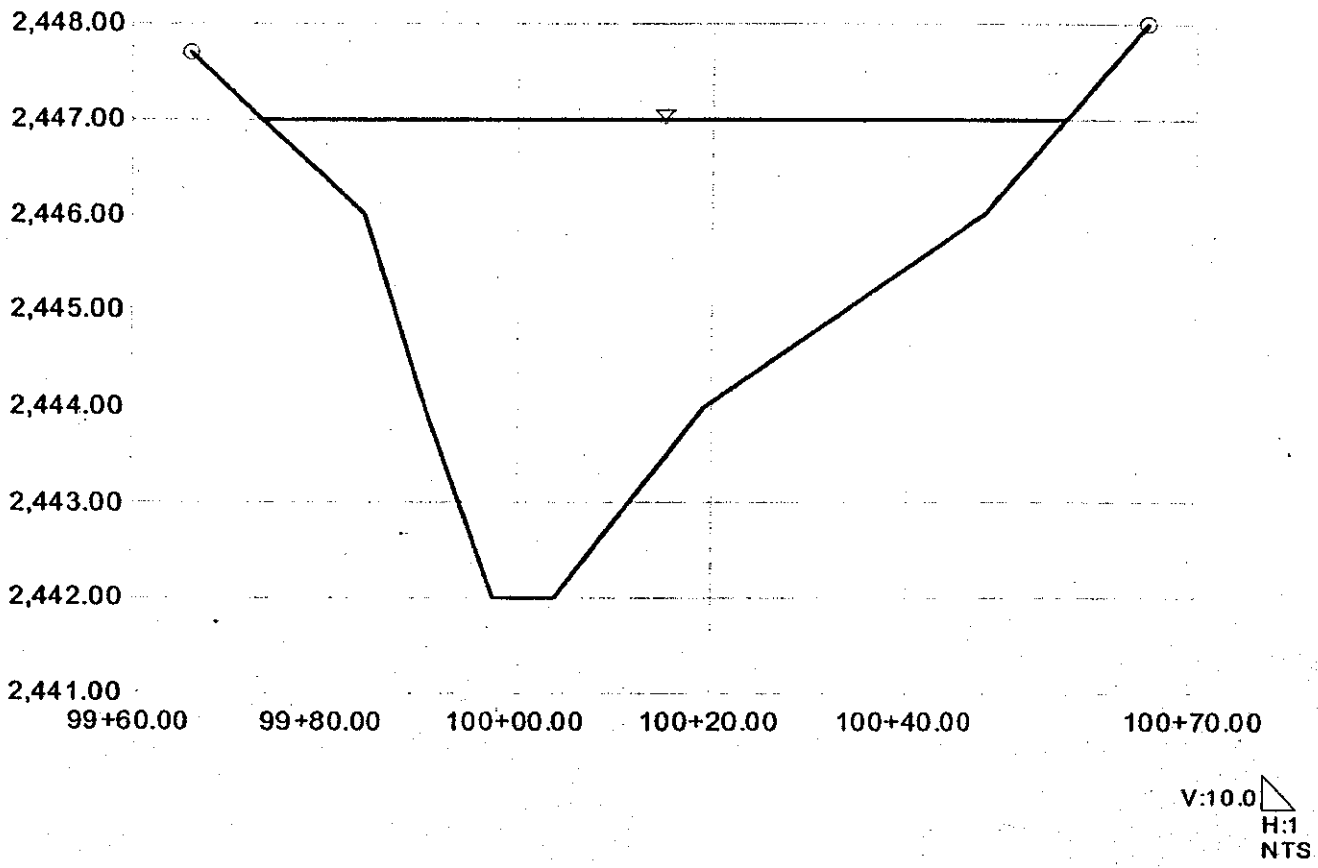
Natural Channel Points

Station (ft)	Elevation (ft)
99+66.16	2,447.70
99+83.99	2,446.00
99+90.57	2,444.00
99+97.58	2,442.00
100+00.00	2,441.99
100+03.89	2,442.00
100+19.02	2,444.00
100+48.12	2,446.00
100+65.01	2,448.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP03
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.021000	ft/ft
Water Surface Elev	2,447.00	ft
Elevation Range	1.99 to 2,448.00	
Discharge	2,581.42	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP02b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	023000	ft/ft
Water Surface Elev	,412.69	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	08.00 to 2,414.00	
Discharge	6,746.28	cfs
Flow Area	612.1	ft²
Wetted Perimeter	273.29	ft
Top Width	272.70	ft
Actual Depth	4.69	ft
Critical Elevation	2,413.13	ft
Critical Slope	0.012981	ft/ft
Velocity	11.02	ft/s
Velocity Head	1.89	ft
Specific Energy	2,414.58	ft
Froude Number	1.30	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+30.56	102+17.1	0.035

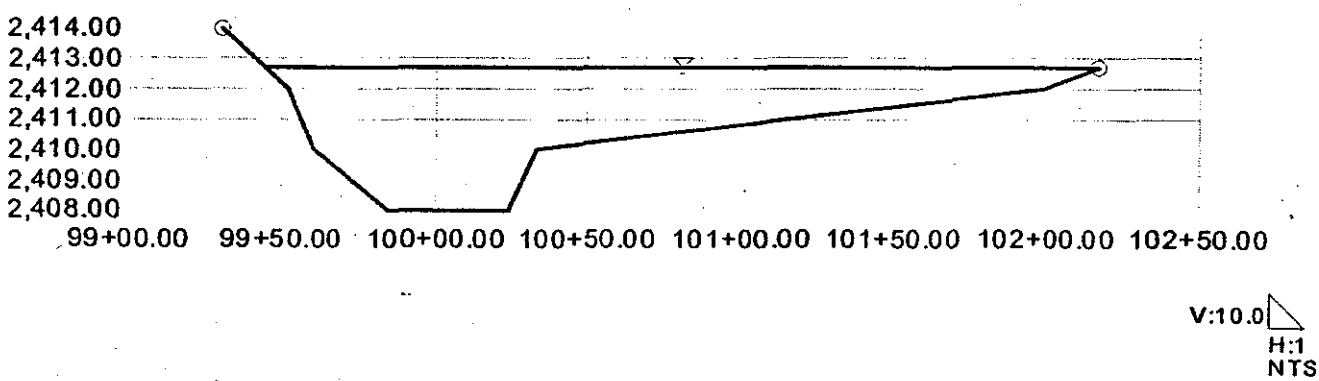
Natural Channel Points

Station (ft)	Elevation (ft)
99+30.56	2,414.00
99+51.75	2,412.00
99+59.81	2,410.00
99+84.99	2,408.00
00+23.78	2,408.00
00+33.45	2,410.00
01+98.54	2,412.00
02+17.14	2,412.69

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP02b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.023000	ft/ft
Water Surface Elev	2,412.69	ft
Elevation Range	08.00 to 2,414.00	
Discharge	6,746.28	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP02
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	021000	ft/ft
Water Surface Elev	,290.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	34.00 to 2,290.00	
Discharge	14,744.33	cfs
Flow Area	1,167.3	ft²
Wetted Perimete	500.00	ft
Top Width	499.18	ft
Actual Depth	6.00	ft
Critical Elevation	2,290.67	ft
Critical Slope	0.009141	ft/ft
Velocity	12.63	ft/s
Velocity Head	2.48	ft
Specific Energy	2,292.48	ft
Froude Number	1.46	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
96+23.09	101+22.2	0.030

Natural Channel Points

Station (ft)	Elevation (ft)
96+23.09	2,290.00
96+34.64	2,288.00
96+57.51	2,286.00
96+67.40	2,286.00
96+87.80	2,286.76
97+11.88	2,286.00
97+36.61	2,288.00
99+04.87	2,289.58
99+48.18	2,288.00
99+59.65	2,286.00
100+00.00	2,284.00
100+16.92	2,286.00
100+82.04	2,288.00

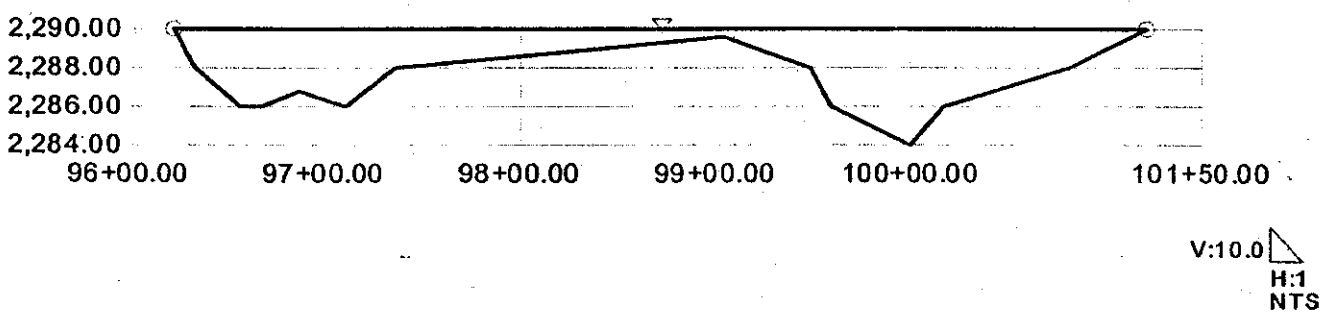
Worksheet
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
101+22.27	2,290.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP02
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.021000	ft/ft
Water Surface Elev	2,290.00	ft
Elevation Range	34.00 to 2,290.00	
Discharge	14,744.33	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB12
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018000	ft/ft
Water Surface Elev	,650.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	10.32 to 2,650.00	
Discharge	17,634.07	cfs
Flow Area	990.8	ft²
Wetted Perimete	226.05	ft
Top Width	224.82	ft
Actual Depth	9.68	ft
Critical Elevation	2,651.35	ft
Critical Slope	0.007487	ft/ft
Velocity	17.80	ft/s
Velocity Head	4.92	ft
Specific Energy	2,654.92	ft
Froude Number	1.49	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+49.60	100+74.4	0.030

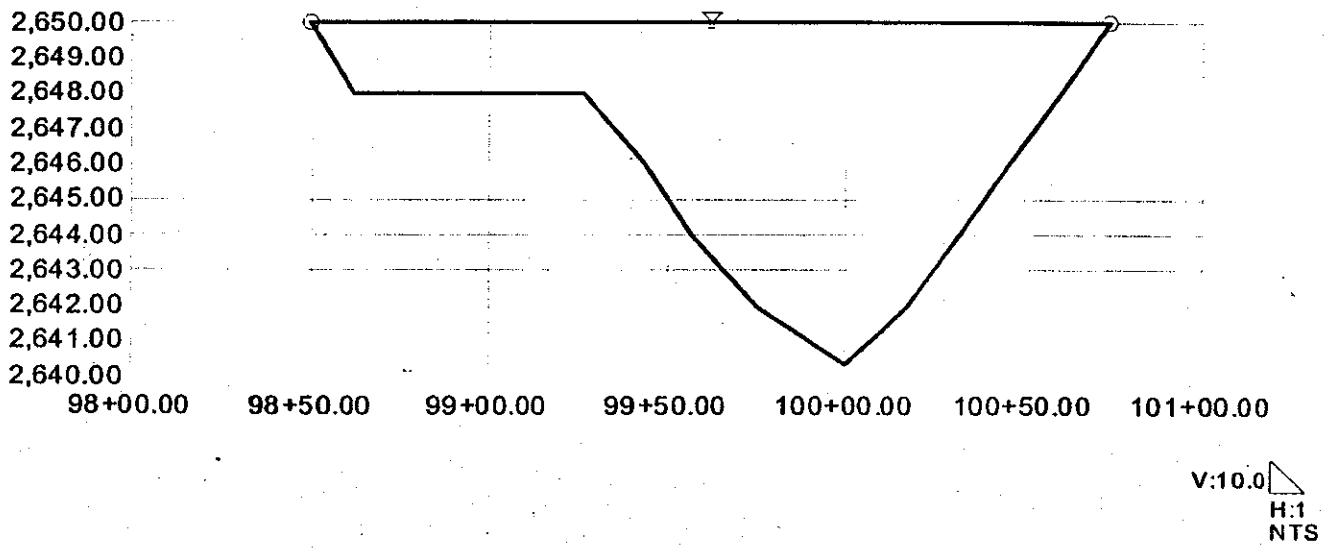
Natural Channel Points

Station (ft)	Elevation (ft)
98+49.60	2,650.00
98+61.93	2,648.00
99+12.51	2,648.00
99+26.81	2,648.00
99+43.52	2,646.00
99+56.88	2,644.00
99+75.29	2,642.00
100+00.00	2,640.32
100+17.23	2,642.00
100+32.30	2,644.00
100+46.54	2,646.00
100+60.34	2,648.00
100+74.42	2,650.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB12
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.018000	ft/ft
Water Surface Elev	2,650.00	ft
Elevation Range	10.32 to 2,650.00	
Discharge	17,634.07	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB10
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018000	ft/ft
Water Surface Elev	,562.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	55.30 to 2,564.00	
Discharge	6,946.83	cfs
Flow Area	651.7	ft²
Wetted Perimeter	320.77	ft
Top Width	319.54	ft
Actual Depth	6.70	ft
Critical Elevation	2,562.42	ft
Critical Slope	0.009845	ft/ft
Velocity	10.66	ft/s
Velocity Head	1.77	ft
Specific Energy	2,563.77	ft
Froude Number	1.32	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+10.36	101+64.2	0.030

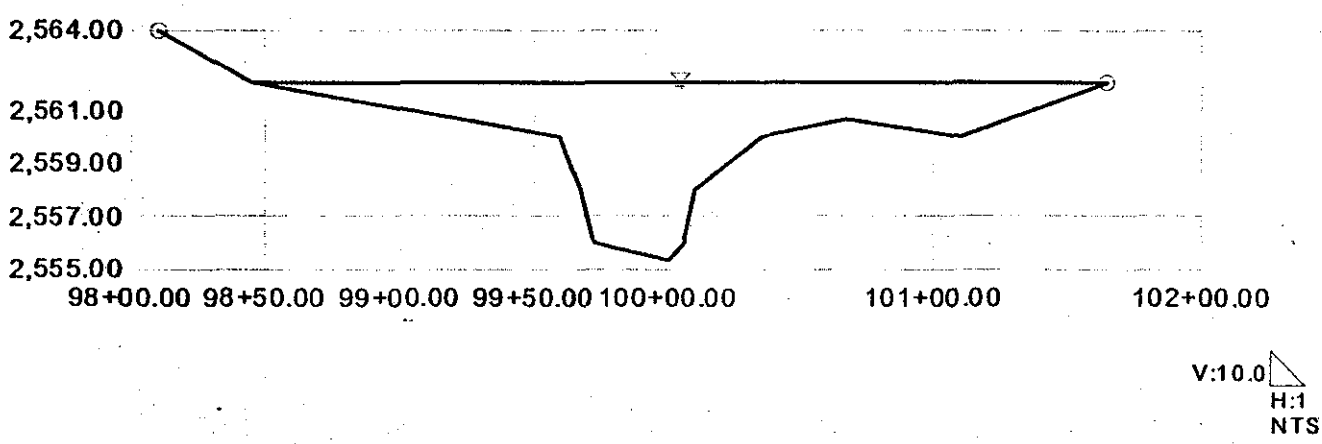
Natural Channel Points

Station (ft)	Elevation (ft)
98+10.36	2,564.00
98+44.75	2,562.00
99+59.75	2,560.00
99+67.72	2,558.00
99+72.83	2,556.00
100+00.00	2,555.30
100+05.85	2,556.00
100+10.51	2,558.00
100+35.47	2,560.00
100+67.36	2,560.64
101+09.82	2,560.00
101+64.29	2,562.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB10
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.018000	ft/ft
Water Surface Elev	2,562.00	ft
Elevation Range	55.30 to 2,564.00	
Discharge	6,946.83	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB09
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	019000	ft/ft
Water Surface Elev	,492.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	35.36 to 2,492.00	
Discharge	8,527.62	cfs
Flow Area	590.7	ft²
Wetted Perimeter	192.09	ft
Top Width	190.85	ft
Actual Depth	6.64	ft
Critical Elevation	2,492.86	ft
Critical Slope	0.008462	ft/ft
Velocity	14.44	ft/s
Velocity Head	3.24	ft
Specific Energy	2,495.24	ft
Froude Number	1.45	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+65.92	100+56.7	0.030

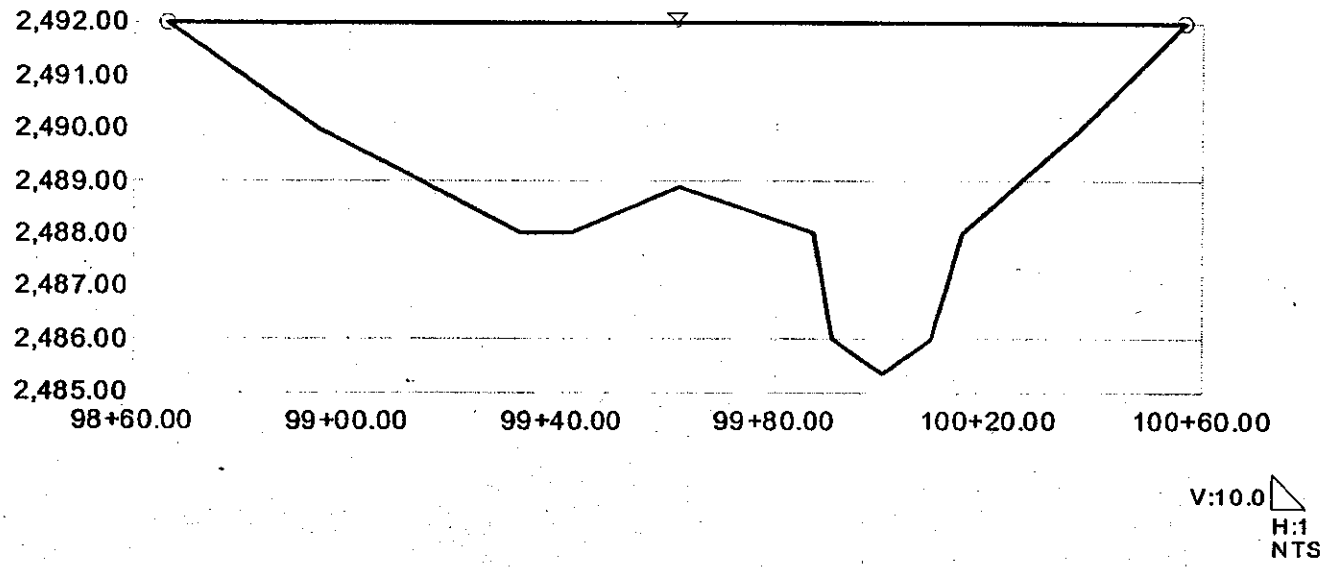
Natural Channel Points

Station (ft)	Elevation (ft)
98+65.92	2,492.00
98+94.60	2,490.00
99+31.89	2,488.00
99+41.34	2,488.00
99+61.57	2,488.90
99+86.73	2,488.00
99+90.45	2,486.00
00+00.00	2,485.36
00+08.97	2,486.00
00+14.69	2,488.00
00+37.12	2,490.00
00+56.77	2,492.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB09
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.019000	ft/ft
Water Surface Elev	2,492.00	ft
Elevation Range	35.36 to 2,492.00	
Discharge	8,527.62	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB08c
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	019000	ft/ft
Water Surface Elev	,498.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	92.00 to 2,498.00	
Discharge	8,991.75	cfs
Flow Area	627.5	ft²
Wetted Perimeter	163.74	ft
Top Width	162.42	ft
Actual Depth	6.00	ft
Critical Elevation	2,498.70	ft
Critical Slope	0.011001	ft/ft
Velocity	14.33	ft/s
Velocity Head	3.19	ft
Specific Energy	2,501.19	ft
Froude Number	1.29	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+75.28	101+37.7(	0.035

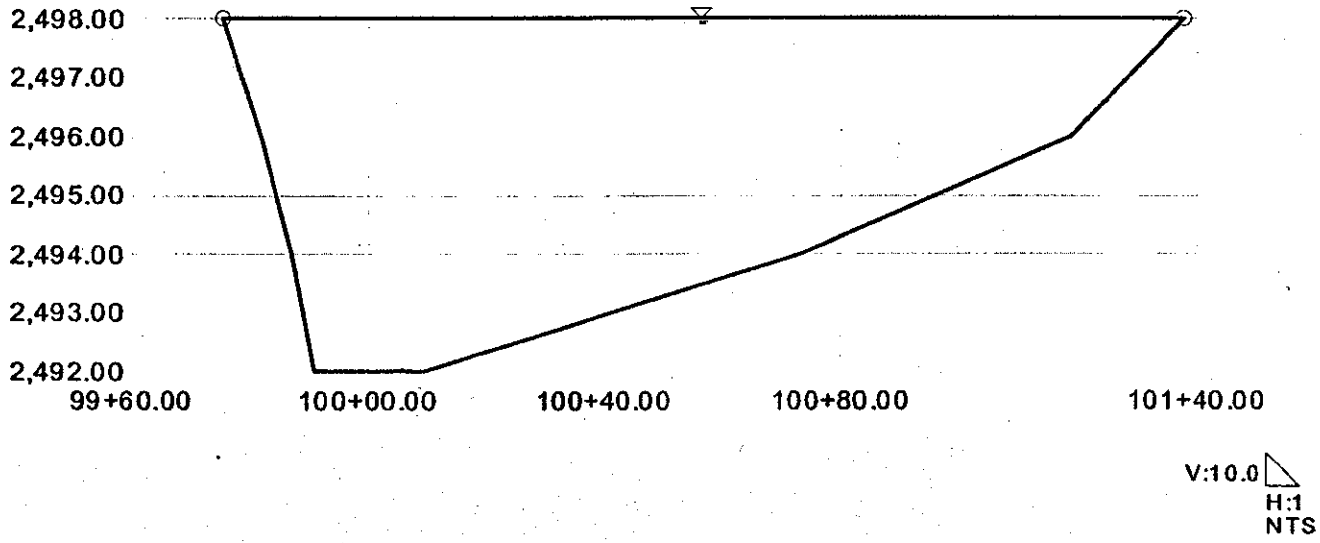
Natural Channel Points

Station (ft)	Elevation (ft)
99+75.28	2,498.00
99+81.71	2,496.00
99+86.90	2,494.00
99+90.99	2,492.00
100+09.23	2,492.00
100+73.09	2,494.00
101+18.92	2,496.00
101+37.70	2,498.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB08c
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.019000	ft/ft
Water Surface Elev	2,498.00	ft
Elevation Range	92.00 to 2,498.00	
Discharge	8,991.75	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB08b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	017300	ft/ft
Water Surface Elev	,498.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	92.00 to 2,498.00	
Discharge	8,580.07	cfs
Flow Area	627.5	ft²
Wetted Perimeter	163.74	ft
Top Width	162.42	ft
Actual Depth	6.00	ft
Critical Elevation	2,498.56	ft
Critical Slope	0.011091	ft/ft
Velocity	13.67	ft/s
Velocity Head	2.91	ft
Specific Energy	2,500.91	ft
Froude Number	1.23	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+75.28	101+37.7(	0.035

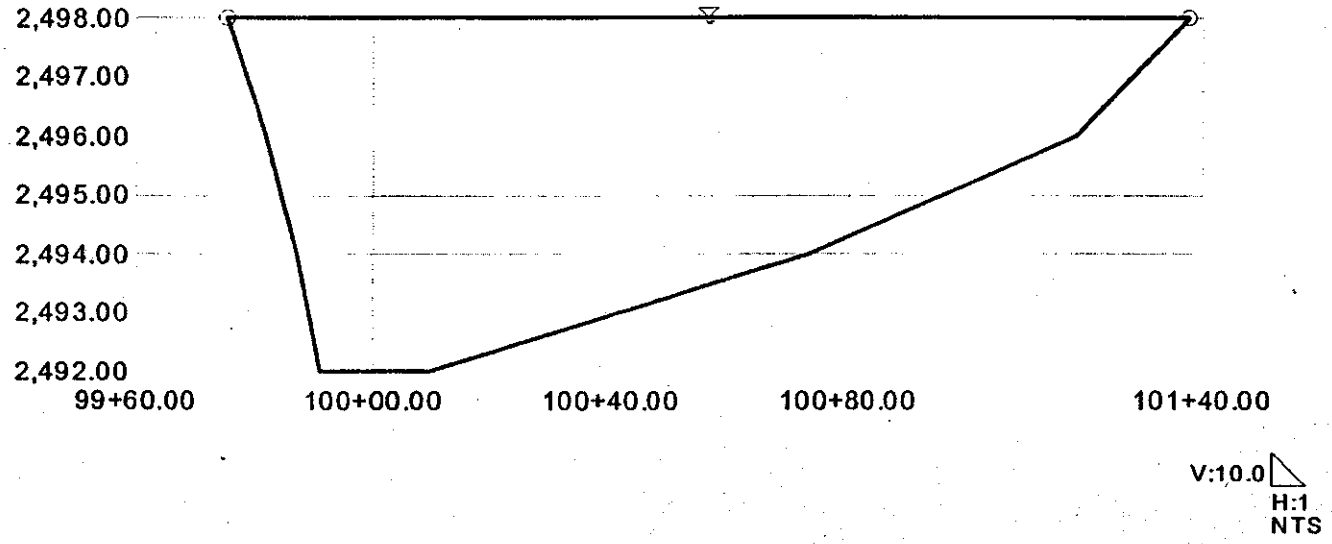
Natural Channel Points

Station (ft)	Elevation (ft)
99+75.28	2,498.00
99+81.71	2,496.00
99+86.90	2,494.00
99+90.99	2,492.00
00+09.23	2,492.00
00+73.09	2,494.00
01+18.92	2,496.00
01+37.70	2,498.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB08b
Flow Element	Irregular Chani
Method	Manning's Forr
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.017300	ft/ft
Water Surface Elev	2,498.00	ft
Elevation Range	92.00 to 2,498.00	
Discharge	8,580.07	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB07
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	020000	ft/ft
Water Surface Elev	,420.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	14.26 to 2,420.00	
Discharge	16,339.49	cfs
Flow Area	1,083.2	ft²
Wetted Perimeter	342.75	ft
Top Width	342.02	ft
Actual Depth	5.74	ft
Critical Elevation	2,420.97	ft
Critical Slope	0.008253	ft/ft
Velocity	15.08	ft/s
Velocity Head	3.54	ft
Specific Energy	2,423.54	ft
Froude Number	1.49	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+02.78	101+44.8(	0.030

Natural Channel Points

Station (ft)	Elevation (ft)
98+02.78	2,420.00
98+22.49	2,418.00
98+69.05	2,416.00
98+96.05	2,415.05
99+08.34	2,416.00
99+39.39	2,416.52
99+77.64	2,416.00
00+00.00	2,414.26
00+23.64	2,416.00
00+31.12	2,418.00
00+36.24	2,418.00
00+71.75	2,416.36
01+04.11	2,418.00

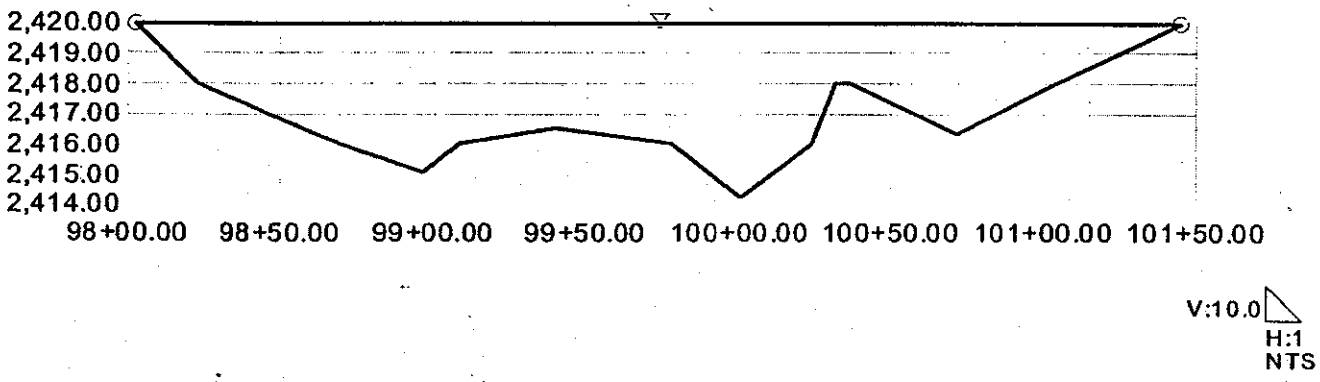
Worksheet
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
101+44.80	2,420.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB07
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.020000	ft/ft
Water Surface Elev	2,420.00	ft
Elevation Range	14.26 to 2,420.00	
Discharge	16,339.49	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB06c
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018300	ft/ft
Water Surface Elev	,366.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	30.00 to 2,366.00	
Discharge	6,803.21	cfs
Flow Area	582.6	ft²
Wetted Perimeter	200.94	ft
Top Width	200.48	ft
Actual Depth	6.00	ft
Critical Elevation	2,366.39	ft
Critical Slope	0.012094	ft/ft
Velocity	11.68	ft/s
Velocity Head	2.12	ft
Specific Energy	2,368.12	ft
Froude Number	1.21	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+21.55	101+22.0	0.035

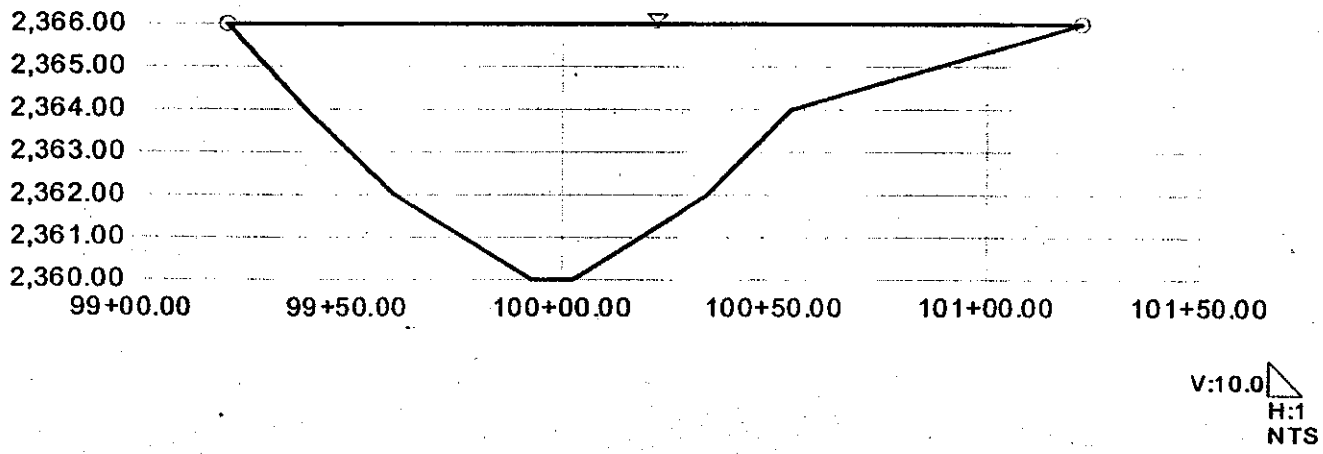
Natural Channel Points

Station (ft)	Elevation (ft)
99+21.55	2,366.00
99+39.79	2,364.00
99+60.83	2,362.00
99+93.30	2,360.00
100+02.25	2,360.00
100+33.75	2,362.00
100+53.45	2,364.00
101+22.03	2,366.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB06c
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.018300	ft/ft
Water Surface Elev	2,366.00	ft
Elevation Range	30.00 to 2,366.00	
Discharge	6,803.21	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB06b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018000	ft/ft
Water Surface Elev	,366.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	30.00 to 2,366.00	
Discharge	6,747.22	cfs
Flow Area	582.6	ft²
Wetted Perimete	200.94	ft
Top Width	200.48	ft
Actual Depth	6.00	ft
Critical Elevation	2,366.37	ft
Critical Slope	0.012113	ft/ft
Velocity	11.58	ft/s
Velocity Head	2.08	ft
Specific Energy	2,368.08	ft
Froude Number	1.20	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+21.55	101+22.0	0.035

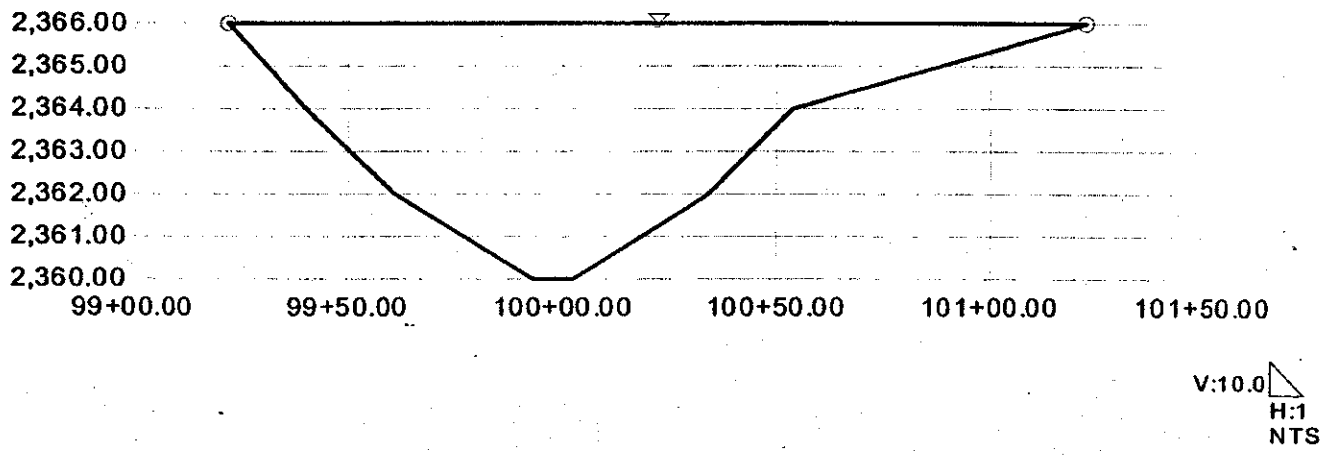
Natural Channel Points

Station (ft)	Elevation (ft)
99+21.55	2,366.00
99+39.79	2,364.00
99+60.83	2,362.00
99+93.30	2,360.00
100+02.25	2,360.00
100+33.75	2,362.00
100+53.45	2,364.00
101+22.03	2,366.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB06b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.018000	ft/ft
Water Surface Elev	2,366.00	ft
Elevation Range	30.00 to 2,366.00	
Discharge	6,747.22	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB06
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	023000	ft/ft
Water Surface Elev.	,336.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	29.69 to 2,336.00	
Discharge	12,192.37	cfs
Flow Area	706.8	ft²
Wetted Perimeter	203.09	ft
Top Width	202.22	ft
Actual Depth	6.31	ft
Critical Elevation	2,337.34	ft
Critical Slope	0.007938	ft/ft
Velocity	17.25	ft/s
Velocity Head	4.62	ft
Specific Energy	2,340.62	ft
Froude Number	1.63	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+24.24	101+26.4	0.030

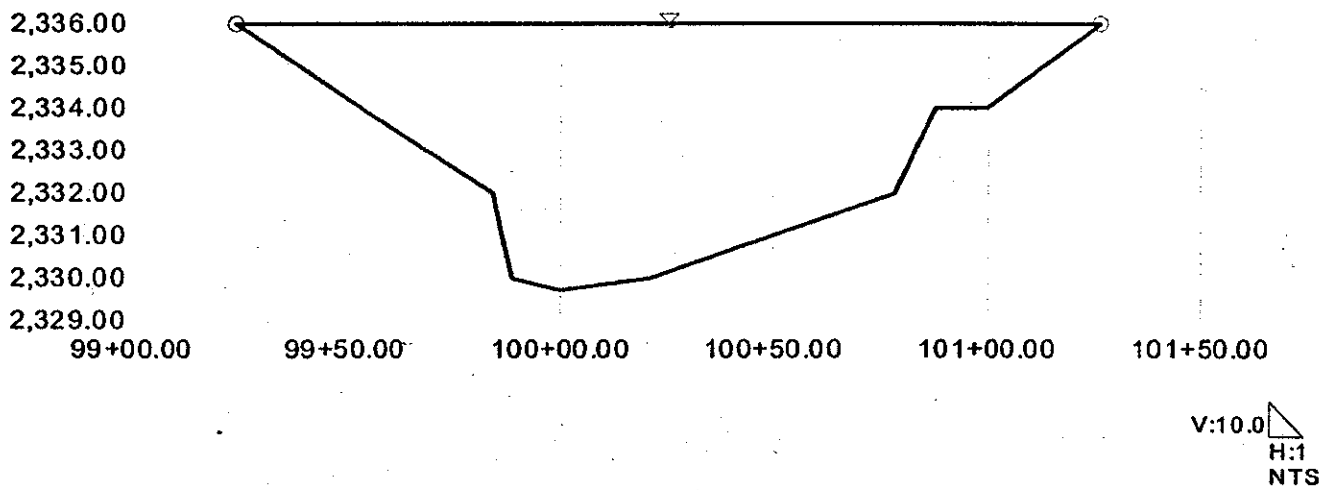
Natural Channel Points

Station (ft)	Elevation (ft)
99+24.24	2,336.00
99+53.80	2,334.00
99+83.96	2,332.00
99+88.70	2,330.00
100+00.00	2,329.69
100+20.57	2,330.00
100+78.16	2,332.00
100+87.39	2,334.00
100+99.56	2,334.00
101+26.46	2,336.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB06
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.023000	ft/ft
Water Surface Elev	2,336.00	ft
Elevation Range	29.69 to 2,336.00	
Discharge	12,192.37	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB05b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	020600	ft/ft
Water Surface Elev	,369.46	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	36.00 to 2,370.12	
Discharge	1,331.11	cfs
Flow Area	190.3	ft²
Wetted Perimete	154.76	ft
Top Width	154.20	ft
Actual Depth	3.46	ft
Critical Elevation	2,369.56	ft
Critical Slope	0.016466	ft/ft
Velocity	6.99	ft/s
Velocity Head	0.76	ft
Specific Energy	2,370.22	ft
Froude Number	1.11	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+74.54	100+66.0	0.035

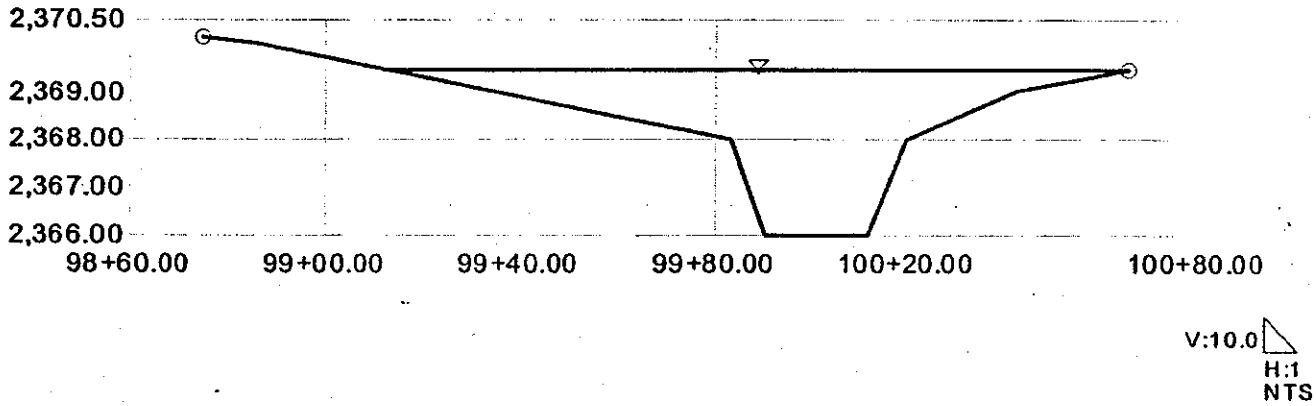
Natural Channel Points

Station (ft)	Elevation (ft)
98+74.54	2,370.12
98+85.38	2,370.00
99+83.50	2,368.00
99+90.74	2,366.00
100+11.98	2,366.00
100+19.94	2,368.00
100+42.59	2,369.00
100+66.07	2,369.46

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB05b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.020600	ft/ft
Water Surface Elev	2,369.46	ft
Elevation Range	36.00 to 2,370.12	
Discharge	1,331.11	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB05
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	022000	ft/ft
Water Surface Elev	,336.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	29.69 to 2,336.00	
Discharge	11,924.38	cfs
Flow Area	706.8	ft²
Wetted Perimete	203.09	ft
Top Width	202.22	ft
Actual Depth	6.31	ft
Critical Elevation	2,337.27	ft
Critical Slope	0.007970	ft/ft
Velocity	16.87	ft/s
Velocity Head	4.42	ft
Specific Energy	2,340.42	ft
Froude Number	1.59	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+24.24	101+26.4	0.030

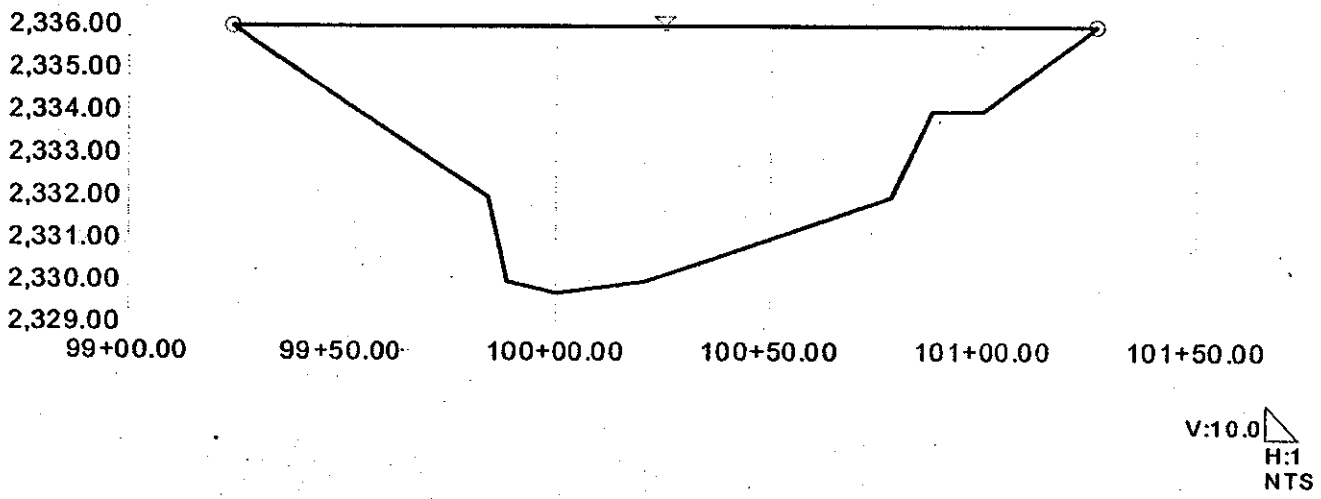
Natural Channel Points

Station (ft)	Elevation (ft)
99+24.24	2,336.00
99+53.80	2,334.00
99+83.96	2,332.00
99+88.70	2,330.00
00+00.00	2,329.69
00+20.57	2,330.00
00+78.16	2,332.00
00+87.39	2,334.00
00+99.56	2,334.00
01+26.46	2,336.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB05
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.022000	ft/ft
Water Surface Elev	2,336.00	ft
Elevation Range	29.69 to 2,336.00	
Discharge	11,924.38	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUB03
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018000	ft/ft
Water Surface Elev	,312.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	5.36 to 2,312.00	
Discharge	23,896.78	cfs
Flow Area	1,717.3	ft²
Wetted Perimete	566.68	ft
Top Width	566.01	ft
Actual Depth	6.64	ft
Critical Elevation	2,312.78	ft
Critical Slope	0.008439	ft/ft
Velocity	13.92	ft/s
Velocity Head	3.01	ft
Specific Energy	2,315.01	ft
Froude Number	1.41	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
97+85.34	103+51.3	0.030

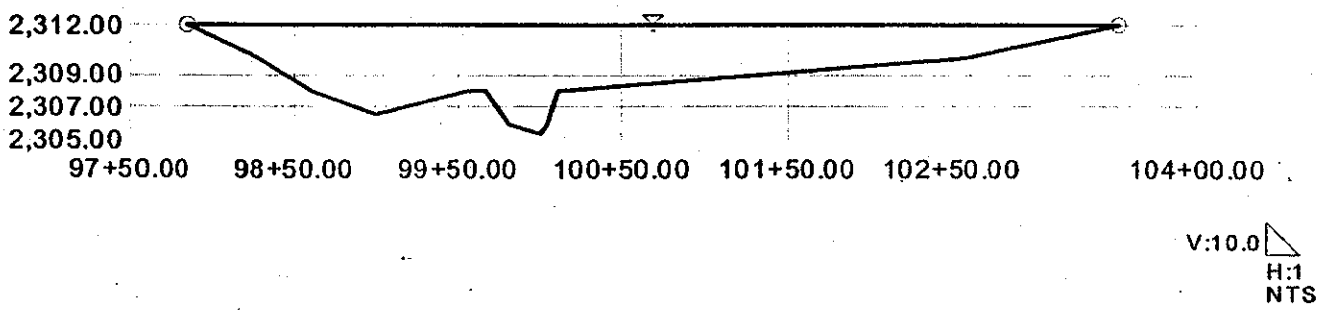
Natural Channel Points

Station (ft)	Elevation (ft)
97+85.34	2,312.00
98+27.66	2,310.00
98+60.41	2,308.00
98+99.00	2,306.61
99+54.91	2,308.00
99+67.29	2,308.00
99+81.03	2,306.00
100+00.00	2,305.36
100+04.26	2,306.00
100+11.01	2,308.00
102+57.95	2,310.00
103+51.35	2,312.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUB03
Flow Element	Irregular Chani
Method	Manning's Forr
Solve For	Discharge

Section Data		
Mannings Coefficiei	0.030	
Slope	0.018000	ft/ft
Water Surface Elev	2,312.00	ft
Elevation Range	)5.36 to 2,312.00	
Discharge	23,896.78	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6C6
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	019000	ft/ft
Water Surface Elev	,626.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	20.81 to 2,626.00	
Discharge	3,023.94	cfs
Flow Area	308.6	ft²
Wetted Perimeter	179.43	ft
Top Width	178.07	ft
Actual Depth	5.19	ft
Critical Elevation	2,626.34	ft
Critical Slope	0.010436	ft/ft
Velocity	9.80	ft/s
Velocity Head	1.49	ft
Specific Energy	2,627.49	ft
Froude Number	1.31	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+64.35	100+42.4	0.030

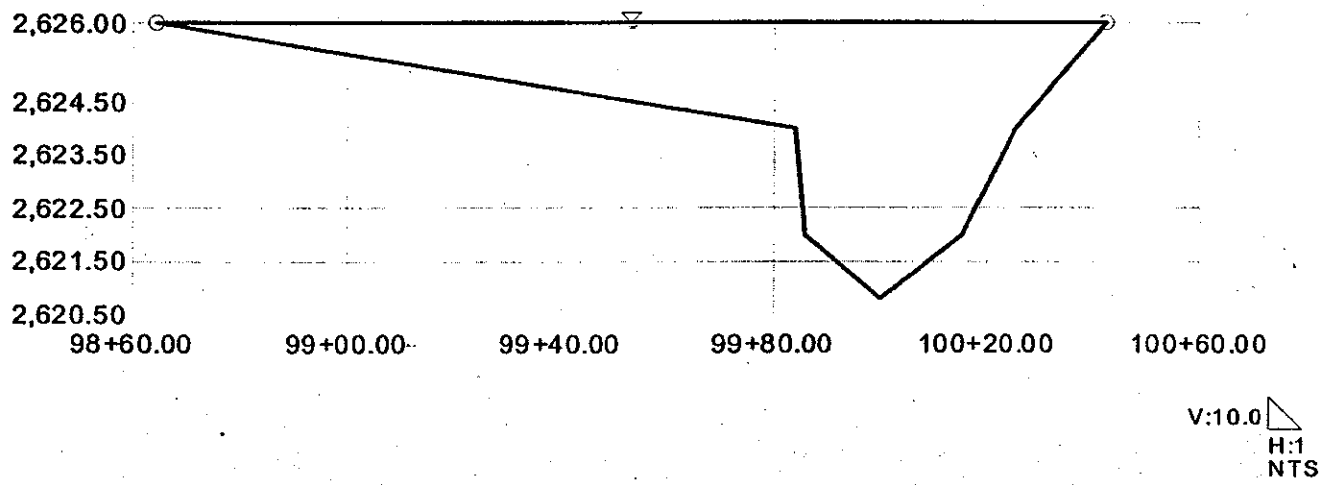
Natural Channel Points

Station (ft)	Elevation (ft)
98+64.35	2,626.00
99+83.84	2,624.00
99+85.51	2,622.00
100+00.00	2,620.81
100+15.10	2,622.00
100+25.49	2,624.00
100+42.42	2,626.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6C6
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.019000	ft/ft
Water Surface Elev	2,626.00	ft
Elevation Range	20.81 to 2,626.00	
Discharge	3,023.94	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6C4
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	007000	ft/ft
Water Surface Elev	,596.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	39.21 to 2,596.00	
Discharge	19,871.06	cfs
Flow Area	2,022.8	ft²
Wetted Perimeter	554.22	ft
Top Width	553.36	ft
Actual Depth	6.79	ft
Critical Elevation	2,595.74	ft
Critical Slope	0.008682	ft/ft
Velocity	9.82	ft/s
Velocity Head	1.50	ft
Specific Energy	2,597.50	ft
Froude Number	0.91	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
96+97.30	102+50.6	0.030

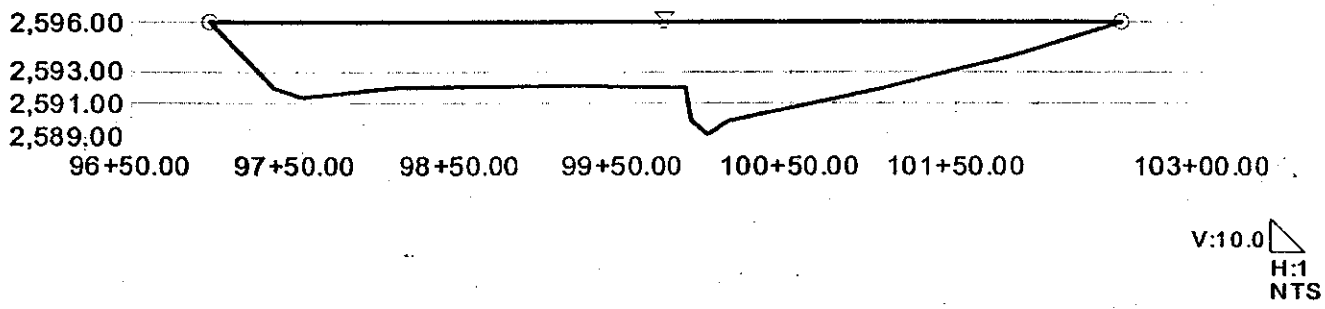
Natural Channel Points

Station (ft)	Elevation (ft)
96+97.30	2,596.00
97+17.07	2,594.00
97+35.74	2,592.00
97+53.43	2,591.43
98+10.61	2,592.00
99+15.55	2,592.10
99+86.87	2,592.00
99+90.58	2,590.00
100+00.00	2,589.21
100+12.93	2,590.00
101+06.06	2,592.00
101+85.18	2,594.00
102+50.66	2,596.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6C4
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.007000	ft/ft
Water Surface Elev	2,596.00	ft
Elevation Range	39.21 to 2,596.00	
Discharge	19,871.06	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6C3
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	028000	ft/ft
Water Surface Elev	,552.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	17.08 to 2,552.00	
Discharge	18,041.41	cfs
Flow Area	1,077.6	ft²
Wetted Perimeter	375.35	ft
Top Width	375.05	ft
Actual Depth	4.92	ft
Critical Elevation	2,553.29	ft
Critical Slope	0.008239	ft/ft
Velocity	16.74	ft/s
Velocity Head	4.36	ft
Specific Energy	2,556.36	ft
Froude Number	1.74	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
97+31.42	101+06.4	0.030

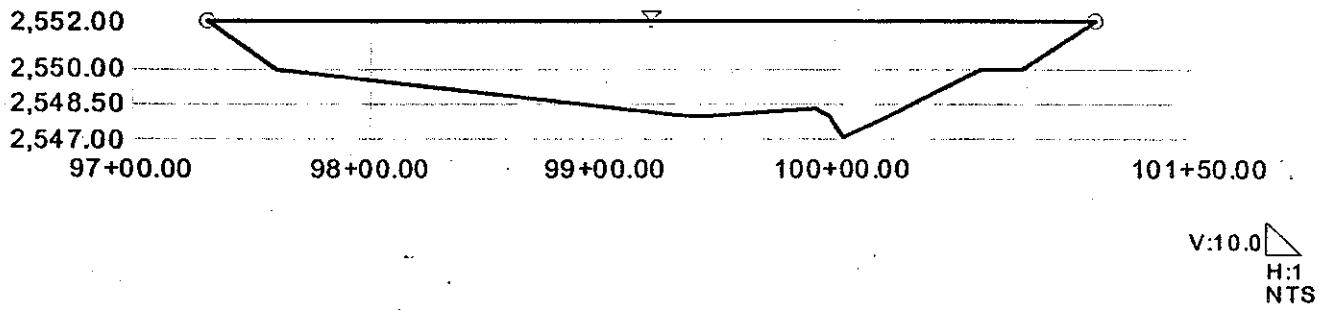
Natural Channel Points

Station (ft)	Elevation (ft)
97+31.42	2,552.00
97+60.35	2,550.00
99+33.43	2,548.00
99+43.42	2,548.00
99+88.69	2,548.30
99+93.89	2,548.00
00+00.00	2,547.08
00+19.77	2,548.00
00+57.80	2,550.00
00+74.79	2,550.00
01+06.47	2,552.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6C3
Flow Element	Irregular Chani
Method	Manning's Forr
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.028000	ft/ft
Water Surface Elev	2,552.00	ft
Elevation Range	47.08 to 2,552.00	
Discharge	18,041.41	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6C2
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	019300	ft/ft
Water Surface Elev	,462.38	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	58.00 to 2,464.00	
Discharge	2,521.93	cfs
Flow Area	278.0	ft²
Wetted Perimete	145.74	ft
Top Width	144.75	ft
Actual Depth	4.38	ft
Critical Elevation	2,462.58	ft
Critical Slope	0.014082	ft/ft
Velocity	9.07	ft/s
Velocity Head	1.28	ft
Specific Energy	2,463.66	ft
Froude Number	1.15	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+63.47	101+14.9	0.035

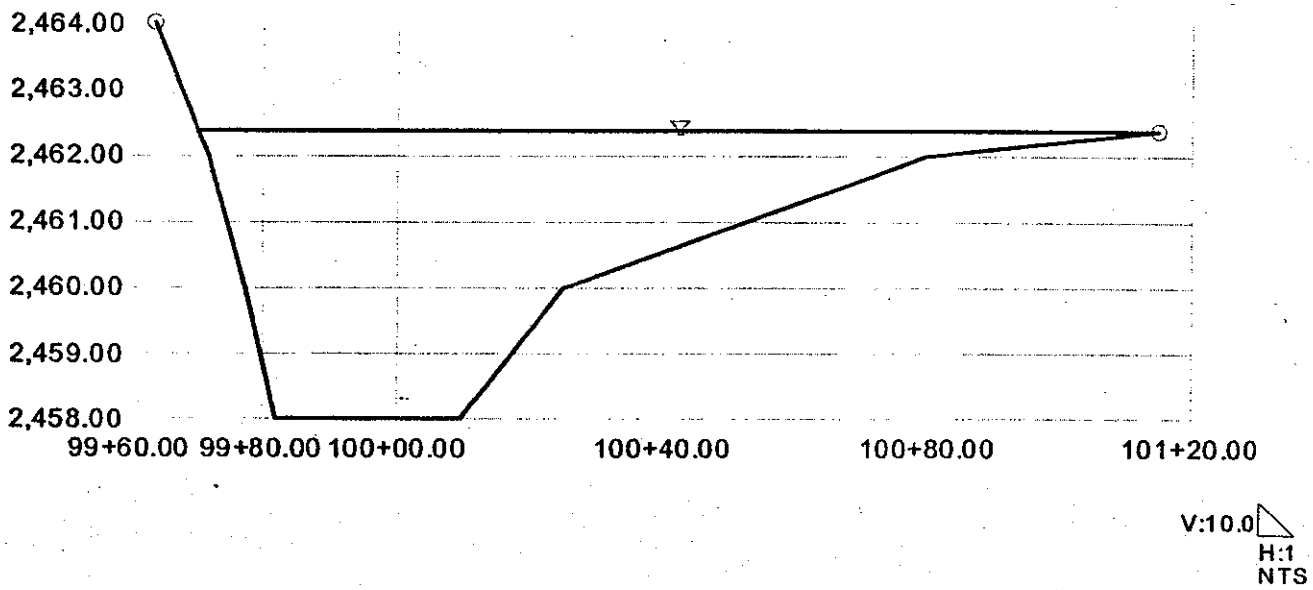
Natural Channel Points

Station (ft)	Elevation (ft)
99+63.47	2,464.00
99+71.78	2,462.00
99+77.44	2,460.00
99+81.84	2,458.00
100+09.31	2,458.00
100+24.89	2,460.00
100+79.45	2,462.00
101+14.95	2,462.38

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6C2
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.019300	ft/ft
Water Surface Elev	2,462.38	ft
Elevation Range	58.00 to 2,464.00	
Discharge	2,521.93	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6C1d
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	016900	ft/ft
Water Surface Elev	,425.26	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	20.00 to 2,426.00	
Discharge	8,229.74	cfs
Flow Area	938.6	ft²
Wetted Perimete	468.69	ft
Top Width	468.06	ft
Actual Depth	5.26	ft
Critical Elevation	2,425.39	ft
Critical Slope	0.013970	ft/ft
Velocity	8.77	ft/s
Velocity Head	1.19	ft
Specific Energy	2,426.45	ft
Froude Number	1.09	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
97+17.14	102+34.5	0.035

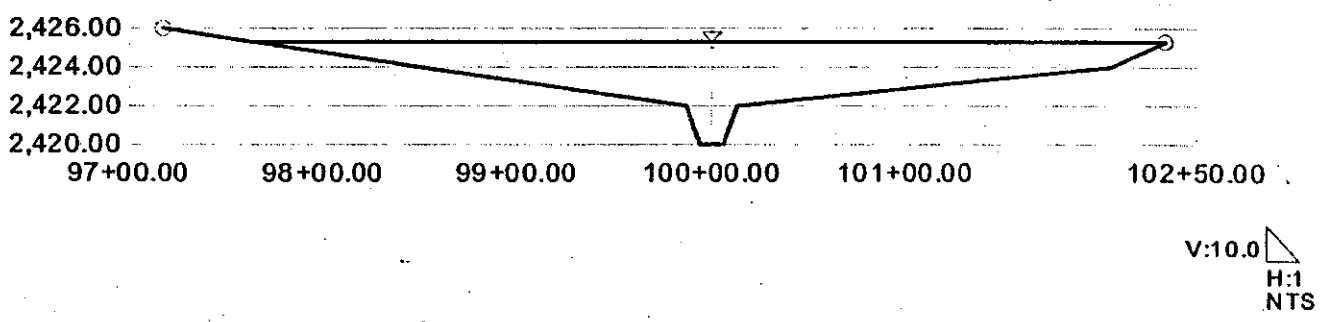
Natural Channel Points

Station (ft)	Elevation (ft)
97+17.14	2,426.00
98+50.39	2,424.00
99+87.36	2,422.00
99+94.68	2,420.00
100+06.59	2,420.00
100+12.98	2,422.00
102+06.55	2,424.00
102+34.50	2,425.26

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6C1d
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.016900	ft/ft
Water Surface Elev	2,425.26	ft
Elevation Range	20.00 to 2,426.00	
Discharge	8,229.74	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6C1c
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018000	ft/ft
Water Surface Elev.	,445.16	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	10.00 to 2,446.00	
Discharge	2,163.44	cfs
Flow Area	317.7	ft²
Wetted Perimete	243.05	ft
Top Width	241.63	ft
Actual Depth	5.16	ft
Critical Elevation	2,445.20	ft
Critical Slope	0.016282	ft/ft
Velocity	6.81	ft/s
Velocity Head	0.72	ft
Specific Energy	2,445.88	ft
Froude Number	1.05	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+09.66	101+82.5	0.035

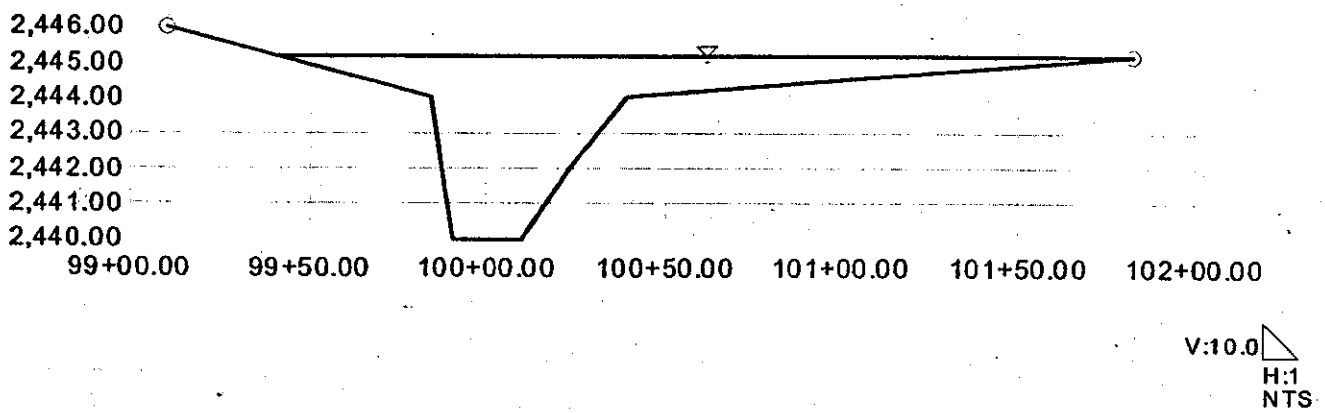
Natural Channel Points

Station (ft)	Elevation (ft)
99+09.66	2,446.00
99+83.96	2,444.00
99+87.47	2,442.00
99+90.52	2,440.00
100+09.62	2,440.00
100+23.14	2,442.00
100+39.10	2,444.00
101+82.50	2,445.16

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6C1c
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.018000	ft/ft
Water Surface Elev	2,445.16	ft
Elevation Range	0.00 to 2,446.00	
Discharge	2,163.44	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6C1b
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	016200	ft/ft
Water Surface Elev	,462.38	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.035	
Elevation Range	58.00 to 2,464.00	
Discharge	2,310.53	cfs
Flow Area	278.0	ft²
Wetted Perimete	145.74	ft
Top Width	144.75	ft
Actual Depth	4.38	ft
Critical Elevation	2,462.45	ft
Critical Slope	0.014330	ft/ft
Velocity	8.31	ft/s
Velocity Head	1.07	ft
Specific Energy	2,463.45	ft
Froude Number	1.06	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+63.47	101+14.9	0.035

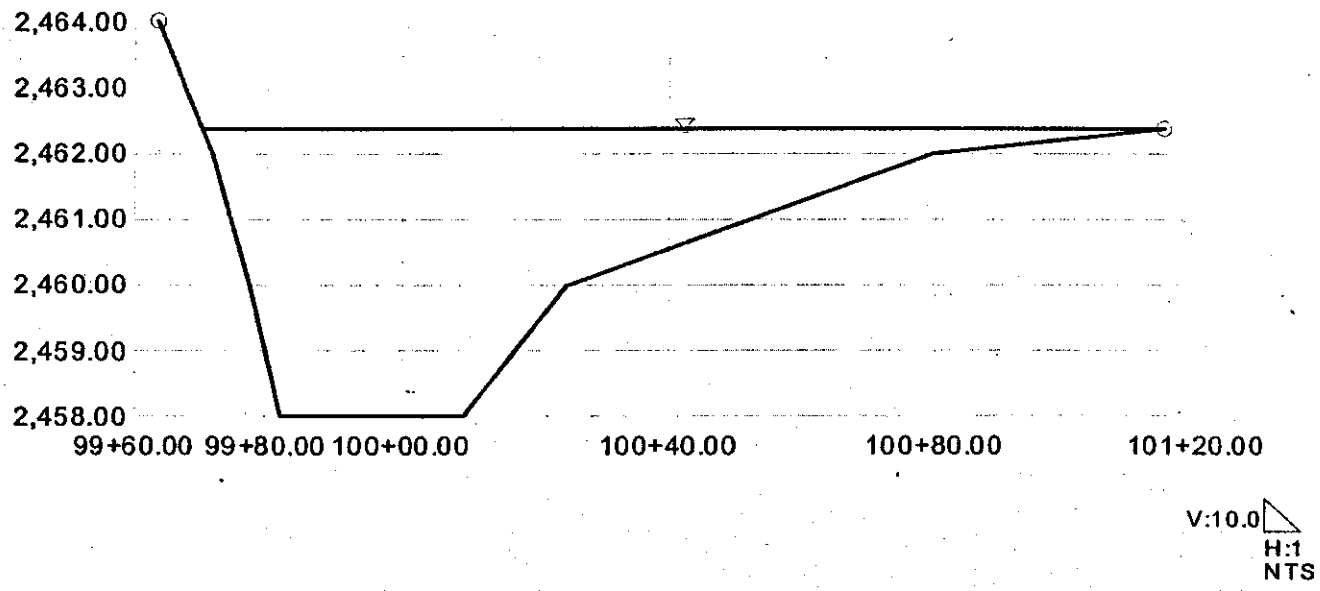
Natural Channel Points

Station (ft)	Elevation (ft)
99+63.47	2,464.00
99+71.78	2,462.00
99+77.44	2,460.00
99+81.84	2,458.00
100+09.31	2,458.00
100+24.89	2,460.00
100+79.45	2,462.00
101+14.95	2,462.38

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6C1b
Flow Element	Irregular Chani
Method	Manning's Forr
Solve For	Discharge

Section Data		
Mannings Coefficie	0.035	
Slope	0.016200	ft/ft
Water Surface Elev	2,462.38	ft
Elevation Range	58.00 to 2,464.00	
Discharge	2,310.53	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6AN8
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	033000	ft/ft
Water Surface Elev	,950.30	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weighting	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	15.46 to 2,952.00	
Discharge	5,602.26	cfs
Flow Area	360.1	ft²
Wetted Perimeter	158.43	ft
Top Width	158.04	ft
Actual Depth	4.84	ft
Critical Elevation	2,951.44	ft
Critical Slope	0.008946	ft/ft
Velocity	15.56	ft/s
Velocity Head	3.76	ft
Specific Energy	2,954.06	ft
Froude Number	1.82	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+26.94	100+97.9	0.030

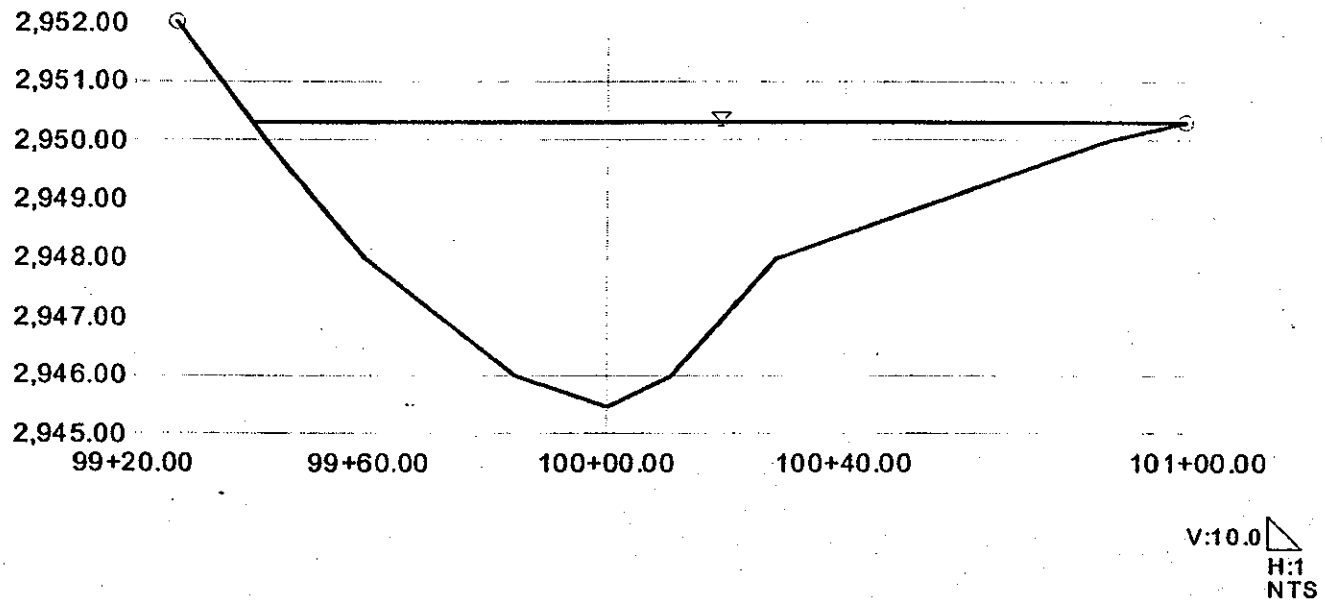
Natural Channel Points

Station (ft)	Elevation (ft)
99+26.94	2,952.00
99+42.14	2,950.00
99+58.92	2,948.00
99+84.65	2,946.00
100+00.00	2,945.46
100+10.73	2,946.00
100+28.33	2,948.00
100+85.18	2,950.00
100+97.90	2,950.30

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6AN8
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.033000	ft/ft
Water Surface Elev	2,950.30	ft
Elevation Range	15.46 to 2,952.00	
Discharge	5,602.26	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6AN6
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	023000	ft/ft
Water Surface Elev	,806.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	99.53 to 2,806.00	
Discharge	28,444.98	cfs
Flow Area	1,405.5	ft²
Wetted Perimeter	317.80	ft
Top Width	316.96	ft
Actual Depth	6.47	ft
Critical Elevation	2,807.87	ft
Critical Slope	0.007237	ft/ft
Velocity	20.24	ft/s
Velocity Head	6.37	ft
Specific Energy	2,812.37	ft
Froude Number	1.69	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+62.45	102+79.4	0.030

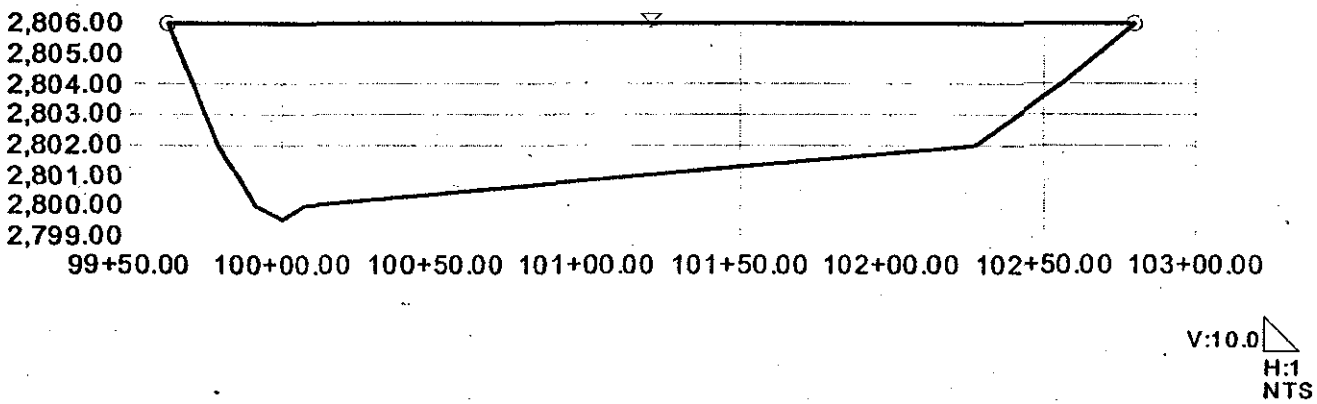
Natural Channel Points

Station (ft)	Elevation (ft)
99+62.45	2,806.00
99+70.56	2,804.00
99+78.44	2,802.00
99+91.02	2,800.00
100+00.00	2,799.53
100+06.76	2,800.00
102+27.48	2,802.00
102+56.06	2,804.00
102+79.41	2,806.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6AN6
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.023000	ft/ft
Water Surface Elev	2,806.00	ft
Elevation Range	99.53 to 2,806.00	
Discharge	28,444.98	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6AN5
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	022000	ft/ft
Water Surface Elev	,732.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	26.71 to 2,734.00	
Discharge	19,056.88	cfs
Flow Area	1,170.1	ft²
Wetted Perimete	354.47	ft
Top Width	353.40	ft
Actual Depth	5.29	ft
Critical Elevation	2,733.19	ft
Critical Slope	0.008046	ft/ft
Velocity	16.29	ft/s
Velocity Head	4.12	ft
Specific Energy	2,736.12	ft
Froude Number	1.58	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+70.07	103+31.4	0.030

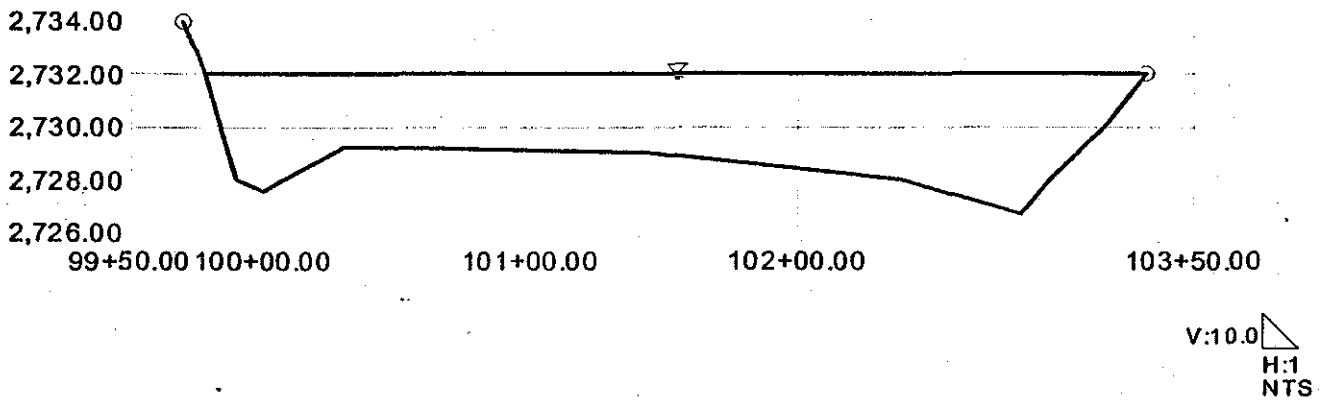
Natural Channel Points

Station (ft)	Elevation (ft)
99+70.07	2,734.00
99+78.00	2,732.00
99+83.50	2,730.00
99+89.35	2,728.00
100+00.00	2,727.55
100+06.99	2,728.00
100+29.92	2,729.27
101+43.33	2,729.02
102+39.08	2,728.00
102+84.38	2,726.71
102+94.86	2,728.00
103+15.73	2,730.00
103+31.40	2,732.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6AN5
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.022000	ft/ft
Water Surface Elev	2,732.00	ft
Elevation Range	26.71 to 2,734.00	
Discharge	19,056.88	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6AN3
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data	
Slope	017000 ft/ft
Water Surface Elev	,690.00 ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	33.49 to 2,690.00	
Discharge	13,837.65	cfs
Flow Area	907.8	ft²
Wetted Perimeter	250.35	ft
Top Width	249.08	ft
Actual Depth	6.51	ft
Critical Elevation	2,690.93	ft
Critical Slope	0.008031	ft/ft
Velocity	15.24	ft/s
Velocity Head	3.61	ft
Specific Energy	2,693.61	ft
Froude Number	1.41	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+78.92	102+28.0	0.030

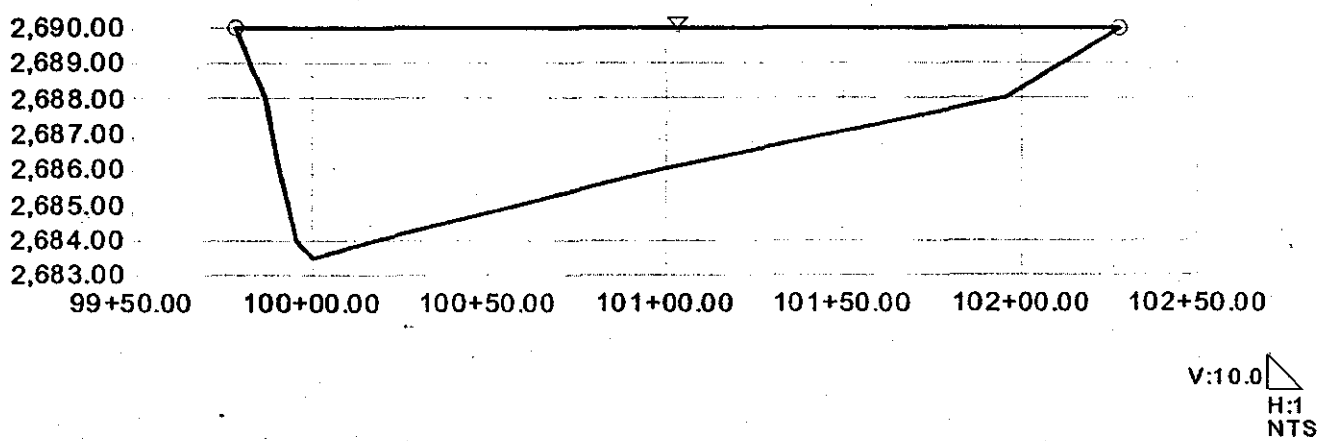
Natural Channel Points

Station (ft)	Elevation (ft)
99+78.92	2,690.00
99+86.94	2,688.00
99+91.14	2,686.00
99+95.63	2,684.00
100+00.00	2,683.49
100+17.47	2,684.00
100+98.65	2,686.00
101+95.09	2,688.00
102+28.00	2,690.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6AN3
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.017000	ft/ft
Water Surface Elev	2,690.00	ft
Elevation Range	33.49 to 2,690.00	
Discharge	13,837.65	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6AN2
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018000	ft/ft
Water Surface Elev	,658.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	50.62 to 2,658.00	
Discharge	24,952.02	cfs
Flow Area	1,416.0	ft²
Wetted Perimete	327.93	ft
Top Width	327.28	ft
Actual Depth	7.38	ft
Critical Elevation	2,659.33	ft
Critical Slope	0.007461	ft/ft
Velocity	17.62	ft/s
Velocity Head	4.83	ft
Specific Energy	2,662.83	ft
Froude Number	1.49	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+97.41	102+24.6	0.030

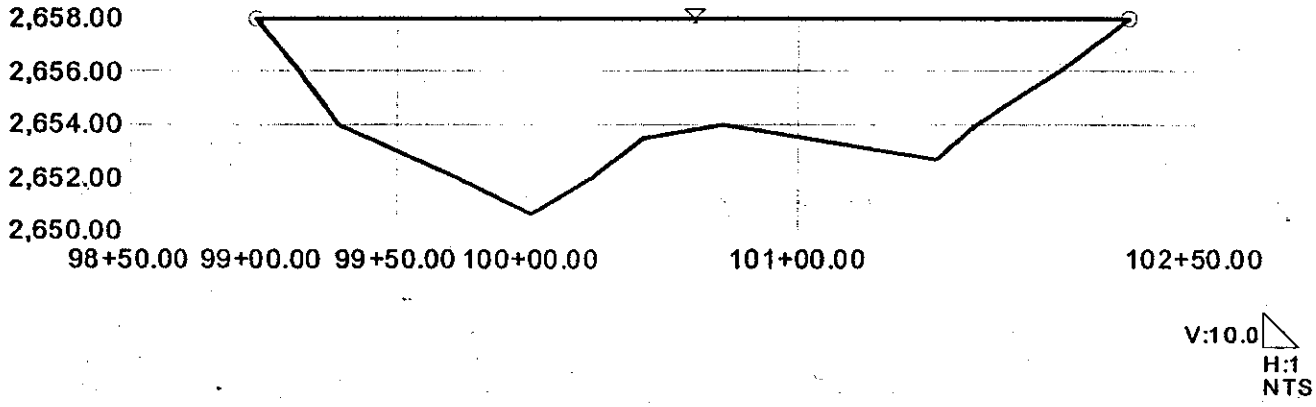
Natural Channel Points

Station (ft)	Elevation (ft)
98+97.41	2,658.00
99+13.81	2,656.00
99+27.79	2,654.00
99+71.84	2,652.00
100+00.00	2,650.62
100+23.51	2,652.00
100+42.63	2,653.46
100+71.10	2,654.00
101+51.99	2,652.68
101+67.56	2,654.00
101+98.96	2,656.00
102+24.69	2,658.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6AN2
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.018000	ft/ft
Water Surface Elev	2,658.00	ft
Elevation Range	50.62 to 2,658.00	
Discharge	24,952.02	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6AN1
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	016000	ft/ft
Water Surface Elev.	,540.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weighting	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	32.94 to 2,540.00	
Discharge	11,134.06	cfs
Flow Area	705.3	ft²
Wetted Perimeter	176.32	ft
Top Width	175.54	ft
Actual Depth	7.06	ft
Critical Elevation	2,540.98	ft
Critical Slope	0.007830	ft/ft
Velocity	15.79	ft/s
Velocity Head	3.87	ft
Specific Energy	2,543.87	ft
Froude Number	1.39	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+79.70	100+55.2	0.030

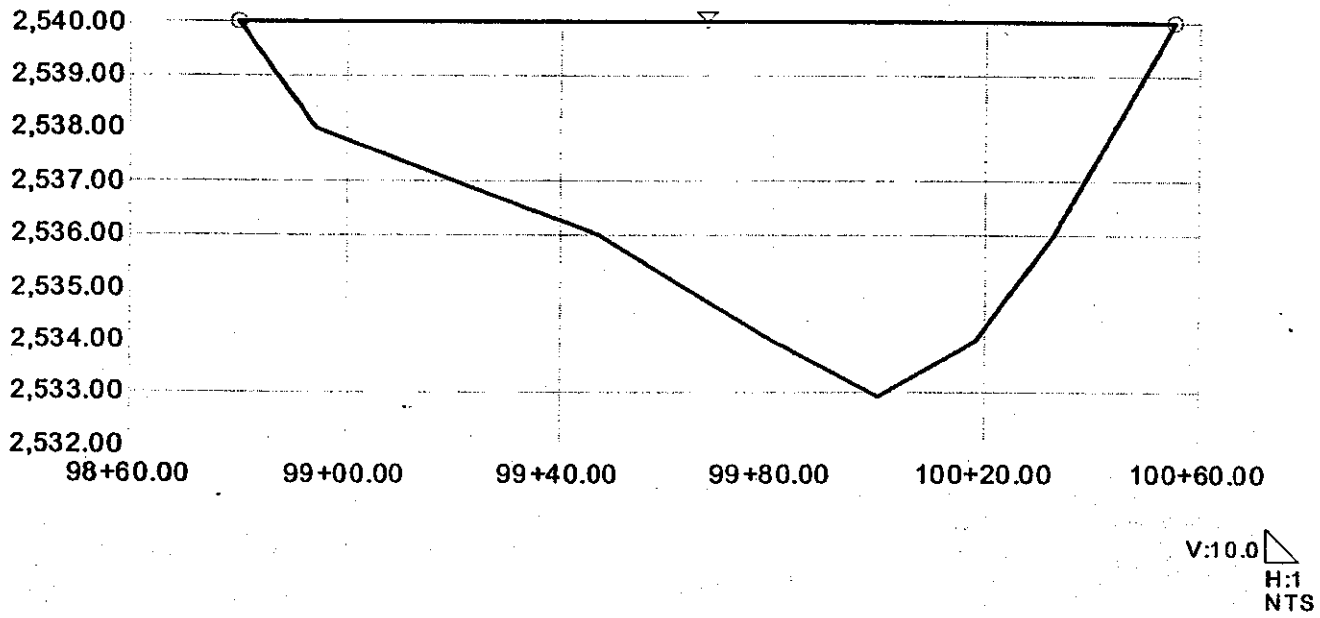
Natural Channel Points

Station (ft)	Elevation (ft)
98+79.70	2,540.00
98+94.16	2,538.00
99+47.20	2,536.00
99+79.66	2,534.00
100+00.00	2,532.94
100+18.23	2,534.00
100+32.57	2,536.00
100+44.15	2,538.00
100+55.24	2,540.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6AN1
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.016000	ft/ft
Water Surface Elev	2,540.00	ft
Elevation Range	32.94 to 2,540.00	
Discharge	11,134.06	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6AS5
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	019000	ft/ft
Water Surface Elev	,780.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	73.45 to 2,780.00	
Discharge	35,832.79	cfs
Flow Area	1,846.1	ft²
Wetted Perimete	385.09	ft
Top Width	384.52	ft
Actual Depth	6.55	ft
Critical Elevation	2,781.66	ft
Critical Slope	0.007136	ft/ft
Velocity	19.41	ft/s
Velocity Head	5.86	ft
Specific Energy	2,785.86	ft
Froude Number	1.56	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+76.96	102+61.4	0.030

Natural Channel Points

Station (ft)	Elevation (ft)
98+76.96	2,780.00
98+87.85	2,778.00
99+15.72	2,776.00
99+86.26	2,774.00
100+00.00	2,773.46
100+08.21	2,774.00
100+25.52	2,774.56
100+44.11	2,774.00
100+51.63	2,773.62
100+62.14	2,774.00
100+76.38	2,774.53
100+93.54	2,774.00
101+02.28	2,773.45

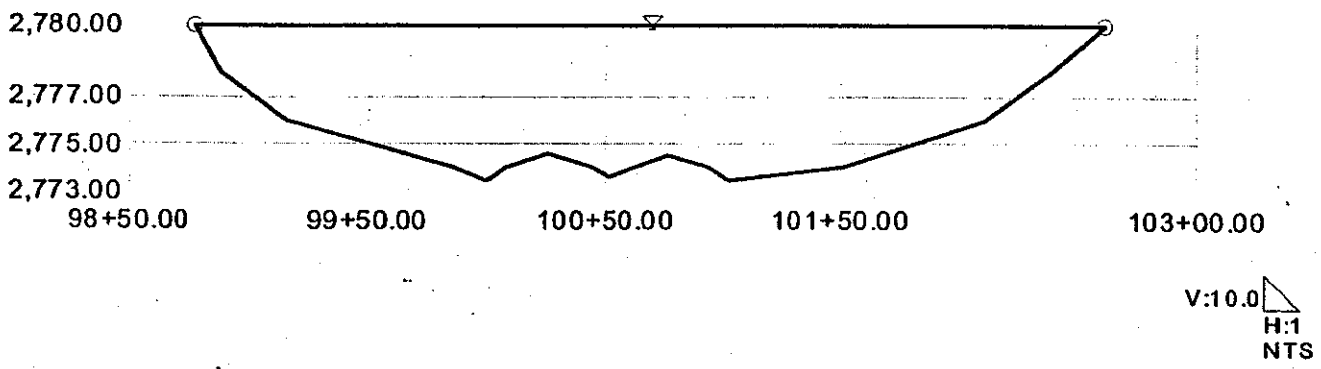
Worksheet
Worksheet for Irregular Channel

Natural Channel Points	
Station (ft)	Elevation (ft)
101+50.98	2,774.00
102+10.34	2,776.00
102+38.25	2,778.00
102+61.48	2,780.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6AS5
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.019000	ft/ft
Water Surface Elev	2,780.00	ft
Elevation Range	73.45 to 2,780.00	
Discharge	35,832.79	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6AS3
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	016000	ft/ft
Water Surface Elev	,652.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	15.52 to 2,652.00	
Discharge	13,062.40	cfs
Flow Area	926.9	ft²
Wetted Perimete	274.75	ft
Top Width	274.16	ft
Actual Depth	6.48	ft
Critical Elevation	2,652.75	ft
Critical Slope	0.008256	ft/ft
Velocity	14.09	ft/s
Velocity Head	3.09	ft
Specific Energy	2,655.09	ft
Froude Number	1.35	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+30.73	101+04.8	0.030

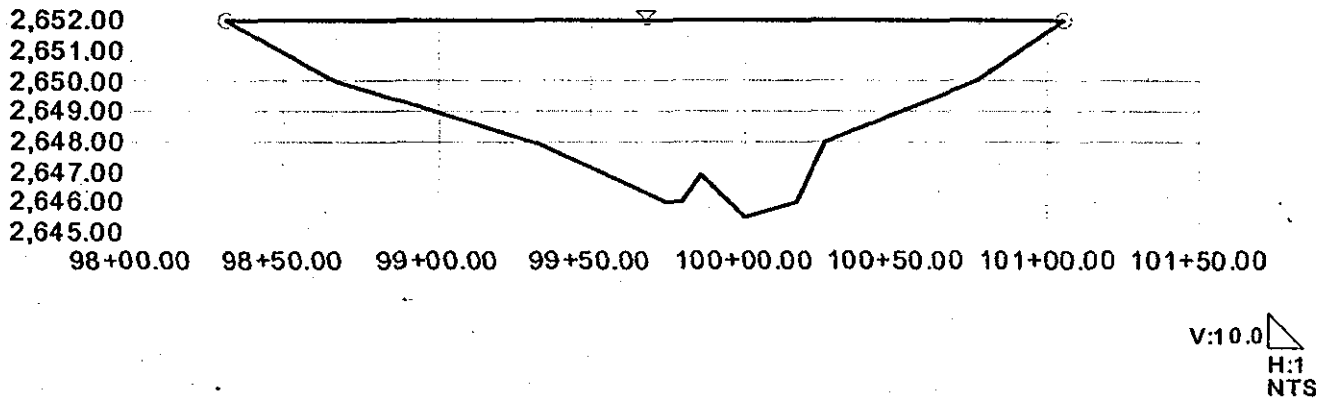
Natural Channel Points

Station (ft)	Elevation (ft)
98+30.73	2,652.00
98+66.04	2,650.00
99+31.01	2,648.00
99+74.39	2,646.00
99+79.39	2,646.00
99+85.99	2,646.88
99+94.97	2,646.00
00+00.00	2,645.52
00+17.28	2,646.00
00+26.50	2,648.00
00+76.22	2,650.00
01+04.89	2,652.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6AS3
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.016000	ft/ft
Water Surface Elev	2,652.00	ft
Elevation Range	15.52 to 2,652.00	
Discharge	13,062.40	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RF6AS2
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	017000	ft/ft
Water Surface Elev	,602.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	95.47 to 2,602.00	
Discharge	15,876.45	cfs
Flow Area	932.2	ft²
Wetted Perimete	217.64	ft
Top Width	216.97	ft
Actual Depth	6.53	ft
Critical Elevation	2,603.20	ft
Critical Slope	0.007571	ft/ft
Velocity	17.03	ft/s
Velocity Head	4.51	ft
Specific Energy	2,606.51	ft
Froude Number	1.45	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
98+50.11	100+67.0	0.030

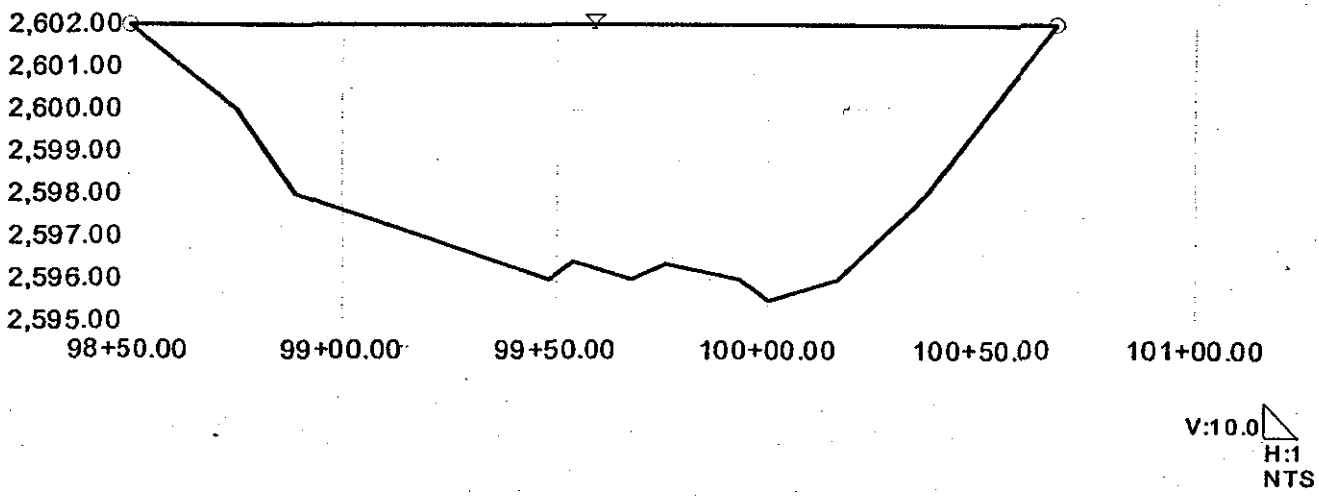
Natural Channel Points

Station (ft)	Elevation (ft)
98+50.11	2,602.00
98+74.75	2,600.00
98+88.98	2,598.00
99+48.09	2,596.00
99+53.68	2,596.40
99+67.59	2,596.00
99+75.81	2,596.37
99+92.73	2,596.00
00+00.00	2,595.47
00+16.37	2,596.00
00+36.52	2,598.00
00+51.81	2,600.00
00+67.08	2,602.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RF6AS2
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.017000	ft/ft
Water Surface Elev	2,602.00	ft
Elevation Range	95.47 to 2,602.00	
Discharge	15,876.45	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RRHW1
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018000	ft/ft
Water Surface Elev	,736.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	28.68 to 2,736.00	
Discharge	29,782.84	cfs
Flow Area	1,743.3	ft²
Wetted Perimete	422.92	ft
Top Width	422.51	ft
Actual Depth	7.32	ft
Critical Elevation	2,737.24	ft
Critical Slope	0.007560	ft/ft
Velocity	17.08	ft/s
Velocity Head	4.54	ft
Specific Energy	2,740.54	ft
Froude Number	1.48	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
97+66.27	101+88.7	0.030

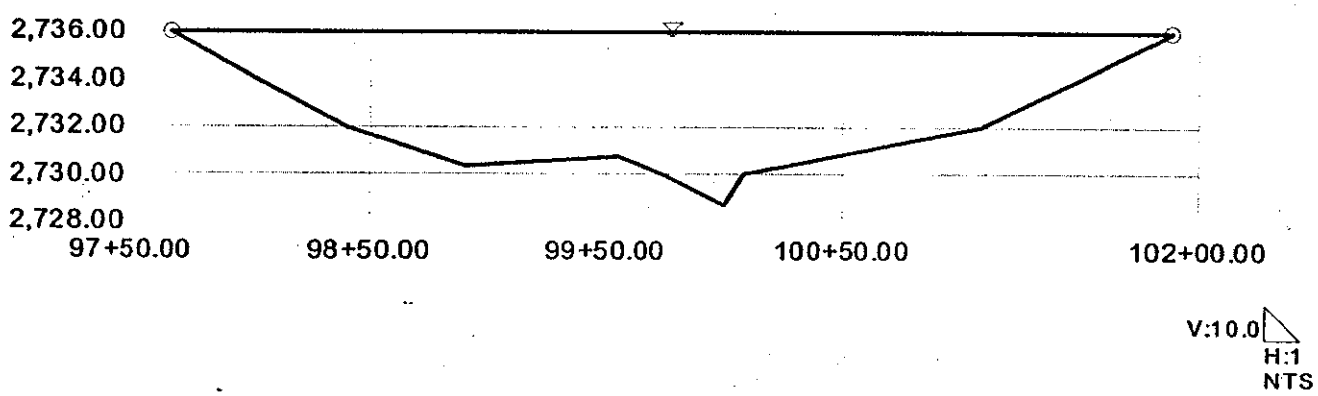
Natural Channel Points

Station (ft)	Elevation (ft)
97+66.27	2,736.00
98+01.84	2,734.00
98+40.20	2,732.00
98+89.55	2,730.37
99+54.50	2,730.76
99+73.36	2,730.00
100+00.00	2,728.68
100+07.77	2,730.00
101+08.05	2,732.00
101+50.43	2,734.00
101+88.78	2,736.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RRHW1
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.018000	ft/ft
Water Surface Elev	2,736.00	ft
Elevation Range	28.68 to 2,736.00	
Discharge	29,782.84	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUF55
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	017000	ft/ft
Water Surface Elev.	,736.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	28.68 to 2,736.00	
Discharge	28,943.72	cfs
Flow Area	1,743.3	ft²
Wetted Perimete	422.92	ft
Top Width	422.51	ft
Actual Depth	7.32	ft
Critical Elevation	2,737.14	ft
Critical Slope	0.007603	ft/ft
Velocity	16.60	ft/s
Velocity Head	4.28	ft
Specific Energy	2,740.28	ft
Froude Number	1.44	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
97+66.27	101+88.7	0.030

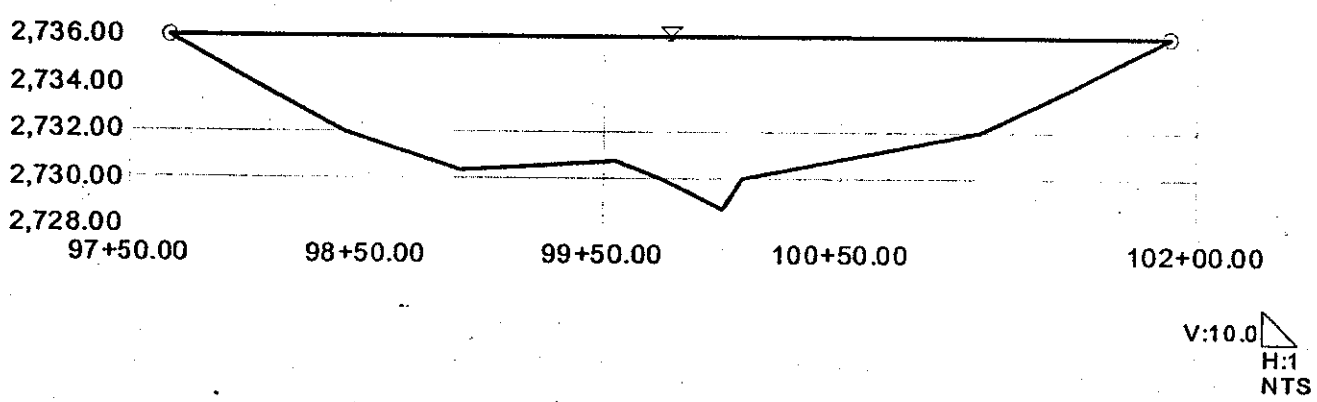
Natural Channel Points

Station (ft)	Elevation (ft)
97+66.27	2,736.00
98+01.84	2,734.00
98+40.20	2,732.00
98+89.55	2,730.37
99+54.50	2,730.76
99+73.36	2,730.00
100+00.00	2,728.68
100+07.77	2,730.00
101+08.05	2,732.00
101+50.43	2,734.00
101+88.78	2,736.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUF55
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.017000	ft/ft
Water Surface Elev	2,736.00	ft
Elevation Range	28.68 to 2,736.00	
Discharge	28,943.72	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUF54
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	018000	ft/ft
Water Surface Elev	,518.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	11.22 to 2,518.00	
Discharge	7,813.91	cfs
Flow Area	513.4	ft²
Wetted Perimete	148.12	ft
Top Width	147.18	ft
Actual Depth	6.78	ft
Critical Elevation	2,518.95	ft
Critical Slope	0.008185	ft/ft
Velocity	15.22	ft/s
Velocity Head	3.60	ft
Specific Energy	2,521.60	ft
Froude Number	1.44	
Flow Type	Supercritical	

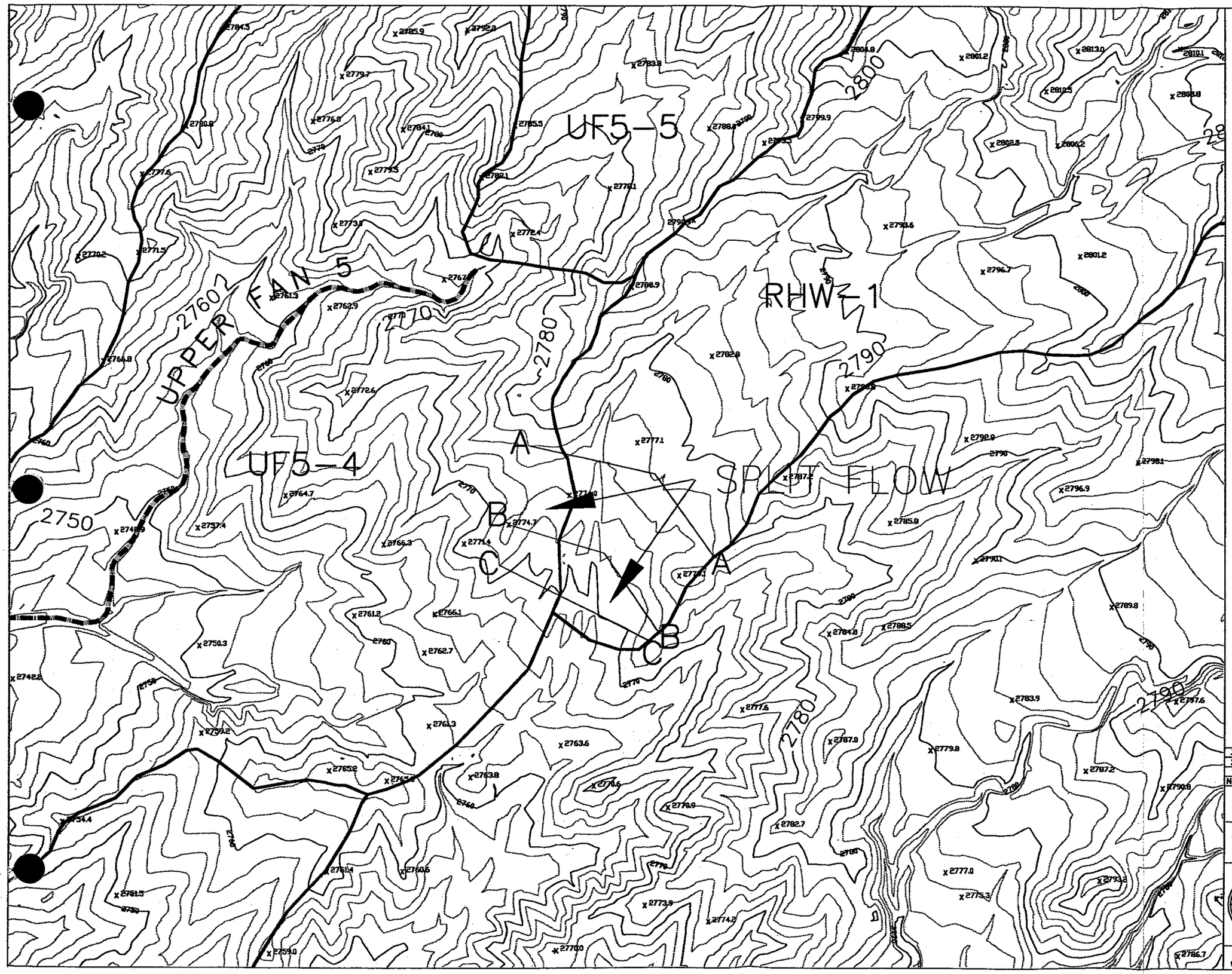
Roughness Segments

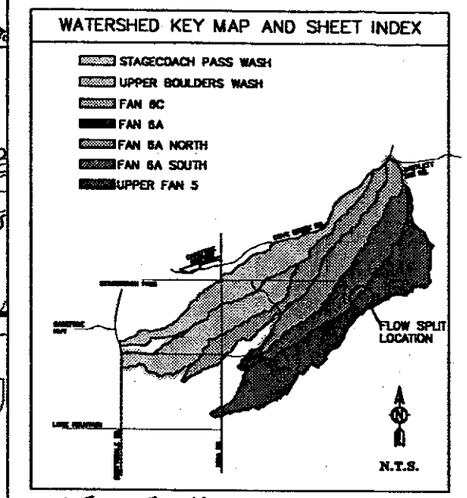
Start Station	End Station	Mannings Coefficient
99+31.91	100+79.0	0.030

Natural Channel Points

Station (ft)	Elevation (ft)
99+31.91	2,518.00
99+46.86	2,516.00
99+61.67	2,514.00
99+82.94	2,512.00
100+00.00	2,511.22
100+12.57	2,512.00
100+23.64	2,514.00
100+36.72	2,516.00
100+48.15	2,516.62
100+68.15	2,516.02
100+79.09	2,518.00

D.4 RESERVOIR ROUTING DATA





SEE SHT 24

N

100' 0' 100' 200'

SCALE: 1" = 200'
CONTOUR INTERVAL = FEET

NO.	REVISION	BY	DATE
3			
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY
FCD 2001 C009 WORK ORDER #2

	BY	DATE
DESIGNED		
DRAWN		
CHECKED		

Registered Professional Engineer (Civil) CERTIFICATE NO. 16376 HAL E. MARRON Date Signed ARIZONA, U.S.A.

20 YEARS OF EXCELLENCE

DRAWING NO. 01131RHWFS.DWG

RAWHDE FLOW SPLIT

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RAWHIDE
PROJECT Upper Flow Split SHEET #
MADE BY HEM DATE 4-24-02 JOB # 01-131.12
CHECKED BY PMM DATE 05/02/02 SECTION SHEET #
CALCULATIONS FOR

Develop Diversion Table Using Cross Sections B & C

Based upon B-B

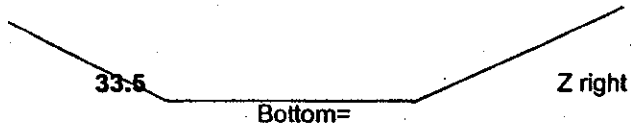
Total Flow	Diverted Flow (to Rawhide)	Flow into model	
160	146	14	10%
389	327	62	16%
790	540	250	32%
1748	1228	520	30%

Based upon C-C

304	292	12	4%
849	502	347	41%
1854	1023	831	45%

Combining B-B & C-C

Total Flow	(Diverted) To Rawhide	Flow into model	
160	146	14	10%
389	327	62	16%
849	502	347	41%
1854	1023	831	45%



Z left = **33.5** Z right = **5**

Bottom=
0

Slope = 0.0189
Mannings n = 0.043 0.057 0.061
A **B** **C**

Depth	Perimeter	Area	Velocity	Flow	ELEV	
1	38.6	19.3	3.0	57	2775.0	
2	77.2	77.0	4.7	365	2776.0	A
3	178.2	215.0	4.1	873	2777	B
4	278.2	430.5	4.5	1929	2778	C1

Section A-A

Z left = **45** Z right = **27.2**

Bottom=
80

Slope = 0.0189
Mannings n = 0.068
C2

Depth	Perimeter	Area	Velocity	Flow	ELEV	
1.4	181.1	182.8	3.0	552	2778.0	C2

PROJECT RAWHIDE SPLIT SHEET # ___
MADE BY HEM DATE ___ JOB # ___
CHECKED BY PMM DATE ___ SECTION SHEET # ___

CALCULATIONS FOR

(A) MAIN FLOW — ELEV 74 to 76
B = 0 — Area = 77.0
Z_R = 5 — P = 77.2
Z_L = 3 1/2 — V = 4.7 fps
Q = 365 cfs

ELEV 76 TO 77
(B) ΔA = 138 ft^2
ΔP = 101 ft
$\approx n = f(P)$ = 0.057 — 0.068 | 0.093 | 0.068
V = 4.1
Q = 873

(C) ELEV 77 TO 78 — V = 4.5 fps
ΔA = 215.5 ft^2 — Q = 1929 cfs
ΔP = 100 ft
$\approx n = f(P)$ = 0.061

Q_{100} = 1806
Slope = 0.0189 ft/ft
n = 0.093 channel
= 0.068 overbank

(C2) ELEV 76.6 → 78
B = 80 — Q = 552 cfs
Z_R = 27.2 — V = 3.0
Z_L = 45
n = 0.068

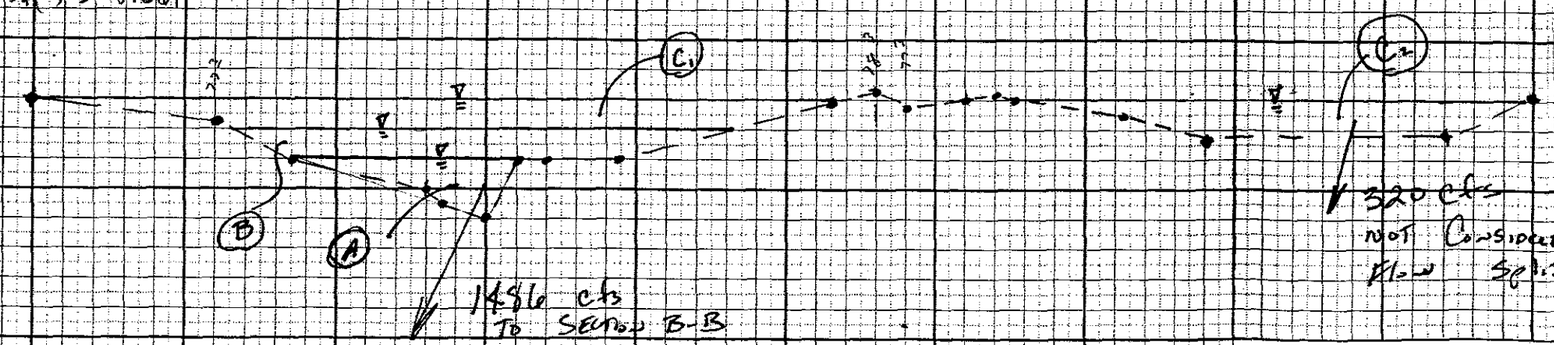
FLOW ADJUSTMENT

FROM 77 → 78 ΔQ = 1056 — C_1
552 — C_2
1608

ΔQ_{ACTUAL} = 1806 − 873 ⇒ 933 cfs

ASSUME PRORATED SPLIT BETWEEN C_1 & C_2

C_1 ∴ (1056/1608) * 933 ⇒ 613 cfs
C_2 320 cfs



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PROJECT RAWHIDE SPLIT SHEET #
MADE BY HEM DATE JOB #
CHECKED BY PMM DATE SECTION SHEET #
CALCULATIONS FOR

— Now Raise Flow to 720

$\Delta A = 47\ ft^2 + 28$

$\Delta P = 32 + 20 = 34$

$\sim N \Rightarrow 34 @ 0.068 \Rightarrow 2.312$
$86.9 @ 0.043 \Rightarrow 3.737$
$6.049 \Rightarrow 0.050$

$Q = 485$ cfs
$V = 4.7$ cfs

Now Raise Flow to 722

$\Delta A = 41\ ft^2$
$\Delta P = 75\ ft$
$\Delta N = 121 @ 0.05 = 6.05$
$75 @ 0.068 = 5.10$
$196 \quad 11.15 \Rightarrow 0.057$

$Q = 502$
$V = 3.1$ fps

* Now Raise Both 0.3'

Over Story
$\Delta A = 40\ ft^2$
$\Delta P = .6$
$Q = 637$ cfs
$V = 5.2$ fps

Rawhide
$\Delta A = 54.6$
$\Delta P = 5$
$Q = 802$
$V = 3.7$ fps

* Now Raise Additional 0.2'

$\Delta A = 24$
$\Delta P = 4$
$Q = 831$
$V = 5.7$

$\Delta A = 36$
$\Delta P = 4$
$Q = 1023$ cfs
$V = 4.1$ fps

Cross Section B-B

Sub- Channel Section A

Z left = **5** Z right = **5**

Bottom= **10**

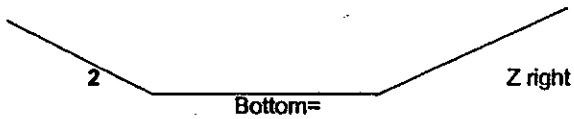
Slope = 0.0156

Mannings n = 0.03 0.061

a **b**

Depth	Perimeter	Area	Velocity	Flow	ELEV	
0.4	14.1	4.8	3.0	14	2771.5	a
0.9	19.2	13.1	4.8	62	2772.0	a
1.4	102.2	89.6	2.8	250	2772.5	b
1.9	107.7	142.1	3.7	520	2773.0	

Sub- Channel Section B



Z left = **2** Z right = **4**

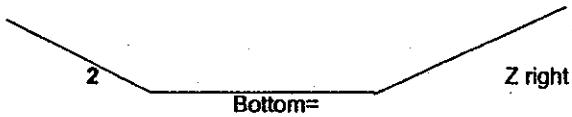
Bottom= **15**

Slope = 0.019

Mannings n = 0.03

Depth	Perimeter	Area	Velocity	Flow	ELEV
0.7	19.5	12.0	4.9	59	2771.5
1.2	22.6	22.3	6.8	151	2772.0

Sub- Channel Section C



Z left = **2** Z right = **10**

Bottom= **10**

Slope = 0.019

Mannings n = 0.043 0.062

c **d**

Depth	Perimeter	Area	Velocity	Flow	ELEV	
1.2	24.7	20.6	4.2	87	2771.5	c
1.7	30.9	34.3	5.1	176	2772.0	c
combined Channels						
2.2	255.5	195.4	2.8	540	2772.5	d
2.7	268.5	326.4	3.8	1228	2773.0	d

PROJECT RAWHIDE SPLIT SHEET #
MADE BY HEM DATE JOB #
CHECKED BY PMM DATE SECTION SHEET #
CALCULATIONS FOR

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Section B-B

Q_{100} = 1486 cfs
Slope = 1.9% Rawhide
= 1.56% Divert

Flow split line

To Rawhide

To

0.068 ← | N=0.043 | → 0.068

22.743

75

70

72.3

70.5

71.1

70.5

Area = 30 + 37.5
= 67.5 ft² + 9 ft²
76.5 ft²

P = A + 83
= 19.2 + 83
= 102.2

N = 83 × .068 → .061
+19.2 × .030
102.2

A = 22.3 + 34.3 + 25 + 8.375 + 5 + 25
= 195.4
P = 255.5

N = 22.6 @ .03 ⇒ 0.678
30.9 @ .043 ⇒ 1.329
202 @ .068 ⇒ 13.736
255.5 15.743 ⇒ 0.62

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PROJECT RAWHIDE SPLIT SHEET #
MADE BY HEM DATE JOB #
CHECKED BY DATE SECTION SHEET #
CALCULATIONS FOR

Section B-B

* Calculated Capacity to 72 ft Three Channels
* Then Calculate new flow Areas

(A) = Flow to our Study
B = 10'
Zr = 5:1 D = 0.9'
Zl = 5:1 Q = 6.2 A = 18.1
N = .030 V = 4.8 P = 19.2
Slope = 1.56

(B) = Flow to Rawhide Wash
B = 15'
Zr = 4:1 D = 1.2' A = 22.3
Zl = 2:1 Q = 151 P = 22.6
N = .030 V = 6.8
Slope = 1.9 %

(C) B = 10'
Zr = 10:1 D = 1.7' A = 34.3
Zl = 2:1 Q = 176 P = 30.9
N = 0.043 V = 5.1
Slope = 1.9 %

Total Flow Accounted for 389 cfs
& 1486 cfs
or 1806 cfs

Now calculate Flow at 72.5

Q to our study 250 V = 2.8 fps
Q to Rawhide Wash 540 V = 2.8 fps

Total Flow Accounted for 790 cfs

Now calculate at 73.0

our Study		Rawhide	
ΔA = 52.5	Q = 520 cfs	ΔA = 131 ft²	Q = 1228
ΔP = 5.5'	V = 3.7 fps	ΔP = 13	V = 3.8 fps
N ≈ Same		N ≈ Same	

Total Flow Accounted for = 1748

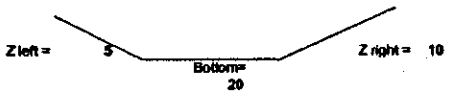
Cross Section C-C
Diverted Flow

Slope = 0.024
Mannings n = 0.043 0.06
a b

Depth	Perimeter	Area	Velocity	Flow	ELEV
0.3	24.2	5.7	2.0	12	2769.4
1.1	71.2	82.2	4.2	347	2770.2
1.4	77.2	122.2	5.2	637	2770.5
1.8	81.2	146.2	5.7	831	2770.7

Rawhide Wash Flow

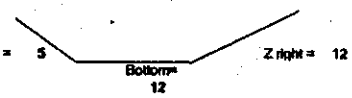
Sub- Channel Section A



Slope = 0.0183
Mannings n = 0.043

Depth	Perimeter	Area	Velocity	Flow	ELEV
0.9	33.6	24.1	3.7	90	2769.5

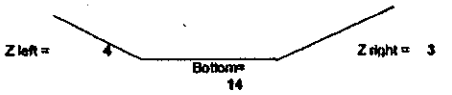
Sub- Channel Section B



Slope = 0.019
Mannings n = 0.043

Depth	Perimeter	Area	Velocity	Flow	ELEV
1	29.1	20.5	3.8	77	2769.5

Sub- Channel Section C



Slope = 0.0166 0.0183
Mannings n = 0.043 0.05 0.057
c d e

Depth	Perimeter	Area	Velocity	Flow	ELEV	
1.4	24.2	26.5	4.7	125	2769.5	c
combined Channels						
1.9	121.0	120.8	4.0	485	2770.0	d
2.1	198.0	161.8	3.1	502	2770.2	e
2.4	201.0	218.4	3.7	802	2770.5	e
2.6	205.0	252.4	4.1	1023	2770.7	e

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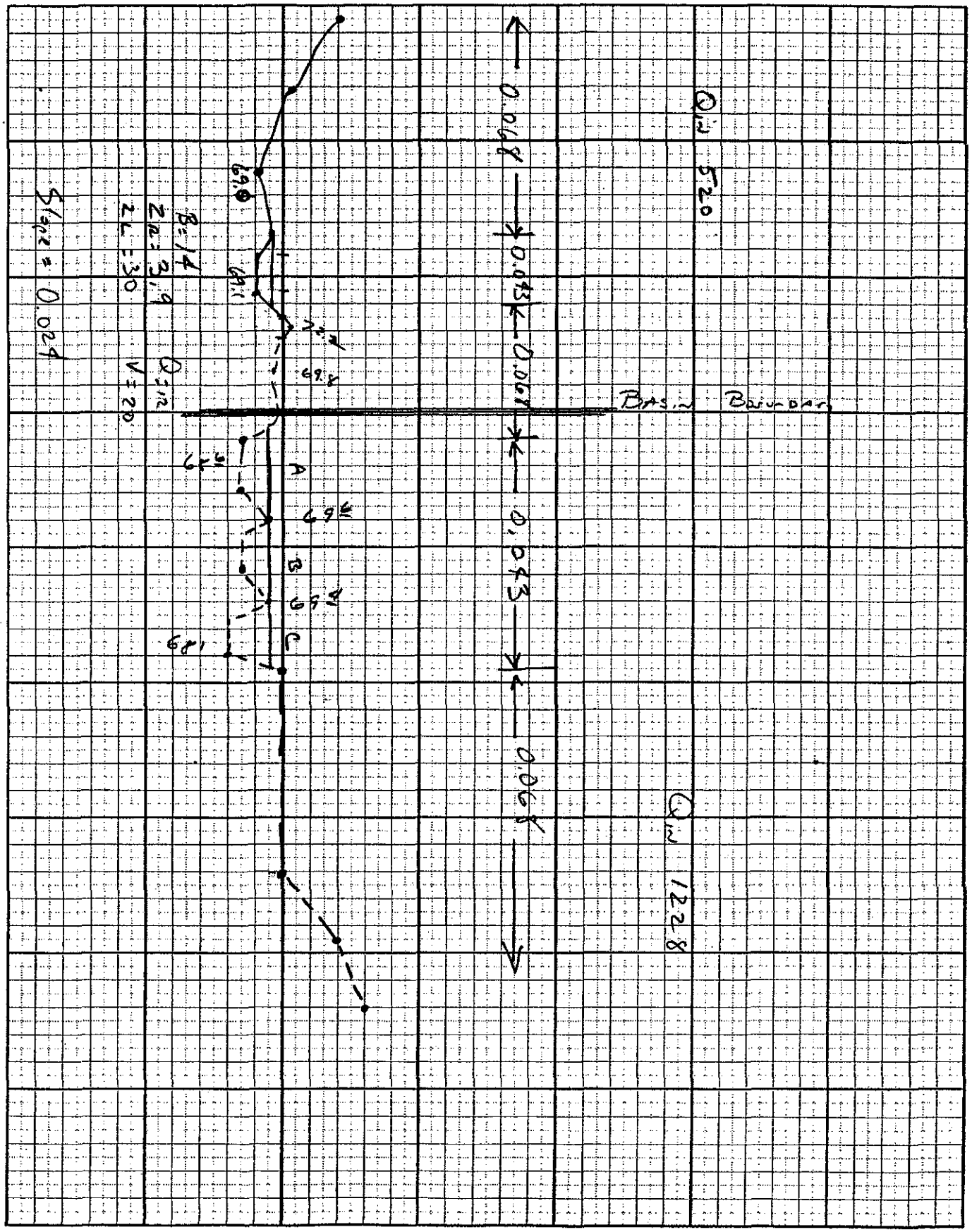
RAWHIDE SPLIT

PROJECT C-C SHEET #

MADE BY HEM DATE 4-24-02 JOB # 01-131.12

CHECKED BY PMM DATE 05/02/02 SECTION SHEET #

CALCULATIONS FOR



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PROJECT RAWHIDE SPLIT SHEET #
MADE BY HEM DATE JOB #
CHECKED BY PMM DATE SECTION SHEET #
CALCULATIONS FOR

SECTION C-C

* Run Analysis of Capacity To Check Flow potential to enter or leave Flow split From B B

* Check Divert to our Sway

Q IN = 520 cfs

Pilot channel is 14' wide 3.03' Deep 69.1 to 69.4
Q = 12 V = 2.0 A = 5.7 P = 24.2

— Run Analysis to 72.2 over flow elev

ΔP = 47
ΔA = 8.5 + 73

Q = 347 cfs
V = 4.2 fps

n N = 47 * 0.068 = 3.196
24.2 @ 0.043 = 1.041
4.237
71.2 0.060

* Check Rawhide Sub Channels A B C
Thru Elevate to 72.2

— Sub Channel A
B = 20
ZR = 10
ZL = 5
Slope = 0.0183%
N = 0.043
Base 68.6
Q = 90
V = 3.7

Channel B
B = 12
ZR = 2
ZL = 5
Slope = 0.0190%
N = 0.043
Base = 68.5
Q = 77
V = 3.8

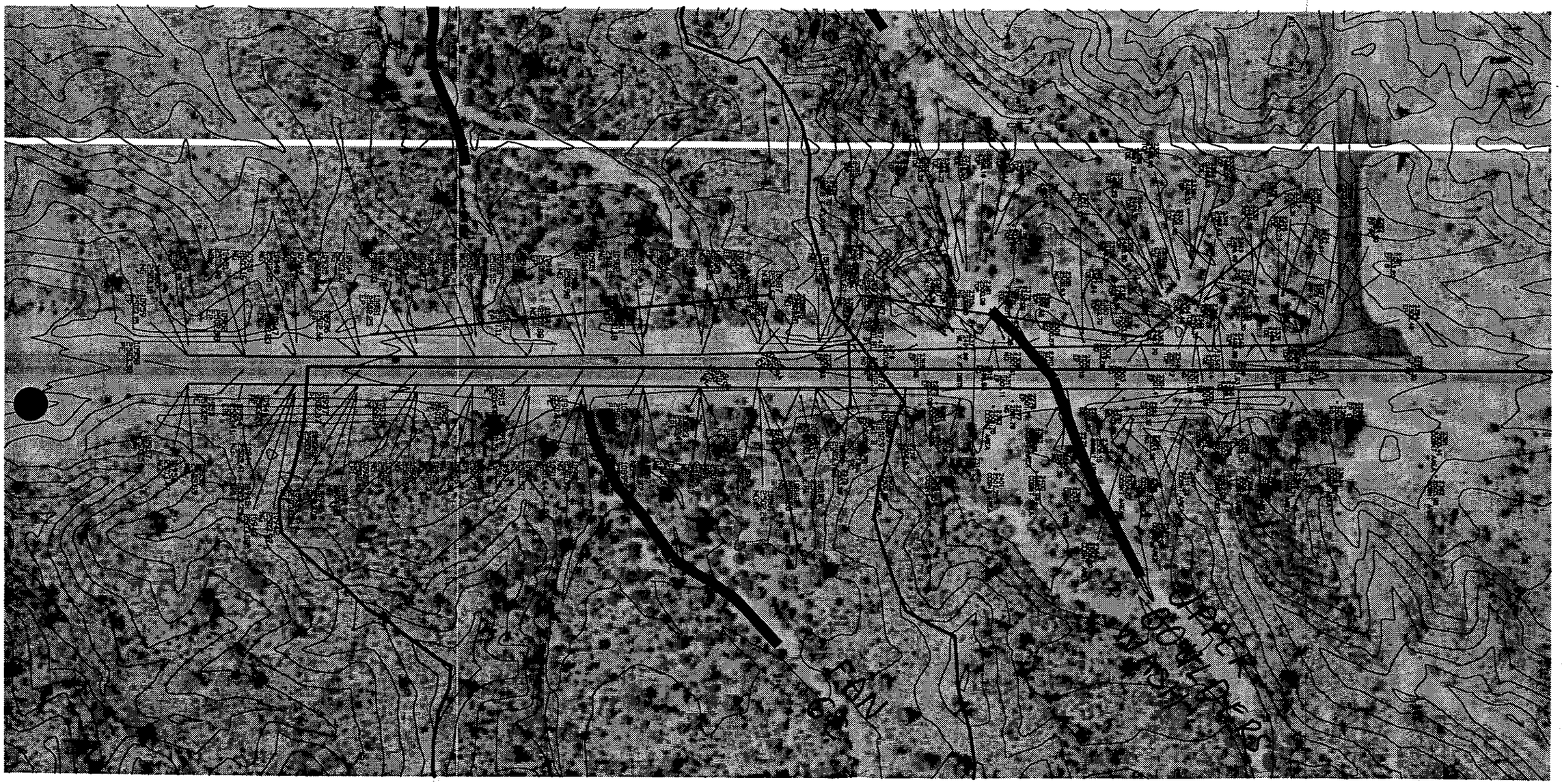
Channel C
B = 14
ZR = 3
ZL = 4
Slope = 0.0166
N = 0.043
Base 68.1
Q = 125
V = 4.7

TOTAL Flow = 292 cfs

PIMA ROAD SPLIT FLOW - FGC & UBW

See Sheet 10 and 13

1" = 100'



F6C - SOUTH FLOW SPLIT

TIME		F6C SOUTH FLOW ELEVATION	ROADWAY OVERTOPPING	UBW SIDE-WEIR TO NORTH	F6C TOTAL SOUTH FLOW
HR	MN	FT	CFS	CFS	CFS
03	55	2501.74	248	0	248
04	17	2502.35	969	0	969
04	22	2502.48	1167	7	1174
04	27	2502.56	1303	18	1321
04	32	2502.59	1341	28	1369
		2502.65	1480	37	1517

SIDE-WEIR CAPACITY

STANDARD FORMULA:

$$Q_w = C\,L\,H^{3/2}$$

Q_w Weir discharge in cubic feet per second

C Weir coefficient

L Length of weir crest in feet

H Heigth of water overtopping in feet

UBW		F6C		WEIR	WEIR	CREST	WEIR
FLOW	ELEV.	FLOW	ELEV.	ELEV.	COEFF.	LENGTH	DISCHARGE
CFS	FT	CFS	FT	FT		FT	CFS
643	2502.07	248	2501.74	N/A	3.0	28	N/A
1181	2502.37	969	2502.35	N/A	3.0	28	N/A
1017	2502.29	1174	2502.48	0.19	3.0	28	7
853	2502.2	1321	2502.56	0.36	3.0	28	18
702	2502.11	1369	2502.59	0.48	3.0	28	28
		1480	2502.65	0.58	3.0	28	37

Note: Side-weir overtopping occurs at an elevation of 2502.07ft.

PIMA ROAD FLOW SPLIT

TIME		UBW NORTH FLOW	F6C SOUTH FLOW	NOTES
HR	MN	CFS	CFS	
03	55	643	248	North Channel Flow Exceeds Side Weir Elevation.
03	56	695	271	Q = 650 CFS
03	57	747	296	
03	58	799	322	
03	59	853	351	
04	00	907	383	
04	01	964	416	
04	02	1021	452	
04	03	1074	489	
04	04	1124	527	
04	05	1168	567	
04	06	1207	605	South Channel Flow Exceeds Side Weir Elevation.
04	07	1231	642	Q = 580 CFS
04	08	1246	677	
04	09	1257	709	
04	10	1265	739	
04	11	1270	767	North Channel Peak Flow = 1270 CFS.
04	12	1269	795	
04	13	1262	825	
04	14	1249	857	
04	15	1231	892	
04	16	1208	929	
04	17	1181	969	North/South Equal Elevation Flow.
04	18	1150	1009	
04	19	1118	1051	
04	20	1085	1094	
04	21	1052	1135	
04	22	1017	1174	
04	23	982	1211	
04	24	949	1243	
04	25	916	1273	
04	26	885	1299	
04	27	853	1321	
04	28	822	1339	
04	29	792	1353	
04	30	761	1362	
04	31	731	1367	
04	32	702	1369	South Channel Peak Flow = 1369 CFS.
04	33	673	1367	
04	34	645	1362	North Channel Flow Drops Below Side Weir Elevation.
04	35	619	1355	
04	36	593	1345	
04	37	569	1333	

North Channel Exceeds Side Weir Elevation - 2502.07 ft

South Channel Exceeds Side Weir Elevation - 2502.07 ft.

North Contributes to South

South Contributes to North

TIME		UBW NORTH FLOW	F6C SOUTH FLOW			NOTES
HR	MN	CFS	CFS			
04	38	546	1319	South Channel Exceeds Side Weir Elevation - 2502.07 ft.	South Contributes to North	
04	39	523	1303			
04	40	500	1286			
04	41	478	1269			
04	42	456	1251			
04	43	436	1232			
04	44	416	1212			
04	45	398	1191			
04	46	380	1170			
04	47	364	1148			
04	48	348	1127			
04	49	335	1104			
04	50	322	1081			
04	51	309	1058			
04	52	296	1034			
04	53	284	1010			
04	54	272	987			
04	55	261	964			
04	56	250	941			
04	57	239	918			
04	58	229	895			
04	59	220	873			
05	00	211	852			
05	01	203	831			
05	02	195	811			
05	03	187	791			
05	04	180	772			
05	05	174	754			
05	06	168	736			
05	07	162	719			
05	08	158	702			
05	09	153	685			
05	10	148	668			
05	11	144	650			
05	12	139	632			
05	13	135	613			
05	14	130	594			
05	15	126	574			South Channel Flow Drops Below Side Weir Elevation.

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	Side Weir
Flow Element	Irregular Chann
Method	Manning's Forr
Solve For	Discharge

FROM SOUTH TO NORTH

CHECK OF CHANNEL METHOD VS. WEIR METHOD

Section Data	
Mannings Coefficie	0.017
Slope	0.005534 ft/ft
Water Surface Elev	2,503.36 ft
Elevation Range	01.95 to 2,504.00
Discharge	200.00 cfs

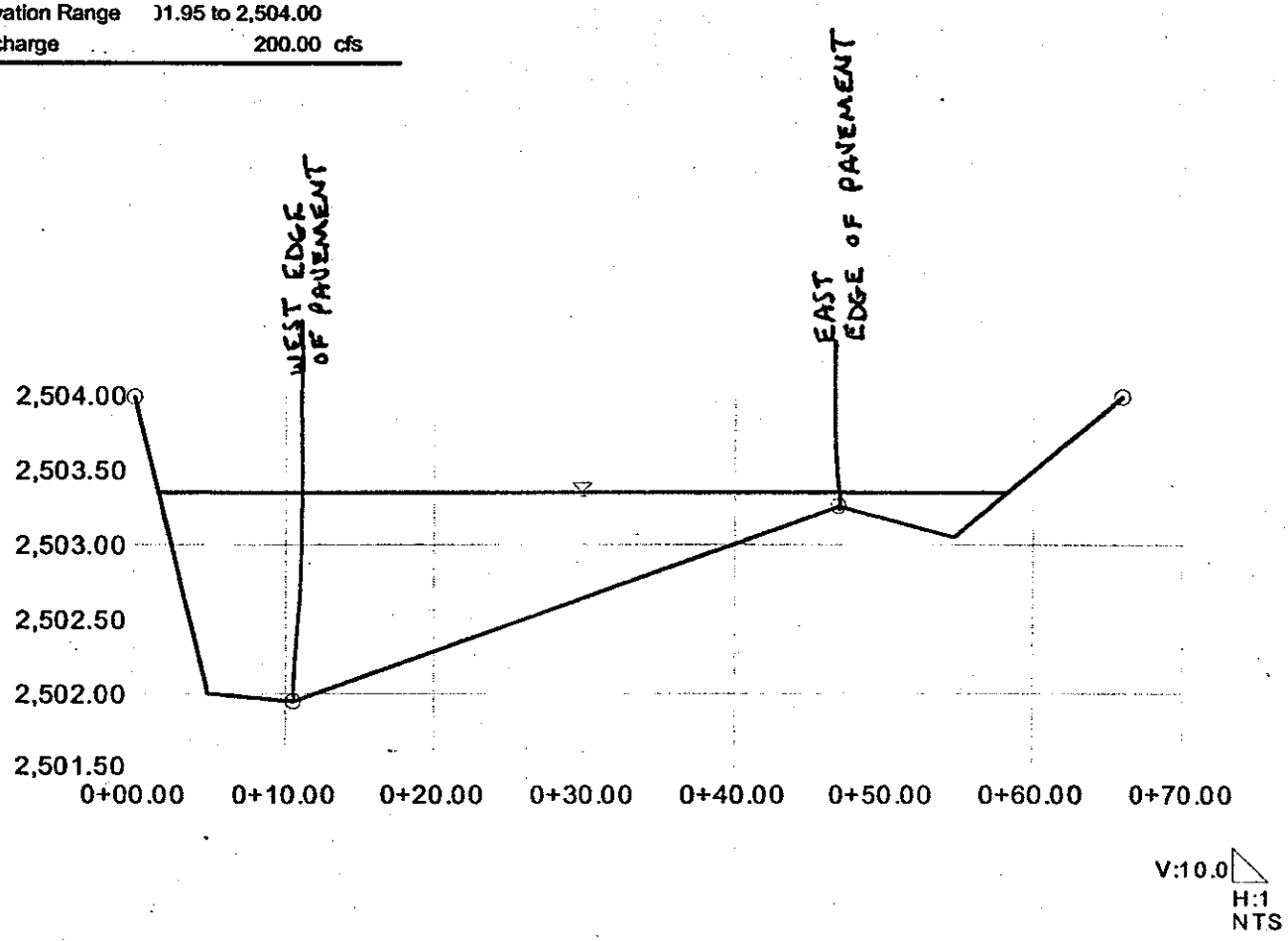


Table
Rating Table for Irregular Channel

FROM SOUTH TO NORTH
CHECK OF CHANNEL METHOD
VS. WEIR METHOD

Project Description	
Worksheet	Side Weir
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data	
Slope	0.005534 ft/ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Attribute	Minimum	Maximum	Increment
Water Surface Eleva	2,501.95	2,504.00	0.10

Water Surface Elevation (ft)	Discharge (cfs)	Velocity (ft/s)	Flow Area (ft²)	Wetted Perimeter (ft)	Top Width (ft)
2,501.95	N/A	N/A	N/A	N/A	N/A
2,502.05	0.36	0.63	0.6	8.61	8.60
2,502.15	1.79	1.13	1.6	11.66	11.63
2,502.25	4.54	1.57	2.9	14.71	14.65
2,502.35	8.88	1.97	4.5	17.75	17.68
2,502.45	15.05	2.34	6.4	20.80	20.70
2,502.55	23.29	2.69	8.7	23.85	23.73
2,502.65	33.83	3.03	11.2	26.89	26.75
2,502.75	46.88	3.35	14.0	29.94	29.78
2,502.85	62.65	3.66	17.1	32.98	32.80
2,502.95	81.35	3.96	20.6	36.03	35.83
2,503.05	103.16	4.25	24.3	39.08	38.85
2,503.15	128.34	4.50	28.5	46.67	46.42
2,503.25	157.42	4.69	33.6	54.77	54.50
2,503.35	196.96	5.03	39.2	56.90	56.60
2,503.45	241.34	5.38	44.9	58.37	58.04
2,503.55	289.72	5.71	50.8	59.83	59.48
2,503.65	341.99	6.02	56.8	61.29	60.92
2,503.75	398.07	6.32	63.0	62.76	62.36
2,503.85	457.89	6.61	69.3	64.22	63.80
2,503.95	521.40	6.89	75.7	65.69	65.24

RATING TABLE USED TO DETERMINE WATER SURFACE ELEVATION FOR A GIVEN FLOW RATE

Culvert Designer/Analyzer Report
South Roadway Overtopping - West EOP

Analysis Component			
Storm Event	Design	Discharge	1,369.00 cfs

Peak Discharge Method: User-Specified			
Design Discharge	1,369.00 cfs	Check Discharge	0.00 cfs

Tailwater properties: Irregular Channel			
Slope	0.033500 ft/ft	Mannings Coefficient	0.038

Roughness Segments

Start Station (ft)	End Station (ft)	Mannings Coefficient
0.00	387.70	0.038

Natural Channel Points

Station (ft)	Elevation (ft)
0.00	2,504.00
94.97	2,502.00
106.28	2,500.00
112.28	2,499.00
130.25	2,499.00
136.25	2,500.00
300.12	2,500.00
319.41	2,499.00
338.69	2,499.00
347.69	2,502.00
372.69	2,504.00
387.70	2,506.00

Tailwater conditions for Design Storm.			
Discharge	1,369.00 cfs	Depth	1.65 ft
Velocity	6.52 ft/s		

Name	Description	Discharge	HW Elev	Velocity
Weir	Roadway	1,369.00 cfs	2,502.59 ft	N/A

Culvert Designer/Analyzer Report
South Roadway Overtopping - West EOP

Component:Weir

Hydraulic Component(s): Roadway					
Discharge	1,369.00	cfs	Allowable HW Elevation	2,502.59	ft
Roadway Width	28.00	ft	Overtopping Coefficient	3.03	US
Low Point	2,501.11	ft	Headwater Elevation	2,502.59	ft
Discharge Coefficient (Cr)	3.03		Submergence Factor (Kt)	1.00	
Tailwater Elevation	2,500.65	ft			

Sta (ft)	Elev (ft)
0.00	2,503.15
54.09	2,502.98
102.73	2,502.83
163.99	2,502.66
218.73	2,502.25
275.05	2,501.27
325.97	2,501.11
380.27	2,501.24
437.22	2,501.18
492.64	2,501.47
549.92	2,501.94
576.99	2,502.07

Rating Table Report
Overtopping

Range Data:

	Minimum	Maximum	Increment
Discharge	0.00	2,000.00	10.00 cfs

Discharge (cfs)	HW Elev (ft)
0.00	2,499.00
10.00	2,501.27
20.00	2,501.31
30.00	2,501.34
40.00	2,501.37
50.00	2,501.40
60.00	2,501.43
70.00	2,501.45
80.00	2,501.47
90.00	2,501.49
100.00	2,501.51
110.00	2,501.53
120.00	2,501.55
130.00	2,501.56
140.00	2,501.58
150.00	2,501.60
160.00	2,501.61
170.00	2,501.63
180.00	2,501.64
190.00	2,501.66
200.00	2,501.67
210.00	2,501.68
220.00	2,501.70
230.00	2,501.71
240.00	2,501.72
250.00	2,501.74
260.00	2,501.75
270.00	2,501.76
280.00	2,501.77
290.00	2,501.79
300.00	2,501.80
310.00	2,501.81
320.00	2,501.82
330.00	2,501.83
340.00	2,501.84
350.00	2,501.85
360.00	2,501.86
370.00	2,501.87
380.00	2,501.89
390.00	2,501.90
400.00	2,501.91
410.00	2,501.92
420.00	2,501.93
430.00	2,501.94
440.00	2,501.95
450.00	2,501.96
460.00	2,501.96
470.00	2,501.97
480.00	2,501.98

Rating Table Report
Overtopping

Discharge (cfs)	HW Elev (ft)
490.00	2,501.99
500.00	2,502.00
510.00	2,502.01
520.00	2,502.02
530.00	2,502.03
540.00	2,502.04
550.00	2,502.04
560.00	2,502.05
570.00	2,502.06
580.00	2,502.07
590.00	2,502.08
600.00	2,502.09
610.00	2,502.09
620.00	2,502.10
630.00	2,502.11
640.00	2,502.12
650.00	2,502.13
660.00	2,502.13
670.00	2,502.14
680.00	2,502.15
690.00	2,502.16
700.00	2,502.17
710.00	2,502.17
720.00	2,502.18
730.00	2,502.19
740.00	2,502.20
750.00	2,502.20
760.00	2,502.21
770.00	2,502.22
780.00	2,502.22
790.00	2,502.23
800.00	2,502.24
810.00	2,502.25
820.00	2,502.25
830.00	2,502.26
840.00	2,502.27
850.00	2,502.27
860.00	2,502.28
870.00	2,502.29
880.00	2,502.29
890.00	2,502.30
900.00	2,502.31
910.00	2,502.31
920.00	2,502.32
930.00	2,502.33
940.00	2,502.33
950.00	2,502.34
960.00	2,502.35
970.00	2,502.35
980.00	2,502.36
990.00	2,502.37
1,000.00	2,502.37
1,010.00	2,502.38

Rating Table Report
Overtopping

Discharge (cfs)	HW Elev (ft)
1,020.00	2,502.38
1,030.00	2,502.39
1,040.00	2,502.40
1,050.00	2,502.40
1,060.00	2,502.41
1,070.00	2,502.42
1,080.00	2,502.42
1,090.00	2,502.43
1,100.00	2,502.43
1,110.00	2,502.44
1,120.00	2,502.45
1,130.00	2,502.45
1,140.00	2,502.46
1,150.00	2,502.46
1,160.00	2,502.47
1,170.00	2,502.48
1,180.00	2,502.48
1,190.00	2,502.49
1,200.00	2,502.49
1,210.00	2,502.50
1,220.00	2,502.51
1,230.00	2,502.51
1,240.00	2,502.52
1,250.00	2,502.52
1,260.00	2,502.53
1,270.00	2,502.53
1,280.00	2,502.54
1,290.00	2,502.55
1,300.00	2,502.55
1,310.00	2,502.56
1,320.00	2,502.56
1,330.00	2,502.57
1,340.00	2,502.57
1,350.00	2,502.58
1,360.00	2,502.58
1,370.00	2,502.59
1,380.00	2,502.60
1,390.00	2,502.60
1,400.00	2,502.61
1,410.00	2,502.61
1,420.00	2,502.62
1,430.00	2,502.62
1,440.00	2,502.63
1,450.00	2,502.63
1,460.00	2,502.64
1,470.00	2,502.64
1,480.00	2,502.65
1,490.00	2,502.65
1,500.00	2,502.66
1,510.00	2,502.67
1,520.00	2,502.67
1,530.00	2,502.68
1,540.00	2,502.68

Rating Table Report
Overtopping

Discharge (cfs)	HW Elev (ft)
1,550.00	2,502.69
1,560.00	2,502.69
1,570.00	2,502.70
1,580.00	2,502.70
1,590.00	2,502.71
1,600.00	2,502.71
1,610.00	2,502.72
1,620.00	2,502.72
1,630.00	2,502.73
1,640.00	2,502.73
1,650.00	2,502.74
1,660.00	2,502.74
1,670.00	2,502.75
1,680.00	2,502.75
1,690.00	2,502.76
1,700.00	2,502.76
1,710.00	2,502.77
1,720.00	2,502.77
1,730.00	2,502.78
1,740.00	2,502.78
1,750.00	2,502.79
1,760.00	2,502.79
1,770.00	2,502.80
1,780.00	2,502.80
1,790.00	2,502.80
1,800.00	2,502.81
1,810.00	2,502.81
1,820.00	2,502.82
1,830.00	2,502.82
1,840.00	2,502.83
1,850.00	2,502.83
1,860.00	2,502.84
1,870.00	2,502.84
1,880.00	2,502.85
1,890.00	2,502.85
1,900.00	2,502.86
1,910.00	2,502.86
1,920.00	2,502.87
1,930.00	2,502.87
1,940.00	2,502.87
1,950.00	2,502.88
1,960.00	2,502.88
1,970.00	2,502.89
1,980.00	2,502.89
1,990.00	2,502.90
2,000.00	2,502.90

1	0807	488	8.	*	1	1627	988	0.	*	2	0047	1488	0.	*	2	0907	1988	0.
	0808	489	8.	*	1	1628	989	0.	*	2	0048	1489	0.	*	2	0908	1989	0.
	0809	490	7.	*	1	1629	990	0.	*	2	0049	1490	0.	*	2	0909	1990	0.
1	0810	491	7.	*	1	1630	991	0.	*	2	0050	1491	0.	*	2	0910	1991	0.
1	0811	492	7.	*	1	1631	992	0.	*	2	0051	1492	0.	*	2	0911	1992	0.
1	0812	493	7.	*	1	1632	993	0.	*	2	0052	1493	0.	*	2	0912	1993	0.
1	0813	494	7.	*	1	1633	994	0.	*	2	0053	1494	0.	*	2	0913	1994	0.
1	0814	495	6.	*	1	1634	995	0.	*	2	0054	1495	0.	*	2	0914	1995	0.
1	0815	496	6.	*	1	1635	996	0.	*	2	0055	1496	0.	*	2	0915	1996	0.
1	0816	497	6.	*	1	1636	997	0.	*	2	0056	1497	0.	*	2	0916	1997	0.
1	0817	498	6.	*	1	1637	998	0.	*	2	0057	1498	0.	*	2	0917	1998	0.
1	0818	499	6.	*	1	1638	999	0.	*	2	0058	1499	0.	*	2	0918	1999	0.
1	0819	500	6.	*	1	1639	1000	0.	*	2	0059	1500	0.	*	2	0919	2000	0.
				*					*					*				

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	33.32-HR
+ (CFS)	(HR)					
		(CFS)				
+ 231.	4.77		86.	22.	16.	16.
		(INCHES)	0.676	0.704	0.704	0.704
		(AC-FT)	43.	44.	44.	44.

CUMULATIVE AREA = 1.18 SQ MI

South 550 Ac

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INTERPOLATED HYDROGRAPH AT CF6C2

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DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	*	1		0820	501	5.	*	1		1640	1001	0.	*	2		0100	1501	0.
1		0001	2	0.	*	1		0821	502	5.	*	1		1641	1002	0.	*	2		0101	1502	0.
1		0002	3	0.	*	1		0822	503	5.	*	1		1642	1003	0.	*	2		0102	1503	0.
1		0003	4	0.	*	1		0823	504	4.	*	1		1643	1004	0.	*	2		0103	1504	0.
		0004	5	0.	*	1		0824	505	4.	*	1		1644	1005	0.	*	2		0104	1505	0.
		0005	6	0.	*	1		0825	506	4.	*	1		1645	1006	0.	*	2		0105	1506	0.
1		0006	7	0.	*	1		0826	507	4.	*	1		1646	1007	0.	*	2		0106	1507	0.
1		0007	8	0.	*	1		0827	508	4.	*	1		1647	1008	0.	*	2		0107	1508	0.
1		0008	9	0.	*	1		0828	509	4.	*	1		1648	1009	0.	*	2		0108	1509	0.
1		0009	10	0.	*	1		0829	510	4.	*	1		1649	1010	0.	*	2		0109	1510	0.
1		0010	11	0.	*	1		0830	511	3.	*	1		1650	1011	0.	*	2		0110	1511	0.
1		0011	12	1.	*	1		0831	512	3.	*	1		1651	1012	0.	*	2		0111	1512	0.
1		0012	13	1.	*	1		0832	513	3.	*	1		1652	1013	0.	*	2		0112	1513	0.
1		0013	14	1.	*	1		0833	514	3.	*	1		1653	1014	0.	*	2		0113	1514	0.
1		0014	15	1.	*	1		0834	515	3.	*	1		1654	1015	0.	*	2		0114	1515	0.
1		0015	16	1.	*	1		0835	516	3.	*	1		1655	1016	0.	*	2		0115	1516	0.
1		0016	17	1.	*	1		0836	517	3.	*	1		1656	1017	0.	*	2		0116	1517	0.
1		0017	18	1.	*	1		0837	518	3.	*	1		1657	1018	0.	*	2		0117	1518	0.
1		0018	19	1.	*	1		0838	519	3.	*	1		1658	1019	0.	*	2		0118	1519	0.
1		0019	20	1.	*	1		0839	520	3.	*	1		1659	1020	0.	*	2		0119	1520	0.
1		0020	21	1.	*	1		0840	521	2.	*	1		1700	1021	0.	*	2		0120	1521	0.
1		0021	22	2.	*	1		0841	522	2.	*	1		1701	1022	0.	*	2		0121	1522	0.
1		0022	23	2.	*	1		0842	523	2.	*	1		1702	1023	0.	*	2		0122	1523	0.
1		0023	24	2.	*	1		0843	524	2.	*	1		1703	1024	0.	*	2		0123	1524	0.
1		0024	25	2.	*	1		0844	525	2.	*	1		1704	1025	0.	*	2		0124	1525	0.
1		0025	26	2.	*	1		0845	526	2.	*	1		1705	1026	0.	*	2		0125	1526	0.
1		0026	27	2.	*	1		0846	527	2.	*	1		1706	1027	0.	*	2		0126	1527	0.
1		0027	28	2.	*	1		0847	528	2.	*	1		1707	1028	0.	*	2		0127	1528	0.
1		0028	29	2.	*	1		0848	529	2.	*	1		1708	1029	0.	*	2		0128	1529	0.
1		0029	30	2.	*	1		0849	530	2.	*	1		1709	1030	0.	*	2		0129	1530	0.
1		0030	31	2.	*	1		0850	531	2.	*	1		1710	1031	0.	*	2		0130	1531	0.
1		0031	32	2.	*	1		0851	532	2.	*	1		1711	1032	0.	*	2		0131	1532	0.
1		0032	33	2.	*	1		0852	533	2.	*	1		1712	1033	0.	*	2		0132	1533	0.
1		0033	34	2.	*	1		0853	534	2.	*	1		1713	1034	0.	*	2		0133	1534	0.
1		0034	35	2.	*	1		0854	535	1.	*	1		1714	1035	0.	*	2		0134	1535	0.
1		0035	36	2.	*	1		0855	536	1.	*	1		1715	1036	0.	*	2		0135	1536	0.
1		0036	37	2.	*	1		0856	537	1.	*	1		1716	1037	0.	*	2		0136	1537	0.
1		0037	38	3.	*	1		0857	538	1.	*	1		1717	1038	0.	*	2		0137	1538	0.
1		0038	39	3.	*	1		0858	539	1.	*	1		1718	1039	0.	*	2		0138	1539	0.
1		0039	40	3.	*	1		0859	540	1.	*	1		1719	1040	0.	*	2		0139	1540	0.
1		0040	41	3.	*	1		0900	541	1.	*	1		1720	1041	0.	*	2		0140	1541	0.
1		0041	42	3.	*	1		0901	542	1.	*	1		1721	1042	0.	*	2		0141	1542	0.
		0042	43	3.	*	1		0902	543	1.	*	1		1722	1043	0.	*	2		0142	1543	0.
		0043	44	3.	*	1		0903	544	1.	*	1		1723	1044	0.	*	2		0143	1544	0.
1		0044	45	3.	*	1		0904	545	1.	*	1		1724	1045	0.	*	2		0144	1545	0.

1	0045	46	3.	*	1	0905	546	1.	*	1	1725	1046	0.	*	2	0145	1546	0.
1	0046	47	3.	*	1	0906	547	1.	*	1	1726	1047	0.	*	2	0146	1547	0.
1	0047	48	4.	*	1	0907	548	1.	*	1	1727	1048	0.	*	2	0147	1548	0.
1	0048	49	4.	*	1	0908	549	1.	*	1	1728	1049	0.	*	2	0148	1549	0.
1	0049	50	4.	*	1	0909	550	1.	*	1	1729	1050	0.	*	2	0149	1550	0.
1	0050	51	4.	*	1	0910	551	1.	*	1	1730	1051	0.	*	2	0150	1551	0.
1	0051	52	4.	*	1	0911	552	1.	*	1	1731	1052	0.	*	2	0151	1552	0.
1	0052	53	4.	*	1	0912	553	1.	*	1	1732	1053	0.	*	2	0152	1553	0.
1	0053	54	4.	*	1	0913	554	1.	*	1	1733	1054	0.	*	2	0153	1554	0.
1	0054	55	4.	*	1	0914	555	1.	*	1	1734	1055	0.	*	2	0154	1555	0.
1	0055	56	5.	*	1	0915	556	1.	*	1	1735	1056	0.	*	2	0155	1556	0.
1	0056	57	5.	*	1	0916	557	1.	*	1	1736	1057	0.	*	2	0156	1557	0.
1	0057	58	5.	*	1	0917	558	1.	*	1	1737	1058	0.	*	2	0157	1558	0.
1	0058	59	5.	*	1	0918	559	1.	*	1	1738	1059	0.	*	2	0158	1559	0.
1	0059	60	5.	*	1	0919	560	1.	*	1	1739	1060	0.	*	2	0159	1560	0.
1	0100	61	5.	*	1	0920	561	0.	*	1	1740	1061	0.	*	2	0200	1561	0.
1	0101	62	6.	*	1	0921	562	0.	*	1	1741	1062	0.	*	2	0201	1562	0.
1	0102	63	6.	*	1	0922	563	0.	*	1	1742	1063	0.	*	2	0202	1563	0.
1	0103	64	6.	*	1	0923	564	0.	*	1	1743	1064	0.	*	2	0203	1564	0.
1	0104	65	6.	*	1	0924	565	0.	*	1	1744	1065	0.	*	2	0204	1565	0.
1	0105	66	6.	*	1	0925	566	0.	*	1	1745	1066	0.	*	2	0205	1566	0.
1	0106	67	6.	*	1	0926	567	0.	*	1	1746	1067	0.	*	2	0206	1567	0.
1	0107	68	7.	*	1	0927	568	0.	*	1	1747	1068	0.	*	2	0207	1568	0.
1	0108	69	7.	*	1	0928	569	0.	*	1	1748	1069	0.	*	2	0208	1569**********	
1	0109	70	7.	*	1	0929	570	0.	*	1	1749	1070	0.	*	2	0209	1570**********	
1	0110	71	7.	*	1	0930	571	0.	*	1	1750	1071	0.	*	2	0210	1571**********	
1	0111	72	8.	*	1	0931	572	0.	*	1	1751	1072	0.	*	2	0211	1572**********	
1	0112	73	8.	*	1	0932	573	0.	*	1	1752	1073	0.	*	2	0212	1573**********	
1	0113	74	8.	*	1	0933	574	0.	*	1	1753	1074	0.	*	2	0213	1574**********	
1	0114	75	8.	*	1	0934	575	0.	*	1	1754	1075	0.	*	2	0214	1575**********	
1	0115	76	8.	*	1	0935	576	0.	*	1	1755	1076	0.	*	2	0215	1576**********	
1	0116	77	9.	*	1	0936	577	0.	*	1	1756	1077	0.	*	2	0216	1577**********	
1	0117	78	9.	*	1	0937	578	0.	*	1	1757	1078	0.	*	2	0217	1578**********	
1	0118	79	9.	*	1	0938	579	0.	*	1	1758	1079	0.	*	2	0218	1579**********	
1	0119	80	10.	*	1	0939	580	0.	*	1	1759	1080	0.	*	2	0219	1580**********	
1	0120	81	10.	*	1	0940	581	0.	*	1	1800	1081	0.	*	2	0220	1581**********	
1	0121	82	10.	*	1	0941	582	0.	*	1	1801	1082	0.	*	2	0221	1582**********	
1	0122	83	10.	*	1	0942	583	0.	*	1	1802	1083	0.	*	2	0222	1583**********	
1	0123	84	11.	*	1	0943	584	0.	*	1	1803	1084	0.	*	2	0223	1584**********	
1	0124	85	11.	*	1	0944	585	0.	*	1	1804	1085	0.	*	2	0224	1585**********	
1	0125	86	11.	*	1	0945	586	0.	*	1	1805	1086	0.	*	2	0225	1586**********	
1	0126	87	12.	*	1	0946	587	0.	*	1	1806	1087	0.	*	2	0226	1587**********	
1	0127	88	12.	*	1	0947	588	0.	*	1	1807	1088	0.	*	2	0227	1588**********	
1	0128	89	12.	*	1	0948	589	0.	*	1	1808	1089	0.	*	2	0228	1589**********	
1	0129	90	13.	*	1	0949	590	0.	*	1	1809	1090	0.	*	2	0229	1590**********	
1	0130	91	13.	*	1	0950	591	0.	*	1	1810	1091	0.	*	2	0230	1591**********	
1	0131	92	13.	*	1	0951	592	0.	*	1	1811	1092	0.	*	2	0231	1592**********	
1	0132	93	14.	*	1	0952	593	0.	*	1	1812	1093	0.	*	2	0232	1593**********	
1	0133	94	14.	*	1	0953	594	0.	*	1	1813	1094	0.	*	2	0233	1594**********	
1	0134	95	14.	*	1	0954	595	0.	*	1	1814	1095	0.	*	2	0234	1595**********	
1	0135	96	15.	*	1	0955	596	0.	*	1	1815	1096	0.	*	2	0235	1596**********	
1	0136	97	15.	*	1	0956	597	0.	*	1	1816	1097	0.	*	2	0236	1597**********	
1	0137	98	16.	*	1	0957	598	0.	*	1	1817	1098	0.	*	2	0237	1598**********	
1	0138	99	16.	*	1	0958	599	0.	*	1	1818	1099	0.	*	2	0238	1599**********	
1	0139	100	16.	*	1	0959	600	0.	*	1	1819	1100	0.	*	2	0239	1600**********	
1	0140	101	17.	*	1	1000	601	0.	*	1	1820	1101	0.	*	2	0240	1601**********	
1	0141	102	17.	*	1	1001	602	0.	*	1	1821	1102	0.	*	2	0241	1602**********	
1	0142	103	17.	*	1	1002	603	0.	*	1	1822	1103	0.	*	2	0242	1603**********	
1	0143	104	18.	*	1	1003	604	0.	*	1	1823	1104	0.	*	2	0243	1604**********	
1	0144	105	18.	*	1	1004	605	0.	*	1	1824	1105	0.	*	2	0244	1605**********	
1	0145	106	18.	*	1	1005	606	0.	*	1	1825	1106	0.	*	2	0245	1606**********	
1	0146	107	19.	*	1	1006	607	0.	*	1	1826	1107	0.	*	2	0246	1607**********	
1	0147	108	19.	*	1	1007	608	0.	*	1	1827	1108	0.	*	2	0247	1608**********	
1	0148	109	19.	*	1	1008	609	0.	*	1	1828	1109	0.	*	2	0248	1609**********	
1	0149	110	20.	*	1	1009	610	0.	*	1	1829	1110	0.	*	2	0249	1610**********	
1	0150	111	20.	*	1	1010	611	0.	*	1	1830	1111	0.	*	2	0250	1611**********	
1	0151	112	20.	*	1	1011	612	0.	*	1	1831	1112	0.	*	2	0251	1612**********	
1	0152	113	21.	*	1	1012	613	0.	*	1	1832	1113	0.	*	2	0252	1613**********	
1	0153	114	21.	*	1	1013	614	0.	*	1	1833	1114	0.	*	2	0253	1614**********	
1	0154	115	21.	*	1	1014	615	0.	*	1	1834	1115	0.	*	2	0254	1615**********	
1	0155	116	21.	*	1	1015	616	0.	*	1	1835	1116	0.	*	2	0255	1616**********	
1	0156	117	22.	*	1	1016	617	0.	*	1	1836	1117	0.	*	2	0256	1617**********	
1	0157	118	22.	*	1	1017	618	0.	*	1	1837	1118	0.	*	2	0257	1618**********	
1	0158	119	22.	*	1	1018	619	0.	*	1	1838	1119	0.	*	2	0258	1619**********	
1	0159	120	22.	*	1	1019	620	0.	*	1	1839	1120	0.	*	2	0259	1620**********	
1	0200	121	22.	*	1	1020	621	0.	*	1	1840	1121	0.	*	2	0300	1621**********	
1	0201	122	23.	*	1	1021	622	0.	*	1	1841	1122	0.	*	2	0301	1622**********	
1	0202	123	23.	*	1	1022	623	0.	*	1	1842	1123	0.	*	2	0302	1623**********	
1	0203	124	23.	*	1	1023	624	0.	*	1	1843	1124	0.	*	2	0303	1624**********	
1	0204	125	23.	*	1	1024	625	0.	*	1	1844	1125	0.	*	2	0304	1625**********	

1	0205	126	23.	*	1	1025	626	0.	*	1	1845	1126	0.	*	2	0305	1626**********
1	0206	127	23.	*	1	1026	627	0.	*	1	1846	1127	0.	*	2	0306	1627**********
1	0207	128	24.	*	1	1027	628	0.	*	1	1847	1128	0.	*	2	0307	1628**********
1	0208	129	24.	*	1	1028	629	0.	*	1	1848	1129	0.	*	2	0308	1629**********
1	0209	130	24.	*	1	1029	630	0.	*	1	1849	1130	0.	*	2	0309	1630**********
1	0210	131	24.	*	1	1030	631	0.	*	1	1850	1131	0.	*	2	0310	1631**********
1	0211	132	24.	*	1	1031	632	0.	*	1	1851	1132	0.	*	2	0311	1632**********
1	0212	133	24.	*	1	1032	633	0.	*	1	1852	1133	0.	*	2	0312	1633**********
1	0213	134	24.	*	1	1033	634	0.	*	1	1853	1134	0.	*	2	0313	1634**********
1	0214	135	24.	*	1	1034	635	0.	*	1	1854	1135	0.	*	2	0314	1635**********
1	0215	136	25.	*	1	1035	636	0.	*	1	1855	1136	0.	*	2	0315	1636**********
1	0216	137	25.	*	1	1036	637	0.	*	1	1856	1137	0.	*	2	0316	1637**********
1	0217	138	25.	*	1	1037	638	0.	*	1	1857	1138	0.	*	2	0317	1638**********
1	0218	139	25.	*	1	1038	639	0.	*	1	1858	1139	0.	*	2	0318	1639**********
1	0219	140	25.	*	1	1039	640	0.	*	1	1859	1140	0.	*	2	0319	1640**********
1	0220	141	25.	*	1	1040	641	0.	*	1	1900	1141	0.	*	2	0320	1641**********
1	0221	142	25.	*	1	1041	642	0.	*	1	1901	1142	0.	*	2	0321	1642**********
1	0222	143	25.	*	1	1042	643	0.	*	1	1902	1143	0.	*	2	0322	1643**********
1	0223	144	25.	*	1	1043	644	0.	*	1	1903	1144	0.	*	2	0323	1644**********
1	0224	145	25.	*	1	1044	645	0.	*	1	1904	1145	0.	*	2	0324	1645**********
1	0225	146	25.	*	1	1045	646	0.	*	1	1905	1146	0.	*	2	0325	1646**********
1	0226	147	26.	*	1	1046	647	0.	*	1	1906	1147	0.	*	2	0326	1647**********
1	0227	148	26.	*	1	1047	648	0.	*	1	1907	1148	0.	*	2	0327	1648**********
1	0228	149	26.	*	1	1048	649	0.	*	1	1908	1149	0.	*	2	0328	1649**********
1	0229	150	26.	*	1	1049	650	0.	*	1	1909	1150	0.	*	2	0329	1650**********
1	0230	151	26.	*	1	1050	651	0.	*	1	1910	1151	0.	*	2	0330	1651**********
1	0231	152	26.	*	1	1051	652	0.	*	1	1911	1152	0.	*	2	0331	1652**********
1	0232	153	26.	*	1	1052	653	0.	*	1	1912	1153	0.	*	2	0332	1653**********
1	0233	154	26.	*	1	1053	654	0.	*	1	1913	1154	0.	*	2	0333	1654**********
1	0234	155	26.	*	1	1054	655	0.	*	1	1914	1155	0.	*	2	0334	1655**********
1	0235	156	26.	*	1	1055	656	0.	*	1	1915	1156	0.	*	2	0335	1656**********
1	0236	157	26.	*	1	1056	657	0.	*	1	1916	1157	0.	*	2	0336	1657**********
1	0237	158	26.	*	1	1057	658	0.	*	1	1917	1158	0.	*	2	0337	1658**********
1	0238	159	26.	*	1	1058	659	0.	*	1	1918	1159	0.	*	2	0338	1659**********
1	0239	160	27.	*	1	1059	660	0.	*	1	1919	1160	0.	*	2	0339	1660**********
1	0240	161	27.	*	1	1100	661	0.	*	1	1920	1161	0.	*	2	0340	1661**********
1	0241	162	27.	*	1	1101	662	0.	*	1	1921	1162	0.	*	2	0341	1662**********
1	0242	163	27.	*	1	1102	663	0.	*	1	1922	1163	0.	*	2	0342	1663**********
1	0243	164	27.	*	1	1103	664	0.	*	1	1923	1164	0.	*	2	0343	1664**********
1	0244	165	27.	*	1	1104	665	0.	*	1	1924	1165	0.	*	2	0344	1665**********
1	0245	166	27.	*	1	1105	666	0.	*	1	1925	1166	0.	*	2	0345	1666**********
1	0246	167	27.	*	1	1106	667	0.	*	1	1926	1167	0.	*	2	0346	1667**********
1	0247	168	27.	*	1	1107	668	0.	*	1	1927	1168	0.	*	2	0347	1668**********
1	0248	169	27.	*	1	1108	669	0.	*	1	1928	1169	0.	*	2	0348	1669**********
1	0249	170	27.	*	1	1109	670	0.	*	1	1929	1170	0.	*	2	0349	1670**********
1	0250	171	27.	*	1	1110	671	0.	*	1	1930	1171	0.	*	2	0350	1671**********
1	0251	172	27.	*	1	1111	672	0.	*	1	1931	1172	0.	*	2	0351	1672**********
1	0252	173	27.	*	1	1112	673	0.	*	1	1932	1173	0.	*	2	0352	1673**********
1	0253	174	28.	*	1	1113	674	0.	*	1	1933	1174	0.	*	2	0353	1674**********
1	0254	175	28.	*	1	1114	675	0.	*	1	1934	1175	0.	*	2	0354	1675**********
1	0255	176	28.	*	1	1115	676	0.	*	1	1935	1176	0.	*	2	0355	1676**********
1	0256	177	28.	*	1	1116	677	0.	*	1	1936	1177	0.	*	2	0356	1677**********
1	0257	178	28.	*	1	1117	678	0.	*	1	1937	1178	0.	*	2	0357	1678**********
1	0258	179	29.	*	1	1118	679	0.	*	1	1938	1179	0.	*	2	0358	1679**********
1	0259	180	29.	*	1	1119	680	0.	*	1	1939	1180	0.	*	2	0359	1680**********
1	0300	181	29.	*	1	1120	681	0.	*	1	1940	1181	0.	*	2	0400	1681**********
1	0301	182	29.	*	1	1121	682	0.	*	1	1941	1182	0.	*	2	0401	1682**********
1	0302	183	29.	*	1	1122	683	0.	*	1	1942	1183	0.	*	2	0402	1683**********
1	0303	184	30.	*	1	1123	684	0.	*	1	1943	1184	0.	*	2	0403	1684**********
1	0304	185	30.	*	1	1124	685	0.	*	1	1944	1185	0.	*	2	0404	1685**********
1	0305	186	30.	*	1	1125	686	0.	*	1	1945	1186	0.	*	2	0405	1686**********
1	0306	187	30.	*	1	1126	687	0.	*	1	1946	1187	0.	*	2	0406	1687**********
1	0307	188	31.	*	1	1127	688	0.	*	1	1947	1188	0.	*	2	0407	1688**********
1	0308	189	31.	*	1	1128	689	0.	*	1	1948	1189	0.	*	2	0408	1689**********
1	0309	190	31.	*	1	1129	690	0.	*	1	1949	1190	0.	*	2	0409	1690**********
1	0310	191	32.	*	1	1130	691	0.	*	1	1950	1191	0.	*	2	0410	1691**********
1	0311	192	32.	*	1	1131	692	0.	*	1	1951	1192	0.	*	2	0411	1692**********
1	0312	193	32.	*	1	1132	693	0.	*	1	1952	1193	0.	*	2	0412	1693**********
1	0313	194	33.	*	1	1133	694	0.	*	1	1953	1194	0.	*	2	0413	1694**********
1	0314	195	33.	*	1	1134	695	0.	*	1	1954	1195	0.	*	2	0414	1695**********
1	0315	196	34.	*	1	1135	696	0.	*	1	1955	1196	0.	*	2	0415	1696**********
1	0316	197	34.	*	1	1136	697	0.	*	1	1956	1197	0.	*	2	0416	1697**********
1	0317	198	34.	*	1	1137	698	0.	*	1	1957	1198	0.	*	2	0417	1698**********
1	0318	199	35.	*	1	1138	699	0.	*	1	1958	1199	0.	*	2	0418	1699**********
1	0319	200	36.	*	1	1139	700	0.	*	1	1959	1200	0.	*	2	0419	1700**********
1	0320	201	36.	*	1	1140	701	0.	*	1	2000	1201	0.	*	2	0420	1701**********
1	0321	202	37.	*	1	1141	702	0.	*	1	2001	1202	0.	*	2	0421	1702**********
1	0322	203	38.	*	1	1142	703	0.	*	1	2002	1203	0.	*	2	0422	1703**********
1	0323	204	39.	*	1	1143	704	0.	*	1	2003	1204	0.	*	2	0423	1704**********
1	0324	205	41.	*	1	1144	705	0.	*	1	2004	1205	0.	*	2	0424	1705**********

1	0325	206	43.	*	1	1145	706	0.	*	1	2005	1206	0.	*	2	0425	1706**********	
1	0326	207	46.	*	1	1146	707	0.	*	1	2006	1207	0.	*	2	0426	1707**********	
1	0327	208	48.	*	1	1147	708	0.	*	1	2007	1208	0.	*	2	0427	1708**********	
1	0328	209	50.	*	1	1148	709	0.	*	1	2008	1209	0.	*	2	0428	1709**********	
1	0329	210	52.	*	1	1149	710	0.	*	1	2009	1210	0.	*	2	0429	1710**********	
1	0330	211	55.	*	1	1150	711	0.	*	1	2010	1211	0.	*	2	0430	1711**********	
1	0331	212	57.	*	1	1151	712	0.	*	1	2011	1212	0.	*	2	0431	1712**********	
1	0332	213	59.	*	1	1152	713	0.	*	1	2012	1213	0.	*	2	0432	1713**********	
1	0333	214	61.	*	1	1153	714	0.	*	1	2013	1214	0.	*	2	0433	1714**********	
1	0334	215	64.	*	1	1154	715	0.	*	1	2014	1215	0.	*	2	0434	1715**********	
1	0335	216	67.	*	1	1155	716	0.	*	1	2015	1216	0.	*	2	0435	1716**********	
1	0336	217	70.	*	1	1156	717	0.	*	1	2016	1217	0.	*	2	0436	1717**********	
1	0337	218	74.	*	1	1157	718	0.	*	1	2017	1218	0.	*	2	0437	1718**********	
1	0338	219	80.	*	1	1158	719	0.	*	1	2018	1219	0.	*	2	0438	1719**********	
1	0339	220	87.	*	1	1159	720	0.	*	1	2019	1220	0.	*	2	0439	1720**********	
1	0340	221	94.	*	1	1200	721	0.	*	1	2020	1221	0.	*	2	0440	1721**********	
1	0341	222	102.	*	1	1201	722	0.	*	1	2021	1222	0.	*	2	0441	1722**********	
1	0342	223	110.	*	1	1202	723	0.	*	1	2022	1223	0.	*	2	0442	1723**********	
1	0343	224	118.	*	1	1203	724	0.	*	1	2023	1224	0.	*	2	0443	1724**********	
1	0344	225	125.	*	1	1204	725	0.	*	1	2024	1225	0.	*	2	0444	1725**********	
1	0345	226	133.	*	1	1205	726	0.	*	1	2025	1226	0.	*	2	0445	1726**********	
1	0346	227	140.	*	1	1206	727	0.	*	1	2026	1227	0.	*	2	0446	1727**********	
1	0347	228	148.	*	1	1207	728	0.	*	1	2027	1228	0.	*	2	0447	1728**********	
1	0348	229	156.	*	1	1208	729	0.	*	1	2028	1229	0.	*	2	0448	1729**********	
1	0349	230	164.	*	1	1209	730	0.	*	1	2029	1230	0.	*	2	0449	1730**********	
1	0350	231	173.	*	1	1210	731	0.	*	1	2030	1231	0.	*	2	0450	1731**********	
1	0351	232	183.	*	1	1211	732	0.	*	1	2031	1232	0.	*	2	0451	1732**********	
1	0352	233	194.	*	1	1212	733	0.	*	1	2032	1233	0.	*	2	0452	1733**********	
1	0353	234	209.	*	1	1213	734	0.	*	1	2033	1234	0.	*	2	0453	1734**********	
1	0354	235	227.	*	1	1214	735	0.	*	1	2034	1235	0.	*	2	0454	1735**********	
1	0355	236	248.	*	1	1215	736	0.	*	1	2035	1236	0.	*	2	0455	1736**********	
1	0356	237	271.	*	1	1216	737	0.	*	1	2036	1237	0.	*	2	0456	1737**********	
1	0357	238	296.	*	1	1217	738	0.	*	1	2037	1238	0.	*	2	0457	1738**********	
1	0358	239	322.	*	1	1218	739	0.	*	1	2038	1239	0.	*	2	0458	1739**********	
1	0359	240	351.	*	1	1219	740	0.	*	1	2039	1240	0.	*	2	0459	1740**********	
1	0400	241	383.	*	1	1220	741	0.	*	1	2040	1241	0.	*	2	0500	1741	0.
1	0401	242	416.	*	1	1221	742	0.	*	1	2041	1242	0.	*	2	0501	1742	0.
1	0402	243	452.	*	1	1222	743	0.	*	1	2042	1243	0.	*	2	0502	1743	0.
1	0403	244	489.	*	1	1223	744	0.	*	1	2043	1244	0.	*	2	0503	1744	0.
1	0404	245	527.	*	1	1224	745	0.	*	1	2044	1245	0.	*	2	0504	1745	0.
1	0405	246	567.	*	1	1225	746	0.	*	1	2045	1246	0.	*	2	0505	1746	0.
1	0406	247	605.	*	1	1226	747	0.	*	1	2046	1247	0.	*	2	0506	1747	0.
1	0407	248	642.	*	1	1227	748	0.	*	1	2047	1248	0.	*	2	0507	1748	0.
1	0408	249	677.	*	1	1228	749	0.	*	1	2048	1249	0.	*	2	0508	1749	0.
1	0409	250	709.	*	1	1229	750	0.	*	1	2049	1250	0.	*	2	0509	1750	0.
1	0410	251	739.	*	1	1230	751	0.	*	1	2050	1251	0.	*	2	0510	1751	0.
1	0411	252	767.	*	1	1231	752	0.	*	1	2051	1252	0.	*	2	0511	1752	0.
1	0412	253	795.	*	1	1232	753	0.	*	1	2052	1253	0.	*	2	0512	1753	0.
1	0413	254	825.	*	1	1233	754	0.	*	1	2053	1254	0.	*	2	0513	1754	0.
1	0414	255	857.	*	1	1234	755	0.	*	1	2054	1255	0.	*	2	0514	1755	0.
1	0415	256	892.	*	1	1235	756	0.	*	1	2055	1256	0.	*	2	0515	1756	0.
1	0416	257	929.	*	1	1236	757	0.	*	1	2056	1257	0.	*	2	0516	1757	0.
1	0417	258	969.	*	1	1237	758	0.	*	1	2057	1258	0.	*	2	0517	1758	0.
1	0418	259	1009.	*	1	1238	759	0.	*	1	2058	1259	0.	*	2	0518	1759	0.
1	0419	260	1051.	*	1	1239	760	0.	*	1	2059	1260	0.	*	2	0519	1760	0.
1	0420	261	1094.	*	1	1240	761	0.	*	1	2100	1261	0.	*	2	0520	1761	0.
1	0421	262	1135.	*	1	1241	762	0.	*	1	2101	1262	0.	*	2	0521	1762	0.
1	0422	263	1174.	*	1	1242	763	0.	*	1	2102	1263	0.	*	2	0522	1763	0.
1	0423	264	1211.	*	1	1243	764	0.	*	1	2103	1264	0.	*	2	0523	1764	0.
1	0424	265	1243.	*	1	1244	765	0.	*	1	2104	1265	0.	*	2	0524	1765	0.
1	0425	266	1273.	*	1	1245	766	0.	*	1	2105	1266	0.	*	2	0525	1766	0.
1	0426	267	1299.	*	1	1246	767	0.	*	1	2106	1267	0.	*	2	0526	1767	0.
1	0427	268	1321.	*	1	1247	768	0.	*	1	2107	1268	0.	*	2	0527	1768	0.
1	0428	269	1339.	*	1	1248	769	0.	*	1	2108	1269	0.	*	2	0528	1769	0.
1	0429	270	1353.	*	1	1249	770	0.	*	1	2109	1270	0.	*	2	0529	1770	0.
1	0430	271	1362.	*	1	1250	771	0.	*	1	2110	1271	0.	*	2	0530	1771	0.
1	0431	272	1367.	*	1	1251	772	0.	*	1	2111	1272	0.	*	2	0531	1772	0.
1	0432	273	1369.	*	1	1252	773	0.	*	1	2112	1273	0.	*	2	0532	1773	0.
1	0433	274	1367.	*	1	1253	774	0.	*	1	2113	1274	0.	*	2	0533	1774	0.
1	0434	275	1362.	*	1	1254	775	0.	*	1	2114	1275	0.	*	2	0534	1775	0.
1	0435	276	1355.	*	1	1255	776	0.	*	1	2115	1276	0.	*	2	0535	1776	0.
1	0436	277	1345.	*	1	1256	777	0.	*	1	2116	1277	0.	*	2	0536	1777	0.
1	0437	278	1333.	*	1	1257	778	0.	*	1	2117	1278	0.	*	2	0537	1778	0.
1	0438	279	1319.	*	1	1258	779	0.	*	1	2118	1279	0.	*	2	0538	1779	0.
1	0439	280	1303.	*	1	1259	780	0.	*	1	2119	1280	0.	*	2	0539	1780	0.
1	0440	281	1286.	*	1	1300	781	0.	*	1	2120	1281	0.	*	2	0540	1781	0.
1	0441	282	1269.	*	1	1301	782	0.	*	1	2121	1282	0.	*	2	0541	1782	0.
1	0442	283	1251.	*	1	1302	783	0.	*	1	2122	1283	0.	*	2	0542	1783	0.
1	0443	284	1232.	*	1	1303	784	0.	*	1	2123	1284	0.	*	2	0543	1784	0.
1	0444	285	1212.	*	1	1304	785	0.	*	1	2124	1285	0.	*	2	0544	1785	0.

1	0445	286	1191.	*	1	1305	786	0.	*	1	2125	1286	0.	*	2	0545	1786	0.
1	0446	287	1170.	*	1	1306	787	0.	*	1	2126	1287	0.	*	2	0546	1787	0.
1	0447	288	1148.	*	1	1307	788	0.	*	1	2127	1288	0.	*	2	0547	1788	0.
1	0448	289	1127.	*	1	1308	789	0.	*	1	2128	1289	0.	*	2	0548	1789	0.
1	0449	290	1104.	*	1	1309	790	0.	*	1	2129	1290	0.	*	2	0549	1790	0.
1	0450	291	1081.	*	1	1310	791	0.	*	1	2130	1291	0.	*	2	0550	1791	0.
1	0451	292	1058.	*	1	1311	792	0.	*	1	2131	1292	0.	*	2	0551	1792	0.
1	0452	293	1034.	*	1	1312	793	0.	*	1	2132	1293	0.	*	2	0552	1793	0.
1	0453	294	1010.	*	1	1313	794	0.	*	1	2133	1294	0.	*	2	0553	1794	0.
1	0454	295	987.	*	1	1314	795	0.	*	1	2134	1295	0.	*	2	0554	1795	0.
1	0455	296	964.	*	1	1315	796	0.	*	1	2135	1296	0.	*	2	0555	1796	0.
1	0456	297	941.	*	1	1316	797	0.	*	1	2136	1297	0.	*	2	0556	1797	0.
1	0457	298	918.	*	1	1317	798	0.	*	1	2137	1298	0.	*	2	0557	1798	0.
1	0458	299	895.	*	1	1318	799	0.	*	1	2138	1299	0.	*	2	0558	1799	0.
1	0459	300	873.	*	1	1319	800	0.	*	1	2139	1300	0.	*	2	0559	1800	0.
1	0500	301	852.	*	1	1320	801	0.	*	1	2140	1301	0.	*	2	0600	1801	0.
1	0501	302	831.	*	1	1321	802	0.	*	1	2141	1302	0.	*	2	0601	1802	0.
1	0502	303	811.	*	1	1322	803	0.	*	1	2142	1303	0.	*	2	0602	1803	0.
1	0503	304	791.	*	1	1323	804	0.	*	1	2143	1304	0.	*	2	0603	1804	0.
1	0504	305	772.	*	1	1324	805	0.	*	1	2144	1305	0.	*	2	0604	1805	0.
1	0505	306	754.	*	1	1325	806	0.	*	1	2145	1306	0.	*	2	0605	1806	0.
1	0506	307	736.	*	1	1326	807	0.	*	1	2146	1307	0.	*	2	0606	1807	0.
1	0507	308	719.	*	1	1327	808	0.	*	1	2147	1308	0.	*	2	0607	1808	0.
1	0508	309	702.	*	1	1328	809	0.	*	1	2148	1309	0.	*	2	0608	1809	0.
1	0509	310	685.	*	1	1329	810	0.	*	1	2149	1310	0.	*	2	0609	1810	0.
1	0510	311	668.	*	1	1330	811	0.	*	1	2150	1311	0.	*	2	0610	1811	0.
1	0511	312	650.	*	1	1331	812	0.	*	1	2151	1312	0.	*	2	0611	1812	0.
1	0512	313	632.	*	1	1332	813	0.	*	1	2152	1313	0.	*	2	0612	1813	0.
1	0513	314	613.	*	1	1333	814	0.	*	1	2153	1314	0.	*	2	0613	1814	0.
1	0514	315	594.	*	1	1334	815	0.	*	1	2154	1315	0.	*	2	0614	1815	0.
1	0515	316	574.	*	1	1335	816	0.	*	1	2155	1316	0.	*	2	0615	1816	0.
1	0516	317	554.	*	1	1336	817	0.	*	1	2156	1317	0.	*	2	0616	1817	0.
1	0517	318	534.	*	1	1337	818	0.	*	1	2157	1318	0.	*	2	0617	1818	0.
1	0518	319	513.	*	1	1338	819	0.	*	1	2158	1319	0.	*	2	0618	1819	0.
1	0519	320	494.	*	1	1339	820	0.	*	1	2159	1320	0.	*	2	0619	1820	0.
1	0520	321	476.	*	1	1340	821	0.	*	1	2200	1321	0.	*	2	0620	1821	0.
1	0521	322	459.	*	1	1341	822	0.	*	1	2201	1322	0.	*	2	0621	1822	0.
1	0522	323	443.	*	1	1342	823	0.	*	1	2202	1323	0.	*	2	0622	1823	0.
1	0523	324	427.	*	1	1343	824	0.	*	1	2203	1324	0.	*	2	0623	1824	0.
1	0524	325	412.	*	1	1344	825	0.	*	1	2204	1325	0.	*	2	0624	1825	0.
1	0525	326	397.	*	1	1345	826	0.	*	1	2205	1326	0.	*	2	0625	1826	0.
1	0526	327	383.	*	1	1346	827	0.	*	1	2206	1327	0.	*	2	0626	1827	0.
1	0527	328	370.	*	1	1347	828	0.	*	1	2207	1328	0.	*	2	0627	1828	0.
1	0528	329	358.	*	1	1348	829	0.	*	1	2208	1329	0.	*	2	0628	1829	0.
1	0529	330	346.	*	1	1349	830	0.	*	1	2209	1330	0.	*	2	0629	1830	0.
1	0530	331	335.	*	1	1350	831	0.	*	1	2210	1331	0.	*	2	0630	1831	0.
1	0531	332	324.	*	1	1351	832	0.	*	1	2211	1332	0.	*	2	0631	1832	0.
1	0532	333	314.	*	1	1352	833	0.	*	1	2212	1333	0.	*	2	0632	1833	0.
1	0533	334	305.	*	1	1353	834	0.	*	1	2213	1334	0.	*	2	0633	1834	0.
1	0534	335	296.	*	1	1354	835	0.	*	1	2214	1335	0.	*	2	0634	1835	0.
1	0535	336	288.	*	1	1355	836	0.	*	1	2215	1336	0.	*	2	0635	1836	0.
1	0536	337	281.	*	1	1356	837	0.	*	1	2216	1337	0.	*	2	0636	1837	0.
1	0537	338	274.	*	1	1357	838	0.	*	1	2217	1338	0.	*	2	0637	1838	0.
1	0538	339	267.	*	1	1358	839	0.	*	1	2218	1339	0.	*	2	0638	1839	0.
1	0539	340	261.	*	1	1359	840	0.	*	1	2219	1340	0.	*	2	0639	1840	0.
1	0540	341	254.	*	1	1400	841	0.	*	1	2220	1341	0.	*	2	0640	1841	0.
1	0541	342	248.	*	1	1401	842	0.	*	1	2221	1342	0.	*	2	0641	1842	0.
1	0542	343	242.	*	1	1402	843	0.	*	1	2222	1343	0.	*	2	0642	1843	0.
1	0543	344	235.	*	1	1403	844	0.	*	1	2223	1344	0.	*	2	0643	1844	0.
1	0544	345	229.	*	1	1404	845	0.	*	1	2224	1345	0.	*	2	0644	1845	0.
1	0545	346	223.	*	1	1405	846	0.	*	1	2225	1346	0.	*	2	0645	1846	0.
1	0546	347	218.	*	1	1406	847	0.	*	1	2226	1347	0.	*	2	0646	1847	0.
1	0547	348	212.	*	1	1407	848	0.	*	1	2227	1348	0.	*	2	0647	1848	0.
1	0548	349	207.	*	1	1408	849	0.	*	1	2228	1349	0.	*	2	0648	1849	0.
1	0549	350	202.	*	1	1409	850	0.	*	1	2229	1350	0.	*	2	0649	1850	0.
1	0550	351	197.	*	1	1410	851	0.	*	1	2230	1351	0.	*	2	0650	1851	0.
1	0551	352	192.	*	1	1411	852	0.	*	1	2231	1352	0.	*	2	0651	1852	0.
1	0552	353	187.	*	1	1412	853	0.	*	1	2232	1353	0.	*	2	0652	1853	0.
1	0553	354	182.	*	1	1413	854	0.	*	1	2233	1354	0.	*	2	0653	1854	0.
1	0554	355	178.	*	1	1414	855	0.	*	1	2234	1355	0.	*	2	0654	1855	0.
1	0555	356	173.	*	1	1415	856	0.	*	1	2235	1356	0.	*	2	0655	1856	0.
1	0556	357	169.	*	1	1416	857	0.	*	1	2236	1357	0.	*	2	0656	1857	0.
1	0557	358	165.	*	1	1417	858	0.	*	1	2237	1358	0.	*	2	0657	1858	0.
1	0558	359	160.	*	1	1418	859	0.	*	1	2238	1359	0.	*	2	0658	1859	0.
1	0559	360	156.	*	1	1419	860	0.	*	1	2239	1360	0.	*	2	0659	1860	0.
1	0600	361	153.	*	1	1420	861	0.	*	1	2240	1361	0.	*	2	0700	1861	0.
1	0601	362	149.	*	1	1421	862	0.	*	1	2241	1362	0.	*	2	0701	1862	0.
1	0602	363	146.	*	1	1422	863	0.	*	1	2242	1363	0.	*	2	0702	1863	0.
1	0603	364	142.	*	1	1423	864	0.	*	1	2243	1364	0.	*	2	0703	1864	0.
1	0604	365	139.	*	1	1424	865	0.	*	1	2244	1365	0.	*	2	0704	1865	0.

1	0605	366	137.	*	1	1425	866	0.	*	1	2245	1366	0.	*	2	0705	1866	0.
1	0606	367	134.	*	1	1426	867	0.	*	1	2246	1367	0.	*	2	0706	1867	0.
	0607	368	132.	*	1	1427	868	0.	*	1	2247	1368	0.	*	2	0707	1868	0.
1	0608	369	130.	*	1	1428	869	0.	*	1	2248	1369	0.	*	2	0708	1869	0.
1	0609	370	127.	*	1	1429	870	0.	*	1	2249	1370	0.	*	2	0709	1870	0.
1	0610	371	125.	*	1	1430	871	0.	*	1	2250	1371	0.	*	2	0710	1871	0.
1	0611	372	122.	*	1	1431	872	0.	*	1	2251	1372	0.	*	2	0711	1872	0.
1	0612	373	120.	*	1	1432	873	0.	*	1	2252	1373	0.	*	2	0712	1873	0.
1	0613	374	118.	*	1	1433	874	0.	*	1	2253	1374	0.	*	2	0713	1874	0.
1	0614	375	115.	*	1	1434	875	0.	*	1	2254	1375	0.	*	2	0714	1875	0.
1	0615	376	113.	*	1	1435	876	0.	*	1	2255	1376	0.	*	2	0715	1876	0.
1	0616	377	110.	*	1	1436	877	0.	*	1	2256	1377	0.	*	2	0716	1877	0.
1	0617	378	108.	*	1	1437	878	0.	*	1	2257	1378	0.	*	2	0717	1878	0.
1	0618	379	106.	*	1	1438	879	0.	*	1	2258	1379	0.	*	2	0718	1879	0.
1	0619	380	103.	*	1	1439	880	0.	*	1	2259	1380	0.	*	2	0719	1880	0.
1	0620	381	101.	*	1	1440	881	0.	*	1	2300	1381	0.	*	2	0720	1881	0.
1	0621	382	99.	*	1	1441	882	0.	*	1	2301	1382	0.	*	2	0721	1882	0.
1	0622	383	97.	*	1	1442	883	0.	*	1	2302	1383	0.	*	2	0722	1883	0.
1	0623	384	95.	*	1	1443	884	0.	*	1	2303	1384	0.	*	2	0723	1884	0.
1	0624	385	92.	*	1	1444	885	0.	*	1	2304	1385	0.	*	2	0724	1885	0.
1	0625	386	90.	*	1	1445	886	0.	*	1	2305	1386	0.	*	2	0725	1886	0.
1	0626	387	88.	*	1	1446	887	0.	*	1	2306	1387	0.	*	2	0726	1887	0.
1	0627	388	86.	*	1	1447	888	0.	*	1	2307	1388	0.	*	2	0727	1888	0.
1	0628	389	84.	*	1	1448	889	0.	*	1	2308	1389	0.	*	2	0728	1889	0.
1	0629	390	82.	*	1	1449	890	0.	*	1	2309	1390	0.	*	2	0729	1890	0.
1	0630	391	80.	*	1	1450	891	0.	*	1	2310	1391	0.	*	2	0730	1891	0.
1	0631	392	78.	*	1	1451	892	0.	*	1	2311	1392	0.	*	2	0731	1892	0.
1	0632	393	76.	*	1	1452	893	0.	*	1	2312	1393	0.	*	2	0732	1893	0.
1	0633	394	74.	*	1	1453	894	0.	*	1	2313	1394	0.	*	2	0733	1894	0.
1	0634	395	72.	*	1	1454	895	0.	*	1	2314	1395	0.	*	2	0734	1895	0.
1	0635	396	71.	*	1	1455	896	0.	*	1	2315	1396	0.	*	2	0735	1896	0.
1	0636	397	69.	*	1	1456	897	0.	*	1	2316	1397	0.	*	2	0736	1897	0.
1	0637	398	67.	*	1	1457	898	0.	*	1	2317	1398	0.	*	2	0737	1898	0.
1	0638	399	65.	*	1	1458	899	0.	*	1	2318	1399	0.	*	2	0738	1899	0.
1	0639	400	64.	*	1	1459	900	0.	*	1	2319	1400	0.	*	2	0739	1900	0.
1	0640	401	62.	*	1	1500	901	0.	*	1	2320	1401	0.	*	2	0740	1901	0.
1	0641	402	60.	*	1	1501	902	0.	*	1	2321	1402	0.	*	2	0741	1902	0.
1	0642	403	59.	*	1	1502	903	0.	*	1	2322	1403	0.	*	2	0742	1903	0.
1	0643	404	57.	*	1	1503	904	0.	*	1	2323	1404	0.	*	2	0743	1904	0.
1	0644	405	56.	*	1	1504	905	0.	*	1	2324	1405	0.	*	2	0744	1905	0.
	0645	406	54.	*	1	1505	906	0.	*	1	2325	1406	0.	*	2	0745	1906	0.
1	0646	407	53.	*	1	1506	907	0.	*	1	2326	1407	0.	*	2	0746	1907	0.
1	0647	408	52.	*	1	1507	908	0.	*	1	2327	1408	0.	*	2	0747	1908	0.
1	0648	409	50.	*	1	1508	909	0.	*	1	2328	1409	0.	*	2	0748	1909	0.
1	0649	410	49.	*	1	1509	910	0.	*	1	2329	1410	0.	*	2	0749	1910	0.
1	0650	411	48.	*	1	1510	911	0.	*	1	2330	1411	0.	*	2	0750	1911	0.
1	0651	412	46.	*	1	1511	912	0.	*	1	2331	1412	0.	*	2	0751	1912	0.
1	0652	413	45.	*	1	1512	913	0.	*	1	2332	1413	0.	*	2	0752	1913	0.
1	0653	414	44.	*	1	1513	914	0.	*	1	2333	1414	0.	*	2	0753	1914	0.
1	0654	415	43.	*	1	1514	915	0.	*	1	2334	1415	0.	*	2	0754	1915	0.
1	0655	416	42.	*	1	1515	916	0.	*	1	2335	1416	0.	*	2	0755	1916	0.
1	0656	417	42.	*	1	1516	917	0.	*	1	2336	1417	0.	*	2	0756	1917	0.
1	0657	418	41.	*	1	1517	918	0.	*	1	2337	1418	0.	*	2	0757	1918	0.
1	0658	419	40.	*	1	1518	919	0.	*	1	2338	1419	0.	*	2	0758	1919	0.
1	0659	420	40.	*	1	1519	920	0.	*	1	2339	1420	0.	*	2	0759	1920	0.
1	0700	421	39.	*	1	1520	921	0.	*	1	2340	1421	0.	*	2	0800	1921	0.
1	0701	422	39.	*	1	1521	922	0.	*	1	2341	1422	0.	*	2	0801	1922	0.
1	0702	423	38.	*	1	1522	923	0.	*	1	2342	1423	0.	*	2	0802	1923	0.
1	0703	424	38.	*	1	1523	924	0.	*	1	2343	1424	0.	*	2	0803	1924	0.
1	0704	425	37.	*	1	1524	925	0.	*	1	2344	1425	0.	*	2	0804	1925	0.
1	0705	426	36.	*	1	1525	926	0.	*	1	2345	1426	0.	*	2	0805	1926	0.
1	0706	427	36.	*	1	1526	927	0.	*	1	2346	1427	0.	*	2	0806	1927	0.
1	0707	428	35.	*	1	1527	928	0.	*	1	2347	1428	0.	*	2	0807	1928	0.
1	0708	429	34.	*	1	1528	929	0.	*	1	2348	1429	0.	*	2	0808	1929	0.
1	0709	430	34.	*	1	1529	930	0.	*	1	2349	1430	0.	*	2	0809	1930	0.
1	0710	431	33.	*	1	1530	931	0.	*	1	2350	1431	0.	*	2	0810	1931	0.
1	0711	432	32.	*	1	1531	932	0.	*	1	2351	1432	0.	*	2	0811	1932	0.
1	0712	433	32.	*	1	1532	933	0.	*	1	2352	1433	0.	*	2	0812	1933	0.
1	0713	434	31.	*	1	1533	934	0.	*	1	2353	1434	0.	*	2	0813	1934	0.
1	0714	435	30.	*	1	1534	935	0.	*	1	2354	1435	0.	*	2	0814	1935	0.
1	0715	436	29.	*	1	1535	936	0.	*	1	2355	1436	0.	*	2	0815	1936	0.
1	0716	437	28.	*	1	1536	937	0.	*	1	2356	1437	0.	*	2	0816	1937	0.
1	0717	438	28.	*	1	1537	938	0.	*	1	2357	1438	0.	*	2	0817	1938	0.
1	0718	439	27.	*	1	1538	939	0.	*	1	2358	1439	0.	*	2	0818	1939	0.
1	0719	440	26.	*	1	1539	940	0.	*	1	2359	1440	0.	*	2	0819	1940	0.
1	0720	441	25.	*	1	1540	941	0.	*	2	0000	1441	0.	*	2	0820	1941	0.
1	0721	442	25.	*	1	1541	942	0.	*	2	0001	1442	0.	*	2	0821	1942	0.
	0722	443	24.	*	1	1542	943	0.	*	2	0002	1443	0.	*	2	0822	1943	0.
	0723	444	23.	*	1	1543	944	0.	*	2	0003	1444	0.	*	2	0823	1944	0.
1	0724	445	23.	*	1	1544	945	0.	*	2	0004	1445	0.	*	2	0824	1945	0.

1	0725	446	22.	*	1	1545	946	0.	*	2	0005	1446	0.	*	2	0825	1946	0.
1	0726	447	21.	*	1	1546	947	0.	*	2	0006	1447	0.	*	2	0826	1947	0.
1	0727	448	21.	*	1	1547	948	0.	*	2	0007	1448	0.	*	2	0827	1948	0.
1	0728	449	20.	*	1	1548	949	0.	*	2	0008	1449	0.	*	2	0828	1949	0.
1	0729	450	20.	*	1	1549	950	0.	*	2	0009	1450	0.	*	2	0829	1950	0.
1	0730	451	19.	*	1	1550	951	0.	*	2	0010	1451	0.	*	2	0830	1951	0.
1	0731	452	19.	*	1	1551	952	0.	*	2	0011	1452	0.	*	2	0831	1952	0.
1	0732	453	18.	*	1	1552	953	0.	*	2	0012	1453	0.	*	2	0832	1953	0.
1	0733	454	18.	*	1	1553	954	0.	*	2	0013	1454	0.	*	2	0833	1954	0.
1	0734	455	17.	*	1	1554	955	0.	*	2	0014	1455	0.	*	2	0834	1955	0.
1	0735	456	17.	*	1	1555	956	0.	*	2	0015	1456	0.	*	2	0835	1956	0.
1	0736	457	16.	*	1	1556	957	0.	*	2	0016	1457	0.	*	2	0836	1957	0.
1	0737	458	16.	*	1	1557	958	0.	*	2	0017	1458	0.	*	2	0837	1958	0.
1	0738	459	15.	*	1	1558	959	0.	*	2	0018	1459	0.	*	2	0838	1959	0.
1	0739	460	15.	*	1	1559	960	0.	*	2	0019	1460	0.	*	2	0839	1960	0.
1	0740	461	15.	*	1	1600	961	0.	*	2	0020	1461	0.	*	2	0840	1961	0.
1	0741	462	14.	*	1	1601	962	0.	*	2	0021	1462	0.	*	2	0841	1962	0.
1	0742	463	14.	*	1	1602	963	0.	*	2	0022	1463	0.	*	2	0842	1963	0.
1	0743	464	13.	*	1	1603	964	0.	*	2	0023	1464	0.	*	2	0843	1964	0.
1	0744	465	13.	*	1	1604	965	0.	*	2	0024	1465	0.	*	2	0844	1965	0.
1	0745	466	13.	*	1	1605	966	0.	*	2	0025	1466	0.	*	2	0845	1966	0.
1	0746	467	12.	*	1	1606	967	0.	*	2	0026	1467	0.	*	2	0846	1967	0.
1	0747	468	12.	*	1	1607	968	0.	*	2	0027	1468	0.	*	2	0847	1968	0.
1	0748	469	12.	*	1	1608	969	0.	*	2	0028	1469	0.	*	2	0848	1969	0.
1	0749	470	12.	*	1	1609	970	0.	*	2	0029	1470	0.	*	2	0849	1970	0.
1	0750	471	11.	*	1	1610	971	0.	*	2	0030	1471	0.	*	2	0850	1971	0.
1	0751	472	11.	*	1	1611	972	0.	*	2	0031	1472	0.	*	2	0851	1972	0.
1	0752	473	11.	*	1	1612	973	0.	*	2	0032	1473	0.	*	2	0852	1973	0.
1	0753	474	10.	*	1	1613	974	0.	*	2	0033	1474	0.	*	2	0853	1974	0.
1	0754	475	10.	*	1	1614	975	0.	*	2	0034	1475	0.	*	2	0854	1975	0.
1	0755	476	10.	*	1	1615	976	0.	*	2	0035	1476	0.	*	2	0855	1976	0.
1	0756	477	10.	*	1	1616	977	0.	*	2	0036	1477	0.	*	2	0856	1977	0.
1	0757	478	9.	*	1	1617	978	0.	*	2	0037	1478	0.	*	2	0857	1978	0.
1	0758	479	9.	*	1	1618	979	0.	*	2	0038	1479	0.	*	2	0858	1979	0.
1	0759	480	9.	*	1	1619	980	0.	*	2	0039	1480	0.	*	2	0859	1980	0.
1	0800	481	9.	*	1	1620	981	0.	*	2	0040	1481	0.	*	2	0900	1981	0.
1	0801	482	8.	*	1	1621	982	0.	*	2	0041	1482	0.	*	2	0901	1982	0.
1	0802	483	8.	*	1	1622	983	0.	*	2	0042	1483	0.	*	2	0902	1983	0.
1	0803	484	8.	*	1	1623	984	0.	*	2	0043	1484	0.	*	2	0903	1984	0.
1	0804	485	8.	*	1	1624	985	0.	*	2	0044	1485	0.	*	2	0904	1985	0.
1	0805	486	8.	*	1	1625	986	0.	*	2	0045	1486	0.	*	2	0905	1986	0.
1	0806	487	7.	*	1	1626	987	0.	*	2	0046	1487	0.	*	2	0906	1987	0.
1	0807	488	7.	*	1	1627	988	0.	*	2	0047	1488	0.	*	2	0907	1988	0.
1	0808	489	7.	*	1	1628	989	0.	*	2	0048	1489	0.	*	2	0908	1989	0.
1	0809	490	7.	*	1	1629	990	0.	*	2	0049	1490	0.	*	2	0909	1990	0.
1	0810	491	7.	*	1	1630	991	0.	*	2	0050	1491	0.	*	2	0910	1991	0.
1	0811	492	6.	*	1	1631	992	0.	*	2	0051	1492	0.	*	2	0911	1992	0.
1	0812	493	6.	*	1	1632	993	0.	*	2	0052	1493	0.	*	2	0912	1993	0.
1	0813	494	6.	*	1	1633	994	0.	*	2	0053	1494	0.	*	2	0913	1994	0.
1	0814	495	6.	*	1	1634	995	0.	*	2	0054	1495	0.	*	2	0914	1995	0.
1	0815	496	6.	*	1	1635	996	0.	*	2	0055	1496	0.	*	2	0915	1996	0.
1	0816	497	5.	*	1	1636	997	0.	*	2	0056	1497	0.	*	2	0916	1997	0.
1	0817	498	5.	*	1	1637	998	0.	*	2	0057	1498	0.	*	2	0917	1998	0.
1	0818	499	5.	*	1	1638	999	0.	*	2	0058	1499	0.	*	2	0918	1999	0.
1	0819	500	5.	*	1	1639	1000	0.	*	2	0059	1500	0.	*	2	0919	2000	0.
				*					*					*				

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	33.32-HR
+ (CFS)	(HR)					
		(CFS)				
+ 1369.	4.53		278.	70.	51.	51.
		(INCHES)	2.184	2.207	2.207	2.207
		(AC-FT)	138.	139.	139.	139.

CUMULATIVE AREA = 1.18 SQ MI

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KK            *   DCF6C2   *
              *            *
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TOTAL FLOW=DI

RATING TABLE USED TO DETERMINE WATER SURFACE ELEVATION FOR A GIVEN FLOW RATE.

Culvert Designer/Analyzer Report
North Roadway Overtopping - West EOP

Analysis Component			
Storm Event	Design	Discharge	1,263.00 cfs

Peak Discharge Method: User-Specified			
Design Discharge	1,263.00 cfs	Check Discharge	0.00 cfs

Tailwater properties: Irregular Channel			
Slope	0.028200 ft/ft	Mannings Coefficient	0.038

Roughness Segments

Start Station (ft)	End Station (ft)	Mannings Coefficient
0.00	428.60	0.038

Natural Channel Points

Station (ft)	Elevation (ft)
0.00	2,506.00
14.86	2,504.00
22.77	2,502.00
29.01	2,500.00
58.37	2,500.00
85.06	2,500.00
92.68	2,498.00
130.02	2,498.00
153.21	2,500.00
172.42	2,502.00
225.92	2,502.00
243.41	2,504.00
275.10	2,504.00
288.77	2,504.00
301.46	2,502.00
317.49	2,500.00
385.26	2,500.00
411.33	2,502.00
428.60	2,504.00

Tailwater conditions for Design Storm.			
Discharge	1,263.00 cfs	Depth	2.47 ft
Velocity	6.36 ft/s		

Name	Description	Discharge	HW Elev	Velocity
Weir	Roadway	1,263.00 cfs	2,502.41 ft	N/A

Culvert Designer/Analyzer Report
North Roadway Overtopping - West EOP

Component:Weir

Hydraulic Component(s): Roadway					
Discharge	1,263.00	cfs	Allowable HW Elevation	2,502.41	ft
Roadway Width	28.00	ft	Overtopping Coefficient	3.03	US
Low Point	2,501.11	ft	Headwater Elevation	2,502.41	ft
Discharge Coefficient (Cr)	3.03		Submergence Factor (Kt)	1.00	
Tailwater Elevation	2,500.47	ft			

Sta (ft)	Elev (ft)
576.99	2,502.07
640.02	2,501.93
701.47	2,501.59
757.97	2,501.26
777.46	2,501.11
804.00	2,501.17
862.77	2,501.15
917.24	2,501.21
971.37	2,501.61
1,024.56	2,501.93
1,079.33	2,502.30
1,101.50	2,502.49
1,138.76	2,503.20

Rating Table Report
Overtopping

Range Data:

	Minimum	Maximum	Increment	
Discharge	0.00	2,000.00	10.00	cfs

Discharge (cfs)	HW Elev (ft)
0.00	2,498.00
10.00	2,501.24
20.00	2,501.29
30.00	2,501.32
40.00	2,501.36
50.00	2,501.38
60.00	2,501.41
70.00	2,501.43
80.00	2,501.46
90.00	2,501.48
100.00	2,501.50
110.00	2,501.52
120.00	2,501.53
130.00	2,501.55
140.00	2,501.57
150.00	2,501.58
160.00	2,501.60
170.00	2,501.61
180.00	2,501.63
190.00	2,501.64
200.00	2,501.66
210.00	2,501.67
220.00	2,501.68
230.00	2,501.69
240.00	2,501.71
250.00	2,501.72
260.00	2,501.73
270.00	2,501.74
280.00	2,501.75
290.00	2,501.76
300.00	2,501.78
310.00	2,501.79
320.00	2,501.80
330.00	2,501.81
340.00	2,501.82
350.00	2,501.83
360.00	2,501.84
370.00	2,501.85
380.00	2,501.86
390.00	2,501.87
400.00	2,501.88
410.00	2,501.88
420.00	2,501.89
430.00	2,501.90
440.00	2,501.91
450.00	2,501.92
460.00	2,501.93
470.00	2,501.94
480.00	2,501.94

Rating Table Report
Overtopping

Discharge (cfs)	HW Elev (ft)
490.00	2,501.95
500.00	2,501.96
510.00	2,501.97
520.00	2,501.98
530.00	2,501.98
540.00	2,501.99
550.00	2,502.00
560.00	2,502.01
570.00	2,502.01
580.00	2,502.02
590.00	2,502.03
600.00	2,502.04
610.00	2,502.04
620.00	2,502.05
630.00	2,502.06
640.00	2,502.06
650.00	2,502.07
660.00	2,502.08
670.00	2,502.08
680.00	2,502.09
690.00	2,502.10
700.00	2,502.10
710.00	2,502.11
720.00	2,502.12
730.00	2,502.12
740.00	2,502.13
750.00	2,502.14
760.00	2,502.14
770.00	2,502.15
780.00	2,502.15
790.00	2,502.16
800.00	2,502.17
810.00	2,502.17
820.00	2,502.18
830.00	2,502.18
840.00	2,502.19
850.00	2,502.20
860.00	2,502.20
870.00	2,502.21
880.00	2,502.21
890.00	2,502.22
900.00	2,502.22
910.00	2,502.23
920.00	2,502.24
930.00	2,502.24
940.00	2,502.25
950.00	2,502.25
960.00	2,502.26
970.00	2,502.26
980.00	2,502.27
990.00	2,502.27
1,000.00	2,502.28
1,010.00	2,502.28

Rating Table Report
Overtopping

Discharge (cfs)	HW Elev (ft)
1,020.00	2,502.29
1,030.00	2,502.30
1,040.00	2,502.30
1,050.00	2,502.31
1,060.00	2,502.31
1,070.00	2,502.32
1,080.00	2,502.32
1,090.00	2,502.33
1,100.00	2,502.33
1,110.00	2,502.34
1,120.00	2,502.34
1,130.00	2,502.35
1,140.00	2,502.35
1,150.00	2,502.36
1,160.00	2,502.36
1,170.00	2,502.37
1,180.00	2,502.37
1,190.00	2,502.38
1,200.00	2,502.38
1,210.00	2,502.39
1,220.00	2,502.39
1,230.00	2,502.40
1,240.00	2,502.40
1,250.00	2,502.41
1,260.00	2,502.41
1,270.00	2,502.42
1,280.00	2,502.42
1,290.00	2,502.43
1,300.00	2,502.43
1,310.00	2,502.44
1,320.00	2,502.44
1,330.00	2,502.44
1,340.00	2,502.45
1,350.00	2,502.45
1,360.00	2,502.46
1,370.00	2,502.46
1,380.00	2,502.47
1,390.00	2,502.47
1,400.00	2,502.48
1,410.00	2,502.48
1,420.00	2,502.49
1,430.00	2,502.49
1,440.00	2,502.50
1,450.00	2,502.50
1,460.00	2,502.50
1,470.00	2,502.51
1,480.00	2,502.51
1,490.00	2,502.52
1,500.00	2,502.52
1,510.00	2,502.53
1,520.00	2,502.53
1,530.00	2,502.54
1,540.00	2,502.54

Rating Table Report
Overtopping

Discharge (cfs)	HW Elev (ft)
1,550.00	2,502.54
1,560.00	2,502.55
1,570.00	2,502.55
1,580.00	2,502.56
1,590.00	2,502.56
1,600.00	2,502.57
1,610.00	2,502.57
1,620.00	2,502.57
1,630.00	2,502.58
1,640.00	2,502.58
1,650.00	2,502.59
1,660.00	2,502.59
1,670.00	2,502.60
1,680.00	2,502.60
1,690.00	2,502.60
1,700.00	2,502.61
1,710.00	2,502.61
1,720.00	2,502.62
1,730.00	2,502.62
1,740.00	2,502.63
1,750.00	2,502.63
1,760.00	2,502.63
1,770.00	2,502.64
1,780.00	2,502.64
1,790.00	2,502.65
1,800.00	2,502.65
1,810.00	2,502.65
1,820.00	2,502.66
1,830.00	2,502.66
1,840.00	2,502.67
1,850.00	2,502.67
1,860.00	2,502.68
1,870.00	2,502.68
1,880.00	2,502.68
1,890.00	2,502.69
1,900.00	2,502.69
1,910.00	2,502.70
1,920.00	2,502.70
1,930.00	2,502.70
1,940.00	2,502.71
1,950.00	2,502.71
1,960.00	2,502.72
1,970.00	2,502.72
1,980.00	2,502.72
1,990.00	2,502.73
2,000.00	2,502.73

1	0735	456	2.	*	1	1555	956	0.	*	2	0015	1456	0.	*	2	0835	1956	0.
1	0736	457	2.	*	1	1556	957	0.	*	2	0016	1457	0.	*	2	0836	1957	0.
1	0737	458	1.	*	1	1557	958	0.	*	2	0017	1458	0.	*	2	0837	1958	0.
1	0738	459	1.	*	1	1558	959	0.	*	2	0018	1459	0.	*	2	0838	1959	0.
1	0739	460	1.	*	1	1559	960	0.	*	2	0019	1460	0.	*	2	0839	1960	0.
1	0740	461	1.	*	1	1600	961	0.	*	2	0020	1461	0.	*	2	0840	1961	0.
1	0741	462	1.	*	1	1601	962	0.	*	2	0021	1462	0.	*	2	0841	1962	0.
1	0742	463	1.	*	1	1602	963	0.	*	2	0022	1463	0.	*	2	0842	1963	0.
1	0743	464	1.	*	1	1603	964	0.	*	2	0023	1464	0.	*	2	0843	1964	0.
1	0744	465	1.	*	1	1604	965	0.	*	2	0024	1465	0.	*	2	0844	1965	0.
1	0745	466	1.	*	1	1605	966	0.	*	2	0025	1466	0.	*	2	0845	1966	0.
1	0746	467	1.	*	1	1606	967	0.	*	2	0026	1467	0.	*	2	0846	1967	0.
1	0747	468	1.	*	1	1607	968	0.	*	2	0027	1468	0.	*	2	0847	1968	0.
1	0748	469	1.	*	1	1608	969	0.	*	2	0028	1469	0.	*	2	0848	1969	0.
1	0749	470	1.	*	1	1609	970	0.	*	2	0029	1470	0.	*	2	0849	1970	0.
1	0750	471	1.	*	1	1610	971	0.	*	2	0030	1471	0.	*	2	0850	1971	0.
1	0751	472	1.	*	1	1611	972	0.	*	2	0031	1472	0.	*	2	0851	1972	0.
1	0752	473	1.	*	1	1612	973	0.	*	2	0032	1473	0.	*	2	0852	1973	0.
1	0753	474	1.	*	1	1613	974	0.	*	2	0033	1474	0.	*	2	0853	1974	0.
1	0754	475	1.	*	1	1614	975	0.	*	2	0034	1475	0.	*	2	0854	1975	0.
1	0755	476	0.	*	1	1615	976	0.	*	2	0035	1476	0.	*	2	0855	1976	0.
1	0756	477	0.	*	1	1616	977	0.	*	2	0036	1477	0.	*	2	0856	1977	0.
1	0757	478	0.	*	1	1617	978	0.	*	2	0037	1478	0.	*	2	0857	1978	0.
1	0758	479	0.	*	1	1618	979	0.	*	2	0038	1479	0.	*	2	0858	1979	0.
1	0759	480	0.	*	1	1619	980	0.	*	2	0039	1480	0.	*	2	0859	1980	0.
1	0800	481	0.	*	1	1620	981	0.	*	2	0040	1481	0.	*	2	0900	1981	0.
1	0801	482	0.	*	1	1621	982	0.	*	2	0041	1482	0.	*	2	0901	1982	0.
1	0802	483	0.	*	1	1622	983	0.	*	2	0042	1483	0.	*	2	0902	1983	0.
1	0803	484	0.	*	1	1623	984	0.	*	2	0043	1484	0.	*	2	0903	1984	0.
1	0804	485	0.	*	1	1624	985	0.	*	2	0044	1485	0.	*	2	0904	1985	0.
1	0805	486	0.	*	1	1625	986	0.	*	2	0045	1486	0.	*	2	0905	1986	0.
1	0806	487	0.	*	1	1626	987	0.	*	2	0046	1487	0.	*	2	0906	1987	0.
1	0807	488	0.	*	1	1627	988	0.	*	2	0047	1488	0.	*	2	0907	1988	0.
1	0808	489	0.	*	1	1628	989	0.	*	2	0048	1489	0.	*	2	0908	1989	0.
1	0809	490	0.	*	1	1629	990	0.	*	2	0049	1490	0.	*	2	0909	1990	0.
1	0810	491	0.	*	1	1630	991	0.	*	2	0050	1491	0.	*	2	0910	1991	0.
1	0811	492	0.	*	1	1631	992	0.	*	2	0051	1492	0.	*	2	0911	1992	0.
1	0812	493	0.	*	1	1632	993	0.	*	2	0052	1493	0.	*	2	0912	1993	0.
1	0813	494	0.	*	1	1633	994	0.	*	2	0053	1494	0.	*	2	0913	1994	0.
1	0814	495	0.	*	1	1634	995	0.	*	2	0054	1495	0.	*	2	0914	1995	0.
1	0815	496	0.	*	1	1635	996	0.	*	2	0055	1496	0.	*	2	0915	1996	0.
1	0816	497	0.	*	1	1636	997	0.	*	2	0056	1497	0.	*	2	0916	1997	0.
1	0817	498	0.	*	1	1637	998	0.	*	2	0057	1498	0.	*	2	0917	1998	0.
1	0818	499	0.	*	1	1638	999	0.	*	2	0058	1499	0.	*	2	0918	1999	0.
1	0819	500	0.	*	1	1639	1000	0.	*	2	0059	1500	0.	*	2	0919	2000	0.

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	33.32-HR
+ (CFS)	(HR)					
+ 206.	4.33	(CFS)	72.	19.	13.	13.
		(INCHES)	0.957	0.987	0.987	0.987
		(AC-FT)	36.	37.	37.	37.

CUMULATIVE AREA = 0.70 SQ MI

North 650 Bmx

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INTERPOLATED HYDROGRAPH AT CUB09

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DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	*	1		0820	501	0.	*	1		1640	1001	0.	*	2		0100	1501	0.
1		0001	2	0.	*	1		0821	502	0.	*	1		1641	1002	0.	*	2		0101	1502	0.
1		0002	3	0.	*	1		0822	503	0.	*	1		1642	1003	0.	*	2		0102	1503	0.
1		0003	4	0.	*	1		0823	504	0.	*	1		1643	1004	0.	*	2		0103	1504	0.
1		0004	5	0.	*	1		0824	505	0.	*	1		1644	1005	0.	*	2		0104	1505	0.
1		0005	6	0.	*	1		0825	506	0.	*	1		1645	1006	0.	*	2		0105	1506	0.
1		0006	7	1.	*	1		0826	507	0.	*	1		1646	1007	0.	*	2		0106	1507	0.
1		0007	8	1.	*	1		0827	508	0.	*	1		1647	1008	0.	*	2		0107	1508	0.
1		0008	9	1.	*	1		0828	509	0.	*	1		1648	1009	0.	*	2		0108	1509	0.
1		0009	10	2.	*	1		0829	510	0.	*	1		1649	1010	0.	*	2		0109	1510	0.
		0010	11	2.	*	1		0830	511	0.	*	1		1650	1011	0.	*	2		0110	1511	0.
		0011	12	3.	*	1		0831	512	0.	*	1		1651	1012	0.	*	2		0111	1512	0.
1		0012	13	3.	*	1		0832	513	0.	*	1		1652	1013	0.	*	2		0112	1513	0.

1	0013	14	4.	*	1	0833	514	0.	*	1	1653	1014	0.	*	2	0113	1514	0.
1	0014	15	4.	*	1	0834	515	0.	*	1	1654	1015	0.	*	2	0114	1515	0.
1	0015	16	4.	*	1	0835	516	0.	*	1	1655	1016	0.	*	2	0115	1516	0.
1	0016	17	5.	*	1	0836	517	0.	*	1	1656	1017	0.	*	2	0116	1517	0.
1	0017	18	5.	*	1	0837	518	0.	*	1	1657	1018	0.	*	2	0117	1518	0.
1	0018	19	5.	*	1	0838	519	0.	*	1	1658	1019	0.	*	2	0118	1519	0.
1	0019	20	6.	*	1	0839	520	0.	*	1	1659	1020	0.	*	2	0119	1520	0.
1	0020	21	6.	*	1	0840	521	0.	*	1	1700	1021	0.	*	2	0120	1521	0.
1	0021	22	7.	*	1	0841	522	0.	*	1	1701	1022	0.	*	2	0121	1522	0.
1	0022	23	7.	*	1	0842	523	0.	*	1	1702	1023	0.	*	2	0122	1523	0.
1	0023	24	7.	*	1	0843	524	0.	*	1	1703	1024	0.	*	2	0123	1524	0.
1	0024	25	7.	*	1	0844	525	0.	*	1	1704	1025	0.	*	2	0124	1525	0.
1	0025	26	8.	*	1	0845	526	0.	*	1	1705	1026	0.	*	2	0125	1526	0.
1	0026	27	8.	*	1	0846	527	0.	*	1	1706	1027	0.	*	2	0126	1527	0.
1	0027	28	8.	*	1	0847	528	0.	*	1	1707	1028	0.	*	2	0127	1528	0.
1	0028	29	9.	*	1	0848	529	0.	*	1	1708	1029	0.	*	2	0128	1529	0.
1	0029	30	9.	*	1	0849	530	0.	*	1	1709	1030	0.	*	2	0129	1530	0.
1	0030	31	9.	*	1	0850	531	0.	*	1	1710	1031	0.	*	2	0130	1531	0.
1	0031	32	10.	*	1	0851	532	0.	*	1	1711	1032	0.	*	2	0131	1532	0.
1	0032	33	10.	*	1	0852	533	0.	*	1	1712	1033	0.	*	2	0132	1533	0.
1	0033	34	10.	*	1	0853	534	0.	*	1	1713	1034	0.	*	2	0133	1534	0.
1	0034	35	11.	*	1	0854	535	0.	*	1	1714	1035	0.	*	2	0134	1535	0.
1	0035	36	11.	*	1	0855	536	0.	*	1	1715	1036	0.	*	2	0135	1536	0.
1	0036	37	11.	*	1	0856	537	0.	*	1	1716	1037	0.	*	2	0136	1537	0.
1	0037	38	12.	*	1	0857	538	0.	*	1	1717	1038	0.	*	2	0137	1538	0.
1	0038	39	12.	*	1	0858	539	0.	*	1	1718	1039	0.	*	2	0138	1539	0.
1	0039	40	13.	*	1	0859	540	0.	*	1	1719	1040	0.	*	2	0139	1540	0.
1	0040	41	13.	*	1	0900	541	0.	*	1	1720	1041	0.	*	2	0140	1541	0.
1	0041	42	13.	*	1	0901	542	0.	*	1	1721	1042	0.	*	2	0141	1542	0.
1	0042	43	14.	*	1	0902	543	0.	*	1	1722	1043	0.	*	2	0142	1543	0.
1	0043	44	14.	*	1	0903	544	0.	*	1	1723	1044	0.	*	2	0143	1544	0.
1	0044	45	14.	*	1	0904	545	0.	*	1	1724	1045	0.	*	2	0144	1545	0.
1	0045	46	15.	*	1	0905	546	0.	*	1	1725	1046	0.	*	2	0145	1546	0.
1	0046	47	15.	*	1	0906	547	0.	*	1	1726	1047	0.	*	2	0146	1547	0.
1	0047	48	15.	*	1	0907	548	0.	*	1	1727	1048	0.	*	2	0147	1548	0.
1	0048	49	16.	*	1	0908	549	0.	*	1	1728	1049	0.	*	2	0148	1549	0.
1	0049	50	16.	*	1	0909	550	0.	*	1	1729	1050	0.	*	2	0149	1550	0.
1	0050	51	16.	*	1	0910	551	0.	*	1	1730	1051	0.	*	2	0150	1551	0.
1	0051	52	17.	*	1	0911	552	0.	*	1	1731	1052	0.	*	2	0151	1552	0.
1	0052	53	17.	*	1	0912	553	0.	*	1	1732	1053	0.	*	2	0152	1553	0.
1	0053	54	17.	*	1	0913	554	0.	*	1	1733	1054	0.	*	2	0153	1554	0.
1	0054	55	17.	*	1	0914	555	0.	*	1	1734	1055	0.	*	2	0154	1555	0.
1	0055	56	18.	*	1	0915	556	0.	*	1	1735	1056	0.	*	2	0155	1556	0.
1	0056	57	18.	*	1	0916	557	0.	*	1	1736	1057	0.	*	2	0156	1557	0.
1	0057	58	18.	*	1	0917	558	0.	*	1	1737	1058	0.	*	2	0157	1558	0.
1	0058	59	18.	*	1	0918	559	0.	*	1	1738	1059	0.	*	2	0158	1559	0.
1	0059	60	19.	*	1	0919	560	0.	*	1	1739	1060	0.	*	2	0159	1560	0.
1	0100	61	19.	*	1	0920	561	0.	*	1	1740	1061	0.	*	2	0200	1561	0.
1	0101	62	19.	*	1	0921	562	0.	*	1	1741	1062	0.	*	2	0201	1562	0.
1	0102	63	19.	*	1	0922	563	0.	*	1	1742	1063	0.	*	2	0202	1563	0.
1	0103	64	19.	*	1	0923	564	0.	*	1	1743	1064	0.	*	2	0203	1564	0.
1	0104	65	19.	*	1	0924	565	0.	*	1	1744	1065	0.	*	2	0204	1565	0.
1	0105	66	20.	*	1	0925	566	0.	*	1	1745	1066	0.	*	2	0205	1566	0.
1	0106	67	20.	*	1	0926	567	0.	*	1	1746	1067	0.	*	2	0206	1567	0.
1	0107	68	20.	*	1	0927	568	0.	*	1	1747	1068	0.	*	2	0207	1568	0.
1	0108	69	20.	*	1	0928	569	0.	*	1	1748	1069	0.	*	2	0208	1569	0.
1	0109	70	20.	*	1	0929	570	0.	*	1	1749	1070	0.	*	2	0209	1570	0.
1	0110	71	20.	*	1	0930	571	0.	*	1	1750	1071	0.	*	2	0210	1571	0.
1	0111	72	21.	*	1	0931	572	0.	*	1	1751	1072	0.	*	2	0211	1572	0.
1	0112	73	21.	*	1	0932	573	0.	*	1	1752	1073	0.	*	2	0212	1573	0.
1	0113	74	21.	*	1	0933	574	0.	*	1	1753	1074	0.	*	2	0213	1574	0.
1	0114	75	21.	*	1	0934	575	0.	*	1	1754	1075	0.	*	2	0214	1575	0.
1	0115	76	21.	*	1	0935	576	0.	*	1	1755	1076	0.	*	2	0215	1576	0.
1	0116	77	21.	*	1	0936	577	0.	*	1	1756	1077	0.	*	2	0216	1577	0.
1	0117	78	21.	*	1	0937	578	0.	*	1	1757	1078	0.	*	2	0217	1578	0.
1	0118	79	21.	*	1	0938	579	0.	*	1	1758	1079	0.	*	2	0218	1579	0.
1	0119	80	22.	*	1	0939	580	0.	*	1	1759	1080	0.	*	2	0219	1580	0.
1	0120	81	22.	*	1	0940	581	0.	*	1	1800	1081	0.	*	2	0220	1581	0.
1	0121	82	22.	*	1	0941	582	0.	*	1	1801	1082	0.	*	2	0221	1582	0.
1	0122	83	22.	*	1	0942	583	0.	*	1	1802	1083	0.	*	2	0222	1583	0.
1	0123	84	22.	*	1	0943	584	0.	*	1	1803	1084	0.	*	2	0223	1584	0.
1	0124	85	22.	*	1	0944	585	0.	*	1	1804	1085	0.	*	2	0224	1585	0.
1	0125	86	22.	*	1	0945	586	0.	*	1	1805	1086	0.	*	2	0225	1586	0.
1	0126	87	22.	*	1	0946	587	0.	*	1	1806	1087	0.	*	2	0226	1587	0.
1	0127	88	23.	*	1	0947	588	0.	*	1	1807	1088	0.	*	2	0227	1588	0.
1	0128	89	23.	*	1	0948	589	0.	*	1	1808	1089	0.	*	2	0228	1589	0.
1	0129	90	23.	*	1	0949	590	0.	*	1	1809	1090	0.	*	2	0229	1590	0.
	0130	91	23.	*	1	0950	591	0.	*	1	1810	1091	0.	*	2	0230	1591	0.
	0131	92	23.	*	1	0951	592	0.	*	1	1811	1092	0.	*	2	0231	1592	0.
1	0132	93	23.	*	1	0952	593	0.	*	1	1812	1093	0.	*	2	0232	1593	0.

1	0133	94	23.	*	1	0953	594	0.	*	1	1813	1094	0.	*	2	0233	1594	0.
1	0134	95	23.	*	1	0954	595	0.	*	1	1814	1095	0.	*	2	0234	1595	0.
1	0135	96	23.	*	1	0955	596	0.	*	1	1815	1096	0.	*	2	0235	1596	0.
1	0136	97	23.	*	1	0956	597	0.	*	1	1816	1097	0.	*	2	0236	1597	0.
1	0137	98	23.	*	1	0957	598	0.	*	1	1817	1098	0.	*	2	0237	1598	0.
1	0138	99	23.	*	1	0958	599	0.	*	1	1818	1099	0.	*	2	0238	1599	0.
1	0139	100	23.	*	1	0959	600	0.	*	1	1819	1100	0.	*	2	0239	1600	0.
1	0140	101	23.	*	1	1000	601	0.	*	1	1820	1101	0.	*	2	0240	1601	0.
1	0141	102	23.	*	1	1001	602	0.	*	1	1821	1102	0.	*	2	0241	1602	0.
1	0142	103	23.	*	1	1002	603	0.	*	1	1822	1103	0.	*	2	0242	1603	0.
1	0143	104	23.	*	1	1003	604	0.	*	1	1823	1104	0.	*	2	0243	1604	0.
1	0144	105	23.	*	1	1004	605	0.	*	1	1824	1105	0.	*	2	0244	1605	0.
1	0145	106	23.	*	1	1005	606	0.	*	1	1825	1106	0.	*	2	0245	1606	0.
1	0146	107	23.	*	1	1006	607	0.	*	1	1826	1107	0.	*	2	0246	1607	0.
1	0147	108	23.	*	1	1007	608	0.	*	1	1827	1108	0.	*	2	0247	1608	0.
1	0148	109	23.	*	1	1008	609	0.	*	1	1828	1109	0.	*	2	0248	1609	0.
1	0149	110	23.	*	1	1009	610	0.	*	1	1829	1110	0.	*	2	0249	1610	0.
1	0150	111	24.	*	1	1010	611	0.	*	1	1830	1111	0.	*	2	0250	1611	0.
1	0151	112	24.	*	1	1011	612	0.	*	1	1831	1112	0.	*	2	0251	1612	0.
1	0152	113	24.	*	1	1012	613	0.	*	1	1832	1113	0.	*	2	0252	1613	0.
1	0153	114	24.	*	1	1013	614	0.	*	1	1833	1114	0.	*	2	0253	1614	0.
1	0154	115	24.	*	1	1014	615	0.	*	1	1834	1115	0.	*	2	0254	1615	0.
1	0155	116	24.	*	1	1015	616	0.	*	1	1835	1116	0.	*	2	0255	1616	0.
1	0156	117	24.	*	1	1016	617	0.	*	1	1836	1117	0.	*	2	0256	1617	0.
1	0157	118	24.	*	1	1017	618	0.	*	1	1837	1118	0.	*	2	0257	1618	0.
1	0158	119	24.	*	1	1018	619	0.	*	1	1838	1119	0.	*	2	0258	1619	0.
1	0159	120	24.	*	1	1019	620	0.	*	1	1839	1120	0.	*	2	0259	1620	0.
1	0200	121	24.	*	1	1020	621	0.	*	1	1840	1121	0.	*	2	0300	1621	0.
1	0201	122	24.	*	1	1021	622	0.	*	1	1841	1122	0.	*	2	0301	1622	0.
1	0202	123	24.	*	1	1022	623	0.	*	1	1842	1123	0.	*	2	0302	1623	0.
1	0203	124	24.	*	1	1023	624	0.	*	1	1843	1124	0.	*	2	0303	1624	0.
1	0204	125	24.	*	1	1024	625	0.	*	1	1844	1125	0.	*	2	0304	1625	0.
1	0205	126	24.	*	1	1025	626	0.	*	1	1845	1126	0.	*	2	0305	1626	0.
1	0206	127	24.	*	1	1026	627	0.	*	1	1846	1127	0.	*	2	0306	1627	0.
1	0207	128	24.	*	1	1027	628	0.	*	1	1847	1128	0.	*	2	0307	1628	0.
1	0208	129	24.	*	1	1028	629	0.	*	1	1848	1129	0.	*	2	0308	1629	0.
1	0209	130	24.	*	1	1029	630	0.	*	1	1849	1130	0.	*	2	0309	1630	0.
1	0210	131	24.	*	1	1030	631	0.	*	1	1850	1131	0.	*	2	0310	1631	0.
1	0211	132	24.	*	1	1031	632	0.	*	1	1851	1132	0.	*	2	0311	1632	0.
1	0212	133	24.	*	1	1032	633	0.	*	1	1852	1133	0.	*	2	0312	1633	0.
	0213	134	24.	*	1	1033	634	0.	*	1	1853	1134	0.	*	2	0313	1634	0.
1	0214	135	24.	*	1	1034	635	0.	*	1	1854	1135	0.	*	2	0314	1635	0.
1	0215	136	24.	*	1	1035	636	0.	*	1	1855	1136	0.	*	2	0315	1636	0.
1	0216	137	24.	*	1	1036	637	0.	*	1	1856	1137	0.	*	2	0316	1637	0.
1	0217	138	24.	*	1	1037	638	0.	*	1	1857	1138	0.	*	2	0317	1638	0.
1	0218	139	24.	*	1	1038	639	0.	*	1	1858	1139	0.	*	2	0318	1639	0.
1	0219	140	24.	*	1	1039	640	0.	*	1	1859	1140	0.	*	2	0319	1640	0.
1	0220	141	24.	*	1	1040	641	0.	*	1	1900	1141	0.	*	2	0320	1641	0.
1	0221	142	24.	*	1	1041	642	0.	*	1	1901	1142	0.	*	2	0321	1642	0.
1	0222	143	24.	*	1	1042	643	0.	*	1	1902	1143	0.	*	2	0322	1643	0.
1	0223	144	24.	*	1	1043	644	0.	*	1	1903	1144	0.	*	2	0323	1644	0.
1	0224	145	25.	*	1	1044	645	0.	*	1	1904	1145	0.	*	2	0324	1645	0.
1	0225	146	25.	*	1	1045	646	0.	*	1	1905	1146	0.	*	2	0325	1646	0.
1	0226	147	25.	*	1	1046	647	0.	*	1	1906	1147	0.	*	2	0326	1647	0.
1	0227	148	25.	*	1	1047	648	0.	*	1	1907	1148	0.	*	2	0327	1648	0.
1	0228	149	25.	*	1	1048	649	0.	*	1	1908	1149	0.	*	2	0328	1649	0.
1	0229	150	26.	*	1	1049	650	0.	*	1	1909	1150	0.	*	2	0329	1650	0.
1	0230	151	26.	*	1	1050	651	0.	*	1	1910	1151	0.	*	2	0330	1651	0.
1	0231	152	26.	*	1	1051	652	0.	*	1	1911	1152	0.	*	2	0331	1652	0.
1	0232	153	26.	*	1	1052	653	0.	*	1	1912	1153	0.	*	2	0332	1653	0.
1	0233	154	26.	*	1	1053	654	0.	*	1	1913	1154	0.	*	2	0333	1654	0.
1	0234	155	27.	*	1	1054	655	0.	*	1	1914	1155	0.	*	2	0334	1655	0.
1	0235	156	27.	*	1	1055	656	0.	*	1	1915	1156	0.	*	2	0335	1656	0.
1	0236	157	27.	*	1	1056	657	0.	*	1	1916	1157	0.	*	2	0336	1657	0.
1	0237	158	27.	*	1	1057	658	0.	*	1	1917	1158	0.	*	2	0337	1658	0.
1	0238	159	27.	*	1	1058	659	0.	*	1	1918	1159	0.	*	2	0338	1659	0.
1	0239	160	27.	*	1	1059	660	0.	*	1	1919	1160	0.	*	2	0339	1660	0.
1	0240	161	28.	*	1	1100	661	0.	*	1	1920	1161	0.	*	2	0340	1661	0.
1	0241	162	28.	*	1	1101	662	0.	*	1	1921	1162	0.	*	2	0341	1662	0.
1	0242	163	28.	*	1	1102	663	0.	*	1	1922	1163	0.	*	2	0342	1663	0.
1	0243	164	28.	*	1	1103	664	0.	*	1	1923	1164**********		*	2	0343	1664	0.
1	0244	165	28.	*	1	1104	665	0.	*	1	1924	1165**********		*	2	0344	1665	0.
1	0245	166	28.	*	1	1105	666	0.	*	1	1925	1166**********		*	2	0345	1666	0.
1	0246	167	29.	*	1	1106	667	0.	*	1	1926	1167**********		*	2	0346	1667	0.
1	0247	168	29.	*	1	1107	668	0.	*	1	1927	1168**********		*	2	0347	1668	0.
1	0248	169	29.	*	1	1108	669	0.	*	1	1928	1169**********		*	2	0348	1669	0.
1	0249	170	29.	*	1	1109	670	0.	*	1	1929	1170**********		*	2	0349	1670	0.
	0250	171	30.	*	1	1110	671	0.	*	1	1930	1171**********		*	2	0350	1671	0.
	0251	172	30.	*	1	1111	672	0.	*	1	1931	1172**********		*	2	0351	1672	0.
1	0252	173	30.	*	1	1112	673	0.	*	1	1932	1173**********		*	2	0352	1673	0.

1	0253	174	31.	*	1	1113	674	0.	*	1	1933	1174**********	*	2	0353	1674	0.
1	0254	175	31.	*	1	1114	675	0.	*	1	1934	1175**********	*	2	0354	1675	0.
	0255	176	32.	*	1	1115	676	0.	*	1	1935	1176**********	*	2	0355	1676	0.
1	0256	177	33.	*	1	1116	677	0.	*	1	1936	1177**********	*	2	0356	1677	0.
1	0257	178	33.	*	1	1117	678	0.	*	1	1937	1178**********	*	2	0357	1678	0.
1	0258	179	34.	*	1	1118	679	0.	*	1	1938	1179**********	*	2	0358	1679	0.
1	0259	180	34.	*	1	1119	680	0.	*	1	1939	1180**********	*	2	0359	1680	0.
1	0300	181	35.	*	1	1120	681	0.	*	1	1940	1181**********	*	2	0400	1681	0.
1	0301	182	35.	*	1	1121	682	0.	*	1	1941	1182**********	*	2	0401	1682	0.
1	0302	183	36.	*	1	1122	683	0.	*	1	1942	1183**********	*	2	0402	1683	0.
1	0303	184	36.	*	1	1123	684	0.	*	1	1943	1184**********	*	2	0403	1684	0.
1	0304	185	37.	*	1	1124	685	0.	*	1	1944	1185**********	*	2	0404	1685	0.
1	0305	186	37.	*	1	1125	686	0.	*	1	1945	1186**********	*	2	0405	1686	0.
1	0306	187	38.	*	1	1126	687	0.	*	1	1946	1187**********	*	2	0406	1687	0.
1	0307	188	38.	*	1	1127	688	0.	*	1	1947	1188**********	*	2	0407	1688	0.
1	0308	189	39.	*	1	1128	689	0.	*	1	1948	1189**********	*	2	0408	1689	0.
1	0309	190	40.	*	1	1129	690	0.	*	1	1949	1190**********	*	2	0409	1690	0.
1	0310	191	40.	*	1	1130	691	0.	*	1	1950	1191**********	*	2	0410	1691	0.
1	0311	192	41.	*	1	1131	692	0.	*	1	1951	1192**********	*	2	0411	1692	0.
1	0312	193	42.	*	1	1132	693	0.	*	1	1952	1193**********	*	2	0412	1693	0.
1	0313	194	42.	*	1	1133	694	0.	*	1	1953	1194**********	*	2	0413	1694	0.
1	0314	195	43.	*	1	1134	695	0.	*	1	1954	1195**********	*	2	0414	1695	0.
1	0315	196	44.	*	1	1135	696	0.	*	1	1955	1196**********	*	2	0415	1696	0.
1	0316	197	44.	*	1	1136	697	0.	*	1	1956	1197**********	*	2	0416	1697	0.
1	0317	198	45.	*	1	1137	698	0.	*	1	1957	1198**********	*	2	0417	1698	0.
1	0318	199	46.	*	1	1138	699	0.	*	1	1958	1199**********	*	2	0418	1699	0.
1	0319	200	48.	*	1	1139	700	0.	*	1	1959	1200**********	*	2	0419	1700	0.
1	0320	201	49.	*	1	1140	701	0.	*	1	2000	1201**********	*	2	0420	1701	0.
1	0321	202	52.	*	1	1141	702	0.	*	1	2001	1202**********	*	2	0421	1702	0.
1	0322	203	55.	*	1	1142	703	0.	*	1	2002	1203**********	*	2	0422	1703	0.
1	0323	204	58.	*	1	1143	704	0.	*	1	2003	1204**********	*	2	0423	1704	0.
1	0324	205	62.	*	1	1144	705	0.	*	1	2004	1205**********	*	2	0424	1705	0.
1	0325	206	66.	*	1	1145	706	0.	*	1	2005	1206**********	*	2	0425	1706	0.
1	0326	207	70.	*	1	1146	707	0.	*	1	2006	1207**********	*	2	0426	1707	0.
1	0327	208	73.	*	1	1147	708	0.	*	1	2007	1208**********	*	2	0427	1708	0.
1	0328	209	77.	*	1	1148	709	0.	*	1	2008	1209**********	*	2	0428	1709	0.
1	0329	210	82.	*	1	1149	710	0.	*	1	2009	1210**********	*	2	0429	1710	0.
1	0330	211	86.	*	1	1150	711	0.	*	1	2010	1211**********	*	2	0430	1711	0.
1	0331	212	90.	*	1	1151	712	0.	*	1	2011	1212**********	*	2	0431	1712	0.
	0332	213	96.	*	1	1152	713	0.	*	1	2012	1213**********	*	2	0432	1713	0.
	0333	214	102.	*	1	1153	714	0.	*	1	2013	1214**********	*	2	0433	1714	0.
1	0334	215	110.	*	1	1154	715	0.	*	1	2014	1215**********	*	2	0434	1715	0.
1	0335	216	119.	*	1	1155	716	0.	*	1	2015	1216**********	*	2	0435	1716	0.
1	0336	217	130.	*	1	1156	717	0.	*	1	2016	1217**********	*	2	0436	1717	0.
1	0337	218	145.	*	1	1157	718	0.	*	1	2017	1218**********	*	2	0437	1718	0.
1	0338	219	161.	*	1	1158	719	0.	*	1	2018	1219**********	*	2	0438	1719	0.
1	0339	220	178.	*	1	1159	720	0.	*	1	2019	1220**********	*	2	0439	1720	0.
1	0340	221	195.	*	1	1200	721	0.	*	1	2020	1221**********	*	2	0440	1721	0.
1	0341	222	213.	*	1	1201	722	0.	*	1	2021	1222**********	*	2	0441	1722	0.
1	0342	223	233.	*	1	1202	723	0.	*	1	2022	1223**********	*	2	0442	1723	0.
1	0343	224	252.	*	1	1203	724	0.	*	1	2023	1224**********	*	2	0443	1724	0.
1	0344	225	270.	*	1	1204	725	0.	*	1	2024	1225**********	*	2	0444	1725	0.
1	0345	226	288.	*	1	1205	726	0.	*	1	2025	1226**********	*	2	0445	1726	0.
1	0346	227	307.	*	1	1206	727	0.	*	1	2026	1227**********	*	2	0446	1727	0.
1	0347	228	327.	*	1	1207	728	0.	*	1	2027	1228**********	*	2	0447	1728	0.
1	0348	229	350.	*	1	1208	729	0.	*	1	2028	1229**********	*	2	0448	1729	0.
1	0349	230	376.	*	1	1209	730	0.	*	1	2029	1230**********	*	2	0449	1730	0.
1	0350	231	406.	*	1	1210	731	0.	*	1	2030	1231**********	*	2	0450	1731	0.
1	0351	232	443.	*	1	1211	732	0.	*	1	2031	1232**********	*	2	0451	1732	0.
1	0352	233	488.	*	1	1212	733	0.	*	1	2032	1233**********	*	2	0452	1733	0.
1	0353	234	538.	*	1	1213	734	0.	*	1	2033	1234**********	*	2	0453	1734	0.
1	0354	235	590.	*	1	1214	735	0.	*	1	2034	1235**********	*	2	0454	1735	0.
1	0355	236	643.	*	1	1215	736	0.	*	1	2035	1236**********	*	2	0455	1736	0.
1	0356	237	695.	*	1	1216	737	0.	*	1	2036	1237**********	*	2	0456	1737	0.
1	0357	238	747.	*	1	1217	738	0.	*	1	2037	1238**********	*	2	0457	1738	0.
1	0358	239	799.	*	1	1218	739	0.	*	1	2038	1239**********	*	2	0458	1739	0.
1	0359	240	853.	*	1	1219	740	0.	*	1	2039	1240**********	*	2	0459	1740	0.
1	0400	241	907.	*	1	1220	741	0.	*	1	2040	1241**********	*	2	0500	1741	0.
1	0401	242	964.	*	1	1221	742	0.	*	1	2041	1242**********	*	2	0501	1742	0.
1	0402	243	1021.	*	1	1222	743	0.	*	1	2042	1243**********	*	2	0502	1743	0.
1	0403	244	1074.	*	1	1223	744	0.	*	1	2043	1244**********	*	2	0503	1744	0.
1	0404	245	1124.	*	1	1224	745	0.	*	1	2044	1245**********	*	2	0504	1745	0.
1	0405	246	1168.	*	1	1225	746	0.	*	1	2045	1246**********	*	2	0505	1746	0.
1	0406	247	1207.	*	1	1226	747	0.	*	1	2046	1247**********	*	2	0506	1747	0.
1	0407	248	1231.	*	1	1227	748	0.	*	1	2047	1248**********	*	2	0507	1748	0.
1	0408	249	1246.	*	1	1228	749	0.	*	1	2048	1249**********	*	2	0508	1749	0.
1	0409	250	1257.	*	1	1229	750	0.	*	1	2049	1250**********	*	2	0509	1750	0.
	0410	251	1265.	*	1	1230	751	0.	*	1	2050	1251**********	*	2	0510	1751	0.
	0411	252	1270.	*	1	1231	752	0.	*	1	2051	1252**********	*	2	0511	1752	0.
1	0412	253	1269.	*	1	1232	753	0.	*	1	2052	1253**********	*	2	0512	1753	0.

1	0413	254	1262.	*	1	1233	754	0.	*	1	2053	1254**********		*	2	0513	1754	0.
1	0414	255	1249.	*	1	1234	755	0.	*	1	2054	1255**********		*	2	0514	1755	0.
1	0415	256	1231.	*	1	1235	756	0.	*	1	2055	1256**********		*	2	0515	1756	0.
1	0416	257	1208.	*	1	1236	757	0.	*	1	2056	1257**********		*	2	0516	1757	0.
1	0417	258	1181.	*	1	1237	758	0.	*	1	2057	1258**********		*	2	0517	1758	0.
1	0418	259	1150.	*	1	1238	759	0.	*	1	2058	1259**********		*	2	0518	1759	0.
1	0419	260	1118.	*	1	1239	760	0.	*	1	2059	1260**********		*	2	0519	1760	0.
1	0420	261	1085.	*	1	1240	761	0.	*	1	2100	1261**********		*	2	0520	1761	0.
1	0421	262	1052.	*	1	1241	762	0.	*	1	2101	1262**********		*	2	0521	1762	0.
1	0422	263	1017.	*	1	1242	763	0.	*	1	2102	1263**********		*	2	0522	1763	0.
1	0423	264	982.	*	1	1243	764	0.	*	1	2103	1264**********		*	2	0523	1764	0.
1	0424	265	949.	*	1	1244	765	0.	*	1	2104	1265**********		*	2	0524	1765	0.
1	0425	266	916.	*	1	1245	766	0.	*	1	2105	1266**********		*	2	0525	1766	0.
1	0426	267	885.	*	1	1246	767	0.	*	1	2106	1267**********		*	2	0526	1767	0.
1	0427	268	853.	*	1	1247	768	0.	*	1	2107	1268**********		*	2	0527	1768	0.
1	0428	269	822.	*	1	1248	769	0.	*	1	2108	1269**********		*	2	0528	1769	0.
1	0429	270	792.	*	1	1249	770	0.	*	1	2109	1270**********		*	2	0529	1770	0.
1	0430	271	761.	*	1	1250	771	0.	*	1	2110	1271**********		*	2	0530	1771	0.
1	0431	272	731.	*	1	1251	772	0.	*	1	2111	1272**********		*	2	0531	1772	0.
1	0432	273	702.	*	1	1252	773	0.	*	1	2112	1273**********		*	2	0532	1773	0.
1	0433	274	673.	*	1	1253	774	0.	*	1	2113	1274**********		*	2	0533	1774	0.
1	0434	275	645.	*	1	1254	775	0.	*	1	2114	1275**********		*	2	0534	1775	0.
1	0435	276	619.	*	1	1255	776	0.	*	1	2115	1276**********		*	2	0535	1776	0.
1	0436	277	593.	*	1	1256	777	0.	*	1	2116	1277	0.	*	2	0536	1777	0.
1	0437	278	569.	*	1	1257	778	0.	*	1	2117	1278	0.	*	2	0537	1778	0.
1	0438	279	546.	*	1	1258	779	0.	*	1	2118	1279	0.	*	2	0538	1779	0.
1	0439	280	523.	*	1	1259	780	0.	*	1	2119	1280	0.	*	2	0539	1780	0.
1	0440	281	500.	*	1	1300	781	0.	*	1	2120	1281	0.	*	2	0540	1781	0.
1	0441	282	478.	*	1	1301	782	0.	*	1	2121	1282	0.	*	2	0541	1782	0.
1	0442	283	456.	*	1	1302	783	0.	*	1	2122	1283	0.	*	2	0542	1783	0.
1	0443	284	436.	*	1	1303	784	0.	*	1	2123	1284	0.	*	2	0543	1784	0.
1	0444	285	416.	*	1	1304	785	0.	*	1	2124	1285	0.	*	2	0544	1785	0.
1	0445	286	398.	*	1	1305	786	0.	*	1	2125	1286	0.	*	2	0545	1786	0.
1	0446	287	380.	*	1	1306	787	0.	*	1	2126	1287	0.	*	2	0546	1787	0.
1	0447	288	364.	*	1	1307	788	0.	*	1	2127	1288	0.	*	2	0547	1788	0.
1	0448	289	348.	*	1	1308	789	0.	*	1	2128	1289	0.	*	2	0548	1789	0.
1	0449	290	335.	*	1	1309	790	0.	*	1	2129	1290	0.	*	2	0549	1790	0.
1	0450	291	322.	*	1	1310	791	0.	*	1	2130	1291	0.	*	2	0550	1791	0.
1	0451	292	309.	*	1	1311	792	0.	*	1	2131	1292	0.	*	2	0551	1792	0.
1	0452	293	296.	*	1	1312	793	0.	*	1	2132	1293	0.	*	2	0552	1793	0.
1	0453	294	284.	*	1	1313	794	0.	*	1	2133	1294	0.	*	2	0553	1794	0.
1	0454	295	272.	*	1	1314	795	0.	*	1	2134	1295	0.	*	2	0554	1795	0.
1	0455	296	261.	*	1	1315	796	0.	*	1	2135	1296	0.	*	2	0555	1796	0.
1	0456	297	250.	*	1	1316	797	0.	*	1	2136	1297	0.	*	2	0556	1797	0.
1	0457	298	239.	*	1	1317	798	0.	*	1	2137	1298	0.	*	2	0557	1798	0.
1	0458	299	229.	*	1	1318	799	0.	*	1	2138	1299	0.	*	2	0558	1799	0.
1	0459	300	220.	*	1	1319	800	0.	*	1	2139	1300	0.	*	2	0559	1800	0.
1	0500	301	211.	*	1	1320	801	0.	*	1	2140	1301	0.	*	2	0600	1801	0.
1	0501	302	203.	*	1	1321	802	0.	*	1	2141	1302	0.	*	2	0601	1802	0.
1	0502	303	195.	*	1	1322	803	0.	*	1	2142	1303	0.	*	2	0602	1803	0.
1	0503	304	187.	*	1	1323	804	0.	*	1	2143	1304	0.	*	2	0603	1804	0.
1	0504	305	180.	*	1	1324	805	0.	*	1	2144	1305	0.	*	2	0604	1805	0.
1	0505	306	174.	*	1	1325	806	0.	*	1	2145	1306	0.	*	2	0605	1806	0.
1	0506	307	168.	*	1	1326	807	0.	*	1	2146	1307	0.	*	2	0606	1807	0.
1	0507	308	162.	*	1	1327	808	0.	*	1	2147	1308	0.	*	2	0607	1808	0.
1	0508	309	158.	*	1	1328	809	0.	*	1	2148	1309	0.	*	2	0608	1809	0.
1	0509	310	153.	*	1	1329	810	0.	*	1	2149	1310	0.	*	2	0609	1810	0.
1	0510	311	148.	*	1	1330	811	0.	*	1	2150	1311	0.	*	2	0610	1811	0.
1	0511	312	144.	*	1	1331	812	0.	*	1	2151	1312	0.	*	2	0611	1812	0.
1	0512	313	139.	*	1	1332	813	0.	*	1	2152	1313	0.	*	2	0612	1813	0.
1	0513	314	135.	*	1	1333	814	0.	*	1	2153	1314	0.	*	2	0613	1814	0.
1	0514	315	130.	*	1	1334	815	0.	*	1	2154	1315	0.	*	2	0614	1815	0.
1	0515	316	126.	*	1	1335	816	0.	*	1	2155	1316	0.	*	2	0615	1816	0.
1	0516	317	122.	*	1	1336	817	0.	*	1	2156	1317	0.	*	2	0616	1817	0.
1	0517	318	118.	*	1	1337	818	0.	*	1	2157	1318	0.	*	2	0617	1818	0.
1	0518	319	114.	*	1	1338	819	0.	*	1	2158	1319	0.	*	2	0618	1819	0.
1	0519	320	110.	*	1	1339	820	0.	*	1	2159	1320	0.	*	2	0619	1820	0.
1	0520	321	106.	*	1	1340	821	0.	*	1	2200	1321	0.	*	2	0620	1821	0.
1	0521	322	102.	*	1	1341	822	0.	*	1	2201	1322	0.	*	2	0621	1822	0.
1	0522	323	99.	*	1	1342	823	0.	*	1	2202	1323	0.	*	2	0622	1823	0.
1	0523	324	95.	*	1	1343	824	0.	*	1	2203	1324	0.	*	2	0623	1824	0.
1	0524	325	92.	*	1	1344	825	0.	*	1	2204	1325	0.	*	2	0624	1825	0.
1	0525	326	89.	*	1	1345	826	0.	*	1	2205	1326	0.	*	2	0625	1826	0.
1	0526	327	86.	*	1	1346	827	0.	*	1	2206	1327	0.	*	2	0626	1827	0.
1	0527	328	83.	*	1	1347	828	0.	*	1	2207	1328	0.	*	2	0627	1828	0.
1	0528	329	80.	*	1	1348	829	0.	*	1	2208	1329	0.	*	2	0628	1829	0.
1	0529	330	78.	*	1	1349	830	0.	*	1	2209	1330	0.	*	2	0629	1830	0.
	0530	331	76.	*	1	1350	831	0.	*	1	2210	1331	0.	*	2	0630	1831	0.
	0531	332	73.	*	1	1351	832	0.	*	1	2211	1332	0.	*	2	0631	1832	0.
1	0532	333	71.	*	1	1352	833	0.	*	1	2212	1333	0.	*	2	0632	1833	0.

1	0533	334	69.	*	1	1353	834	0.	*	1	2213	1334	0.	*	2	0633	1834	0.
1	0534	335	67.	*	1	1354	835	0.	*	1	2214	1335	0.	*	2	0634	1835	0.
1	0535	336	65.	*	1	1355	836	0.	*	1	2215	1336	0.	*	2	0635	1836	0.
1	0536	337	63.	*	1	1356	837	0.	*	1	2216	1337	0.	*	2	0636	1837	0.
1	0537	338	61.	*	1	1357	838	0.	*	1	2217	1338	0.	*	2	0637	1838	0.
1	0538	339	60.	*	1	1358	839	0.	*	1	2218	1339	0.	*	2	0638	1839	0.
1	0539	340	58.	*	1	1359	840	0.	*	1	2219	1340	0.	*	2	0639	1840	0.
1	0540	341	56.	*	1	1400	841	0.	*	1	2220	1341	0.	*	2	0640	1841	0.
1	0541	342	55.	*	1	1401	842	0.	*	1	2221	1342	0.	*	2	0641	1842	0.
1	0542	343	54.	*	1	1402	843	0.	*	1	2222	1343	0.	*	2	0642	1843	0.
1	0543	344	53.	*	1	1403	844	0.	*	1	2223	1344	0.	*	2	0643	1844	0.
1	0544	345	52.	*	1	1404	845	0.	*	1	2224	1345	0.	*	2	0644	1845	0.
1	0545	346	51.	*	1	1405	846	0.	*	1	2225	1346	0.	*	2	0645	1846	0.
1	0546	347	50.	*	1	1406	847	0.	*	1	2226	1347	0.	*	2	0646	1847	0.
1	0547	348	50.	*	1	1407	848	0.	*	1	2227	1348	0.	*	2	0647	1848	0.
1	0548	349	49.	*	1	1408	849	0.	*	1	2228	1349	0.	*	2	0648	1849	0.
1	0549	350	49.	*	1	1409	850	0.	*	1	2229	1350	0.	*	2	0649	1850	0.
1	0550	351	48.	*	1	1410	851	0.	*	1	2230	1351	0.	*	2	0650	1851	0.
1	0551	352	48.	*	1	1411	852	0.	*	1	2231	1352	0.	*	2	0651	1852	0.
1	0552	353	47.	*	1	1412	853	0.	*	1	2232	1353	0.	*	2	0652	1853	0.
1	0553	354	46.	*	1	1413	854	0.	*	1	2233	1354	0.	*	2	0653	1854	0.
1	0554	355	46.	*	1	1414	855	0.	*	1	2234	1355	0.	*	2	0654	1855	0.
1	0555	356	46.	*	1	1415	856	0.	*	1	2235	1356	0.	*	2	0655	1856	0.
1	0556	357	45.	*	1	1416	857	0.	*	1	2236	1357	0.	*	2	0656	1857	0.
1	0557	358	45.	*	1	1417	858	0.	*	1	2237	1358	0.	*	2	0657	1858	0.
1	0558	359	44.	*	1	1418	859	0.	*	1	2238	1359	0.	*	2	0658	1859	0.
1	0559	360	43.	*	1	1419	860	0.	*	1	2239	1360	0.	*	2	0659	1860	0.
1	0600	361	43.	*	1	1420	861	0.	*	1	2240	1361	0.	*	2	0700	1861	0.
1	0601	362	42.	*	1	1421	862	0.	*	1	2241	1362	0.	*	2	0701	1862	0.
1	0602	363	42.	*	1	1422	863	0.	*	1	2242	1363	0.	*	2	0702	1863	0.
1	0603	364	41.	*	1	1423	864	0.	*	1	2243	1364	0.	*	2	0703	1864	0.
1	0604	365	41.	*	1	1424	865	0.	*	1	2244	1365	0.	*	2	0704	1865	0.
1	0605	366	40.	*	1	1425	866	0.	*	1	2245	1366	0.	*	2	0705	1866	0.
1	0606	367	39.	*	1	1426	867	0.	*	1	2246	1367	0.	*	2	0706	1867	0.
1	0607	368	38.	*	1	1427	868	0.	*	1	2247	1368	0.	*	2	0707	1868	0.
1	0608	369	37.	*	1	1428	869	0.	*	1	2248	1369	0.	*	2	0708	1869	0.
1	0609	370	36.	*	1	1429	870	0.	*	1	2249	1370	0.	*	2	0709	1870	0.
1	0610	371	35.	*	1	1430	871	0.	*	1	2250	1371	0.	*	2	0710	1871	0.
1	0611	372	34.	*	1	1431	872	0.	*	1	2251	1372	0.	*	2	0711	1872	0.
1	0612	373	33.	*	1	1432	873	0.	*	1	2252	1373	0.	*	2	0712	1873	0.
1	0613	374	32.	*	1	1433	874	0.	*	1	2253	1374	0.	*	2	0713	1874	0.
1	0614	375	31.	*	1	1434	875	0.	*	1	2254	1375	0.	*	2	0714	1875	0.
1	0615	376	31.	*	1	1435	876	0.	*	1	2255	1376	0.	*	2	0715	1876	0.
1	0616	377	30.	*	1	1436	877	0.	*	1	2256	1377	0.	*	2	0716	1877	0.
1	0617	378	29.	*	1	1437	878	0.	*	1	2257	1378	0.	*	2	0717	1878	0.
1	0618	379	28.	*	1	1438	879	0.	*	1	2258	1379	0.	*	2	0718	1879	0.
1	0619	380	27.	*	1	1439	880	0.	*	1	2259	1380	0.	*	2	0719	1880	0.
1	0620	381	26.	*	1	1440	881	0.	*	1	2300	1381	0.	*	2	0720	1881	0.
1	0621	382	26.	*	1	1441	882	0.	*	1	2301	1382	0.	*	2	0721	1882	0.
1	0622	383	25.	*	1	1442	883	0.	*	1	2302	1383	0.	*	2	0722	1883	0.
1	0623	384	24.	*	1	1443	884	0.	*	1	2303	1384	0.	*	2	0723	1884	0.
1	0624	385	24.	*	1	1444	885	0.	*	1	2304	1385	0.	*	2	0724	1885	0.
1	0625	386	23.	*	1	1445	886	0.	*	1	2305	1386	0.	*	2	0725	1886	0.
1	0626	387	22.	*	1	1446	887	0.	*	1	2306	1387	0.	*	2	0726	1887	0.
1	0627	388	22.	*	1	1447	888	0.	*	1	2307	1388	0.	*	2	0727	1888	0.
1	0628	389	21.	*	1	1448	889	0.	*	1	2308	1389	0.	*	2	0728	1889	0.
1	0629	390	20.	*	1	1449	890	0.	*	1	2309	1390	0.	*	2	0729	1890	0.
1	0630	391	20.	*	1	1450	891	0.	*	1	2310	1391	0.	*	2	0730	1891	0.
1	0631	392	19.	*	1	1451	892	0.	*	1	2311	1392	0.	*	2	0731	1892	0.
1	0632	393	19.	*	1	1452	893	0.	*	1	2312	1393	0.	*	2	0732	1893	0.
1	0633	394	18.	*	1	1453	894	0.	*	1	2313	1394	0.	*	2	0733	1894	0.
1	0634	395	17.	*	1	1454	895	0.	*	1	2314	1395	0.	*	2	0734	1895	0.
1	0635	396	17.	*	1	1455	896	0.	*	1	2315	1396	0.	*	2	0735	1896	0.
1	0636	397	16.	*	1	1456	897	0.	*	1	2316	1397	0.	*	2	0736	1897	0.
1	0637	398	16.	*	1	1457	898	0.	*	1	2317	1398	0.	*	2	0737	1898	0.
1	0638	399	15.	*	1	1458	899	0.	*	1	2318	1399	0.	*	2	0738	1899	0.
1	0639	400	15.	*	1	1459	900	0.	*	1	2319	1400	0.	*	2	0739	1900	0.
1	0640	401	14.	*	1	1500	901	0.	*	1	2320	1401	0.	*	2	0740	1901	0.
1	0641	402	14.	*	1	1501	902	0.	*	1	2321	1402	0.	*	2	0741	1902	0.
1	0642	403	13.	*	1	1502	903	0.	*	1	2322	1403	0.	*	2	0742	1903	0.
1	0643	404	13.	*	1	1503	904	0.	*	1	2323	1404	0.	*	2	0743	1904	0.
1	0644	405	12.	*	1	1504	905	0.	*	1	2324	1405	0.	*	2	0744	1905	0.
1	0645	406	12.	*	1	1505	906	0.	*	1	2325	1406	0.	*	2	0745	1906	0.
1	0646	407	11.	*	1	1506	907	0.	*	1	2326	1407	0.	*	2	0746	1907	0.
1	0647	408	11.	*	1	1507	908	0.	*	1	2327	1408	0.	*	2	0747	1908	0.
1	0648	409	11.	*	1	1508	909	0.	*	1	2328	1409	0.	*	2	0748	1909	0.
1	0649	410	10.	*	1	1509	910	0.	*	1	2329	1410	0.	*	2	0749	1910	0.
	0650	411	10.	*	1	1510	911	0.	*	1	2330	1411	0.	*	2	0750	1911	0.
	0651	412	9.	*	1	1511	912	0.	*	1	2331	1412	0.	*	2	0751	1912	0.
1	0652	413	9.	*	1	1512	913	0.	*	1	2332	1413	0.	*	2	0752	1913	0.

1	0653	414	9.	*	1	1513	914	0.	*	1	2333	1414	0.	*	2	0753	1914	0.
1	0654	415	8.	*	1	1514	915	0.	*	1	2334	1415	0.	*	2	0754	1915	0.
	0655	416	8.	*	1	1515	916	0.	*	1	2335	1416	0.	*	2	0755	1916	0.
1	0656	417	8.	*	1	1516	917	0.	*	1	2336	1417	0.	*	2	0756	1917	0.
1	0657	418	7.	*	1	1517	918	0.	*	1	2337	1418	0.	*	2	0757	1918	0.
1	0658	419	7.	*	1	1518	919	0.	*	1	2338	1419	0.	*	2	0758	1919	0.
1	0659	420	7.	*	1	1519	920	0.	*	1	2339	1420	0.	*	2	0759	1920	0.
1	0700	421	6.	*	1	1520	921	0.	*	1	2340	1421	0.	*	2	0800	1921	0.
1	0701	422	6.	*	1	1521	922	0.	*	1	2341	1422	0.	*	2	0801	1922	0.
1	0702	423	6.	*	1	1522	923	0.	*	1	2342	1423	0.	*	2	0802	1923	0.
1	0703	424	6.	*	1	1523	924	0.	*	1	2343	1424	0.	*	2	0803	1924	0.
1	0704	425	5.	*	1	1524	925	0.	*	1	2344	1425	0.	*	2	0804	1925	0.
1	0705	426	5.	*	1	1525	926	0.	*	1	2345	1426	0.	*	2	0805	1926	0.
1	0706	427	5.	*	1	1526	927	0.	*	1	2346	1427	0.	*	2	0806	1927	0.
1	0707	428	5.	*	1	1527	928	0.	*	1	2347	1428	0.	*	2	0807	1928	0.
1	0708	429	4.	*	1	1528	929	0.	*	1	2348	1429	0.	*	2	0808	1929	0.
1	0709	430	4.	*	1	1529	930	0.	*	1	2349	1430	0.	*	2	0809	1930	0.
1	0710	431	4.	*	1	1530	931	0.	*	1	2350	1431	0.	*	2	0810	1931	0.
1	0711	432	4.	*	1	1531	932	0.	*	1	2351	1432	0.	*	2	0811	1932	0.
1	0712	433	4.	*	1	1532	933	0.	*	1	2352	1433	0.	*	2	0812	1933	0.
1	0713	434	4.	*	1	1533	934	0.	*	1	2353	1434	0.	*	2	0813	1934	0.
1	0714	435	3.	*	1	1534	935	0.	*	1	2354	1435	0.	*	2	0814	1935	0.
1	0715	436	3.	*	1	1535	936	0.	*	1	2355	1436	0.	*	2	0815	1936	0.
1	0716	437	3.	*	1	1536	937	0.	*	1	2356	1437	0.	*	2	0816	1937	0.
1	0717	438	3.	*	1	1537	938	0.	*	1	2357	1438	0.	*	2	0817	1938	0.
1	0718	439	3.	*	1	1538	939	0.	*	1	2358	1439	0.	*	2	0818	1939	0.
1	0719	440	3.	*	1	1539	940	0.	*	1	2359	1440	0.	*	2	0819	1940	0.
1	0720	441	3.	*	1	1540	941	0.	*	2	0000	1441	0.	*	2	0820	1941	0.
1	0721	442	2.	*	1	1541	942	0.	*	2	0001	1442	0.	*	2	0821	1942	0.
1	0722	443	2.	*	1	1542	943	0.	*	2	0002	1443	0.	*	2	0822	1943	0.
1	0723	444	2.	*	1	1543	944	0.	*	2	0003	1444	0.	*	2	0823	1944	0.
1	0724	445	2.	*	1	1544	945	0.	*	2	0004	1445	0.	*	2	0824	1945	0.
1	0725	446	2.	*	1	1545	946	0.	*	2	0005	1446	0.	*	2	0825	1946	0.
1	0726	447	2.	*	1	1546	947	0.	*	2	0006	1447	0.	*	2	0826	1947	0.
1	0727	448	2.	*	1	1547	948	0.	*	2	0007	1448	0.	*	2	0827	1948	0.
1	0728	449	2.	*	1	1548	949	0.	*	2	0008	1449	0.	*	2	0828	1949	0.
1	0729	450	2.	*	1	1549	950	0.	*	2	0009	1450	0.	*	2	0829	1950	0.
1	0730	451	2.	*	1	1550	951	0.	*	2	0010	1451	0.	*	2	0830	1951	0.
1	0731	452	1.	*	1	1551	952	0.	*	2	0011	1452	0.	*	2	0831	1952	0.
	0732	453	1.	*	1	1552	953	0.	*	2	0012	1453	0.	*	2	0832	1953	0.
	0733	454	1.	*	1	1553	954	0.	*	2	0013	1454	0.	*	2	0833	1954	0.
1	0734	455	1.	*	1	1554	955	0.	*	2	0014	1455	0.	*	2	0834	1955	0.
1	0735	456	1.	*	1	1555	956	0.	*	2	0015	1456	0.	*	2	0835	1956	0.
1	0736	457	1.	*	1	1556	957	0.	*	2	0016	1457	0.	*	2	0836	1957	0.
1	0737	458	1.	*	1	1557	958	0.	*	2	0017	1458	0.	*	2	0837	1958	0.
1	0738	459	1.	*	1	1558	959	0.	*	2	0018	1459	0.	*	2	0838	1959	0.
1	0739	460	1.	*	1	1559	960	0.	*	2	0019	1460	0.	*	2	0839	1960	0.
1	0740	461	1.	*	1	1600	961	0.	*	2	0020	1461	0.	*	2	0840	1961	0.
1	0741	462	1.	*	1	1601	962	0.	*	2	0021	1462	0.	*	2	0841	1962	0.
1	0742	463	1.	*	1	1602	963	0.	*	2	0022	1463	0.	*	2	0842	1963	0.
1	0743	464	1.	*	1	1603	964	0.	*	2	0023	1464	0.	*	2	0843	1964	0.
1	0744	465	1.	*	1	1604	965	0.	*	2	0024	1465	0.	*	2	0844	1965	0.
1	0745	466	1.	*	1	1605	966	0.	*	2	0025	1466	0.	*	2	0845	1966	0.
1	0746	467	1.	*	1	1606	967	0.	*	2	0026	1467	0.	*	2	0846	1967	0.
1	0747	468	1.	*	1	1607	968	0.	*	2	0027	1468	0.	*	2	0847	1968	0.
1	0748	469	1.	*	1	1608	969	0.	*	2	0028	1469	0.	*	2	0848	1969	0.
1	0749	470	1.	*	1	1609	970	0.	*	2	0029	1470	0.	*	2	0849	1970	0.
1	0750	471	0.	*	1	1610	971	0.	*	2	0030	1471	0.	*	2	0850	1971	0.
1	0751	472	0.	*	1	1611	972	0.	*	2	0031	1472	0.	*	2	0851	1972	0.
1	0752	473	0.	*	1	1612	973	0.	*	2	0032	1473	0.	*	2	0852	1973	0.
1	0753	474	0.	*	1	1613	974	0.	*	2	0033	1474	0.	*	2	0853	1974	0.
1	0754	475	0.	*	1	1614	975	0.	*	2	0034	1475	0.	*	2	0854	1975	0.
1	0755	476	0.	*	1	1615	976	0.	*	2	0035	1476	0.	*	2	0855	1976	0.
1	0756	477	0.	*	1	1616	977	0.	*	2	0036	1477	0.	*	2	0856	1977	0.
1	0757	478	0.	*	1	1617	978	0.	*	2	0037	1478	0.	*	2	0857	1978	0.
1	0758	479	0.	*	1	1618	979	0.	*	2	0038	1479	0.	*	2	0858	1979	0.
1	0759	480	0.	*	1	1619	980	0.	*	2	0039	1480	0.	*	2	0859	1980	0.
1	0800	481	0.	*	1	1620	981	0.	*	2	0040	1481	0.	*	2	0900	1981	0.
1	0801	482	0.	*	1	1621	982	0.	*	2	0041	1482	0.	*	2	0901	1982	0.
1	0802	483	0.	*	1	1622	983	0.	*	2	0042	1483	0.	*	2	0902	1983	0.
1	0803	484	0.	*	1	1623	984	0.	*	2	0043	1484	0.	*	2	0903	1984	0.
1	0804	485	0.	*	1	1624	985	0.	*	2	0044	1485	0.	*	2	0904	1985	0.
1	0805	486	0.	*	1	1625	986	0.	*	2	0045	1486	0.	*	2	0905	1986	0.
1	0806	487	0.	*	1	1626	987	0.	*	2	0046	1487	0.	*	2	0906	1987	0.
1	0807	488	0.	*	1	1627	988	0.	*	2	0047	1488	0.	*	2	0907	1988	0.
1	0808	489	0.	*	1	1628	989	0.	*	2	0048	1489	0.	*	2	0908	1989	0.
1	0809	490	0.	*	1	1629	990	0.	*	2	0049	1490	0.	*	2	0909	1990	0.
	0810	491	0.	*	1	1630	991	0.	*	2	0050	1491	0.	*	2	0910	1991	0.
	0811	492	0.	*	1	1631	992	0.	*	2	0051	1492	0.	*	2	0911	1992	0.
1	0812	493	0.	*	1	1632	993	0.	*	2	0052	1493	0.	*	2	0912	1993	0.

STAGECOACH PASS
SANDFLOWER LEVEE
SEE SHEET 3

N

SCALE 1" = 100'

STAGE COACH PASS - EAST FLOW SPLIT

SCP		LEVEE	SCP
EAST ELEVATION	EAST FLOW	WEST FLOW	TOTAL EAST FLOW
FT	CFS	CFS	CFS
61.00	194.1	76.4	270.5
61.50	389.7	161.0	550.7
62.00	643.8	289.9	933.7
62.50	811.1	352.5	1163.6
63.00	1046.2	629.9	1676.1
63.50	1347.3	1480.6	2827.9

Table
Rating Table for Irregular Channel
LEVEE SANDFLOWER

Project Description	
Worksheet	CSCP03-E
Flow Element	Irregular Chan
Method	Manning's Forr
Solve For	Discharge

HEC-1 LABEL CSCP03
EAST SPLIT RATING TABLE

Input Data	
Slope	020194 ft/ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Attribute	Minimum	Maximum	Increment
Water Surface Elevat	60.00	63.50	0.10

Water Surface Elevation (ft)	Discharge (cfs)	Velocity (ft/s)	Flow Area (ft²)	Wetted Perimeter (ft)	Top Width (ft)
60.00	N/A	N/A	N/A	N/A	N/A
60.10	4.04	1.19	3.4	34.45	34.42
60.20	12.88	1.87	6.9	35.23	35.17
60.30	25.41	2.43	10.4	36.00	35.91
60.40	41.19	2.93	14.1	36.77	36.65
60.50	59.96	3.37	17.8	37.55	37.39
60.60	81.55	3.79	21.5	38.32	38.14
60.70	105.85	4.17	25.4	39.09	38.88
60.80	132.75	4.53	29.3	39.86	39.62
60.90	162.19	4.87	33.3	40.64	40.36
61.00	194.11	5.19	37.4	41.41	41.11
61.10	228.47	5.50	41.5	42.18	41.85
61.20	265.24	5.80	45.8	42.96	42.59
61.30	304.39	6.08	50.1	43.73	43.33
61.40	345.89	6.35	54.4	44.50	44.07
61.50	389.74	6.62	58.9	45.28	44.82
61.60	435.91	6.88	63.4	46.05	45.56
61.70	484.41	7.13	68.0	46.82	46.30
61.80	535.22	7.37	72.7	47.60	47.04
61.90	588.34	7.60	77.4	48.37	47.79
62.00	643.77	7.83	82.2	49.14	48.53
62.10	671.34	7.70	87.2	51.28	50.65
62.20	702.01	7.60	92.3	53.42	52.77
62.30	735.60	7.53	97.7	55.57	54.89
62.40	771.99	7.47	103.3	57.71	57.02
62.50	811.09	7.43	109.1	59.85	59.14
62.60	852.87	7.41	115.1	61.99	61.26
62.70	897.28	7.39	121.4	64.13	63.38
62.80	944.31	7.39	127.8	66.27	65.50
62.90	993.95	7.39	134.5	68.41	67.62
63.00	1,046.20	7.40	141.3	70.55	69.74
63.10	1,101.09	7.42	148.4	72.69	71.87
63.20	1,158.61	7.44	155.7	74.84	73.99

Table
Rating Table for Irregular Channel

Water Surface Elevation (ft)	Discharge (cfs)	Velocity (ft/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)
63.30	1,218.80	7.47	163.2	76.98	76.11
63.40	1,281.68	7.50	170.9	79.12	78.23
63.50	1,347.26	7.53	178.9	81.26	80.35

DEI

6225 N. 24th Street Ste. 200
Phoenix, Arizona 85016

Phone: 602-954-0038
FAX: 602-944-8602

PROJECT NORTH SCOTTSDALE SHEET # 01/01
MADE BY JML DATE 05/06/02 JOB # 01131.12
CHECKED BY PMM DATE _____ SECTION SHEET # _____
CALCULATIONS FOR X-SECTION DATA

I FLOW SPLIT (WEST)

(x)	(y)
0	63.22
53.99	62.00
58.09	60.00
70.58	60.00
78.72	62.00
98.61	62.67

o INTERPOLATE CNTRS

$L = 80.98$ ft

$S = \frac{2 \text{ ft}}{80.98 \text{ ft}}$

$S = 0.0247$ ft/ft

$y = 0.0247 \times 49.37 + 62.00$

$y = 63.22$ ft //

$L = 78.65$ ft

$S = \frac{2 \text{ ft}}{78.65 \text{ ft}}$

$S = 0.0254$ ft/ft

$y = 26.36 \times 0.0254 + 62.00$

$y = 62.67$ ft //

I Channel Slope

$S = \frac{2 \text{ ft}}{97.28 \text{ ft}}$

$S = 0.020559$ ft/ft //

II FLOW SPLIT (EAST)

(x)	(y)
0	64.00
5.74	62.00
16.03	60.00
49.71	60.00
54.27	62.00
90.96	64.00

ADDITIONAL PTS.

108.85	62.00
119.06	61.04
129.26	62.00
135.405	63.11
141.55	62.00
152.30	62.00
161.76	64.00

III CHANNEL SLOPE

$S = \frac{2 \text{ ft}}{99.04 \text{ ft}} = 0.020194$ ft/ft //

Table
Rating Table for Irregular Channel

LEVEE SANDFLOWER

HEC-1 LABEL CSCP03

WEST SPLIT RATING TABLE

Project Description	
Worksheet	CSCP03-W
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data	
Slope	020559 ft/ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Attribute	Minimum	Maximum	Increment
Water Surface Elevat	60.00	63.50	0.10

Water Surface Elevation (ft)	Discharge (cfs)	Velocity (ft/s)	Flow Area (ft²)	Wetted Perimeter (ft)	Top Width (ft)
60.00	N/A	N/A	N/A	N/A	N/A
60.10	1.52	1.19	1.3	13.14	13.10
60.20	4.86	1.85	2.6	13.78	13.71
60.30	9.62	2.39	4.0	14.43	14.33
60.40	15.67	2.86	5.5	15.08	14.94
60.50	22.93	3.27	7.0	15.73	15.55
60.60	31.36	3.65	8.6	16.37	16.16
60.70	40.93	4.00	10.2	17.02	16.77
60.80	51.63	4.32	12.0	17.67	17.39
60.90	63.45	4.62	13.7	18.31	18.00
61.00	76.38	4.91	15.6	18.96	18.61
61.10	90.46	5.17	17.5	20.89	20.50
61.20	105.81	5.38	19.7	23.67	23.24
61.30	122.60	5.54	22.1	26.46	25.97
61.40	140.96	5.67	24.9	29.24	28.71
61.50	160.99	5.78	27.9	32.02	31.45
61.60	182.82	5.87	31.2	34.80	34.19
61.70	206.53	5.95	34.7	37.59	36.93
61.80	232.22	6.03	38.5	40.37	39.66
61.90	259.98	6.10	42.6	43.15	42.40
62.00	289.90	6.17	47.0	45.93	45.14
62.10	184.12	3.47	53.1	67.22	66.39
62.20	280.78	4.66	60.3	77.76	76.90
62.30	296.59	4.33	68.5	88.30	87.40
62.40	320.80	4.12	77.8	98.83	97.90
62.50	352.53	4.00	88.1	109.37	108.40
62.60	391.37	3.94	99.5	119.91	118.91
62.70	438.58	3.92	111.9	129.09	128.06
62.80	495.80	3.97	125.0	135.13	134.06
62.90	559.61	4.04	138.7	141.16	140.07
63.00	629.93	4.12	153.0	147.20	146.08
63.10	706.76	4.21	167.9	153.23	152.08
63.20	1,108.26	6.04	183.3	158.26	157.09

Table
Rating Table for Irregular Channel

Water Surface Elevation (ft)	Discharge (cfs)	Velocity (ft/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)
63.30	1,225.36	6.15	199.2	159.70	158.45
63.40	1,349.84	6.28	215.0	160.29	158.92
63.50	1,480.56	6.41	230.9	160.87	159.39

D.5 FLOW SPLIT AND DIVERSION DATA

NORTH SCOTTSDALE DELINEATION STUDY

(FCD 2003C008)

APPENDIX D.5.1 SPLIT FLOW ANALYSIS OF WESTLAND ROAD AND FAN 6C

INTERSECTION OF FAN 6C AND WESTLAND ROAD

The mapping does not reflect the construction of Westland Road. According to the recorded AS-BUILT plans, Boulder Ridge Improvement Plans, Westland Road was built with a 2-3% slope from east to west along the intersection in question. These plans indicate 2-10 X 4 concrete box culverts under the road. The flow and velocity indicated on these plans for the 100-year storm event is 605 cfs and 17.5 ft/s accordingly. According to the calculations determined in this study there are 1,513 cfs within Fan 6C. The large discrepancy in the flow amount has caused problems in the modeling. There will be a considerable amount of flow that will travel out of the main wash. A portion of the flow traveling over the roadway will begin to travel north, north-east and west. This flow will be contained within an adjacent wash and eventually rejoin the main wash. The size of the weir across the road was determined by using an approximate expansion, based on field survey, beginning at cross section 0.82. The weirs to the north and the northeast were sized based on field survey between the homes at the breakout point. This determined the amount of flow that has the potential to breakout of the main wash. Using the field survey points, culvert locations, and weir calculations it was determined that approximately 913-cfs would travel north, then west. The remainder would remain within the main wash. The flow in model Fan 6C was lowered by the amount determined to exit the wash. The breakout flow was then modeled in a small HEC-RAS to determine the floodplain limits. A portion of the breakout flow could not be designated as a Zone AE due to the complex hydraulic conditions that exist upstream of the box culverts in Westland Rd. These limits are called out as a Zone A in the floodplain maps. Also, it was agreed to not show the Floodway in the AE Zones downstream of cross-section 0.82. The decision to take this approach was approved by the FEMA region IX coordinator and the Map IX Mainland Project Review Manager at a meeting held at the District on February 3rd, 2005. Calculations can be found on the following pages.

www.deipro.com

DEI Professional Services, LLC

FAX TRANSMITTAL

Date: December 20, 2004	**Job No. 03062.10**	**Page:** 1 of 13
To: URS Corp – Floodplain Management		**Attn: Erik Lopez**
7720 N 16th St, Suite 100		**Re: North Scottsdale FDS**
Phoenix, AZ		**Phone: 602-371-1100**
85020		**Fax: 602-371-1615**

FROM: Brian Rahal, P.E.

DEI PROJECT No. 03062.10

SUBJECT: North Scottsdale Delineation Study – Details Calcs, Westland Rd Split Flow

Attached are the worksheets and rating tables for the split flow determination at Westland Road.

Thank you,
DEI Professional Services, LLC

Brian Rahal, P.E.

cc: Hal Marron, P.E.

6225 North 24th Street, Ste. 200 ♦ Phoenix, AZ 85016 ♦ 602.954.0038 Phone ♦ 602.944.8605 Fax

North Scottsdale Floodplain Delineation Study

Split Flow Calculations @ Westland Rd

Summary:

Split flow occurs at the upstream side of the box culverts in four phases. The first phase is where all flows are carried through the box culvert, up to a water surface elevation of 2456.73. The second phase is where flows occur at the box culverts and the West weir up to a water surface elevation of 2457.31. The third phase is where flows occur at the box culverts, the West weir and the North weir up to a water surface elevation of 2458.20. The fourth phase is where flows occur at the box culverts, the West weir, the North weir, and Road weir (Westland Rd) at peak total discharge of 1,584-cfs to a maximum water surface elevation of approximately 2459.15. See Summary Table below.

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY					
FAN 6C SPLIT FLOW CALCULATIONS @ WESTLAND RD BOX CULVERTS					
	Q TO Q_{100} = 1584-cfs				
	2 10x4 BOX	WEST WEIR	NORTH WEIR	ROAD WEIR	
BASE ELEV	2454.21	2456.73	2457.31	2458.20	
WS ELEV					TOTAL
2454.21	0	0	0	0	0
2456.73	220	0	0	0	220
2457.31	305	60	0	0	365
2458.20	440	274	110	0	824
2458.82	550	466	247	25	1288
2458.92	570	500	271	61	1402
2459.00	585	528	292	76	1481
2459.10	595	563	318	86	1562
2459.15	600	581	331	99	1611

Table of Contents:

(2) 10x4 Box Culvert Hydraulic Characteristics pg. 2
(2) 10x4 Box Culvert Performance Curve pg. 3
North Weir Worksheet pg. 4
North Weir Performance Curve pg. 5
West Weir Worksheet pg. 6
West Weir Performance Curve pg. 7
Road Weir Worksheet pg. 8
BFE Calculation Worksheets for Preserve Way
- Boulder Ridge Lot 20 pg. 9
- Boulder Ridge Lot 21 pg.10
- Boulder Ridge Lot 22 pg.11
Map of Weir Locations pg.12

Culvert Calculator Report
10X4-BOX

Solve For: Headwater Elevation

Culvert Summary					
Allowable HW Elevation	6.00	ft	Headwater Depth/Height	1.23	
Computed Headwater Elev	2,459.15	ft	Discharge	600.00	cfs
Inlet Control HW Elev.	2,459.15	ft	Tailwater Elevation	2,453.25	ft
Outlet Control HW Elev.	2,459.10	ft	Control Type	Inlet Control	

Grades					
Upstream Invert	2,454.24	ft	Downstream Invert	2,453.25	ft
Length	68.00	ft	Constructed Slope	0.014559	ft/ft

Hydraulic Profile					
Profile	S2		Depth, Downstream	2.19	ft
Slope Type	Steep		Normal Depth	1.80	ft
Flow Regime	Supercritical		Critical Depth	3.04	ft
Velocity Downstream	13.72	ft/s	Critical Slope	0.003202	ft/ft

Section					
Section Shape	Box		Mannings Coefficient	0.013	
Section Material	Concrete		Span	10.00	ft
Section Size	10 x 4 ft		Rise	4.00	ft
Number Sections	2				

Outlet Control Properties					
Outlet Control HW Elev.	2,459.10	ft	Upstream Velocity Head	1.52	ft
Ke	0.20		Entrance Loss	0.30	ft

Inlet Control Properties					
Inlet Control HW Elev.	2,459.15	ft	Flow Control	N/A	
Inlet Type	90° headwall w 45° bevels		Area Full	80.0	ft²
K	0.49500		HDS 5 Chart	10	
M	0.66700		HDS 5 Scale	2	
C	0.03140		Equation Form	2	
Y	0.82000				

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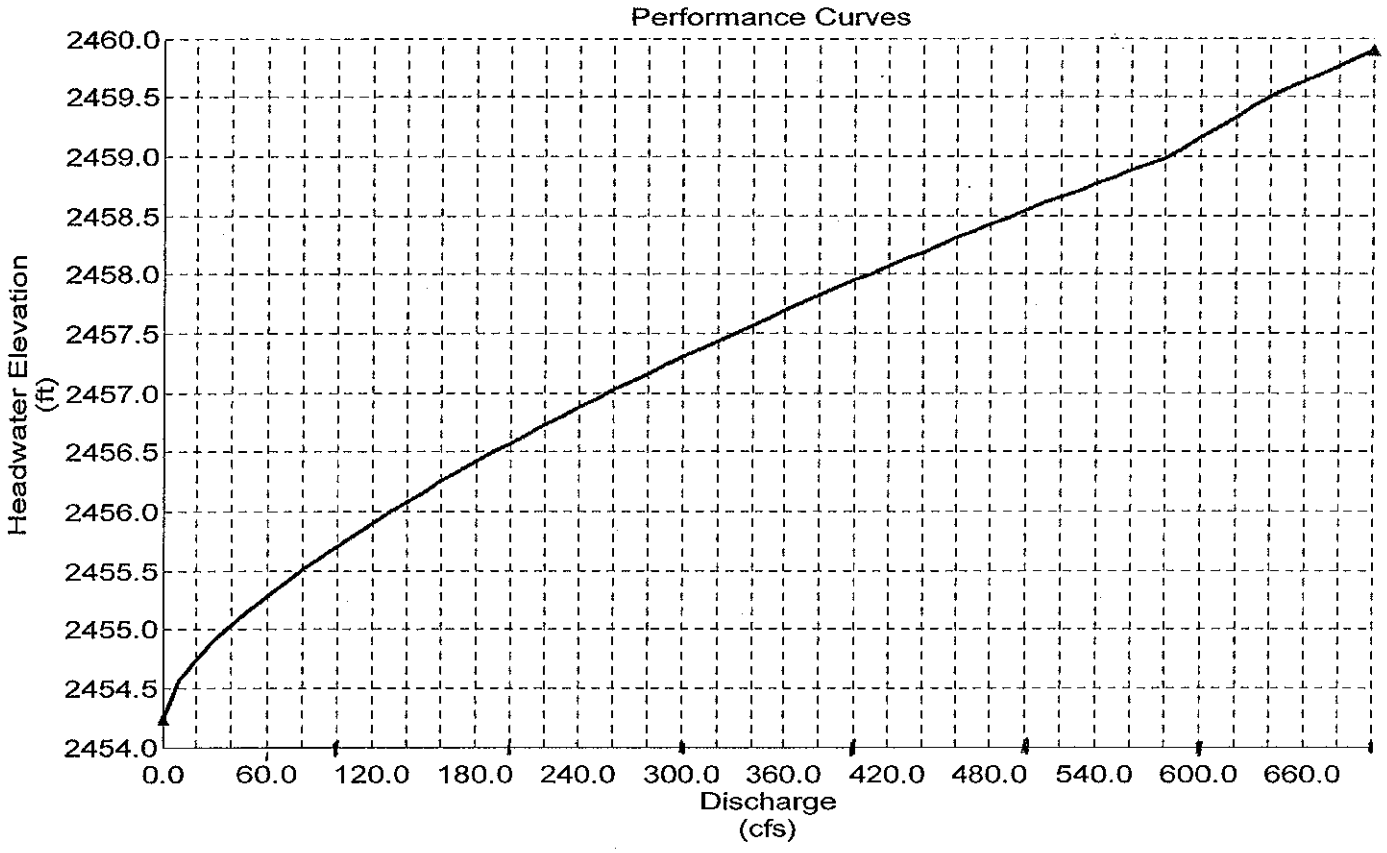
Performance Curves Report
10X4-BOX

Range Data:			
	Minimum	Maximum	Increment
Discharge	0.00	700.00	10.00 cfs



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Worksheet
Worksheet for Broad Crested Weir

Project Description	
Worksheet	North Weir
Type	Broad Crested
Solve For	Discharge

Input Data		
Headwater Elev	2459.15	ft
Crest Elevation	2457.31	ft
Tailwater Elevati	0.00	ft
Crest Surface T	Paved	
Crest Breadth	5.00	ft
Crest Length	43.00	ft

Results		
Discharge	331.31	cfs
Headwater Height Above	1.84	ft
Tailwater Height Above C	2457.31	ft
Discharge Coefficient	3.09	US
Submergence Factor	1.00	
Adjusted Discharge Coef	3.09	US
Flow Area	79.1	ft²
Velocity	4.19	ft/s
Wetted Perimeter	46.68	ft
Top Width	43.00	ft

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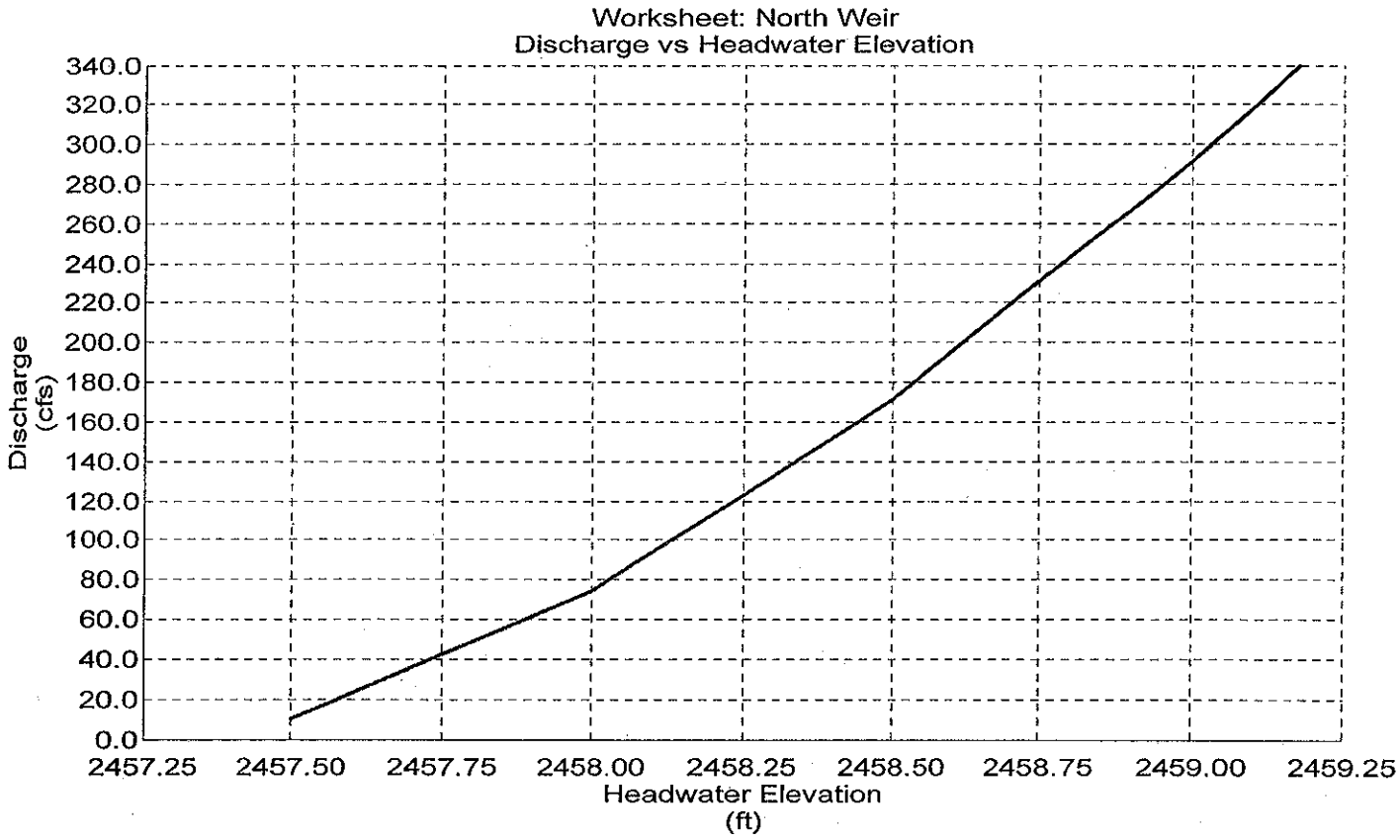
Curve
Plotted Curves for Broad Crested Weir

Project Description	
Worksheet	North Weir
Type	Broad Crested \
Solve For	Discharge

Input Data		
Crest Elevation	2457.31	ft
Tailwater Elevati	0.00	ft
Crest Surface T)	Paved	
Crest Breadth	5.00	ft
Crest Length	43.00	ft

Attribute	Minimum	Maximum	Increment
Headwater Elevation	2,457.00	2,460.00	0.50



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Worksheet
Worksheet for Broad Crested Weir

Project Description	
Worksheet	West Weir
Type	Broad Crested \
Solve For	Discharge

Input Data		
Headwater Elevi	2459.15	ft
Crest Elevation	2456.73	ft
Tailwater Elevati	0.00	ft
Crest Surface T\	Gravel	
Crest Breadth	5.00	ft
Crest Length	50.00	ft

Results		
Discharge	581.07	cfs
Headwater Height Above	2.42	ft
Tailwater Height Above C	2,456.73	ft
Discharge Coefficient	3.09	US
Submergence Factor	1.00	
Adjusted Discharge Coef	3.09	US
Flow Area	121.0	ft²
Velocity	4.80	ft/s
Wetted Perimeter	54.84	ft
Top Width	50.00	ft

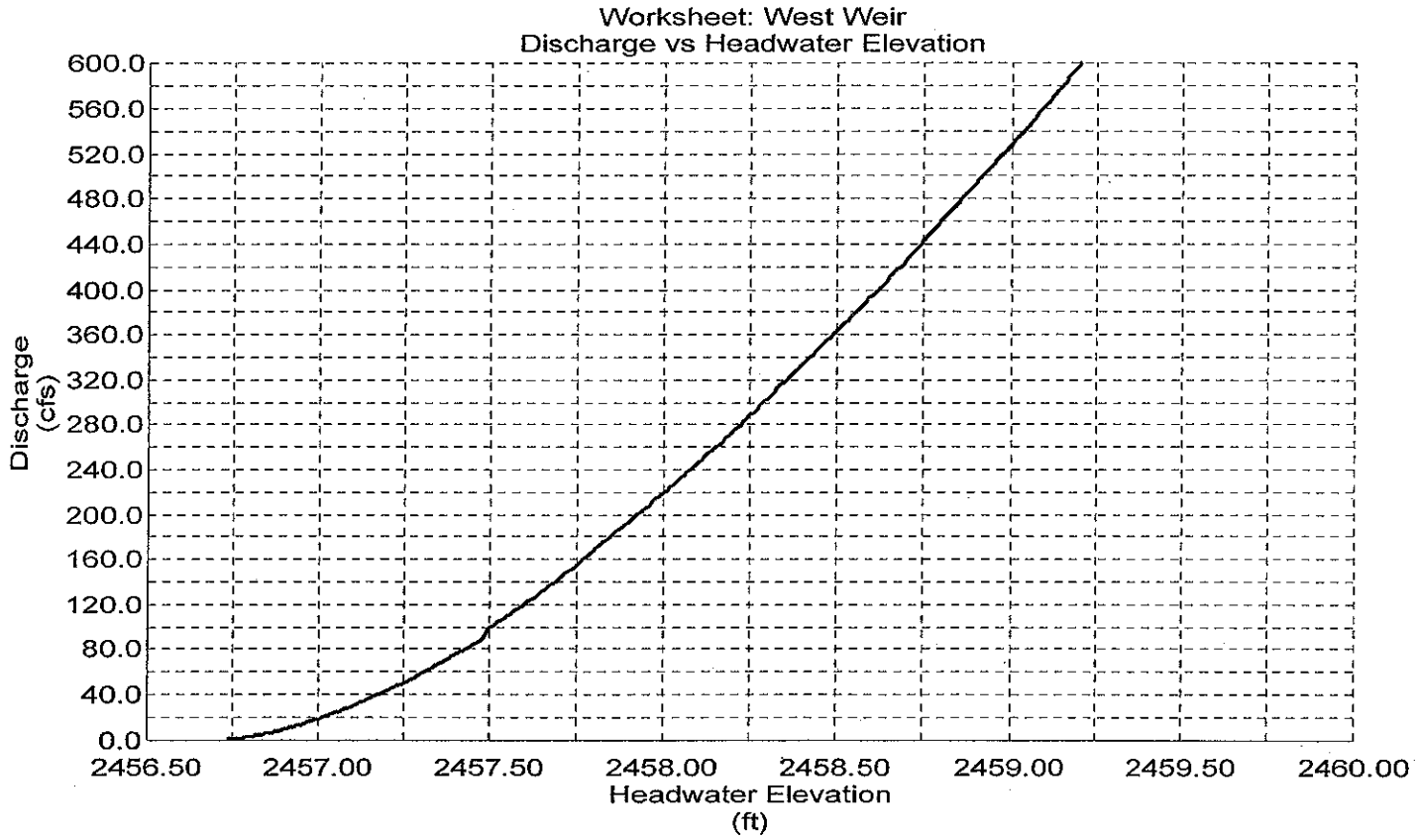
6/12

Curve
Plotted Curves for Broad Crested Weir

Project Description	
Worksheet	West Weir
Type	Broad Crested
Solve For	Discharge

Input Data		
Crest Elevation	2,456.73	ft
Tailwater Elevati	0.00	ft
Crest Surface Ty	Gravel	
Crest Breadth	5.00	ft
Crest Length	50.00	ft

Attribute	Minimum	Maximum	Increment
Headwater Elevation	2,456.00	2,460.00	0.01



7/12

Worksheet
Worksheet for Broad Crested Weir

Project Description	
Worksheet	ROAD
Type	Broad Crested !
Solve For	Discharge

Input Data		
Headwater Elev	2459.15	ft
Crest Elevation	2458.20	ft
Tailwater Elevati	0.00	ft
Crest Surface T	Paved	
Crest Breadth	5.00	ft
Crest Length	35.00	ft

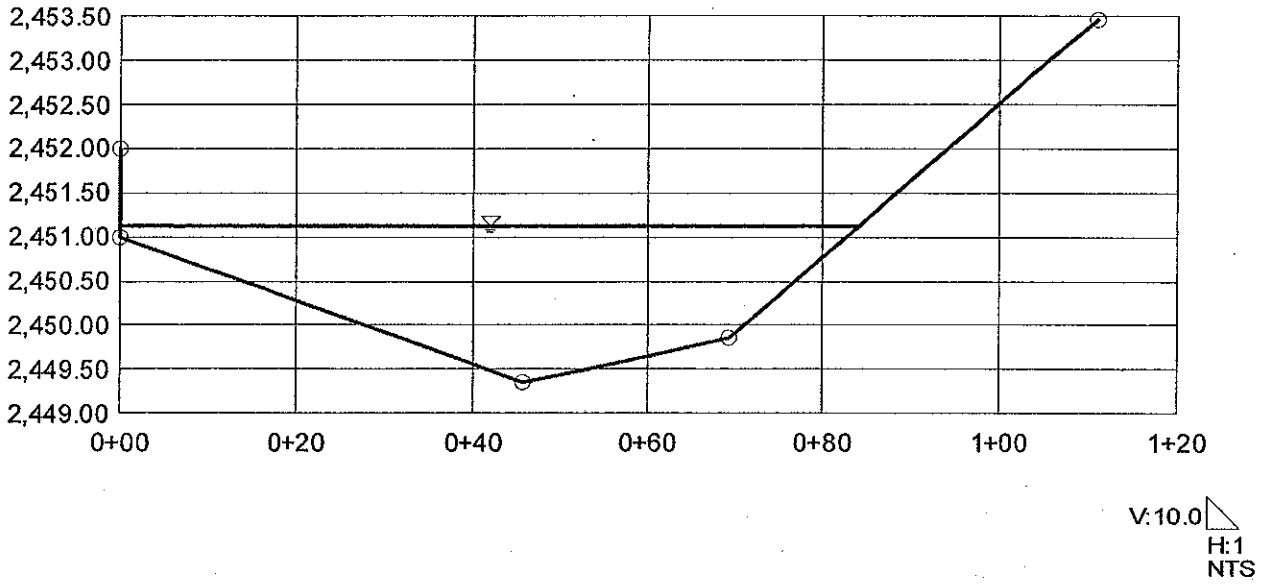
Results		
Discharge	99.25	cfs
Headwater Height Above	0.95	ft
Tailwater Height Above C	2458.20	ft
Discharge Coefficient	3.06	US
Submergence Factor	1.00	
Adjusted Discharge Coef	3.06	US
Flow Area	33.3	ft²
Velocity	2.99	ft/s
Wetted Perimeter	36.90	ft
Top Width	35.00	ft

8/12

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	LOT20-PRESEI
Flow Element	Irregular Chann
Method	Manning's Form
Solve For	Channel Depth

Section Data		
Mannings Coefficiei	0.042	
Channel Slope	0.010500	ft/ft
Water Surface Elev	2,451.11	ft BFE
Elevation Range	19.35 to 2,453.47	
Discharge	331.31	cfs

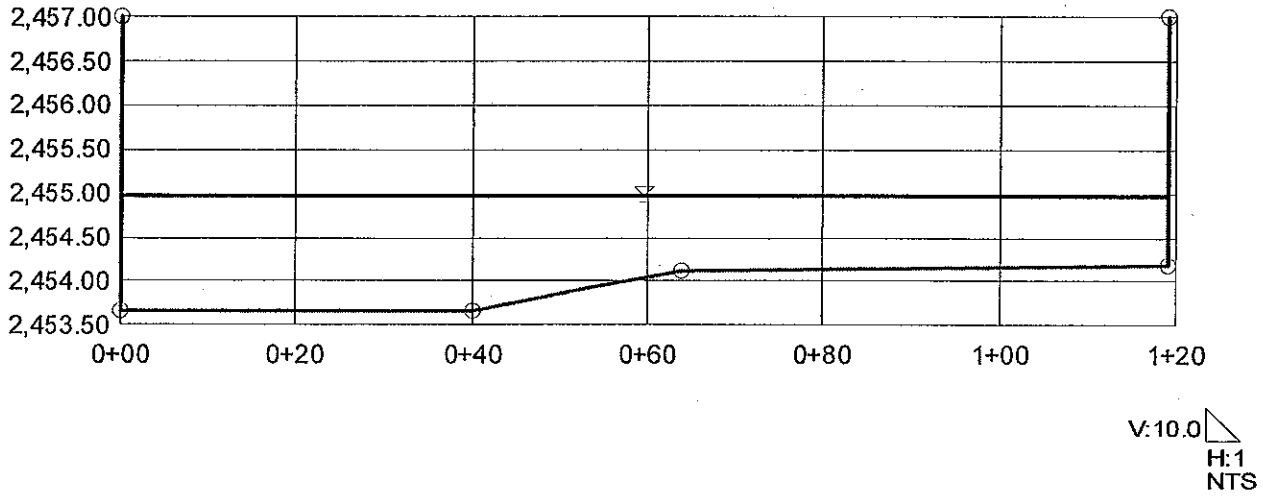


9/12

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	LOT21-PRESEI
Flow Element	Irregular Chann
Method	Manning's Form
Solve For	Channel Depth

Section Data		
Mannings Coefficiei	0.057	
Channel Slope	0.010500	ft/ft
Water Surface Elev	2,454.97	ft BFE
Elevation Range	53.66 to 2,457.00	
Discharge	331.31	cfs



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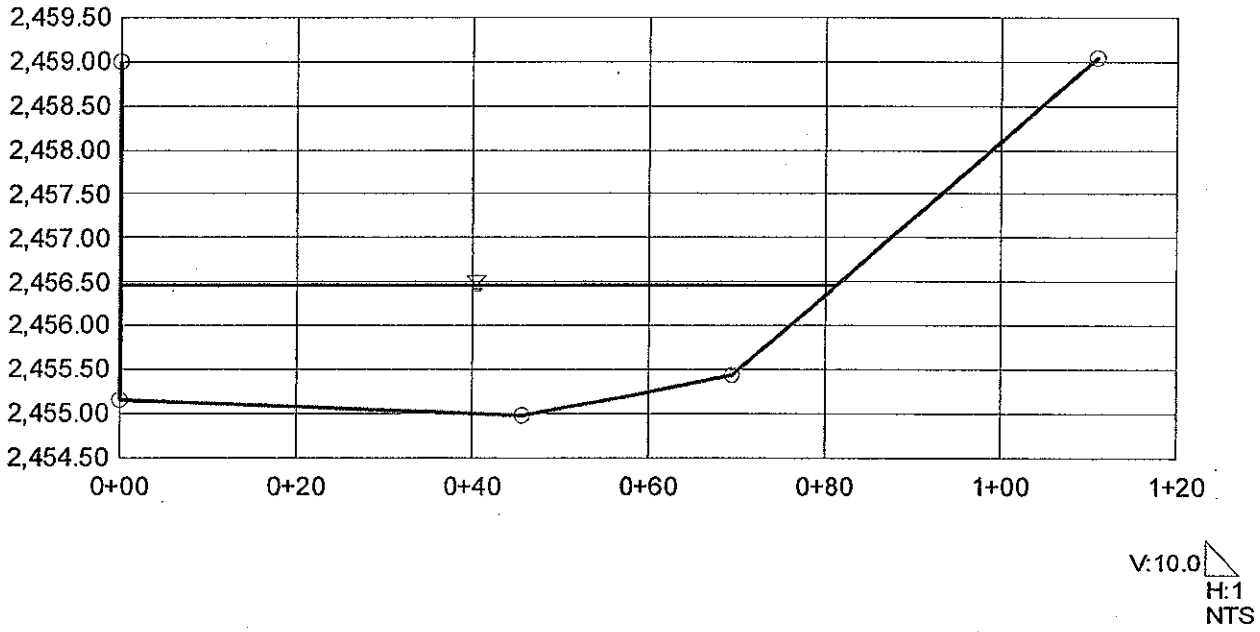
Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	LOT22-PRESEI
Flow Element	Irregular Chann
Method	Manning's Form
Solve For	Channel Depth

Section Data		
Mannings Coefficiei	0.052	
Channel Slope	0.010500	ft/ft
Water Surface Elev	2,456.45	ft BFE
Elevation Range	54.97 to 2,459.04	
Discharge	331.31	cfs



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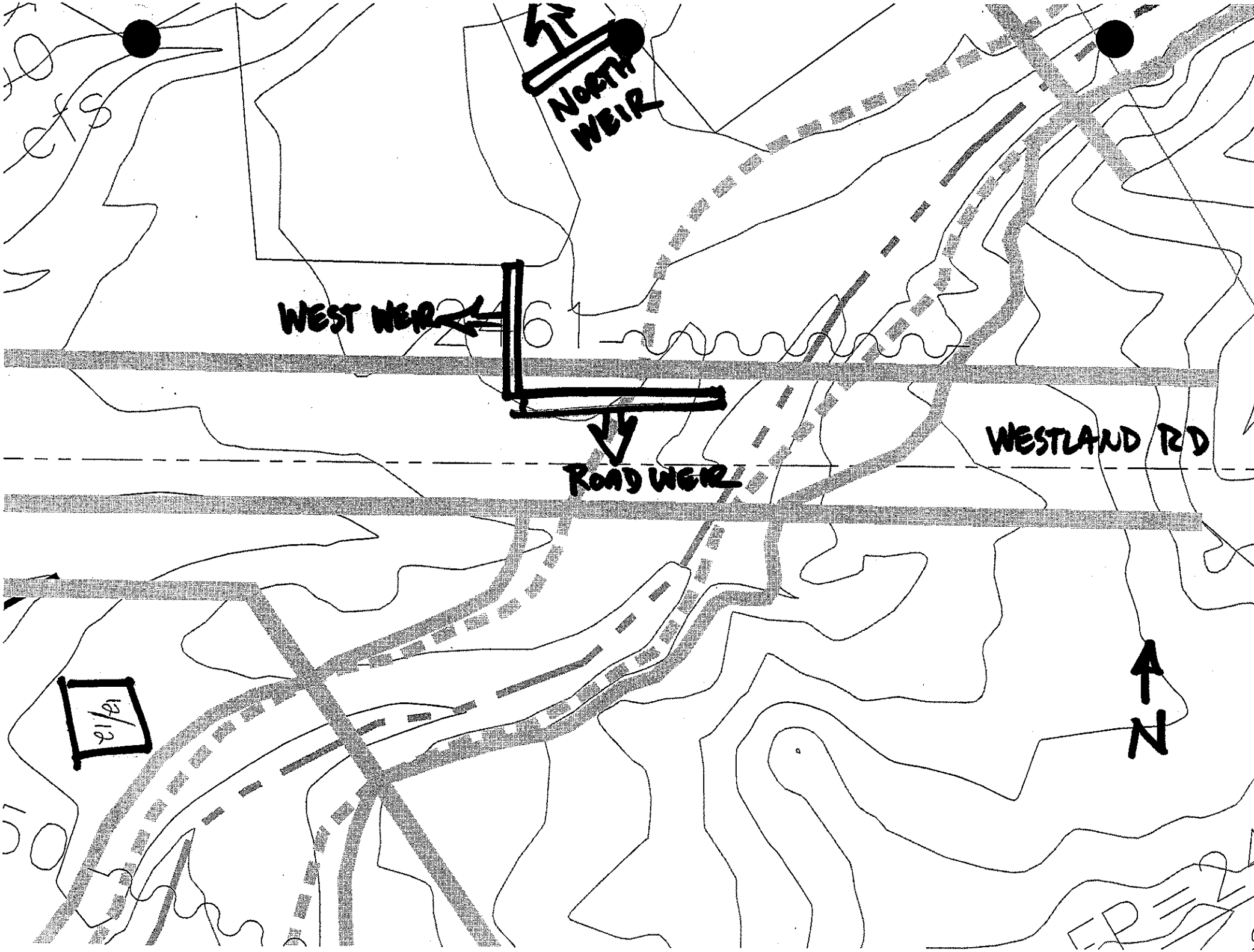
NORTH WEIR
WEST WEIR
ROAD WEIR
WESTLAND RD
N

TRANSMISSION VERIFICATION REPORT

TIME : 12/20/2004 15:08
NAME : DEI PROFESSIONAL
FAX : 6023240165
TEL : 6029540038

DATE,TIME	12/20 15:05
FAX NO./NAME	6023711615
DURATION	00:02:38
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RESULT	OK
MODE	STANDARD ECM

D.6 HYDROLOGIC CALCULATIONS

HEC-1 Peak Flow Summary

Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
NS									
	SCP-14	Hydrograph	0.060	51	75	92	118	139	157
	RSCP14	Routed	0.060	47	70	87	113	132	150
	SCP-13	Hydrograph	0.080	75	110	136	170	198	227
	SCP-12	Hydrograph	0.030	29	43	54	69	80	91
	CSCP12	Combined	0.170	145	215	267	340	398	453
	RSCP12	Routed	0.170	125	192	241	308	366	419
	SCP-10	Hydrograph	0.110	75	124	159	207	248	286
	CSCP10	Combined	0.280	175	276	352	456	547	631
	SCP-11	Hydrograph	0.030	22	35	44	58	67	78
	CSCP11	Combined	0.300						676
	RSCP10	Routed	0.300	157	263	341	447	546	635
	SCP-09	Hydrograph	0.110	77	127	162	212	250	289
	CSCP09	Combined	0.410	180	303	393	517	646	758
	RSCP09	Routed	0.410	159	288	377	499	618	737
	SCP-08	Hydrograph	0.130	82	139	179	235	278	326
	CSCP08	Combined	0.540	176	322	423	561	702	844
	RSCP08	Routed	0.540	173	309	411	552	685	824
	SCP-7E	Hydrograph	0.050	32	54	70	93	111	130
	CSCP7E	Combined	0.590						836
	SCP-7B	Hydrograph	0.090	39	66	87	120	147	173
	RSCP7B	Routed	0.090	37	62	82	113	139	164
	SCP-7C	Hydrograph	0.180	68	115	154	212	263	315
	RSCP7C	Routed	0.180	67	112	150	206	255	306
	SCP-7D	Hydrograph	0.030	21	33	42	56	66	76
	CSCP7D	Combined	0.290	114	192	256	350	433	517
	RSCP7D	Routed	0.290	114	192	256	350	433	517
	CSCP07	Combined	0.880	231	388	531	738	924	1,116
	SCP-7A	Hydrograph	0.140	58	99	131	180	222	263
	CSCP7A	Combined	1.010						1,243
	RSCP07	Routed	1.010	262	429	576	812	1,019	1,234
	SCP-06	Hydrograph	0.100	63	101	131	172	205	237
	CSCP06	Combined	1.110	289	472	620	858	1,079	1,308
	SSCP06	Routed	1.110	289	472	620	858	1,079	1,308
	RSCP06	Routed	1.110	287	468	617	857	1,076	1,305
	SCP-4B	Hydrograph	0.140	81	139	182	244	292	343
	SSCP4B	Routed	0.140	81	139	182	244	292	343
	RSCP4B	Routed	0.140	73	127	165	223	269	317
	SCP-4A	Hydrograph	0.080	45	75	97	128	153	178
	CSCP4A	Combined	1.330						1,487
	SCP-5C	Hydrograph	0.150	103	166	214	281	337	389
	SSCP5C	Routed	0.150	103	166	214	281	337	389
	RSCP5C	Routed	0.150	90	146	188	249	301	350
	SCP-5B	Hydrograph	0.030	21	32	40	51	60	69
	SSCP5B	Routed	0.030	4	4	4	4	4	4
	RSCP5B	Routed	0.030	4	4	4	4	4	4
	SCP-5A	Hydrograph	0.090	65	108	137	182	215	250
	CSCP04	Combined	1.600	406	666	884	1,205	1,473	1,752

HEC-1 Peak Flow Summary

Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
NS									
	RSCP04	Routed	1.600	404	662	881	1,199	1,468	1,746
	SCP-03	Hydrograph	0.080	45	80	105	140	169	198
	CSCP03	Combined	1.680	410	676	903	1,232	1,509	1,792
	RSCP03	Routed	1.680	409	674	901	1,229	1,506	1,788
	SCP-2B	Hydrograph	0.050	20	36	49	70	85	102
	CSCP2B	Combined	1.730	414	686	919	1,257	1,540	1,828
	SSCP2B	Routed	1.730	415	686	919	1,256	1,540	1,828
	RSCP2B	Routed	1.730	412	683	915	1,251	1,533	1,821
	SCP-2A	Hydrograph	0.050	29	52	67	90	110	128
	CSCP02	Combined	1.790	416	692	929	1,272	1,559	1,851
	SSCP02	Routed	1.790	416	692	929	1,272	1,559	1,851
	RSCP02	Routed	1.790	410	680	911	1,244	1,523	1,813
	SCP-01	Hydrograph	0.320	117	207	285	398	491	583
	CSCP01	Combined	2.110	449	754	1,017	1,387	1,687	1,996
	SSCP01	Routed	2.110	449	754	1,017	1,387	1,687	1,996
	F6C-6	Hydrograph	0.890	224	410	574	829	1,041	1,251
	RF6C6	Routed	0.890	224	408	572	824	1,032	1,236
	F6C-4	Hydrograph	0.030	17	28	36	47	56	65
	CF6C4	Combined	0.910	229	417	585	842	1,054	1,261
	F6C-5	Hydrograph	0.140	46	80	106	148	184	222
	CF6C5	Combined	1.050						1,399
	RF6C4	Routed	1.050	250	452	617	874	1,095	1,317
	F6C-3	Hydrograph	0.050	24	42	55	74	89	103
	CF6C3	Combined	1.100	257	464	631	892	1,118	1,346
	RF6C3	Routed	1.100	253	458	624	879	1,101	1,324
	F6C-2	Hydrograph	0.090	78	118	147	184	217	248
	CF6C2	Combined	1.180	263	476	647	909	1,137	1,369
	SF6C2	Routed	1.180	263	476	647	909	1,137	1,369
	DCUB09	Diversion	1.180				1	8	24
	DCF6C2	Hydrograph	1.180	263	476	647	907	1,128	1,345
	RF6C2	Routed	1.180	261	474	645	904	1,123	1,338
	F6C-1C	Hydrograph	0.080	91	132	159	197	229	260
	CF6C1C	Combined	1.260	261	476	650	909	1,131	1,349
	F6C-1B	Hydrograph	0.190	98	163	213	282	81	402
	SF6C1B	Routed	0.190	98	163	213	282	81	402
	RF6C1B	Routed	0.190	96	160	208	276	81	394
	CF6C1B	Combined	1.460						1,513
	SF6C1C	Routed	1.460	302	547	745	1,023	1,169	1,513
	RF6C1C	Routed	1.460	300	544	742	1,020	1,163	1,500
	F6C-1D	Hydrograph	0.040	51	73	87	108	123	140
	SF6C1D	Routed	0.040	51	73	87	108	123	140
	RF6C1D	Routed	0.040	42	61	75	94	109	125
	F6C-1A	Hydrograph	0.180	163	250	313	400	465	529
	CF6C1	Combined	1.680	315	580	798	1,086	1,223	1,584
	UB-12	Hydrograph	0.060	39	63	81	105	127	146
	RUB12	Routed	0.060	27	41	53	77	95	112
	UB-10	Hydrograph	0.090	52	84	109	146	176	206

HEC-1 Peak Flow Summary

Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
NS									
	CUB10	Combined	0.150	60	95	121	161	200	238
	UB-11	Hydrograph	0.210	136	216	274	364	434	508
	CUB11	Combined	0.360						735
	RUB10	Routed	0.360	182	287	366	489	586	691
	UB-09	Hydrograph	0.340	219	355	458	606	728	848
	CUB09	Combined	0.700	328	523	672	900	1,080	1,270
	SUB09	Routed	0.700	328	523	672	900	1,080	1,270
	DCUB09	Hydrograph	1.180				1	8	24
	DCUB09	Combined	0.700	328	523	672	900	1,080	1,270
	RUB09	Routed	0.700	323	507	645	857	1,034	1,217
	UB-07	Hydrograph	0.190	144	225	284	368	435	496
	CUB07	Combined	0.890	401	625	786	1,032	1,242	1,459
	UB-08C	Hydrograph	0.010	10	15	19	24	28	32
	RUB08C	Routed	0.010	6	8	10	12	14	16
	UB-08B	Hydrograph	0.030	38	54	66	81	94	108
	RUB08B	Routed	0.030	20	33	42	53	64	75
	UB-08A	Hydrograph	0.120	50	88	119	164	201	238
	CUB08	Combined	1.060						1,629
	RUB07	Routed	1.060	433	684	869	1,145	1,377	1,617
	UB-05B	Hydrograph	0.020	27	39	47	58	67	76
	CUB05B	Combined	1.080	436	689	875	1,153	1,387	1,628
	SUB05B	Routed	1.080	436	689	875	1,153	1,387	1,628
	RUB05B	Routed	1.080	434	686	870	1,140	1,368	1,603
	UB-05A	Hydrograph	0.090	74	113	140	177	208	237
	CUB05	Combined	1.170	457	721	911	1,189	1,424	1,667
	SUB05	Routed	1.170	457	721	911	1,189	1,424	1,667
	RUB05	Routed	1.170	455	719	909	1,187	1,421	1,663
	UB-06C	Hydrograph	0.040	39	57	70	87	100	114
	SUB06C	Routed	0.040	39	57	70	87	100	114
	RUB06C	Routed	0.040	32	49	61	76	88	102
	UB-06B	Hydrograph	0.050	39	60	74	95	111	127
	SUB06B	Routed	0.050	39	60	74	95	111	127
	RUB06B	Routed	0.050	35	55	69	88	104	119
	UB-06A	Hydrograph	0.040	42	61	75	94	109	125
	CUB06	Combined	0.130	99	153	190	241	283	326
	RUB06	Routed	0.130	97	149	185	236	276	318
	UB-03	Hydrograph	0.030	26	40	49	62	73	84
	CUB03	Combined	1.330	506	799	1,004	1,301	1,552	1,810
	UB-04	Hydrograph	0.350	229	365	465	605	722	836
	CUB04	Combined	1.680						2,178
	RUB03	Routed	1.680	613	978	1,232	1,583	1,868	2,152
	UB-01	Hydrograph	0.050	47	71	87	112	131	151
	CUB01	Combined	1.730	621	992	1,250	1,606	1,894	2,178
	SUB01	Routed	1.730	621	992	1,250	1,606	1,894	2,178
	UB-02	Hydrograph	0.050	57	81	98	123	143	162
	F6AN-8	Hydrograph	0.230	263	384	467	581	676	716
	RF6AN8	Routed	0.230	225	341	420	528	621	653

Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
NS									
	F6AN-6	Hydrograph	0.110	41	78	108	151	186	215
	CF6AN6	Combined	0.340	260	402	501	636	756	809
	F6AN-7	Hydrograph	0.280	119	212	291	403	493	565
	CF6AN7	Combined	0.630						1,227
	RF6AN6	Routed	0.630	314	517	673	890	1,077	1,164
	F6AN-5	Hydrograph	0.100	49	92	124	169	206	246
	CF6AN5	Combined	0.730	324	537	701	931	1,129	1,225
	RF6AN5	Routed	0.730	290	489	649	869	1,053	1,138
	F6AN-3	Hydrograph	0.140	45	76	101	141	175	206
	CF6AN3	Combined	0.870	306	520	691	931	1,131	1,228
	F6AN-4	Hydrograph	0.250	100	168	221	305	373	438
	CF6AN4	Combined	1.120						1,435
	RF6AN3	Routed	1.120	345	589	788	1,071	1,307	1,430
	F6AN-2	Hydrograph	0.150	52	93	127	177	221	265
	CF6AN2	Combined	1.270	361	618	831	1,135	1,389	1,527
	RF6AN2	Routed	1.270	352	600	803	1,044	1,377	1,514
	F6AN-1	Hydrograph	0.410	200	341	460	633	771	892
	CF6AN1	Combined	1.680	368	624	837	1,120	1,523	1,678
	F6AS-5	Hydrograph	0.630	248	463	631	875	1,064	1,145
	RF6AS5	Routed	0.630	184	363	516	728	907	963
	F6AS-3	Hydrograph	0.320	136	225	300	414	506	593
	CF6AS3	Combined	0.950	212	431	607	865	1,080	1,154
	F6AS-4	Hydrograph	0.430	109	189	254	359	456	537
	CF6AS4	Combined	1.380						1,450
	RF6AS3	Routed	1.380	251	520	730	1,054	1,321	1,427
	F6AS-2	Hydrograph	0.060	41	65	82	107	128	147
	CF6AS2	Combined	1.440	251	523	736	1,065	1,335	1,442
	RF6AS2	Routed	1.440	243	502	702	1,019	1,293	1,395
	F6AS-1	Hydrograph	0.280	126	210	280	385	472	616
	CF6AS1	Combined	1.720						1,493
	CF6ASN	Combined	3.400						2,709
	RF6AN1	Routed	3.400	502	959	1,356	1,964	2,453	2,696
	F6A-1	Hydrograph	0.130	135	199	242	304	351	371
	CF6A1	Combined	3.530	502	957	1,354	1,964	2,467	2,698
	RHW-1	Hydrograph	1.050	317	628	877	1,245	1,544	1,822
	DRHOUT	Diversion	1.050	270	418	527	707	862	1,006
	DRHW1	Hydrograph	1.050	47	210	349	538	682	815
	RRHW1	Routed	1.050	34	151	261	406	523	645
	UF5-5	Hydrograph	0.290	68	127	180	266	335	404
	RUF55	Routed	0.290	60	109	151	216	269	320
	UF5-4	Hydrograph	0.250	128	205	268	362	441	522
	CUF54	Combined	1.600	103	275	429	642	806	979
	RUF54	Routed	1.600	98	259	413	623	786	954
	UF5-2	Hydrograph	0.620	277	455	590	783	940	1,094
	CUF52	Combined	2.220	249	421	555	805	1,023	1,242
	UF5-3	Hydrograph	0.840	300	485	624	832	1,001	1,171
	CUF53	Combined	3.070						1,976

HEC-1 Peak Flow Summary

Major Basin ID	ID	Type	Area (sq mi)	2 Year (cfs)	5 Year (cfs)	10 Year (cfs)	25 Year (cfs)	50 Year (cfs)	100 Year (cfs)
NS									
	RUF52	Routed	3.070	482	796	1,038	1,394	1,680	1,971
	UF5-1	Hydrograph	0.080	89	129	158	199	231	260
	CUF51	Combined	3.150	489	810	1,061	1,427	1,721	2,019

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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   13APR05  TIME  14:02:24  *                    *          (916) 756-1104              *
*                                      *                    *                                      *
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                                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   Project ID: 01131.12 - Major Basin: NS - Return Period: 100 Years
    2           ID
    3           ID   NORTH SCOTTSDALE 100-YR FLOODPLAIN DELINEATION STUDY
    4           ID   MAY 2002
    5           ID
    6           ID   FILE NAME:  NS.DAT
    7           ID   THIS MODEL REPRESENTS THE FUTURE LAND USE CONDITIONS OF THE WATERSHEDS.
    8           ID   THE TOTAL DRAINAGE AREA FOR THE ENTIRE STUDY IS 15.2 SQUARE MILES.
    9           ID
   10           ID   100-YEAR, 6-HOUR FREQUENCY
   11           ID
   12           ID   METHODOLOGY:
   13           ID   THE US CORPS OF ENGINEERS FLOOD HYROLOGY MODEL HEC-1, DATED JUNE 1998,
   14           ID   VERSION 4.1
   15           ID   MULTIPLE STORMS
   16           ID   CLARK UNIT HYDROGRAPH
   17           ID   GREEN AMPT LOSS METHOD
   18           ID   NORMAL DEPTH BASIN AND REACH ROUTING METHOD
   19           ID
   20           ID   LAND USES PER CITY OF SCOTTSDALE PROVIDED GIS
   21           ID
   22           ID   PROJECT WASHES INCLUDE: STAGE COACH PASS (SCP)
   23           ID                           UPPER BOULDERS WASH (UB)
   24           ID                           FAN 6C (F6C)
   25           ID                           FAN 6A NORTH (F6AN)
   26           ID                           FAN 6A SOULTH (F6AS)
   27           ID                           FAN 6A (F6A)
   28           ID                           UPPER FAN 5 (UF5)
   29           ID
   30           ID   PROJECT SUB-BASINS DESIGNATED AS SUB-BASIN NAME ABREVIATION FOLLOWED BY BASIN
   31           ID   NUMBER.  I.E. STAGE COACH PASS SUB-BASIN 14 IS DESIGNATED AS SCP-14.
   32           ID
   33           ID   PROJECT CONCENTRATION POINTS DESIGNATED AS C FOLLOWED BY SUB-BASIN NAME AND
   34           ID   CONCENTRATION POINT NUMBER.  CONCENTRATION POINT NUMBER IS CHOOSEN BY THE SUB
   35           ID   BASIN THE CONCENTRATION POINT IS LOCATED IN.  I.E.  CONCENTRATION POINT IN
   36           ID   SUB-BASIN 06 OF UPPER BOULDERS WASH IS DESIGNATED AS CUB06.
   37           ID
   38           ID   PROJECT ROUTES ARE DESIGNATED AS R FOLLOWED BY SUB-BASIN NAME AND ROUTE
   39           ID   NUMBER. ROUTE NUMBER IS CHOOSEN BY THE SUB-BASIN IN WHICH THE ROUTE BEGINS.
   40           ID   IE A ROUTE FROM SUB-BASIN 4 IN FAN 6C IS DESIGNATED AS RF6C4.
   41           ID
   42           ID
   43           ID
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 44          ID
 45          IT       1                    2000
 46          IO       5
             *DIAGRAM
 47          IN      15
 48          JD    3.50    0.01
 49          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
 50          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
 51          PC   0.962   0.972   0.983   0.991   1.000
 52          JD   3.477    0.50
 53          JD   3.412    2.80
 54          PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
1                                          HEC-1 INPUT                                          PAGE  2

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 55          PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
 56          PC   0.950   0.963   0.975   0.988   1.000
 57          JD   3.227    16.0
 58          PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
 59          PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
 60          PC   0.946   0.960   0.973   0.987   1.000
 61          JD   2.842    90.0
 62          PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
 63          PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
 64          PC   0.927   0.945   0.964   0.982   1.000
 65          JD   1.995   500.0
 66          PC   0.000   0.024   0.043   0.059   0.078   0.098   0.119   0.141   0.162   0.186
 67          PC   0.212   0.239   0.271   0.321   0.408   0.515   0.627   0.735   0.814   0.864
 68          PC   0.907   0.930   0.954   0.977   1.000
             *DIAGRAM

 69          KK  SCP-14   BASIN
 70          BA   0.059
 71          LG    0.30    0.15    8.80    0.06      18
 72          UC   0.171   0.260
 73          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 74          UA     100

 75          KK  RSCP14   ROUTE   REACH
 76          RS       1    STOR      -1
 77          RC   0.064   0.044   0.064    1086  0.0322    0.00
 78          RX   812.0   844.1   955.0   977.5  1000.0  1009.0  1017.6  1031.5
 79          RY   957.3   957.0   956.0   955.0   954.0   956.0   958.0   960.0

 80          KK  SCP-13   BASIN
 81          BA   0.080
 82          LG    0.30    0.15    9.70    0.04      17
 83          UC   0.171   0.228
 84          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 85          UA     100

 86          KK  SCP-12   BASIN
 87          BA   0.028
 88          LG    0.30    0.25    5.80    0.18      27
 89          UC   0.121   0.135
 90          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
 91          UA     100

 92          KK  CSCP12
 93          KM   COMBINE SCP12, SCP13, AND RSCP14
 94          KM   LOCATED AT NORTH BOUNDARY OF MIRABEL.
 95          HC       3

 96          KK  RSCP12   ROUTE   REACH
 97          RS       4    STOR      -1
 98          RC   0.064   0.044   0.064    3465  0.0268    0.00
 99          RX   870.5   892.9   951.4   993.0  1049.1  1067.0  1124.7  1164.5
100          RY   886.0   884.0   882.0   880.0   880.0   882.0   884.0   886.0
1                                          HEC-1 INPUT                                          PAGE  3

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

101          KK  SCP-10   BASIN
102          BA   0.111
103          LG    0.24    0.29    5.60    0.19      24
104          UC   0.200   0.232
105          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
106          UA     100
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107          KK  CSCP10
108          KM   COMBINE SCP10, AND RSCP12
109          KM   EXITING MIRABEL ON WEST BOUNDARY BEFORE RE-ENTERING SUBDIVISION.
110          HC       2

111          KK  SCP-11   BASIN
112          BA   0.026
113          LG    0.31    0.25    3.95    0.46      36
114          UC   0.129   0.152
115          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
116          UA     100

117          KK  CSCP11
118          KM   COMBINE CSCP10, AND SCP11
119          KM   EXITING MIRABEL ON WEST BOUNDARY BEFORE RE-ENTERING SUBDIVISION.
120          HC       2

121          KK  RSCP10   ROUTE   REACH
122          RS       5    STOR      -1
123          RC   0.064   0.044   0.064    4424  0.0255    0.00
124          RX   814.2   853.2   899.7   949.5  1052.9  1130.7  1232.4  1257.1
125          RY   820.0   815.3   816.0   812.0   812.0   814.0   818.0   820.0

126          KK  SCP-09   BASIN
127          BA   0.107
128          LG    0.30    0.25    4.20    0.41      37
129          UC   0.192   0.196
130          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
131          UA     100

132          KK  CSCP09
133          KM   COMBINE SCP09, AND RSCP10
134          KM   EXITING MIRABEL ON WEST BOUNDARY.
135          HC       2

136          KK  RSCP09   ROUTE   REACH
137          RS       3    STOR      -1
138          RC   0.064   0.044   0.064    2968  0.0230    0.00
139          RX   865.1   910.6   932.1   961.1  1066.2  1091.4  1109.0  1125.3
140          RY   724.0   722.0   718.0   714.0   714.0   718.0   722.0   724.0

141          KK  SCP-08   BASIN
142          BA   0.127
143          LG    0.30    0.25    3.95    0.56      45
144          UC   0.208   0.212
145          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
146          UA     100
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

147          KK  CSCP08
148          KM   COMBINE SCP08, AND RSCP09
149          KM   EXITING CITY OF SCOTTSDALE AND ENTERING TOWN OF CAREFREE.
150          HC       2

151          KK  RSCP08   ROUTE   REACH
152          RS       3    STOR      -1
153          RC   0.064   0.044   0.064    2847  0.0204    0.00
154          RX   850.9   901.3   954.4   979.4  1000.0  1062.3  1114.0  1201.2
155          RY   668.0   666.0   664.0   662.0   660.0   662.0   664.0   666.0

156          KK  SCP-7E   BASIN
157          BA   0.048
158          LG    0.30    0.25    3.95    0.55      33
159          UC   0.163   0.183
160          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
161          UA     100

162          KK  CSCP7E
163          KM   COMBINE SCP7E, AND RSCP08
164          KM   NORTH OF CITY OF SCOTTSDALE BOUNDARY IN SECTION 31 OF T6N5E.
165          KM   EXITING TOWN OF CAREFREE AT STAGECOACH PASS.
166          HC       2

167          KK  SCP-7B   BASIN
168          BA   0.088
169          LG    0.30    0.25    3.95    0.50      40
170          UC   0.238   0.357
171          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
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 172          UA     100

 173          KK  RSCP7B   ROUTE   REACH
 174          RS       3    STOR      -1
 175          RC   0.064   0.044   0.064    2275  0.0224    0.00
 176          RX   947.0   967.3   977.1   990.7  1013.1  1024.4  1047.5  1074.1
 177          RY   646.0   644.0   642.0   640.0   640.0   642.0   644.0   646.0

 178          KK  SCP-7C   BASIN
 179          BA   0.177
 180          LG    0.30    0.25    3.95    0.50      41
 181          UC   0.292   0.411
 182          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 183          UA     100

 184          KK  RSCP7C   ROUTE   REACH
 185          RS       1    STOR      -1
 186          RC   0.064   0.044   0.064     821  0.0207    0.00
 187          RX   827.0   845.3   898.0   993.5  1008.9  1024.0  1042.1  1057.6
 188          RY   640.0   638.0   636.0   634.0   634.0   636.0   638.0   640.0
1                                          HEC-1 INPUT                                                    PAGE  5

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 189          KK  SCP-7D   BASIN
 190          BA   0.027
 191          LG    0.30    0.25    3.95    0.56      41
 192          UC   0.142   0.176
 193          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 194          UA     100

 195          KK  CSCP7D
 196          KM   COMBINE SCP7D, RSCP7B AND RSCP7C
 197          KM   CONFLUENCE POINT WITHIN TOWN OF CAREFREE.  CROSSING AT TWILIGHT TRAIL.
 198          HC       3

 199          KK  RSCP7D   ROUTE   REACH
 200          RS       1    STOR      -1
 201          RC   0.064   0.044   0.064     217  0.0276    0.00
 202          RX   956.3   969.1   987.2   991.1  1012.9  1019.5  1030.2  1044.8
 203          RY   620.0   618.0   616.0   614.0   614.0   616.0   618.0   619.0

 204          KK  CSCP07
 205          KM   COMBINE CSCP7D, AND RSCP7D
 206          KM   NORTH OF CITY OF SCOTTSDALE BOUNDARY IN SECTION 31 OF T6N5E.
 207          KM   EXITING TOWN OF CAREFREE AT STAGECOACH PASS.
 208          HC       2

 209          KK  SCP-7A   BASIN
 210          BA   0.136
 211          LG    0.30    0.25    3.95    0.54      42
 212          UC   0.263   0.359
 213          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 214          UA     100

 215          KK  CSCP7A
 216          KM   COMBINE SCP7A, AND CSCP07
 217          KM   NORTH OF CITY OF SCOTTSDALE BOUNDARY IN SECTION 31 OF T6N5E.
 218          KM   EXITING TOWN OF CAREFREE AT STAGECOACH PASS.
 219          HC       2

 220          KK  RSCP07   ROUTE   REACH
 221          RS       4    STOR      -1
 222          RC   0.056   0.038   0.076    3297  0.0179    0.00
 223          RX   857.9   951.0   966.1   972.2  1006.8  1087.4  1125.8  1266.4
 224          RY   578.0   574.0   572.0   568.0   568.0   571.5   569.3   578.0

 225          KK  SCP-06   BASIN
 226          BA   0.101
 227          LG    0.25    0.25    3.95    0.54      52
 228          UC   0.229   0.271
 229          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
 230          UA     100
1                                          HEC-1 INPUT                                                    PAGE  6

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 231          KK  CSCP06
 232          KM   COMBINE SCP06, AND RSCP07
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233          KM   PIMA ROAD CROSSING.
234          HC       2

235          KK  SSCP06
236          RS       1    FLOW       1
237          SA       0    0.01
238          SE    2552    2562
239          SQ       0   10000
240          SE    2552    2562

241          KK  RSCP06   ROUTE   REACH
242          RS       4    STOR      -1
243          RC   0.064   0.044   0.064    3157  0.0196    0.00
244          RX   627.2   683.7   977.3   987.0  1012.1  1029.7  1045.2  1079.6
245          RY   538.0   534.0   536.0   530.0   530.0   534.0   536.0   538.0

246          KK  SCP-4B   BASIN
247          BA   0.140
248          LG    0.30    0.25    3.95    0.56      42
249          UC   0.217   0.230
250          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
251          UA     100

252          KK  SSCP4B
253          RS       1    FLOW       1
254          SA       0    0.01
255          SE    2558    2568
256          SQ       0   10000
257          SE    2558    2568

258          KK  RSCP4B   ROUTE   REACH
259          RS       4    STOR      -1
260          RC   0.064   0.044   0.064    3614  0.0183    0.00
261          RX   627.2   683.7   977.3   987.0  1012.1  1029.7  1045.2  1079.6
262          RY   538.0   534.0   536.0   530.0   530.0   534.0   536.0   538.0

263          KK  SCP-4A   BASIN
264          BA   0.075
265          LG    0.26    0.25    3.95    0.49      41
266          UC   0.208   0.259
267          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
268          UA     100

269          KK  CSCP4a
270          KM   COMBINE SCP4a, RSCP4b, AND RSCP06
271          KM   CONFLUENCE POINT LOCATED IN SECTION 1 OF T5NR4E.
272          KM   LOCATED EAST OF SANDFLOWER EAST BOUNDARY.
273          HC       3
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

274          KK  SCP-5C   BASIN
275          BA   0.153
276          LG    0.27    0.25    4.00    0.49      46
277          UC   0.229   0.227
278          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
279          UA     100

280          KK  SSCP5C
281          RS       1    FLOW       1
282          SA       0    0.01
283          SE    2540    2550
284          SQ       0   10000
285          SE    2540    2550

286          KK  RSCP5C   ROUTE   REACH
287          RS       3    STOR      -1
288          RC   0.064   0.044   0.064    2696  0.0185    0.00
289          RX   903.8   943.5   972.7   996.7  1005.3  1068.4  1099.0  1112.6
290          RY   542.0   540.0   538.0   536.0   536.0   538.0   540.0   542.0

291          KK  SCP-5B   BASIN
292          BA   0.027
293          LG    0.24    0.25    3.95    0.52      58
294          UC   0.171   0.253
295          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
296          UA     100

297          KK  SSCP5B
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298          RS       1    FLOW       1
299          SA       0    0.01
300          SE    2550    2560
301          SQ       0   10000
302          SE    2550   2560

303          KK  RSCP5B   ROUTE   REACH
304          RS       3    STOR      -1
305          RC   0.064   0.044   0.064    2870  0.0209    0.00
306          RX   788.3   815.7   850.1   990.6  1008.8  1019.8  1037.3  1075.2
307          RY   522.0   520.0   518.0   516.0   516.0   518.0   520.0   522.0

308          KK  SCP-5A   BASIN
309          BA   0.092
310          LG    0.30    0.25    3.95    0.51      39
311          UC   0.192   0.186
312          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
313          UA     100

314          KK  CSCP04
315          KM   COMBINE CSCP4a, SCP5a, RSCP5b, AND RSCP5c
316          KM   CONFLUENCE POINT LOCATED IN SECTION 1 OF T5NR4E.
317          KM   LOCATED EAST OF SANDFLOWER EAST BOUNDARY.
318          HC       4
1                                        HEC-1 INPUT                                          PAGE  8

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


319          KK  RSCP04   ROUTE   REACH
320          RS       2    STOR      -1
321          RC   0.056   0.038   0.086    1499  0.0180    0.00
322          RX   850.6   870.5   971.1   987.9  1027.2  1050.7  1218.9  1240.9
323          RY   492.0   490.0   486.0   484.0   484.0   486.0   488.0   492.0

324          KK  SCP-03   BASIN
325          BA   0.076
326          LG    0.30    0.25    4.20    0.45      25
327          UC   0.192   0.195
328          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
329          UA     100

330          KK  CSCP03
331          KM   COMBINE SCP03, AND RSCP04
332          KM   DIVERSION SPLIT FLOW WITHIN SANDFLOWER SUBDIVISION.
333          HC       2
             * KK DSCP3
             * KM TOTAL FLOW=DI
             * KM CONTINUING FLOW=DSCP3 (DI-DQ)
             * KM DIVERTED FLOW=DSCOUT (DQ)
             * DTDSCOUT
             * DI      0   270.5   550.7   933.7  1163.6  1676.1  2827.8
             * DQ      0    76.4   161.0   289.9   352.5   629.9  1480.6

334          KK  RSCP03   ROUTE   REACH
335          RS       2    STOR      -1
336          RC   0.061   0.038   0.056    1378  0.0181    0.00
337          RX   966.2   984.0   990.6   997.6  1003.9  1019.0  1048.1  1065.0
338          RY   447.7   446.0   444.0   442.0   442.0   444.0   446.0   448.0

339          KK  SCP-2B   BASIN
340          BA   0.054
341          LG    0.30    0.25    4.10    0.43      25
342          UC   0.229   0.369
343          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
344          UA     100

345          KK  CSCP2B
346          KM   COMBINE SCP2B, AND RSCP03
347          KM   CROSSING AT 81ST STREET LOCATED WITHIN SANDFLOWER.
348          HC       2

349          KK  SSCP2B
350          RS       1    FLOW       1
351          SA       0    0.01
352          SE    2438    2448
353          SQ       0   10000
354          SE    2438    2448
                                         HEC-1 INPUT                                          PAGE  9

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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355          KK  RSCP2B   ROUTE   REACH
356          RS       2    STOR      -1
357          RC   0.061   0.038   0.056    1827  0.0230    0.00
358          RX   930.6   951.8   959.8   985.0  1023.8  1033.5  1198.5  1217.1
359          RY   414.0   412.0   410.0   408.0   408.0   410.0   412.0   412.7

360          KK  SCP-2A   BASIN
361          BA   0.054
362          LG    0.30    0.25    4.15    0.41      24
363          UC   0.188   0.249
364          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
365          UA     100

366          KK  CSCP02
367          KM   COMBINE SCP2A, AND RSCP2B
368          KM   EXITING SANDFLOWER ON WEST BOUNDARY AND ENTERING BOULDERS ON EAST BOUNDARY.
369          KM   HAYDEN ROAD CROSSING.
370          HC       2

371          KK  SSCP02
372          RS       1    FLOW       1
373          SA       0    0.01
374          SE    2396    2406
375          SQ       0   10000
376          SE    2396    2406

377          KK  RSCP02   ROUTE   REACH
378          RS       7    STOR      -1
379          RC   0.056   0.038   0.056    5949  0.0212    0.00
380          RX   623.1   687.8   904.9   959.7  1000.0  1016.9  1082.0  1122.3
381          RY   290.0   286.8   289.6   286.0   284.0   286.0   288.0   290.0

382          KK  SCP-01   BASIN
383          BA   0.324
384          LG    0.31    0.23    6.20    0.19      25
385          UC   0.354   0.414
386          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
387          UA     100

388          KK  CSCP01
389          KM   SCOTTSDALE ROAD CROSSING.
390          KM   COMBINE SCP01, AND RSCP02
391          HC       2

392          KK  SSCP01
393          RS       1    FLOW       1
394          SA       0    0.01
395          SE    2270    2280
396          SQ       0   10000
397          SE    2270    2280
             *  END STAGE COACH PASS AND BEGIN FAN 6C
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

398          KK   F6C-6   BASIN
399          BA   0.888
400          LG    0.33    0.25    5.40    0.25      27
401          UC   0.438   0.469
402          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
403          UA     100

404          KK   RF6C6   ROUTE   REACH
405          RS       2    STOR      -1
406          RC   0.050   0.035   0.050    1780  0.0185    0.00
407          RX   864.4   924.1   983.8   985.5  1015.1  1025.5  1034.0  1042.4
408          RY   626.0   625.0   624.0   622.0   622.0   624.0   625.0   626.0

409          KK   F6C-4   BASIN
410          BA   0.025
411          LG    0.31    0.25    3.95    0.57      43
412          UC   0.158   0.217
413          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
414          UA     100

415          KK   CF6C4
416          KM   COMBINE F6C-4, AND RF6C6
417          KM   CONFLUENCE WITHIN LENGEN TRAIL LOCATED IN SECTION 6 OF T5NR5E.
```

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418          HC       2

419          KK   F6C-5   BASIN
420          BA   0.137
421          LG    0.32    0.25    3.95    0.58      42
422          UC   0.300   0.464
423          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
424          UA     100

425          KK   CF6C5
426          KM   COMBINE CF6C4, AND F6C-5
427          KM   CONFLUENCE WITHIN LENGEN TRAIL LOCATED IN SECTION 6 OF T5NR5E.
428          HC       2

429          KK   RF6C4   ROUTE   REACH
430          RS       3    STOR      -1
431          RC   0.050   0.035   0.050    2707  0.0070    0.00
432          RX   697.3   735.7   986.9   990.6  1012.9  1106.1  1185.2  1250.7
433          RY   596.0   592.0   592.0   590.0   590.0   592.0   594.0   596.0

434          KK   F6C-3   BASIN
435          BA   0.046
436          LG    0.33    0.25    4.20    0.53      43
437          UC   0.221   0.278
438          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
439          UA     100
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

440          KK   CF6C3
441          KM   COMBINE F6C-3, AND RF6C4
442          KM   EXITING LEGEND TRAIL ALONG WEST BOUNDARY.
443          HC       2

444          KK   RF6C3   ROUTE   REACH
445          RS       4    STOR      -1
446          RC   0.058   0.038   0.058    3172  0.0284    0.00
447          RX   731.4   760.4   943.4   993.9  1019.8  1057.8  1074.8  1160.5
448          RY   552.0   550.0   548.0   548.0   548.0   550.0   550.0   552.0

449          KK   F6C-2   BASIN
450          BA   0.088
451          LG    0.29    0.15    7.30    0.13      34
452          UC   0.200   0.214
453          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
454          UA     100

455          KK   CF6C2
456          KM   COMBINE F6C-2, AND RF6C3
457          KM   AT PIMA ROAD FLOW SPLIT.
458          HC       2

459          KK   SF6C2
460          RS       1    FLOW       1
461          SA       0    0.01
462          SE    2502    2512
463          SQ       0   10000
464          SE    2502    2512

465          KK  DCF6C2
466          KM   TOTAL FLOW=DI
467          KM   CONTINUING FLOW=DCF6C2 (DI-DQ)
468          KM   DIVERTED FLOW=DCUB09 (DQ)
469          DT  DCUB09
470          DI       0     248     969    1174    1321    1369    1517
471          DQ       0       0       0       7      18      28      37

472          KK   RF6C2   ROUTE   REACH
473          RS       3    STOR      -1
474          RC   0.058   0.038   0.058    2486  0.0193    0.00
475          RX   963.5   971.8   977.4   981.8  1009.3  1024.9  1079.5  1115.0
476          RY   464.0   462.0   460.0   458.0   458.0   460.0   462.0   462.4

477          KK  F6C-1C   BASIN
478          BA   0.077
479          LG    0.29    0.15    8.00    0.08      21
480          UC   0.158   0.129
481          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
482          UA     100
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  483         KK  CF6C1C
  484         KM   COMBINE F6C-1C, AND RF6C2
  485         KM   AT WESTLAND ROAD.
  486         HC       2

  487         KK  F6C-1B   BASIN
  488         BA   0.195
  489         LG    0.30    0.17    6.80    0.16      36
  490         UC   0.300   0.368
  491         UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
  492         UA     100

  493         KK  SF6C1B
  494         RS       1    FLOW       1
  495         SA       0    0.01
  496         SE    2480    2490
  497         SQ       0   10000
  498         SE    2480    2490

  499         KK  RF6C1B   ROUTE   REACH
  500         RS       2    STOR      -1
  501         RC   0.058   0.038   0.058    1607  0.0162    0.00
  502         RX   963.5   971.8   977.4   981.8  1009.3  1024.9  1079.5  1115.0
  503         RY   464.0   462.0   460.0   458.0   458.0   460.0   462.0   462.4

  504         KK  CF6C1B
  505         KM   COMBINE CF6C1C, AND RF6C1B
  506         KM   AT WESTLAND ROAD.
  507         HC       2

  508         KK  SF6C1C
  509         RS       1    FLOW       1
  510         SA       0    0.01
  511         SE    2454    2464
  512         SQ       0   10000
  513         SE    2454    2464

  514         KK  RF6C1C   ROUTE   REACH
  515         RS       5    STOR      -1
  516         RC   0.063   0.039   0.063    4158  0.0180    0.00
  517         RX   909.7   984.0   987.5   990.5  1009.6  1023.1  1039.2  1182.5
  518         RY   446.0   444.0   442.0   440.0   440.0   442.0   444.0   445.2

  519         KK  F6C-1D   BASIN
  520         BA   0.040
  521         LG    0.30    0.15    9.70    0.04      17
  522         UC   0.133   0.121
  523         UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
  524         UA     100
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  525         KK  SF6C1D
  526         RS       1    FLOW       1
  527         SA       0    0.01
  528         SE    2442    2452
  529         SQ       0   10000
  530         SE    2442    2452

  531         KK  RF6C1D   ROUTE   REACH
  532         RS       4    STOR      -1
  533         RC   0.063   0.039   0.063    3718  0.0169    0.00
  534         RX   717.1   850.7   987.4   994.7  1006.6  1013.0  1206.6  1234.5
  535         RY   426.0   424.0   422.0   420.0   420.0   422.0   424.0   425.3

  536         KK  F6C-1A   BASIN
  537         BA   0.183
  538         LG    0.30    0.15    8.00    0.08      17
  539         UC   0.217   0.194
  540         UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
  541         UA     100

  542         KK   CF6C1
  543         KM   COMBINE F6C-1A, RF6C1D, AND RF6C1C
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544          KM   MATCH TO EXISTING FEMA FLOODPLAIN
545          HC       3
             *  END FAN 6C AND BEGIN UPPER BOULDERS WASH

546          KK   UB-12   BASIN
547          BA   0.059
548          LG    0.30    0.25    3.95    0.56      46
549          UC   0.192   0.239
550          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
551          UA     100

552          KK   RUB12   ROUTE   REACH
553          RS       6    STOR      -1
554          RC   0.056   0.044   0.056    5388  0.0182    0.00
555          RX   849.6   861.9   926.8   975.3  1017.2  1046.5  1060.3  1074.7
556          RY   650.0   648.0   648.0   642.0   642.0   646.0   648.0   650.0

557          KK   UB-10   BASIN
558          BA   0.094
559          LG    0.28    0.25    4.15    0.48      47
560          UC   0.238   0.314
561          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
562          UA     100

563          KK   CUB10
564          KM   COMBINE UB-10, AND RUB12
565          KM   EXITING LEGEND TRAIL ON NORTHWEST CORNER.
566          HC       2
1                                        HEC-1 INPUT                                        PAGE 14

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


567          KK   UB-11   BASIN
568          BA   0.206
569          LG    0.27    0.25    4.10    0.54      54
570          UC   0.246   0.246
571          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
572          UA     100

573          KK   CUB11
574          KM   COMBINE CUB10, AND UB-11
575          KM   EXITING LEGEND TRAIL ON NORTHWEST CORNER.
576          HC       2

577          KK   RUB10   ROUTE   REACH
578          RS       4    STOR      -1
579          RC   0.056   0.044   0.056    3907  0.0179    0.00
580          RX   810.4   844.8   959.8   972.8  1005.9  1035.5  1109.8  1164.3
581          RY   564.0   562.0   560.0   556.0   556.0   560.0   560.0   562.0

582          KK   UB-09   BASIN
583          BA   0.342
584          LG    0.28    0.23    6.20    0.20      41
585          UC   0.279   0.248
586          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
587          UA     100

588          KK   CUB09
589          KM   COMBINE UB-09, AND RUB10
590          KM   AT PIMA ROAD FLOW SPLIT.
591          HC       2

592          KK   SUB09
593          RS       1    FLOW       1
594          SA       0    0.01
595          SE    2502    2520
596          SQ       0   10000
597          SE    2502    2520

598          KK  DCUB09
599          DR  DCUB09

600          KK  DCUB09
601          KM   COMBINE DCUB09, AND SUB09
602          KM   FLOW SPLIT WEST OF PIMA ROAD FROM FAN 6C TO UPPER BOULDERS
603          HC       2

604          KK   RUB09   ROUTE   REACH
605          RS       5    STOR      -1
606          RC   0.061   0.038   0.061    4450  0.0187    0.00
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607          RX   865.9   913.3   986.7   990.5  1009.0  1014.7  1037.1  1056.8
608          RY   492.0   489.0   488.0   486.0   486.0   488.0   490.0   492.0
                                          HEC-1 INPUT                                                    PAGE 15

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


609          KK   UB-07   BASIN
610          BA   0.191
611          LG    0.30    0.15    8.80    0.06      16
612          UC   0.250   0.257
613          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
614          UA     100

615          KK   CUB07
616          KM   COMBINE UB-07, AND RUB09
617          KM   CONFLUENCE POINT SOUTH OF BLACK MOUNTAIN ROAD AND EAST OF HAYDEN ROAD.
618          HC       2

619          KK  UB-08C   BASIN
620          BA   0.010
621          LG    0.25    0.25    4.00    0.55      55
622          UC   0.113   0.143
623          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
624          UA     100

625          KK  RUB08C   ROUTE   REACH
626          RS       7    STOR      -1
627          RC   0.061   0.038   0.061    5952  0.0190    0.00
628          RX   975.3   981.7   986.9   991.0  1009.2  1073.1  1118.9  1137.7
629          RY   498.0   496.0   494.0   492.0   492.0   494.0   496.0   498.0

630          KK  UB-08B   BASIN
631          BA   0.033
632          LG    0.25    0.17    6.80    0.15      42
633          UC   0.142   0.147
634          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
635          UA     100

636          KK  RUB08B   ROUTE   REACH
637          RS       7    STOR      -1
638          RC   0.061   0.038   0.061    6656  0.0173    0.00
639          RX   975.3   981.7   986.9   991.0  1009.2  1073.1  1118.9  1137.7
640          RY   498.0   496.0   494.0   492.0   492.0   494.0   496.0   498.0

641          KK  UB-08A   BASIN
642          BA   0.121
643          LG    0.30    0.25    5.70    0.21      26
644          UC   0.275   0.371
645          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
646          UA     100

647          KK   CUB08
648          KM   COMBINE UB-08A, RUB08B, RUB08C, AND CUB07
649          KM   CONFLUENCE POINT SOUTH OF BLACK MOUNTAIN ROAD AND EAST OF HAYDEN ROAD.
650          HC       4
1                                         HEC-1 INPUT                                                    PAGE 16

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


651          KK   RUB07   ROUTE   REACH
652          RS       2    STOR      -1
653          RC   0.061   0.038   0.061    1441  0.0187    0.00
654          RX   802.8   896.1   939.4   977.6  1023.6  1036.2  1071.8  1144.8
655          RY   420.0   415.1   416.5   416.0   416.0   418.0   416.4   420.0

656          KK  UB-05B   BASIN
657          BA   0.022
658          LG    0.30    0.15    9.70    0.04      17
659          UC   0.125   0.132
660          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
661          UA     100

662          KK  CUB05B
663          KM   COMBINE UB-05B, AND RUB07
664          KM   BOULDERS EAST BOUNDARY ALONG HAYDEN ROAD.
665          HC       2

666          KK  SUB05B
667          RS       1    FLOW       1
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668          SA       0    0.01
669          SE    2392    2402
670          SQ       0   10000
671          SE    2392    2402

672          KK  RUB05B   ROUTE   REACH
673          RS       3    STOR      -1
674          RC   0.076   0.038   0.076    2325  0.0206    0.00
675          RX   874.5   885.3   983.5   990.7  1012.0  1019.9  1042.6  1086.1
676          RY   370.1   370.0   368.0   366.0   366.0   368.0   369.0   369.5

677          KK  UB-05A   BASIN
678          BA   0.089
679          LG    0.29    0.15    9.70    0.05      24
680          UC   0.213   0.250
681          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
682          UA     100

683          KK   CUB05
684          KM   COMBINE UB-05A, AND RUB05B
685          KM   NORTH OF WESTLAND ROAD BETWEEN HAYDEN AND SCOTTSDALE ROAD.
686          HC       2

687          KK   SUB05
688          RS       1    FLOW       1
689          SA       0    0.01
690          SE    2344    2354
691          SQ       0   10000
692          SE    2344    2354
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

693          KK   RUB05   ROUTE   REACH
694          RS       2    STOR      -1
695          RC   0.076   0.038   0.076    1527  0.0216    0.00
696          RX   924.2   953.8   984.0   988.7  1020.6  1078.2  1087.4  1126.5
697          RY   336.0   334.0   332.0   330.0   330.0   332.0   334.0   336.0

698          KK  UB-06C   BASIN
699          BA   0.037
700          LG    0.30    0.15    9.70    0.04      17
701          UC   0.154   0.182
702          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
703          UA     100

704          KK  SUB06C
705          RS       1    FLOW       1
706          SA       0    0.01
707          SE    2377    2387
708          SQ       0   10000
709          SE    2377    2387

710          KK  RUB06C   ROUTE   REACH
711          RS       2    STOR      -1
712          RC   0.076   0.038   0.076    2022  0.0183    0.00
713          RX   921.6   939.8   960.8   993.3  1002.3  1033.8  1053.5  1122.0
714          RY   366.0   364.0   362.0   360.0   360.0   362.0   364.0   366.0

715          KK  UB-06B   BASIN
716          BA   0.053
717          LG    0.30    0.15    9.70    0.04      18
718          UC   0.208   0.316
719          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
720          UA     100

721          KK  SUB06B
722          RS       1    FLOW       1
723          SA       0    0.01
724          SE    2371    2381
725          SQ       0   10000
726          SE    2371    2381

727          KK  RUB06B   ROUTE   REACH
728          RS       2    STOR      -1
729          RC   0.076   0.038   0.076    1719  0.0180    0.00
730          RX   921.6   939.8   960.8   993.3  1002.3  1033.8  1053.5  1122.0
731          RY   366.0   364.0   362.0   360.0   360.0   362.0   364.0   366.0

732          KK  UB-06A   BASIN
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733          BA   0.042
734          LG    0.24    0.17    8.80    0.06      25
735          UC   0.171   0.198
736          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
737          UA     100
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

738          KK   CUB06
739          KM   COMBINE UB-06A, RUB06B, AND RUB06C
740          KM   SOUTH OF WESTLAND ROAD BETWEN HAYDEN AND SCOTTSDALE ROAD, WITHIN WINFEILD.
741          HC       3

742          KK   RUB06   ROUTE   REACH
743          RS       2    STOR      -1
744          RC   0.076   0.038   0.076    1436  0.0202    0.00
745          RX   924.2   953.8   984.0   988.7  1020.6  1078.2  1087.4  1126.5
746          RY   336.0   334.0   332.0   330.0   330.0   332.0   334.0   336.0

747          KK   UB-03   BASIN
748          BA   0.027
749          LG    0.18    0.29    4.90    0.29      38
750          UC   0.142   0.149
751          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
752          UA     100

753          KK   CUB03
754          KM   COMBINE UB-03, RUB05, AND RUB06
755          KM   CONFLUENCE POINT WITHIN WINFEILD, LOCATED SOUTH OF BLACK MOUNTAIN ROAD.
756          HC       3

757          KK   UB-04   BASIN
758          BA   0.350
759          LG    0.26    0.17    9.70    0.05      19
760          UC   0.304   0.290
761          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
762          UA     100

763          KK   CUB04
764          KM   COMBINE UB-04, AND CUB03
765          KM   CONFLUENCE POINT WITHIN WINFEILD, LOCATED SOUTH OF BLACK MOUNTAIN ROAD.
766          HC       2

767          KK   RUB03   ROUTE   REACH
768          RS       3    STOR      -1
769          RC   0.076   0.038   0.076    2425  0.0177    0.00
770          RX   785.3   899.0   967.3   981.0  1004.3  1011.0  1258.0  1351.4
771          RY   312.0   306.6   308.0   306.0   306.0   308.0   310.0   312.0

772          KK   UB-01   BASIN
773          BA   0.054
774          LG    0.20    0.27    3.95    0.54      58
775          UC   0.183   0.196
776          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
777          UA     100

778          KK   CUB01
779          KM   COMBINE UB-01, AND RUB03
780          KM   SCOTTSDALE ROAD CROSSING.
781          HC       2
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

782          KK   SUB01
783          RS       1    FLOW       1
784          SA       0    0.01
785          SE    2268    2278
786          SQ       0   10000
787          SE    2268    2278

788          KK   UB-02   BASIN
789          BA   0.050
790          LG    0.24    0.27    5.40    0.26      60
791          UC   0.133   0.150
792          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
793          UA     100
             *  END UPPER BOULDERS WASH AND BEGIN FAN 6AN/6AS     /6A
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794          KK  F6AN-8   BASIN
795          BA   0.235
796          LG    0.30    0.25    5.80    0.18       6
797          UC   0.183   0.141
798          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
799          UA     100

800          KK  RF6AN8   ROUTE   REACH
801          RS       8    STOR      -1
802          RC   0.056   0.039   0.056    6862  0.0331    0.00
803          RX   942.1   950.5   958.9   988.7  1010.7  1028.3  1056.8  1085.2
804          RY   950.0   949.0   948.0   946.0   946.0   948.0   949.0   950.0

805          KK  F6AN-6   BASIN
806          BA   0.107
807          LG    0.33    0.25    4.45    0.39      13
808          UC   0.225   0.312
809          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
810          UA     100

811          KK  CF6AN6
812          KM   COMBINE F6AN-6, AND RF6AN8
813          KM   CONFLUENCE POINT WITHIN MIRABEL
814          HC       2

815          KK  F6AN-7   BASIN
816          BA   0.284
817          LG    0.32    0.25    5.30    0.24      10
818          UC   0.279   0.332
819          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
820          UA     100

821          KK  CF6AN7
822          KM   COMBINE CF6AN6, AND F6AN-7
823          KM   CONFLUENCE POINT WITHIN MIRABEL
824          HC       2
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

825          KK  RF6AN6   ROUTE   REACH
826          RS       5    STOR      -1
827          RC   0.056   0.038   0.053    4132  0.0225    0.00
828          RX   962.5   970.6   978.4   991.0  1006.8  1227.5  1256.1  1279.4
829          RY   806.0   804.0   802.0   800.0   800.0   802.0   804.0   806.0

830          KK  F6AN-5   BASIN
831          BA   0.104
832          LG    0.33    0.25    4.65    0.38      15
833          UC   0.208   0.232
834          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
835          UA     100

836          KK  CF6AN5
837          KM   COMBINE F6AN-5, AND RF6AN6
838          KM   EXIT MIRABEL AT SOUTH BOUNDARY, STAGECOACH PASS.
839          HC       2

840          KK  RF6AN5   ROUTE   REACH
841          RS       3    STOR      -1
842          RC   0.056   0.038   0.053    3137  0.0217    0.00
843          RX   978.0   983.5   989.4  1007.0  1029.9  1143.3  1284.4  1331.4
844          RY   732.0   730.0   728.0   728.0   729.3   729.0   726.7   732.0

845          KK  F6AN-3   BASIN
846          BA   0.138
847          LG    0.30    0.25    5.40    0.25      22
848          UC   0.313   0.543
849          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
850          UA     100

851          KK  CF6AN3
852          KM   COMBINE F6AN-3, AND RF6AN5
853          KM   CONFLUENCE POINT SOUTH OF STAGECOACH PASS WITHIN SECTION 5 OF T5NR5E.
854          HC       2

855          KK  F6AN-4   BASIN
856          BA   0.251
857          LG    0.30    0.25    5.00    0.32      24
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858          UC   0.321   0.425
859          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
860          UA     100

861          KK  CF6AN4
862          KM   COMBINE CF6AN3, AND F6AN-4
863          KM   CONFLUENCE POINT SOUTH OF STAGECOACH PASS WITHIN SECTION 5 OF T5NR5E.
864          HC       2

865          KK  RF6AN3   ROUTE   REACH
866          RS       1    STOR      -1
867          RC   0.056   0.038   0.053     876  0.0171    0.00
868          RX   978.9   986.9   991.1   995.6  1017.5  1098.7  1195.1  1228.0
869          RY   690.0   688.0   686.0   684.0   684.0   686.0   688.0   690.0
1                                          HEC-1 INPUT                                          PAGE 21

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


870          KK  F6AN-2   BASIN
871          BA   0.150
872          LG    0.34    0.25    5.20    0.30      18
873          UC   0.279   0.399
874          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
875          UA     100

876          KK  CF6AN2
877          KM   COMBINE F6AN-2, AND RF6AN3
878          KM   CONFLUENCE POINT IN SECTION 5 OF T5NR5E.
879          KM   NORTHEAST OF NORTHEAST CORNER OF LENGEND TRAIL.
880          HC       2

881          KK  RF6AN2   ROUTE   REACH
882          RS      27    STOR      -1
883          RC   0.056   0.038   0.053    7999  0.0176    0.00
884          RX   897.4   913.8   927.5   971.8  1023.5  1071.1  1152.0  1224.7
885          RY   685.0   656.0   654.0   652.0   652.0   654.0   652.7   658.0

886          KK  F6AN-1   BASIN
887          BA   0.415
888          LG    0.31    0.25    5.70    0.24      26
889          UC   0.325   0.292
890          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
891          UA     100

892          KK  CF6AN1
893          KM   COMBINE
894          KM   UPSTREAM OF CONFLUENCE POINT
895          HC       2

896          KK  F6AS-5   BASIN
897          BA   0.631
898          LG    0.32    0.32    6.00    0.18       6
899          UC   0.392   0.342
900          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
901          UA     100

902          KK  RF6AS5   ROUTE   REACH
903          RS       9    STOR      -1
904          RC   0.064   0.044   0.064    8083  0.0192    0.00
905          RX   877.0   887.9   915.7   986.3  1151.0  1210.3  1238.3  1261.5
906          RY   780.0   778.0   776.0   774.0   774.0   776.0   778.0   780.0

907          KK  F6AS-3   BASIN
908          BA   0.317
909          LG    0.30    0.25    5.70    0.23      24
910          UC   0.329   0.397
911          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
912          UA     100
1                                          HEC-1 INPUT                                          PAGE 22

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


913          KK  CF6AS3
914          KM   COMBINE F6AS-3, AND RF6AS5
915          KM   CONFLUENCE POINT IN SECTION 5 OF T5NR5E, EAST OF LEGEND TRAIL.
916          HC       2

917          KK  F6AS-4   BASIN
918          BA   0.433
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919          LG    0.31    0.28    5.10    0.29      18
920          UC   0.479   0.663
921          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
922          UA     100

923          KK  CF6AS4
924          KM   COMBINE F6AS-4, AND CF6AS3
925          KM   CONFLUENCE POINT IN SECTION 5 OF T5NR5E, EAST OF LEGEND TRAIL.
926          HC       2

927          KK  RF6AS3   ROUTE   REACH
928          RS       3    STOR      -1
929          RC   0.064   0.044   0.064    2438  0.0160    0.00
930          RX   830.7   866.0   931.0   995.0  1017.3  1026.5  1076.2  1104.9
931          RY   652.0   650.0   648.0   646.0   646.0   648.0   650.0   652.0

932          KK  F6AS-2   BASIN
933          BA   0.058
934          LG    0.29    0.25    5.10    0.31      29
935          UC   0.192   0.230
936          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
937          UA     100

938          KK  CF6AS2
939          KM   COMBINE F6AS-2, AND RF6AS3
940          KM   EAST OF EAST BOUNDARY OF LEGEND TRAIL.
941          HC       2

942          KK  RF6AS2   ROUTE   REACH
943          RS       7    STOR      -1
944          RC   0.064   0.044   0.064    5914  0.0167    0.00
945          RX   850.1   874.8   889.0   953.7  1000.0  1016.4  1036.5  1067.1
946          RY   602.0   600.0   598.0   596.4   595.5   596.0   598.0   602.0

947          KK  F6AS-1   BASIN
948          BA   0.278
949          LG    0.29    0.15    7.60    0.11      38
950          UC   0.308   0.333
951          UA       0     5.0    16.0    30.0    65.0    77.0    84.0    90.0    94.0    97.0
952          UA     100

953          KK  CF6AS1
954          KM   COMBINE F6AS1-4, AND RF6AS2
955          KM   NORTH OF CONFLUENCE
956          HC       2
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

957          KK  CF6ASN
958          KM   COMBINE F6AN-1, F6AS1-4, RF6AN2, AND RF6AS2
959          KM   SOUTH BOUNDARY OF LEGEND TRAIL.
960          HC       2

961          KK  RF6AN1   ROUTE   REACH
962          RS       3    STOR      -1
963          RC   0.063   0.038   0.063    2859  0.0161    0.00
964          RX   879.7   894.2   947.2   979.7  1018.2  1032.6  1044.2  1055.2
965          RY   540.0   538.0   536.0   534.0   534.0   536.0   538.0   540.0

966          KK   F6A-1   BASIN
967          BA   0.125
968          LG    0.30    0.25    5.70    0.20      13
969          UC   0.196   0.154
970          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
971          UA     100

972          KK   CF6A1
973          KM   COMBINE F6A-1, AND RF6AN1
974          KM   MATCH TO EXISTING FEMA FLOODPLAIN.
975          HC       2
             *  END FAN 6AN/6AS/6A AN D BEGINUPPER FA     N 5

976          KK   RHW-1   BASIN
977          BA   1.051
978          LG    0.33    0.30    6.80    0.14      16
979          UC   0.454   0.313
980          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
981          UA     100
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982          KK  DRHW1
983          KM   TOTAL FLOW=DI
984          KM   CONTINUING FLOW=DRHW1 (DI-DQ)
985          KM   DIVERTED FLOW=DRHWOUT (DQ)
986          DT  DRHOUT
987          DI     160     389     849    1854
988          DQ     146     327     502    1023

989          KK   RRHW1   ROUTE   REACH
990          RS       9    STOR      -1
991          RC   0.068   0.043   0.068    8155  0.0180    0.00
992          RX   766.3   889.6   954.5   973.4  1000.0  1007.8  1108.1  1188.8
993          RY   736.0   730.4   730.8   730.0   728.7   730.0   732.0   736.0

994          KK   UF5-5   BASIN
995          BA   0.294
996          LG    0.34    0.34    6.40    0.16      17
997          UC   0.379   0.620
998          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
999          UA     100
1                                        HEC-1 INPUT                                          PAGE 24

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1000         KK   RUF55   ROUTE   REACH
1001         RS       9    STOR      -1
1002         RC   0.068   0.043   0.068    8318  0.0174    0.00
1003         RX   766.3   889.6   954.5   973.4  1000.0  1007.8  1108.1  1188.8
1004         RY   736.0   730.4   730.8   730.0   728.7   730.0   732.0   736.0

1005         KK   UF5-4   BASIN
1006         BA   0.255
1007         LG    0.29    0.25    4.70    0.36      45
1008         UC   0.304   0.353
1009         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1010         UA     100

1011         KK   CUF54
1012         KM   COMBINE UF5-4, RUF55, AND RRHW1
1013         KM   EAST OF LEGNED TRAIL EAST BOUNDARY.
1014         HC       3

1015         KK   RUF54   ROUTE   REACH
1016         RS      13    STOR      -1
1017         RC   0.071   0.038   0.071   11314  0.0175    0.00
1018         RX   931.9   946.9   961.7   982.9  1012.6  1048.2  1068.2  1079.1
1019         RY   518.0   516.0   514.0   512.0   512.0   516.6   516.0   518.0

1020         KK   UF5-2   BASIN
1021         BA   0.624
1022         LG    0.27    0.15    7.60    0.11      34
1023         UC   0.425   0.468
1024         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1025         UA     100

1026         KK   CUF52
1027         KM   COMBINE UF5-2, AND RUF5-4
1028         KM   NORTH OF CONFLUENCE POINT IN SECTION 18 OF T5NR5E, EAST OF PIMA ROAD.
1029         HC       2

1030         KK   UF5-3   BASIN
1031         BA   0.842
1032         LG    0.25    0.15    7.60    0.11      40
1033         UC   0.533   0.625
1034         UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1035         UA     100

1036         KK   CUF53
1037         KM   COMBINE UF5-3, AND CUF52
1038         KM   CONFLUENCE POINT IN SECTION 18 OF T5NR5E, EAST OF PIMA ROAD.
1039         HC       2

1040         KK   RUF52   ROUTE   REACH
1041         RS       2    STOR      -1
1042         RC   0.071   0.038   0.071    2113  0.0170    0.00
1043         RX   904.8   916.9   925.7   945.0  1017.8  1042.5  1074.4  1089.9
1044         RY   420.0   418.0   416.0   414.0   414.0   416.0   418.0   420.0
                                         HEC-1 INPUT                                          PAGE 25

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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1045          KK   UF5-1   BASIN
1046          BA   0.083
1047          LG    0.29    0.15    7.60    0.10      22
1048          UC   0.179   0.158
1049          UA       0     3.0     5.0     8.0    12.0    20.0    43.0    75.0    90.0    96.0
1050          UA     100

1051          KK   CUF51
1052          KM   COMBINE UF5-1, AND RUF5-2
1053          KM   MATCH TO EXISTING FEMA FLOODPLAIN.
1054          HC       2
1055          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (---->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   69      SCP-14
                V
                V
   75      RSCP14
                .
                .
   80           .      SCP-13
                .           .
                .           .
   86           .           .      SCP-12
                .           .           .
                .           .           .
   92      CSCP12.......................
                V
                V
   96      RSCP12
                .
                .
  101           .      SCP-10
                .           .
                .           .
  107      CSCP10............
                .
                .
  111           .      SCP-11
                .           .
                .           .
  117      CSCP11............
                V
                V
  121      RSCP10
                .
                .
  126           .      SCP-09
                .           .
                .           .
  132      CSCP09............
                V
                V
  136      RSCP09
                .
                .
  141           .      SCP-08
                .           .
                .           .
  147      CSCP08............
                V
                V
  151      RSCP08
                .
                .
  156           .      SCP-7E
                .           .
                .           .
  162      CSCP7E............
                .
                .
  167           .      SCP-7B
                .           V
                .           V
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173          .      RSCP7B
             .           .
             .           .
178          .           .      SCP-7C
             .           .           V
             .           .           V
184          .           .      RSCP7C
             .           .           .
             .           .           .
189          .           .           .      SCP-7D
             .           .           .           .
             .           .           .           .
195          .      CSCP7D.......................
             .           V
             .           V
199          .      RSCP7D
             .           .
             .           .
204     CSCP07............
             .
             .
209          .      SCP-7A
             .           .
             .           .
215     CSCP7A............
             V
             V
220     RSCP07
             .
             .
225          .      SCP-06
             .           .
             .           .
231     CSCP06............
             V
             V
235     SSCP06
             V
             V
241     RSCP06
             .
             .
246          .      SCP-4B
             .           V
             .           V
252          .      SSCP4B
             .           V
             .           V
258          .      RSCP4B
             .           .
             .           .
263          .           .      SCP-4A
             .           .           .
             .           .           .
269     CSCP4a........................
             .
             .
274          .      SCP-5C
             .           V
             .           V
280          .      SSCP5C
             .           V
             .           V
286          .      RSCP5C
             .           .
             .           .
291          .           .      SCP-5B
             .           .           V
             .           .           V
297          .           .      SSCP5B
             .           .           V
             .           .           V
303          .           .      RSCP5B
             .           .           .
             .           .           .
308          .           .           .      SCP-5A
             .           .           .           .
             .           .           .           .
314     CSCP04..................................
             V
             V
```

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319     RSCP04
            .
            .
324         .       SCP-03
            .           .
            .           .
330     CSCP03............
            V
            V
334     RSCP03
            .
            .
339         .       SCP-2B
            .           .
            .           .
345     CSCP2B............
            V
            V
349     SSCP2B
            V
            V
355     RSCP2B
            .
            .
360         .       SCP-2A
            .           .
            .           .
366     CSCP02............
            V
            V
371     SSCP02
            V
            V
377     RSCP02
            .
            .
382         .       SCP-01
            .           .
            .           .
388     CSCP01............
            V
            V
392     SSCP01
            .
            .
398         .       F6C-6
            .           V
            .           V
404         .       RF6C6
            .           .
            .           .
409         .           .       F6C-4
            .           .           .
            .           .           .
415         .       CF6C4............
            .           .
            .           .
419         .           .       F6C-5
            .           .           .
            .           .           .
425         .       CF6C5............
            .           V
            .           V
429         .       RF6C4
            .           .
            .           .
434         .           .       F6C-3
            .           .           .
            .           .           .
440         .       CF6C3............
            .           V
            .           V
444         .       RF6C3
            .           .
            .           .
449         .           .       F6C-2
            .           .           ..
            .           .           .
455         .       CF6C2............
            .           V
            .           V
```

```
459          .      SF6C2
             .          .
             .          .
469          .          .-------> DCUB09
465          .     DCF6C2
             .          V
             .          V
472          .      RF6C2
             .          .
             .          .
477          .          .     F6C-1C
             .          .          .
             .          .          .
483          .     CF6C1C............
             .          .
             .          .
487          .          .     F6C-1B
             .          .          V
             .          .          V
493          .          .     SF6C1B
             .          .          V
             .          .          V
499          .          .     RF6C1B
             .          .          .
             .          .          .
504          .     CF6C1B............
             .          V
             .          V
508          .     SF6C1C
             .          V
             .          V
514          .     RF6C1C
             .          .
             .          .
519          .          .     F6C-1D
             .          .          V
             .          .          V
525          .          .     SF6C1D
             .          .          V
             .          .          V
531          .          .     RF6C1D
             .          .          .
             .          .          .
536          .          .          .     F6C-1A
             .          .          .          .
             .          .          .          .
542          .      CF6C1........................
             .          .
             .          .
546          .          .      UB-12
             .          .          V
             .          .          V
552          .          .      RUB12
             .          .          .
             .          .          .
557          .          .          .      UB-10
             .          .          .          .
             .          .          .          .
563          .          .      CUB10............
             .          .          .
             .          .          .
567          .          .          .      UB-11
             .          .          .          .
             .          .          .          .
573          .          .      CUB11............
             .          .          V
             .          .          V
577          .          .      RUB10
             .          .          .
             .          .          .
582          .          .          .      UB-09
             .          .          .          .
             .          .          .          .
588          .          .      CUB09............
             .          .          V
             .          .          V
592          .          .      SUB09
             .          .          .
             .          .          .
599          .          .          .          .<-------  DCUB09
598          .          .          .     DCUB09
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600                 DCUB09............
                        V
                        V
604                 RUB09
                        .
                        .
609                     .       UB-07
                        .           .
                        .           .
615                 CUB07............
                        .
                        .
619                     .      UB-08C
                        .           V
                        .           V
625                     .      RUB08C
                        .           .
                        .           .
630                     .           .      UB-08B
                        .           .           V
                        .           .           V
636                     .           .      RUB08B
                        .           .           .
                        .           .           .
641                     .           .           .      UB-08A
                        .           .           .           .
                        .           .           .           .
647                 CUB08.................................
                        V
                        V
651                 RUB07
                        .
                        .
656                     .      UB-05B
                        .           .
                        .           .
662                 CUB05B...........
                        V
                        V
666                 SUB05B
                        V
                        V
672                 RUB05B
                        .
                        .
677                     .      UB-05A
                        .           .
                        .           .
683                 CUB05............
                        V
                        V
687                 SUB05
                        V
                        V
693                 RUB05
                        .
                        .
698                     .      UB-06C
                        .           V
                        .           V
704                     .      SUB06C
                        .           V
                        .           V
710                     .      RUB06C
                        .           .
                        .           .
715                     .           .      UB-06B
                        .           .           V
                        .           .           V
721                     .           .      SUB06B
                        .           .           V
                        .           .           V
727                     .           .      RUB06B
                        .           .           .
                        .           .           .
732                     .           .           .      UB-06A
                        .           .           .           .
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738                     .      CUB06........................
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                                  V
                                  V
742                           RUB06
                                  .
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747                               .      UB-03
                                  .        .
                                  .        .
753                       CUB03.......................
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                                  .
757                           UB-04
                                  .
                                  .
763                       CUB04............
                              V
                              V
767                       RUB03
                                  .
                                  .
772                           UB-01
                                  .
                                  .
778                       CUB01............
                              V
                              V
782                       SUB01
                                  .
                                  .
788                           UB-02
                                  .
                                  .
794                               .      F6AN-8
                                  .          V
                                  .          V
800                               .      RF6AN8
                                  .          .
                                  .          .
805                               .          .      F6AN-6
                                  .          .        .
                                  .          .        .
811                               .      CF6AN6............
                                  .          .
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815                               .          .      F6AN-7
                                  .          .        .
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821                               .      CF6AN7............
                                  .          V
                                  .          V
825                               .      RF6AN6
                                  .          .
                                  .          .
830                               .          .      F6AN-5
                                  .          .        .
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836                               .      CF6AN5............
                                  .          V
                                  .          V
840                               .      RF6AN5
                                  .          .
                                  .          .
845                               .          .      F6AN-3
                                  .          .        .
                                  .          .        .
851                               .      CF6AN3............
                                  .          .
                                  .          .
855                               .          .      F6AN-4
                                  .          .        .
                                  .          .        .
861                               .      CF6AN4............
                                  .          V
                                  .          V
865                               .      RF6AN3
                                  .          .
                                  .          .
870                               .          .      F6AN-2
                                  .          .        .
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876                               .      CF6AN2............
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                                  V
                                  V
881                           RF6AN2
                                  .
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886                               .      F6AN-1
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                                  .          .
892                           CF6AN1............
                                  .
                                  .
896                               .      F6AS-5
                                  .          V
                                  .          V
902                               .      RF6AS5
                                  .          .
                                  .          .
907                               .          .      F6AS-3
                                  .          .          .
                                  .          .          .
913                               .      CF6AS3............
                                  .          .
                                  .          .
917                               .          .      F6AS-4
                                  .          .          .
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923                               .      CF6AS4............
                                  .          V
                                  .          V
927                               .      RF6AS3
                                  .          .
                                  .          .
932                               .          .      F6AS-2
                                  .          .          .
                                  .          .          .
938                               .      CF6AS2............
                                  .          V
                                  .          V
942                               .      RF6AS2
                                  .          .
                                  .          .
947                               .          .      F6AS-1
                                  .          .          .
                                  .          .          .
953                               .      CF6AS1............
                                  .          .
                                  .          .
957                           CF6ASN............
                                  V
                                  V
961                           RF6AN1
                                  .
                                  .
966                               .       F6A-1
                                  .          .
                                  .          .
972                           CF6A1............
                                  .
                                  .
976                               .       RHW-1
                                  .          .
                                  .          .
986                               .          .-------> DRHOUT
982                               .      DRHW1
                                  .          V
                                  .          V
989                               .       RRHW1
                                  .          .
                                  .          .
994                               .          .      UF5-5
                                  .          .          V
                                  .          .          V
1000                              .          .      RUF55
                                  .          .          .
                                  .          .          .
1005                              .          .          .      UF5-4
                                  .          .          .          .
                                  .          .          .          .
1011                              .       CUF54.......................
                                  .          V
                                  .          V
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1015          .          .          .          .          .      RUF54
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              .          .          .          .          .        .
1020          .          .          .          .          .        .       UF5-2
              .          .          .          .          .        .         .
              .          .          .          .          .        .         .
1026          .          .          .          .          .      CUF52............
              .          .          .          .          .        .
              .          .          .          .          .        .
1030          .          .          .          .          .        .       UF5-3
              .          .          .          .          .        .         .
              .          .          .          .          .        .         .
1036          .          .          .          .          .      CUF53............
              .          .          .          .          .          V
              .          .          .          .          .          V
1040          .          .          .          .          .      RUF52
              .          .          .          .          .        .
              .          .          .          .          .        .
1045          .          .          .          .          .        .       UF5-1
              .          .          .          .          .        .         .
              .          .          .          .          .        .         .
1051          .          .          .          .          .      CUF51............
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(***) 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   13APR05  TIME  14:02:24  *                                    *           (916) 756-1104             *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
```

Project ID: 01131.12 - Major Basin: NS - Return Period: 100 Years

NORTH SCOTTSDALE 100-YR FLOODPLAIN DELINEATION STUDY
MAY 2002

FILE NAME: NS.DAT
THIS MODEL REPRESENTS THE FUTURE LAND USE CONDITIONS OF THE WATERSHEDS.
THE TOTAL DRAINAGE AREA FOR THE ENTIRE STUDY IS 11.2 SQUARE MILES.

100-YEAR, 6-HOUR FREQUENCY

METHODOLOGY:
THE US CORPS OF ENGINEERS FLOOD HYROLOGY MODEL HEC-1, DATED JUNE 1998,
VERSION 4.1
MULTIPLE STORMS
CLARK UNIT HYDROGRAPH
GREEN AMPT LOSS METHOD
NORMAL DEPTH BASIN AND REACH ROUTING METHOD

LAND USES PER CITY OF SCOTTSDALE PROVIDED GIS

PROJECT WASHES INCLUDE: STAGE COACH PASS (SCP)
UPPER BOULDERS WASH (UB)
FAN 6C (F6C)
FAN 6A NORTH (F6AN)
FAN 6A SOULTH (F6AS)
FAN 6A (F6A)
UPPER FAN 5 (UF5)

PROJECT SUB-BASINS DESIGNATED AS SUB-BASIN NAME ABREVIATION FOLLOWED BY BASIN NUMBER. I.E. STAGE COACH PASS SUB-BASIN 14 IS DESIGNATED AS SCP-14.

PROJECT CONCENTRATION POINTS DESIGNATED AS C FOLLOWED BY SUB-BASIN NAME AND CONCENTRATION POINT NUMBER. CONCENTRATION POINT NUMBER IS CHOOSEN BY THE SUB BASIN THE CONCENTRATION POINT IS LOCATED IN. I.E. CONCENTRATION POINT IN SUB-BASIN 06 OF UPPER BOULDERS WASH IS DESIGNATED AS CUB06.

PROJECT ROUTES ARE DESIGNATED AS R FOLLOWED BY SUB-BASIN NAME AND ROUTE NUMBER. ROUTE NUMBER IS CHOOSEN BY THE SUB-BASIN IN WHICH THE ROUTE BEGINS. IE A ROUTE FROM SUB-BASIN 4 IN FAN 6C IS DESIGNATED AS RF6C4.

```
6 IO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

  IT          HYDROGRAPH TIME DATA
                     NMIN          1  MINUTES IN COMPUTATION INTERVAL
                    IDATE      1   0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      2   0  ENDING DATE
                   NDTIME       0919  ENDING TIME
                    ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL    0.02 HOURS
                   TOTAL TIME BASE   33.32 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

48 JD         INDEX STORM NO. 1
                    STRM       3.50  PRECIPITATION DEPTH
                    TRDA       0.01  TRANSPOSITION DRAINAGE AREA

49 PI           PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.03      0.03      0.03      0.03      0.03
                 0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

52 JD         INDEX STORM NO. 2
                    STRM       3.48  PRECIPITATION DEPTH
                    TRDA       0.50  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
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0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.03	0.03
0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

53 JD INDEX STORM NO. 3

STRM 3.41 PRECIPITATION DEPTH

TRDA 2.80 TRANSPOSITION DRAINAGE AREA

54 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02
0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

57 JD INDEX STORM NO. 4

STRM 3.23 PRECIPITATION DEPTH

TRDA 16.00 TRANSPOSITION DRAINAGE AREA

58 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

61 JD INDEX STORM NO. 5

STRM 2.84 PRECIPITATION DEPTH
TRDA 90.00 TRANSPOSITION DRAINAGE AREA

62 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

65 JD INDEX STORM NO. 6

STRM 2.00 PRECIPITATION DEPTH
TRDA 500.00 TRANSPOSITION DRAINAGE AREA

66 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO

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	SCP-14	157.	4.10	17.	4.	3.	0.06		
+	ROUTED TO	RSCP14	150.	4.13	17.	4.	3.	0.06		
+	HYDROGRAPH AT	SCP-13	227.	4.10	23.	6.	4.	0.08		
+	HYDROGRAPH AT	SCP-12	91.	4.05	7.	2.	1.	0.03		
+	3 COMBINED AT	CSCP12	453.	4.08	47.	12.	8.	0.17		
+	ROUTED TO	RSCP12	419.	4.22	47.	12.	8.	0.17		
+	HYDROGRAPH AT	SCP-10	286.	4.07	28.	7.	5.	0.11		
+	2 COMBINED AT	CSCP10	631.	4.17	74.	19.	13.	0.28		
+	HYDROGRAPH AT	SCP-11	78.	4.03	6.	2.	1.	0.03		
+	2 COMBINED AT	CSCP11	676.	4.15	81.	20.	15.	0.30		
	ROUTED TO	RSCP10	635.	4.33	80.	20.	15.	0.30		
	HYDROGRAPH AT									

+	SCP-09	289.	4.05	27.	7.	5.	0.11
2 COMBINED AT	CSCP09	758.	4.28	107.	27.	19.	0.41
ROUTED TO +	RSCP09	737.	4.38	107.	27.	19.	0.41
HYDROGRAPH AT +	SCP-08	326.	4.07	33.	8.	6.	0.13
2 COMBINED AT +	CSCP08	844.	4.35	139.	35.	25.	0.54
ROUTED TO +	RSCP08	824.	4.45	139.	35.	25.	0.54
HYDROGRAPH AT +	SCP-7E	130.	4.05	11.	3.	2.	0.05
2 COMBINED AT +	CSCP7E	836.	4.45	149.	38.	27.	0.59
HYDROGRAPH AT +	SCP-7B	173.	4.08	22.	6.	4.	0.09
ROUTED TO +	RSCP7B	164.	4.18	22.	6.	4.	0.09
HYDROGRAPH AT +	SCP-7C	315.	4.12	45.	11.	8.	0.18
ROUTED TO +	RSCP7C	306.	4.15	45.	11.	8.	0.18
HYDROGRAPH AT +	SCP-7D	76.	4.03	7.	2.	1.	0.03
3 COMBINED AT +	CSCP7D	517.	4.15	73.	18.	13.	0.29
ROUTED TO	RSCP7D	517.	4.15	73.	18.	13.	0.29
2 COMBINED AT +	CSCP07	1116.	4.38	216.	55.	39.	0.88
HYDROGRAPH AT +	SCP-7A	263.	4.10	34.	9.	6.	0.14
2 COMBINED AT +	CSCP7A	1243.	4.35	247.	62.	45.	1.01
ROUTED TO +	RSCP07	1234.	4.45	247.	62.	45.	1.01
HYDROGRAPH AT +	SCP-06	237.	4.08	28.	7.	5.	0.10
2 COMBINED AT +	CSCP06	1308.	4.42	272.	69.	50.	1.11
ROUTED TO +	SSCP06	1308.	4.42	272.	69.	50.	1.11
ROUTED TO +	RSCP06	1305.	4.48	272.	69.	50.	1.11
HYDROGRAPH AT +	SCP-4B	343.	4.07	35.	9.	6.	0.14
ROUTED TO +	SSCP4B	343.	4.07	35.	9.	6.	0.14
ROUTED TO +	RSCP4B	317.	4.18	35.	9.	6.	0.14
HYDROGRAPH AT	SCP-4A	178.	4.07	19.	5.	3.	0.08
3 COMBINED AT							

+	CSCP4a	1487.	4.42	319.	81.	58.	1.33
HYDROGRAPH AT	SCP-5C	389.	4.13	40.	10.	7.	0.15
ROUTED TO +	SSCP5C	389.	4.13	40.	10.	7.	0.15
ROUTED TO +	RSCP5C	350.	4.25	40.	10.	7.	0.15
HYDROGRAPH AT +	SCP-5B	69.	4.10	8.	2.	1.	0.03
ROUTED TO +	SSCP5B	4.	3.50	4.	2.	1.	0.03
ROUTED TO +	RSCP5B	4.	5.22	4.	2.	1.	0.03
HYDROGRAPH AT +	SCP-5A	250.	4.05	23.	6.	4.	0.09
4 COMBINED AT +	CSCP04	1752.	4.32	377.	97.	70.	1.60
ROUTED TO +	RSCP04	1746.	4.38	377.	97.	70.	1.60
HYDROGRAPH AT +	SCP-03	198.	4.05	17.	4.	3.	0.08
2 COMBINED AT +	CSCP03	1792.	4.37	391.	100.	72.	1.68
ROUTED TO +	RSCP03	1788.	4.40	391.	100.	72.	1.68
HYDROGRAPH AT +	SCP-2B	102.	4.08	12.	3.	2.	0.05
2 COMBINED AT	CSCP2B	1828.	4.38	401.	103.	74.	1.73
ROUTED TO +	SSCP2B	1828.	4.38	401.	103.	74.	1.73
ROUTED TO +	RSCP2B	1821.	4.43	401.	103.	74.	1.73
HYDROGRAPH AT +	SCP-2A	128.	4.07	12.	3.	2.	0.05
2 COMBINED AT +	CSCP02	1851.	4.43	411.	105.	76.	1.79
ROUTED TO +	SSCP02	1851.	4.43	411.	105.	76.	1.79
ROUTED TO +	RSCP02	1813.	4.68	411.	106.	76.	1.79
HYDROGRAPH AT +	SCP-01	583.	4.13	81.	20.	15.	0.32
2 COMBINED AT +	CSCP01	1996.	4.63	481.	123.	89.	2.11
ROUTED TO +	SSCP01	1996.	4.63	481.	123.	89.	2.11
HYDROGRAPH AT +	F6C-6	1251.	4.18	210.	53.	38.	0.89
ROUTED TO +	RF6C6	1236.	4.25	210.	53.	38.	0.89
HYDROGRAPH AT	F6C-4	65.	4.05	6.	2.	1.	0.03
2 COMBINED AT							

+	CF6C4	1261.	4.25	215.	54.	39.	0.91
HYDROGRAPH AT	F6C-5	222.	4.12	34.	9.	6.	0.14
2 COMBINED AT							
+	CF6C5	1399.	4.23	246.	62.	45.	1.05
ROUTED TO							
+	RF6C4	1317.	4.43	246.	62.	45.	1.05
HYDROGRAPH AT							
+	F6C-3	103.	4.07	12.	3.	2.	0.05
2 COMBINED AT							
+	CF6C3	1346.	4.43	256.	64.	46.	1.10
ROUTED TO							
+	RF6C3	1324.	4.55	256.	64.	46.	1.10
HYDROGRAPH AT							
+	F6C-2	248.	4.12	25.	6.	5.	0.09
2 COMBINED AT							
+	CF6C2	1369.	4.53	278.	70.	51.	1.18
ROUTED TO							
+	SF6C2	1369.	4.53	278.	70.	51.	1.18
DIVERSION TO							
+	DCUB09	24.	4.53	1.	0.	0.	1.18
HYDROGRAPH AT							
+	DCF6C2	1345.	4.53	277.	70.	50.	1.18
ROUTED TO							
+	RF6C2	1338.	4.60	277.	70.	50.	1.18
HYDROGRAPH AT							
+	F6C-1C	260.	4.03	21.	5.	4.	0.08
2 COMBINED AT							
	CF6C1C	1349.	4.58	296.	75.	54.	1.26
HYDROGRAPH AT							
+	F6C-1B	402.	4.12	54.	14.	10.	0.19
ROUTED TO							
+	SF6C1B	402.	4.12	54.	14.	10.	0.19
ROUTED TO							
+	RF6C1B	394.	4.17	54.	14.	10.	0.19
2 COMBINED AT							
+	CF6C1B	1513.	4.57	345.	87.	63.	1.46
ROUTED TO							
+	SF6C1C	1513.	4.55	345.	87.	63.	1.46
ROUTED TO							
+	RF6C1C	1500.	4.67	345.	87.	63.	1.46
HYDROGRAPH AT							
+	F6C-1D	140.	4.02	12.	3.	2.	0.04
ROUTED TO							
+	SF6C1D	140.	4.02	12.	3.	2.	0.04
ROUTED TO							
+	RF6C1D	125.	4.13	12.	3.	2.	0.04
HYDROGRAPH AT							
+	F6C-1A	529.	4.07	50.	12.	9.	0.18
3 COMBINED AT							
+	CF6C1	1584.	4.63	401.	102.	73.	1.68
HYDROGRAPH AT							
	UB-12	146.	4.12	15.	4.	3.	0.06
ROUTED TO							

+	RUB12	112.	4.42	15.	4.	3.	0.06
HYDROGRAPH AT	UB-10	206.	4.15	25.	6.	5.	0.09
2 COMBINED AT							
+	CUB10	238.	4.32	40.	10.	7.	0.15
HYDROGRAPH AT							
+	UB-11	508.	4.15	57.	14.	10.	0.21
2 COMBINED AT							
+	CUB11	735.	4.15	97.	24.	18.	0.36
ROUTED TO							
+	RUB10	691.	4.27	97.	24.	18.	0.36
HYDROGRAPH AT							
+	UB-09	848.	4.10	94.	24.	17.	0.34
2 COMBINED AT							
+	CUB09	1270.	4.18	188.	47.	34.	0.70
ROUTED TO							
+	SUB09	1270.	4.18	188.	47.	34.	0.70
HYDROGRAPH AT							
+	DCUB09	24.	4.53	1.	0.	0.	1.18
2 COMBINED AT							
+	DCUB09	1270.	4.18	190.	48.	34.	0.70
ROUTED TO							
+	RUB09	1217.	4.35	190.	48.	34.	0.70
HYDROGRAPH AT							
+	UB-07	496.	4.15	53.	13.	10.	0.19
2 COMBINED AT							
+	CUB07	1459.	4.32	239.	60.	43.	0.89
HYDROGRAPH AT							
	UB-08C	32.	4.05	3.	1.	1.	0.01
ROUTED TO							
+	RUB08C	16.	4.60	3.	1.	1.	0.01
HYDROGRAPH AT							
+	UB-08B	108.	4.07	10.	2.	2.	0.03
ROUTED TO							
+	RUB08B	75.	4.43	10.	2.	2.	0.03
HYDROGRAPH AT							
+	UB-08A	238.	4.10	30.	8.	5.	0.12
4 COMBINED AT							
+	CUB08	1629.	4.32	278.	70.	51.	1.06
ROUTED TO							
+	RUB07	1617.	4.37	278.	70.	51.	1.06
HYDROGRAPH AT							
+	UB-05B	76.	4.02	6.	2.	1.	0.02
2 COMBINED AT							
+	CUB05B	1628.	4.37	284.	72.	52.	1.08
ROUTED TO							
+	SUB05B	1628.	4.37	284.	72.	52.	1.08
ROUTED TO							
+	RUB05B	1603.	4.47	284.	72.	52.	1.08
HYDROGRAPH AT							
+	UB-05A	237.	4.07	26.	6.	5.	0.09
2 COMBINED AT							
	CUB05	1667.	4.45	308.	78.	56.	1.17
ROUTED TO							

+	SUB05	1667.	4.45	308.	78.	56.	1.17
ROUTED TO	RUB05	1663.	4.48	308.	78.	56.	1.17
HYDROGRAPH AT							
+	UB-06C	114.	4.03	11.	3.	2.	0.04
ROUTED TO							
+	SUB06C	114.	4.03	11.	3.	2.	0.04
ROUTED TO							
+	RUB06C	102.	4.13	11.	3.	2.	0.04
HYDROGRAPH AT							
+	UB-06B	127.	4.07	15.	4.	3.	0.05
ROUTED TO							
+	SUB06B	127.	4.07	15.	4.	3.	0.05
ROUTED TO							
+	RUB06B	119.	4.17	15.	4.	3.	0.05
HYDROGRAPH AT							
+	UB-06A	125.	4.05	12.	3.	2.	0.04
3 COMBINED AT							
+	CUB06	326.	4.10	38.	10.	7.	0.13
ROUTED TO							
+	RUB06	318.	4.17	38.	10.	7.	0.13
HYDROGRAPH AT							
+	UB-03	84.	4.03	7.	2.	1.	0.03
3 COMBINED AT							
+	CUB03	1810.	4.45	350.	88.	64.	1.33
HYDROGRAPH AT							
+	UB-04	836.	4.10	99.	25.	18.	0.35
2 COMBINED AT							
	CUB04	2178.	4.37	441.	111.	80.	1.68
ROUTED TO							
+	RUB03	2152.	4.48	441.	111.	80.	1.68
HYDROGRAPH AT							
+	UB-01	151.	4.05	15.	4.	3.	0.05
2 COMBINED AT							
+	CUB01	2178.	4.47	455.	115.	83.	1.73
ROUTED TO							
+	SUB01	2178.	4.47	455.	115.	83.	1.73
HYDROGRAPH AT							
+	UB-02	162.	4.03	15.	4.	3.	0.05
HYDROGRAPH AT							
+	F6AN-8	716.	4.08	53.	13.	9.	0.23
ROUTED TO							
+	RF6AN8	653.	4.25	53.	13.	9.	0.23
HYDROGRAPH AT							
+	F6AN-6	215.	4.08	22.	6.	4.	0.11
2 COMBINED AT							
+	CF6AN6	809.	4.23	75.	19.	13.	0.34
HYDROGRAPH AT							
+	F6AN-7	565.	4.10	62.	16.	11.	0.28
2 COMBINED AT							
+	CF6AN7	1227.	4.20	134.	34.	24.	0.63
ROUTED TO							
	RF6AN6	1164.	4.35	134.	34.	24.	0.63
HYDROGRAPH AT							

+	F6AN-5	246.	4.07	22.	5.	4.	0.10
2 COMBINED AT	CF6AN5	1225.	4.33	154.	39.	28.	0.73
ROUTED TO +	RF6AN5	1138.	4.50	154.	39.	28.	0.73
HYDROGRAPH AT +	F6AN-3	206.	4.13	33.	8.	6.	0.14
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HYDROGRAPH AT +	F6AN-4	438.	4.20	59.	15.	11.	0.25
2 COMBINED AT +	CF6AN4	1435.	4.47	235.	59.	43.	1.12
ROUTED TO +	RF6AN3	1430.	4.48	235.	59.	43.	1.12
HYDROGRAPH AT +	F6AN-2	265.	4.10	33.	8.	6.	0.15
2 COMBINED AT +	CF6AN2	1527.	4.47	263.	66.	48.	1.27
ROUTED TO +	RF6AN2	1514.	4.68	263.	66.	48.	1.27
HYDROGRAPH AT +	F6AN-1	892.	4.12	101.	25.	18.	0.41
2 COMBINED AT +	CF6AN1	1678.	4.65	351.	88.	64.	1.68
HYDROGRAPH AT +	F6AS-5	1145.	4.25	132.	33.	24.	0.63
ROUTED TO	RF6AS5	963.	4.62	132.	33.	24.	0.63
HYDROGRAPH AT +	F6AS-3	593.	4.22	77.	19.	14.	0.32
2 COMBINED AT +	CF6AS3	1154.	4.60	202.	51.	37.	0.95
HYDROGRAPH AT +	F6AS-4	537.	4.33	96.	24.	17.	0.43
2 COMBINED AT +	CF6AS4	1450.	4.58	285.	72.	52.	1.38
ROUTED TO +	RF6AS3	1427.	4.67	285.	72.	52.	1.38
HYDROGRAPH AT +	F6AS-2	147.	4.12	14.	4.	3.	0.06
2 COMBINED AT +	CF6AS2	1442.	4.67	297.	75.	54.	1.44
ROUTED TO +	RF6AS2	1395.	4.87	297.	75.	54.	1.44
HYDROGRAPH AT +	F6AS-1	616.	4.12	81.	20.	15.	0.28
2 COMBINED AT +	CF6AS1	1493.	4.85	369.	93.	67.	1.72
2 COMBINED AT +	CF6ASN	2709.	4.78	681.	173.	124.	3.40
ROUTED TO	RF6AN1	2696.	4.85	681.	173.	124.	3.40
HYDROGRAPH AT							

+		F6A-1	371.	4.10	29.	7.	5.	0.13
	2 COMBINED AT	CF6A1	2698.	4.85	704.	178.	129.	3.53
	HYDROGRAPH AT							
+		RHW-1	1822.	4.28	240.	60.	43.	1.05
	DIVERSION TO							
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+		UF5-5	404.	4.27	68.	17.	12.	0.29
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+		RUF55	320.	4.95	68.	17.	12.	0.29
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+		CUF52	1242.	5.02	370.	95.	68.	2.22
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+		UF5-3	1171.	4.37	243.	61.	44.	0.84
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		CUF53	1976.	4.52	596.	152.	110.	3.07
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+		RUF52	1971.	4.57	596.	152.	110.	3.07
	HYDROGRAPH AT							
+		UF5-1	260.	4.08	23.	6.	4.	0.08
	2 COMBINED AT							
+		CUF51	2019.	4.55	616.	157.	113.	3.15

*** NORMAL END OF HEC-1 ***

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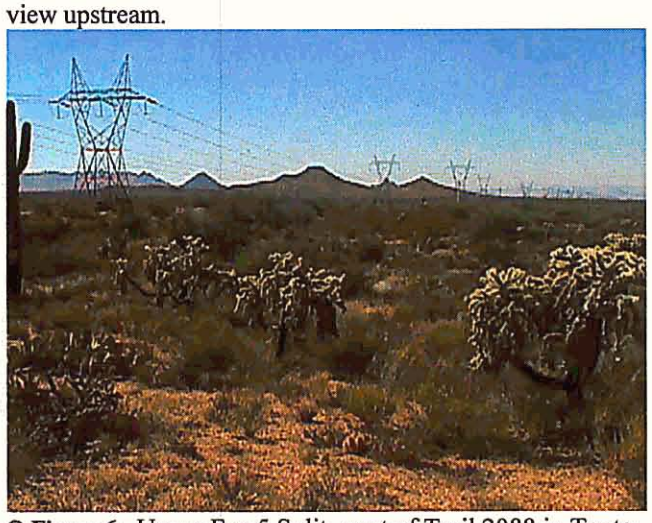

O Figure 6: Upper Fan 5 Split, west of Trail 2088 in Tonto Forrest, view south.

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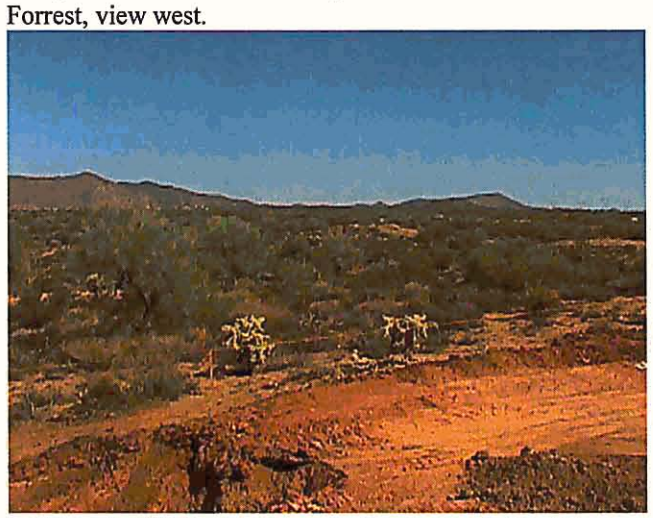
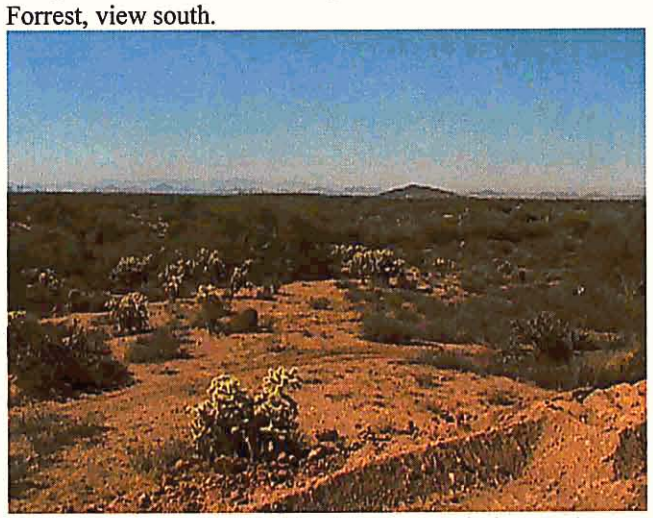
O Figure 8: T5NR5E Township Line south end of Tonto Forrest, view south.



O Figure 9: 1000ft downstream of upper limit, Fan 6A North, view upstream.



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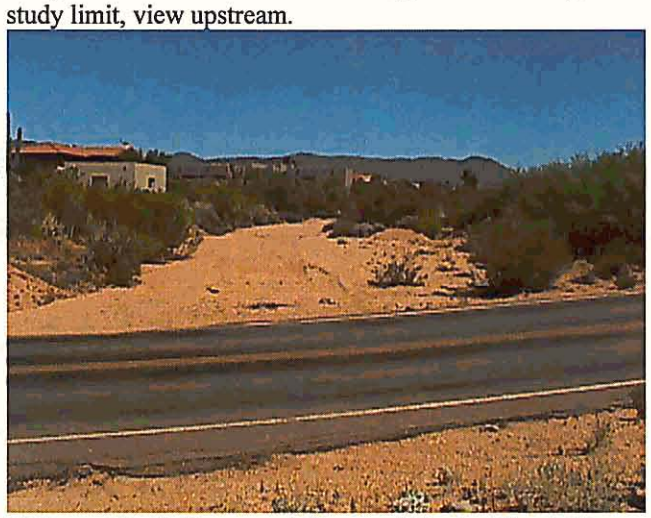

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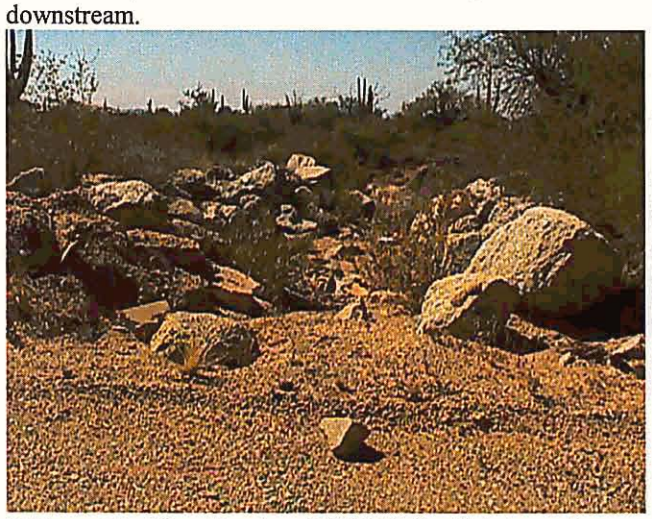

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NORTH SCOTTSDALE DELINEATION STUDY

(FCD 2003C008)

APPENDIX E.1.1: FIELD RECONNAISSANCE

North Scottsdale
Delineation Study

Appendix E.1.1: FIELD RECONNAISSANCE

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1 INTRODUCTION

DEI Professional Services, LLC has been contracted by the Flood Control District of Maricopa County to prepare a flood plain delineation for Upper Fan 5, Fan 6, Fan 6A South, Fan 6A North, Fan 6C Upper Boulders Wash and Stage Coach Pass Washes. The top of the hydrologic study area begins at Wildcat Hill. The hydrologic study area covers approximately 12.9 square miles, with wash delineation covering approximately 24.06 river miles and is located in the northern limits of the City of Scottsdale. The study area is within Sections 2-9 and 18-17 of Township 5 North, Range 5 East, and Sections 21, 22, 27-29 and 31-35 of Township 6 North, Range 5 East, and Sections 1-3 and 10-13 of Township 5 North, Range 4 East, of the Gila and Salt River Base and Meridian.

2 FIELD EVALUATION

Field reconnaissance for the general watershed was conducted over several site visits. Site visit dates included September 28, 2001 and October 30, 2001. Field reconnaissance consists of either driving or walking the washes, observing the general watershed conditions, channel bank and vegetation characteristics, and taking photographs at representative locations. The following pages show the photographs taken during these visits. Photograph location and direction are shown on the aerial plan view sheets of each subject wash in the subsequent Appendix E.1.2. Photographs from this section are shown in circles on the aerial plan sheets.

NORTH SCOTTSDALE DELINEATION STUDY

(FCD 2003C008)

APPENDIX E.1.2: MANNING'S 'n' VALUE DETERMINATION

North Scottsdale
Delineation Study

Appendix E.1.2: MANNING'S 'n' VALUE DETERMINATION

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Figure F6AS-S2:	Manning's 'n' Evaluation-Reach S

1 INTRODUCTION

DEI Professional Services, LLC has been contracted by the Flood Control District of Maricopa County to prepare a flood plain delineation for Upper Fan 5, Fan 6, Fan 6A South, Fan 6A North, Fan 6C Upper Boulders Wash and Stage Coach Pass Washes that lie within the Wildcat Hill Watershed. See Figure 1 for Vicinity Map. The wash delineations cover approximately 24.06 river miles. Appendix E.1 includes a compilation of field reconnaissance and data collection for each wash, which was used to estimate the Manning's 'n' values in the hydrologic and hydraulic analysis used to delineate the floodplains. Results from this Appendix will be considered from submittal to the Federal Emergency Management Agency (FEMA) for inclusion of delineated 100-year floodplains on updated Flood Insurance Rate Maps (FIRM).

2 PURPOSE OF STUDY

This report satisfies the requirements of the Contract Scope of work Task item 6.7. The Manning's 'n' report documents the field conditions and physical parameters used in modeling the water surface elevations and to define the final floodplain delineations for the study washes. Parameters evaluated in this section include the Base Component (n_b), Irregularity Component (n_1), Obstruction Component (n_2), Vegetation Component (n_3) and Meandering Factor (m).

3 STUDY LOCATION

The hydrologic study area covers approximately 12.9 square miles, with wash delineation covering approximately 24.06 river miles and is located in the northern limits of the City of Scottsdale. The study area is within Sections 2-9 and 18-17 of Township 5 North, Range 5 East, and Sections 21, 22, 27-29 and 31-35 of Township 6 North, Range 5 East, and Sections 1-3 and 10-13 of Township 5 North, Range 4 East, of the Gila and Salt River Base and Meridian.

4 FIELD EVALUATION

The field reconnaissance for each of the study reaches was conducted over several site visits. Site visit dates included November 21, 2001; March 1, 2002; and March 3, 2002. Field reconnaissance consists of either driving or walking the washes, observing the channel bank and vegetation characteristics, developing an inventory of channel and overbanks features, and taking photographs at representative locations.

Aerial photographs with delineated drainage areas for each wash is provided on the MANNING'S "N" VALUE AND PHOTO INDEX MAPS in this Appendix. Each wash is delineated into reach lengths that show photograph locations and directions at representative cross sections for that reach length. Following each reach length MANNING'S "N" VALUE AND PHOTO INDEX MAP the representative photograph, channel geometry, Manning's 'n' value equation, and a list of the selected 'n' factors are

shown on subsequent Plates. The frame of the grid shown in several photographs is 1.5 feet outside dimension on a side with an internal square of 1 foot on a side and grid spacing of 1 inch.

5 MANNING'S 'n' ESTIMATION METHODOLOGY

The procedure presented in the report entitled *Estimated Manning's Roughness Coefficients for Stream Channels and Flood Plains in Maricopa County, Arizona* (Ref. ?) was used for the estimation of Manning's 'n' values. The procedure consists of selecting a base 'n' for both the channel and overbank areas, and applying an adjustment factor to account for the roughness associated with channel irregularity, obstructions, vegetation, and channel meandering. Tables 1 and 2 of the above mentioned report give a range of base 'n' values and adjustment factors. The composite Manning's 'n' value can be computed as follows:

$$
\begin{aligned}
& n = \left(n_b + n_1 + n_2 + n_3\right) \cdot m_1 \\
& where: \\
& \quad n_b = base\ value\ for\ 'n'\ for\ a\ straight \\
& \qquad uniform\ channel \\
& \quad n_1 = value\ for\ surface\ irregularities \\
& \quad n_2 = value\ for\ obstruction \\
& \quad n_3 = value\ for\ vegetation \\
& \quad m_1 = meandering\ factor
\end{aligned}
$$

5.1 Base Component (n_b)

The base n was determined by using the values located on Table 1: Base Values of Manning's "n" for Stable Channels (Ref.1). The base "n" is determined by analyzing the bed material. Table 1 illustrates a wide range of base "n_b" values as reported by Benson & Dalrymple, and Chow. The values given by Benson & Dalrymple represent a straight uniform channel while the values given by Chow represent the smoothest channel attainable in a given material. Base "n_b" values

range from 0.011 to 0.070, with lower values observed in the main channel and slightly higher values observed in the overbank areas. In general, the following values were used as guidelines in the determination of the base "n_b" value:

Table C1: Selected Study Specific Base Component Guidelines

Course Sand and Fine Gravel	$n_b = 0.030$
Coarse Gravel	$n_b = 0.032$
Gravel and Cobbles	$n_b = 0.035$
Predominant Cobbles	$n_b = 0.040$
Large Rocks and Boulders	$n_b = 0.055$
Rock Outcrop	$n_b = 0.025$

Vegetation, obstructions, irregularities and other factors that may increase the channel's 'n' value are accounted for by adding an adjustment factor to account for the roughness to the base 'n' as described above.

5.2 Irregularity Component (n_1)

The adjustment for irregularity is based upon the degree of erosion or scour of the overbank and channel bank side slopes. The adjustment factors range from 0.00 to 0.020 depending on the severity of the bank erosion. The erosion/scour are determined to be either smooth, minor, moderate, or severe. The following guidelines were used to determine the irregularity component adjustment factor:

Table C2: Selected Study Specific Irregularity Component Adjustment Guidelines

Smooth: smooth channel	$N_1 = 0.000$
Minor: channel with slightly eroded side slopes	$n_1 = 0.003$
Moderate: channel with moderately eroded or sloughed side slopes	$n_1 = 0.008$
Severe: channels with badly sloughed banks; rock channels	$n_1 = 0.016$

5.3 Obstruction Component (n_2)

Obstructions include but are not limited to debris deposits, stumps, exposed roots, logs, piers and boulders. These obstructions are determined to either be negligible, minor, appreciable, or severe depending on the percentage of cross sectional area that the obstruction is occupying. The following table indicates the guidelines used to determine the obstruction adjustment factor:

Table C3: Selected Study Specific Obstruction Component Adjustment Factor Guidelines

Negligible: few scattered obstructions occupying less than 5% of cross section	$n_2 = 0.002$
Minor: obstructions occupying 5 to 15% of cross section	$n_2 = 0.010$
Appreciable: obstructions occupying 15 to 50% of cross section	$n_2 = 0.025$
Severe: obstructions occupying more than 50% of cross section	$n_2 = 0.050$

5.4 Vegetation Component (n_3)

The vegetation component of the Manning's 'n' value varies according to the density of growth and the ratio of flow depth to vegetation height. The vegetation component is determined to either be small, medium, large, or very large. The following table indicates the guidelines used to determine the vegetation adjustment factor:

Table C4: Selected Study Specific Vegetation Adjustment Factor Guidelines

Small: average depth is at least three times the height of the vegetation	$n_3 = 0.006$
Medium: average depth is one to two times the height of the vegetation	$n_3 = 0.018$
Large: average depth is about equal to the height of the vegetation	$n_3 = 0.038$
Very Large: average depth is less than half the height of the vegetation	$n_3 = 0.075$

In the areas where the main channels and overbanks are easily defined, and the main channel has little or no vegetation a vegetation adjustment factor of 0.00 was used. A higher factor was applied to the overbank areas. Within the upper reaches of the washes the distinction between the overbanks and channel become less predominant and vegetation is found within the main channels. The channel areas typically contain greater amounts of vegetation thus the vegetation adjustment factor is correspondingly higher.

5.5 Meandering Factor (m)

The meandering factor applies only to flow meandering within the channel limits, and is based on the ratio of the meander length to the straight length of the channel. The meandering of the wash can be described as any of the following; minor, appreciable or severe with the following

values assigned to each:

Table C5: Meandering Factor Guidelines

Minor: ratio of the meander length to the straight length of channel is 1.0 to 1.2	m = 1.0
Appreciable: ratio of the meander length to the straight length of channel is 1.2 to 1.5	m = 1.15
Severe: ratio of the meander length to the straight length of channel is greater than 1.5	m = 1.30

5.6 Manning's "n" Value Field Photographs

Photographs are provided for documentation of the field conditions found in the study washes and assist in determining the Manning's "n" Values. Photograph location and direction are shown in plan view on the MANNING'S "N" VALUE AND PHOTO INDEX MAPS in this Appendix. Photographs used to determine the Manning's "n" follow on the subsequent pages.

STAGECOACH PASS WASH-Reach A

FIGURE 14: Stage Coach Pass Wash (SCP) looking northeast in Boulders Subdivision east of Scottsdale Road. See MANNING'S "n" & PHOTO INDEX MAP SCP-1 for photo location and direction.

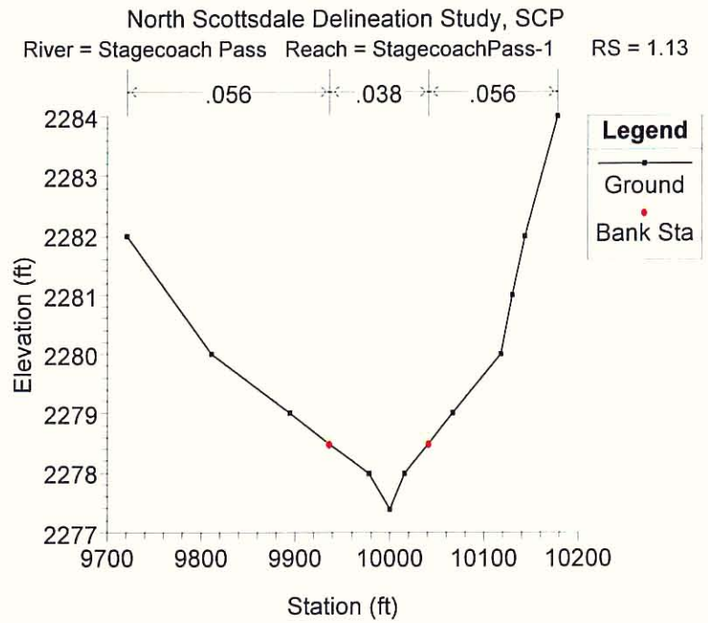

FIGURE 14-2: Channel geometry at cross section 1.13, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where :

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.018	0	0.018
Meandering (m_1)	1	1	1
Composite 'n'	0.056	0.038	0.056

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

FCD CONTRACT NO. 2003C008

In Cooperation with

City of Scottsdale 2001

Honor the Past - Imagine the Future

PREPARED BY:

DEI Professional Services, LLC

6225 North 24th Street
Suite 200
Phoenix, AZ 85016

MANNING'S "n" EVALUATION

STAGECOACH PASS WASH REACH A

PLATE SCP-A

STAGECOACH PASS WASH-Reach B

FIGURE 12: Stage Coach Pass Wash looking southwest in Sandflower Subdivision downstream from box culvert. See MANNING'S "n" & PHOTO INDEX MAP SCP-1 for photo location and direction.

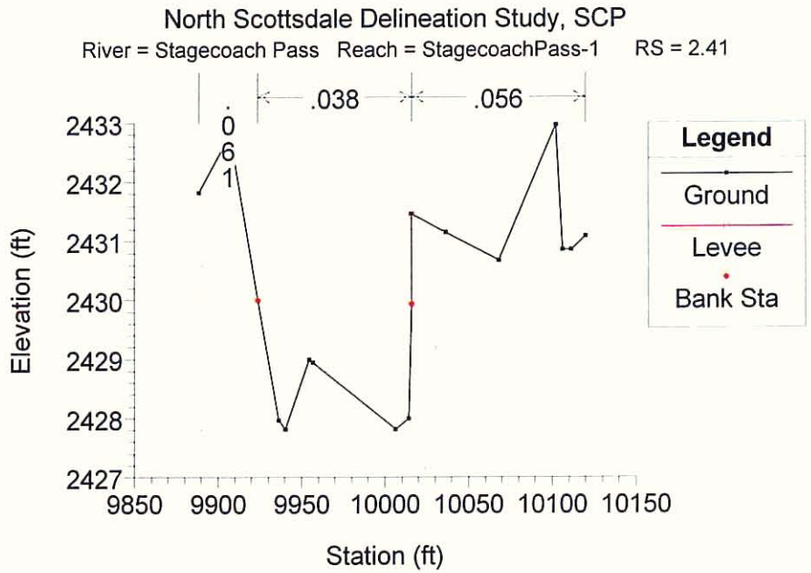

FIGURE 12-2: Channel geometry at cross section 2.41, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.008	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.018	0	0.018
Meandering (m_1)	1	1	1
Composite 'n'	0.061	0.038	0.056

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

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MANNING'S "n" EVALUATION

STAGECOACH PASS WASH REACH B

PLATE SCP-B

STAGECOACH PASS WASH-Reach C

FIGURE 11: Stage Coach Pass Wash (SCP) looking northeast in Sandflower Subdivision from top of dyke. See MANNING'S "n" & PHOTO INDEX MAP SCP-1 for photo location and direction.

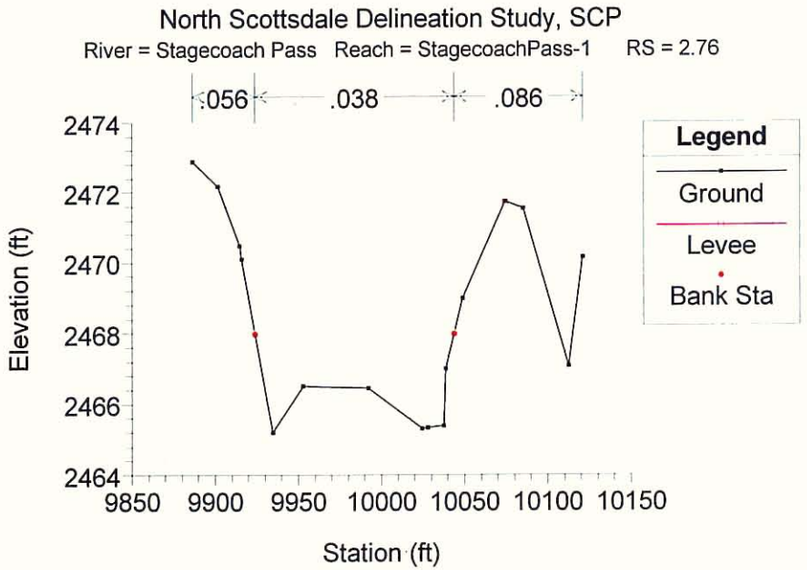

FIGURE 11-2: Channel geometry at cross section 2.76, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.055
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.018	0	0.018
Meandering (m_1)	1	1	1
Composite 'n'	0.056	0.038	0.086

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MANNING'S "n" EVALUATION

STAGECOACH PASS WASH REACH C

PLATE SCP-C

STAGECOACH PASS WASH-Reach D

NO PHOTO AVAILIBLE

FIGURE n/a: Stage Coach Pass Wash (SCP).

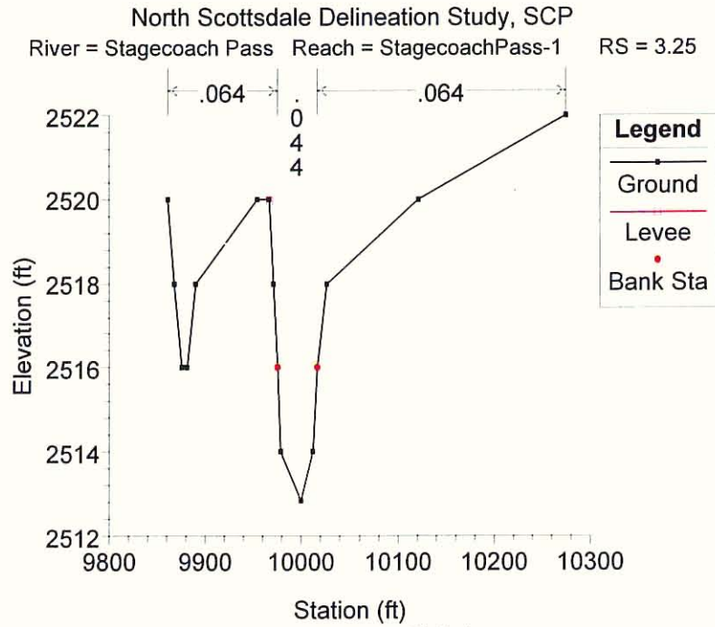

FIGURE n/a-2: Channel geometry at cross section 3.25, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.018	0	0.018
Meandering (m_1)	1.15	1.15	1.15
Composite 'n'	0.064	0.044	0.064

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MANNING'S "n" EVALUATION

STAGECOACH PASS WASH REACH D

PLATE SCP-D

STAGECOACH PASS WASH-Reach E

FIGURE 18: Stage Coach Pass Wash (SCP) looking east from the east side of Pima Road. See MANNING'S "n" & PHOTO INDEX MAP SCP-2 for photo location and direction.

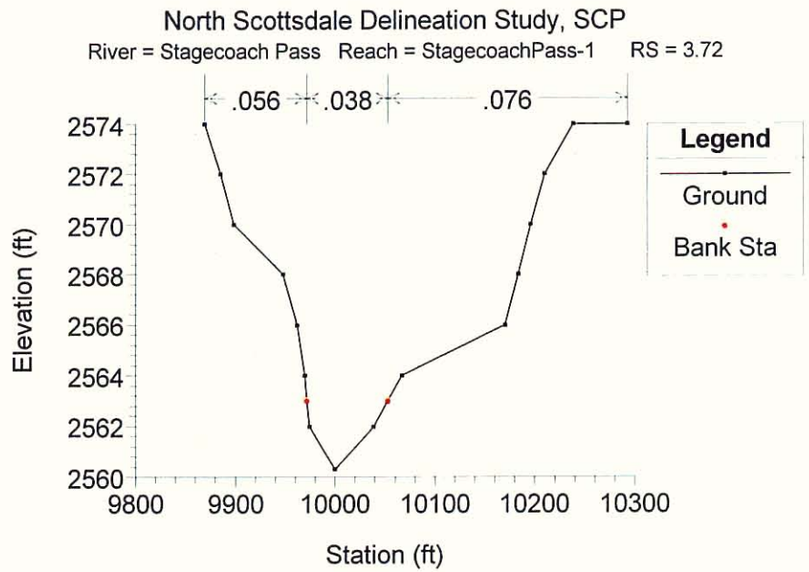

FIGURE 18-2: Channel geometry at cross section 3.73, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where :

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.018	0	0.038
Meandering (m_1)	1	1	1
Composite 'n'	0.056	0.038	0.076

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

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MANNING'S "n" EVALUATION

STAGECOACH PASS WASH REACH E

PLATE SCP-E

STAGECOACH PASS WASH-Reach F

FIGURE 15: Stage Coach Pass Wash (SCP) looking northeast from the east side of the Town of Carefree border. See MANNING'S "n" & PHOTO INDEX MAP SCP-2 for photo location and direction.

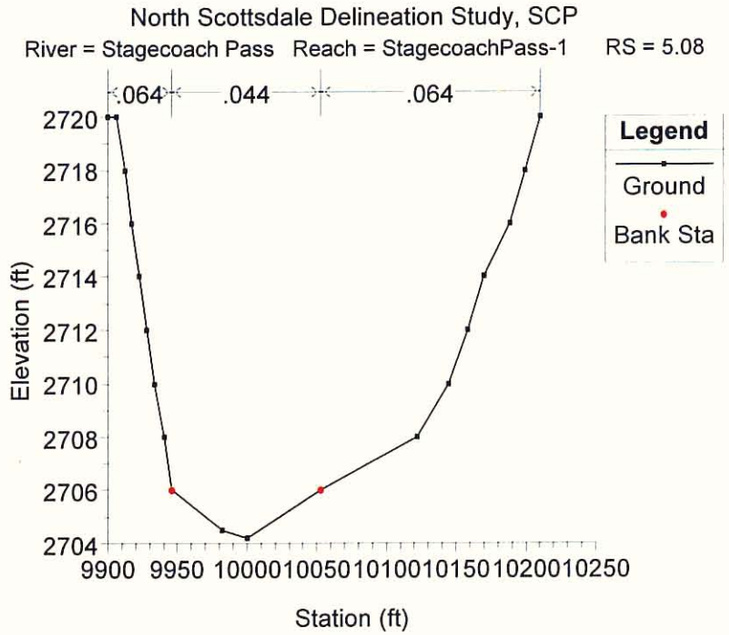

FIGURE 15-2: Channel geometry at cross section 5.08, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where :

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.018	0	0.018
Meandering (m_1)	1.15	1.15	1.15
Composite 'n'	0.064	0.044	0.064

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MANNING'S "n" EVALUATION

STAGECOACH PASS WASH REACH F

PLATE SCP-F

UPPER BOULDERS WASH-Reach A

FIGURE 22: Upper Boulders Wash (UBW) looking east from the east side of the intersection with Winfield Drive. See MANNING'S "n" & PHOTO INDEX MAP UBW-2 for photo location and direction..

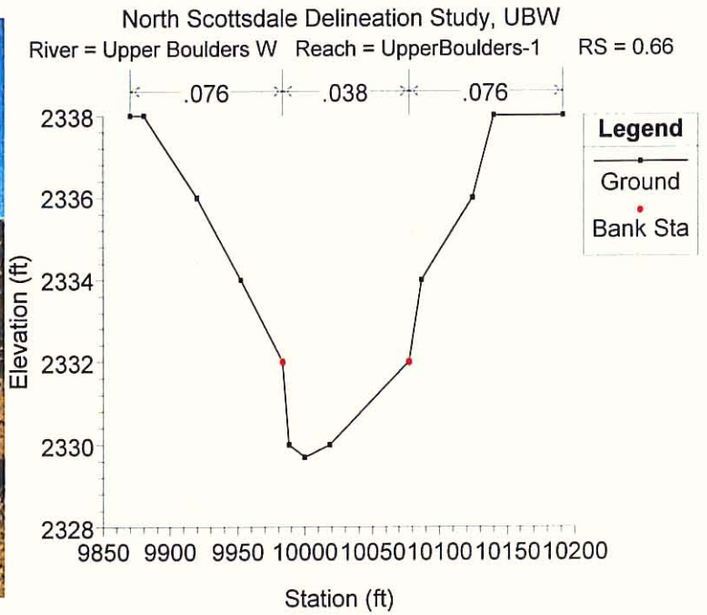

FIGURE 23-2: Channel geometry at cross section 0.66, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where :

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.038	0	0.038
Meandering (m_1)	1	1	1
Composite 'n'	0.076	0.038	0.076

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

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MANNING'S "n" EVALUATION

UPPER BOULDERS WASH REACH A

PLATE UBW-A

UPPER BOULDERS WASH-Reach B

NO PHOTO AVAILIBLE

FIGURE n/a: Upper Boulders Wash (UBW)

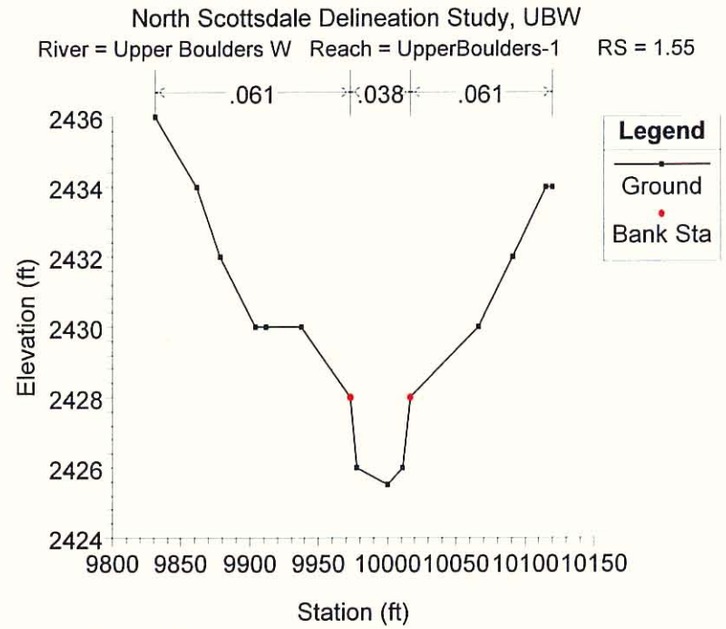

FIGURE n/a-2: Channel geometry at cross section 1.55, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.008	0.003	0.008
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.018	0	0.018
Meandering (m_1)	1	1	1
Composite 'n'	0.061	0.038	0.061

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

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MANNING'S "n" EVALUATION

UPPER BOULDERS WASH REACH B

PLATE UBW-B

UPPER BOULDER WASH-Reach C

NO PHOTO AVAILIBLE

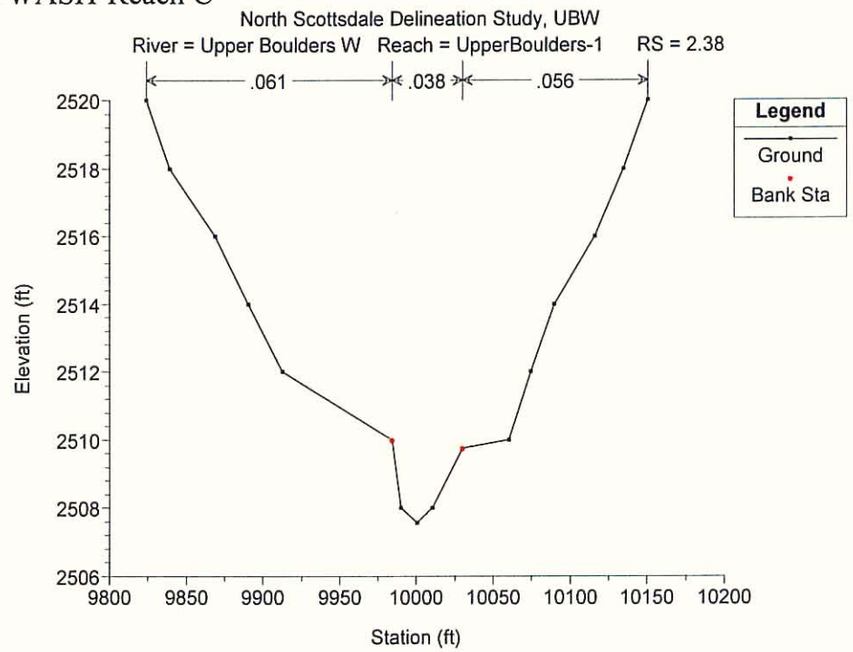

FIGURE 11: Upper Boulders Wash (UBW).

FIGURE 11-2: Channel geometry at cross section 2.38, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.008	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.018	0	0.018
Meandering (m_1)	1	1	1
Composite 'n'	0.061	0.038	0.056

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

FCD CONTRACT NO. 2003C008

In Cooperation with:

City of Scottsdale

Honor the Past - Imagine the Future

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MANNING'S "n" EVALUATION

UPPER BOULDERS WASH REACH C

PLATE UBW-C

UPPER BOULDERS WASH-Reach D

FIGURE 24: Upper Boulders Wash (UBW) looking southwest from the northeast corner of Legend Trail Subdivision and downstream of box culverts. See MANNING'S "n" & PHOTO INDEX MAP UBW-2 for photo location and direction.

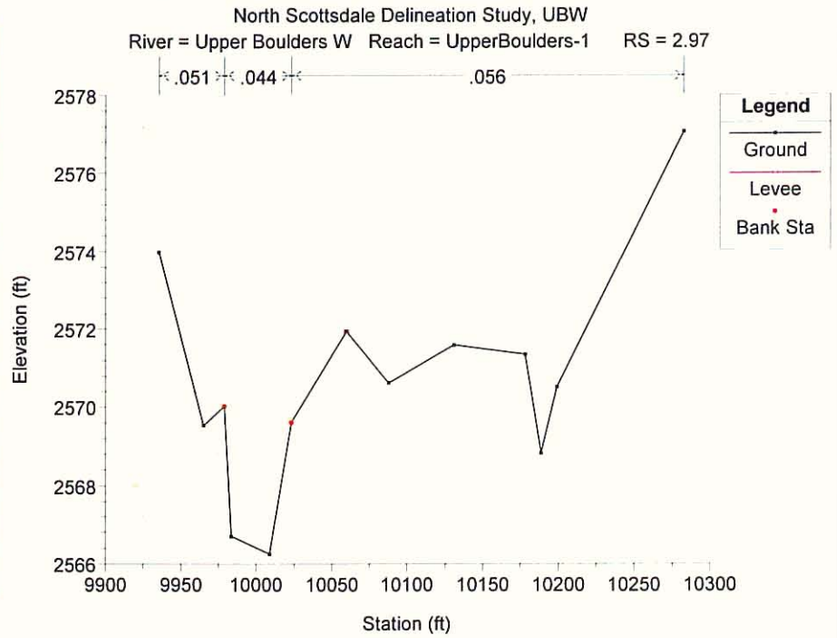

FIGURE 24-2: Channel geometry at cross section 2.97, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.008
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.006	0	0.006
Meandering (m_1)	1.15	1.15	1.15
Composite 'n'	0.051	0.044	0.056

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

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MANNING'S "n" EVALUATION

UPPER BOULDERS WASH REACH D

PLATE UBW-D

FAN 6C-Reach A

FIGURE 31: Fan 6C (F6C) looking northeast from north side of Smokehouse Trail Road Alignment. See MANNING'S "n" & PHOTO INDEX MAP F6C-1 for photo location and direction.

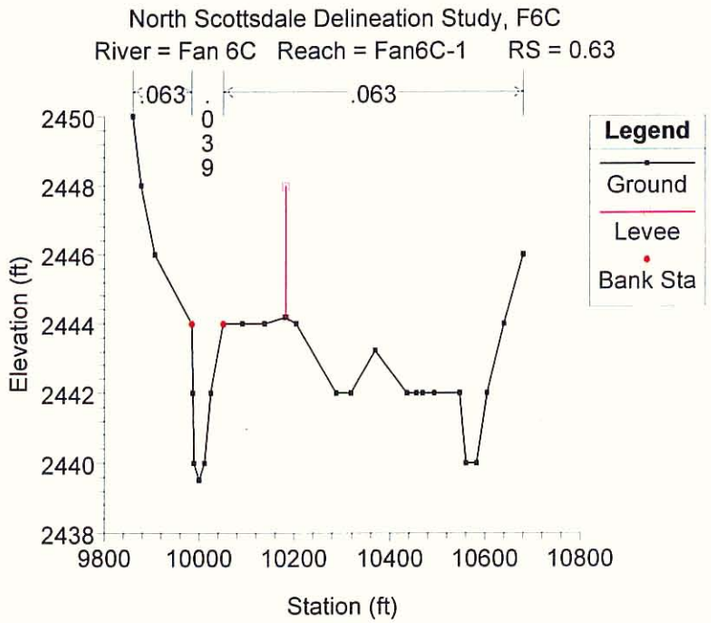

FIGURE 31-2: Channel geometry at cross section 0.63, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.025	0.001	0.025
Meandering (m_1)	1	1	1
Composite 'n'	0.063	0.039	0.063

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

FCD CONTRACT NO. 2003C008

In Cooperation with:

Honor the Past - Imagine the Future

PREPARED BY:

DEI Professional Services, LLC

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Suite 200
Phoenix, AZ 85016

MANNING'S "n" EVALUATION

FAN 6C
REACH A

PLATE F6C-A

FAN 6C-Reach B

FIGURE 29: Fan 6C (F6C) looking northeast from north side of Westland Road upstream of box culverts. See MANNING'S "n" & PHOTO INDEX MAP F6C-1for photo location and direction.

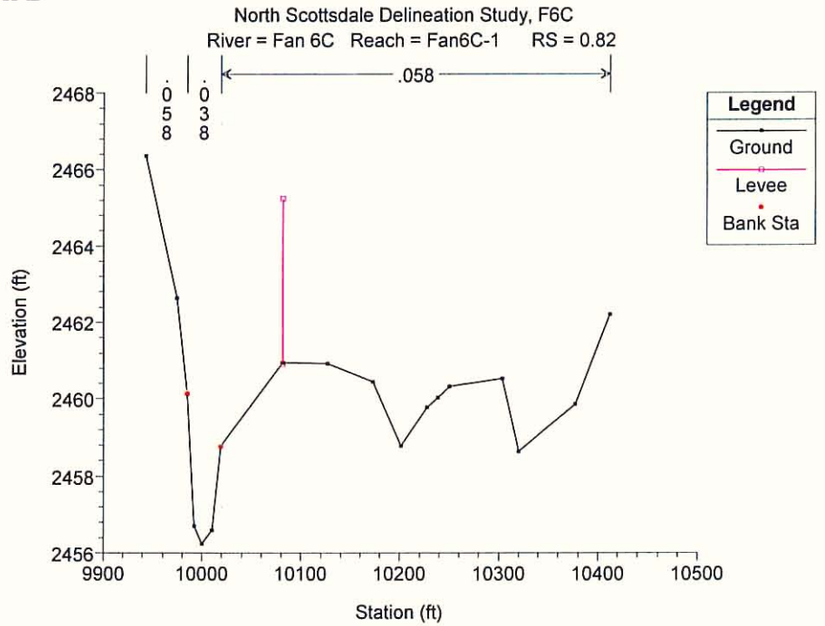

FIGURE 29-2: Channel geometry at cross section 0.82, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.02	0	0.02
Meandering (m_1)	1	1	1
Composite 'n'	0.058	0.038	0.058

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

FCD CONTRACT NO. 2003C008

In Cooperation with:

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MANNING'S "n" EVALUATION

FAN 6C
REACH B

PLATE F6C-B

FAN 6C-Reach C

FIGURE 34: Fan 6C (F6C) looking southwest from west boundary of Legend Trail Subdivision downstream of box culverts. See MANNING'S "n" & PHOTO INDEX MAP F6C-2 for photo location and direction.

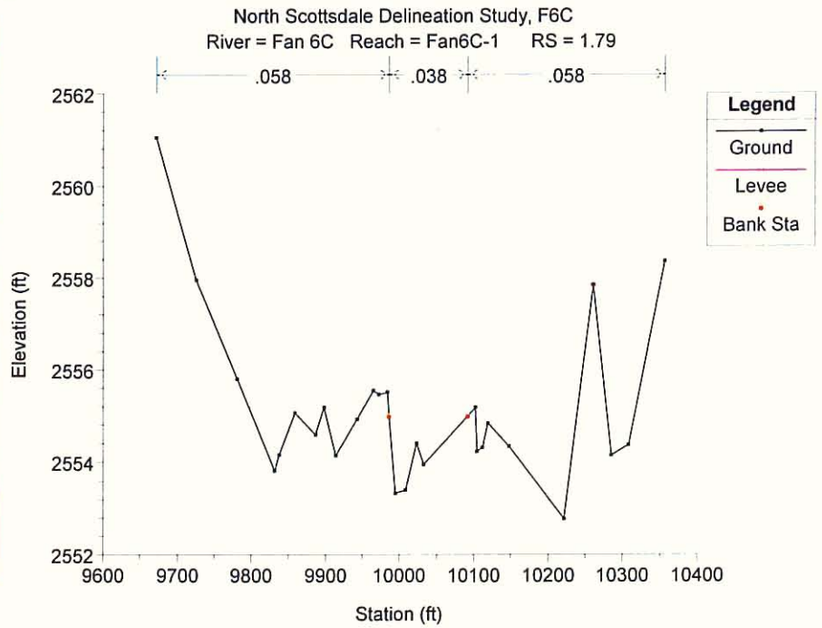

FIGURE 34-2: Channel geometry at cross section 1.79, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.02	0	0.02
Meandering (m_1)	1	1	1
Composite 'n'	0.058	0.038	0.058

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

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MANNING'S "n" EVALUATION

FAN 6C
REACH C

PLATE F6C-C

FAN 6C-Reach D

FIGURE 36: Fan 6C (F6C) looking southwest from south side of Whitewing Drive in Legend Trail Subdivision. See MANNING'S "n" & PHOTO INDEX MAP F6C-2 for photo location and direction.

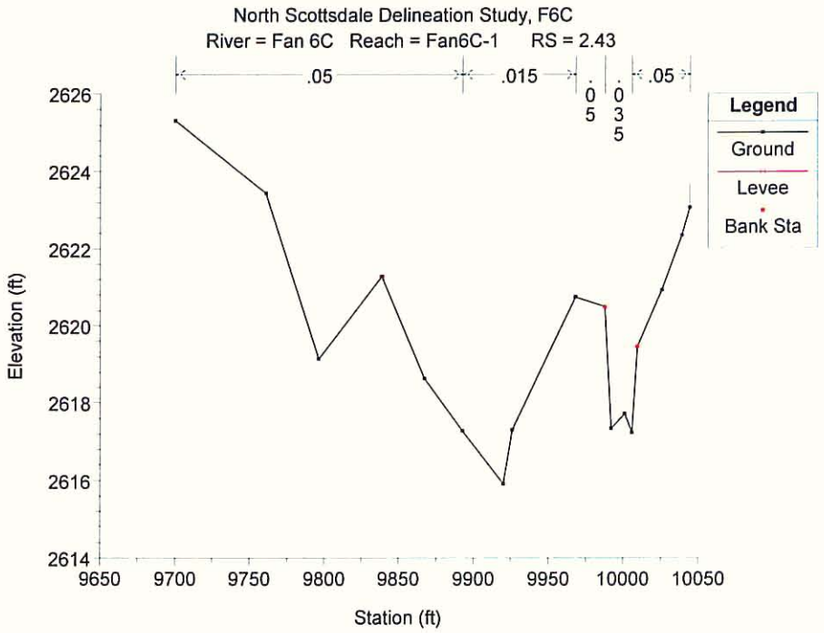

FIGURE 36-2: Channel geometry at cross section 2.43, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0	0	0
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.015	0	0.015
Meandering (m_1)	1	1	1
Composite 'n'	0.05	0.035	0.05

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MANNING'S "n" EVALUATION

FAN 6C
REACH D

PLATE F6C-D

FAN 6A-Reach A

FIGURE 40: Fan 6A (F6A) looking northeast from the south side of Legend Trail Parkway south of Legend Trail Subdivision. See MANNING'S "n" & PHOTO INDEX MAP F6A-1 for photo location and direction.

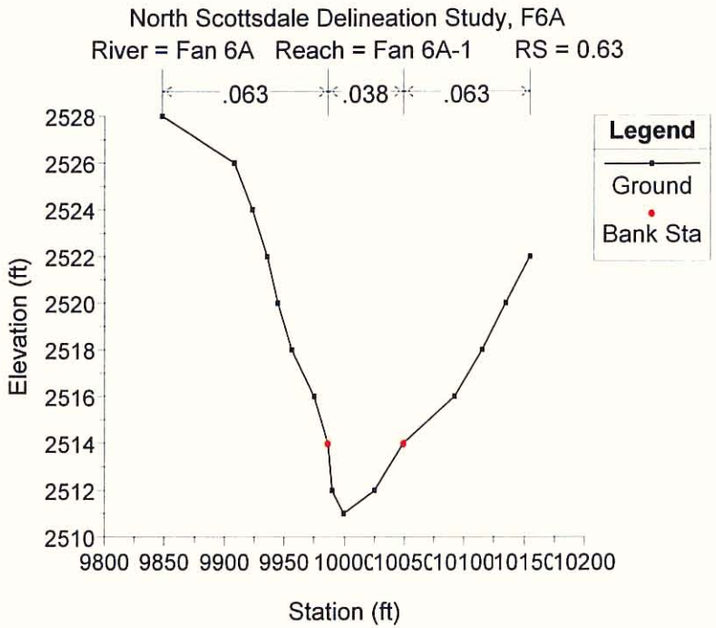

FIGURE 40-2: Channel geometry at cross section 0.63, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.025	0	0.025
Meandering (m_1)	1	1	1
Composite 'n'	0.063	0.038	0.063

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MANNING'S "n" EVALUATION

FAN 6A
REACH A

PLATE F6A-A

FAN 6A NORTH-Reach N1

FIGURE 41: Fan 6A North (F6AN) looking northeast at confluence of Fan 6A North and Fan 6A South at south boundary of Legend Trail Subdivision. See MANNING'S "n" & PHOTO INDEX MAP F6A-1for photo location and direction.

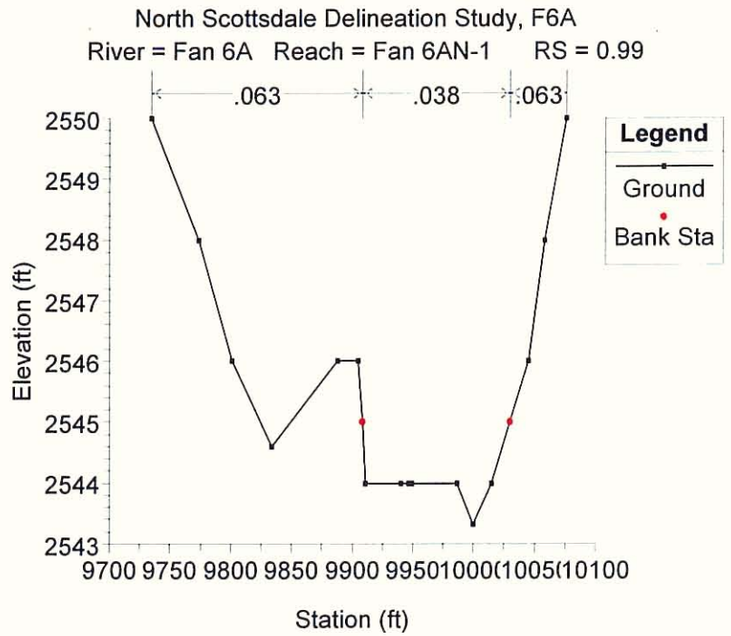

FIGURE 41-2: Channel geometry at cross section ___, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.025	0	0.025
Meandering (m_1)	1	1	1
Composite 'n'	0.063	0.038	0.063

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

FCD CONTRACT NO. 2003C008

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MANNING'S "n" EVALUATION

FAN 6A NORTH REACH N1

PLATE F6AN-N1

FAN 6A NORTH-Reach N2

NO PHOTO AVAILIBLE

FIGURE N/A: Fan 6A North (F6AN)

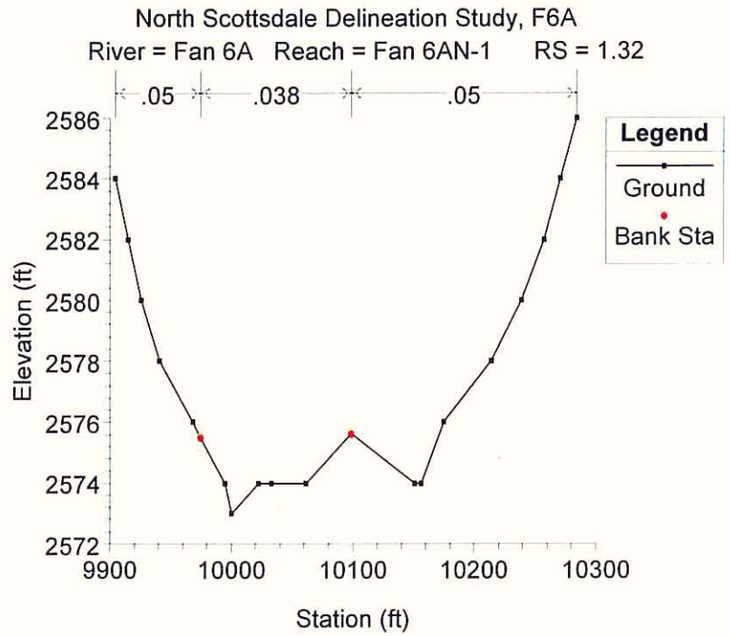

FIGURE N/A-2: Channel geometry at cross section 1.32, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.012	0	0.012
Meandering (m_1)	1	1	1
Composite 'n'	0.05	0.038	0.05

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

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MANNING'S "n" EVALUATION

FAN 6A NORTH REACH N2

PLATE F6AN-N2

FAN 6A NORTH-Reach N3

FIGURE 42: Fan 6A North (F6AN) looking southwest from Cavalry Drive from top of box culvert outlet. See MANNING'S "n" & PHOTO INDEX MAP F6A-1 for photo location and direction.

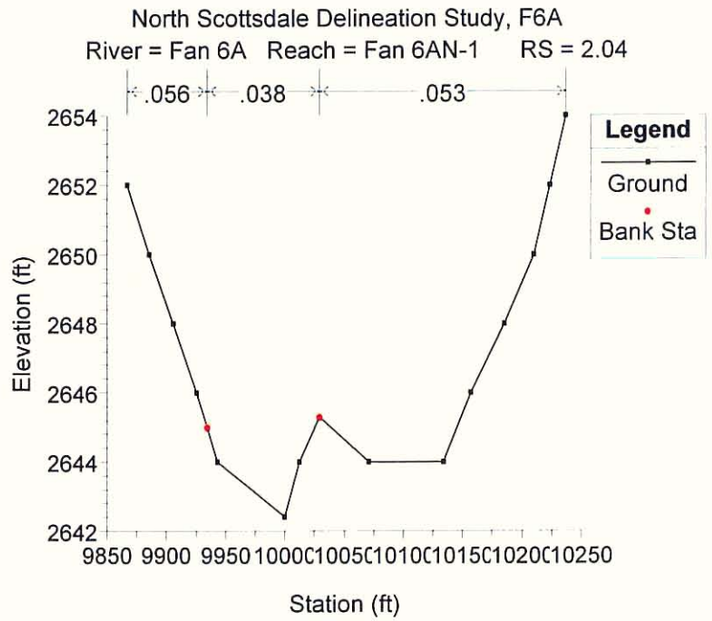

FIGURE 42-2: Channel geometry at cross section 2.04, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.018	0	0.015
Meandering (m_1)	1	1	1
Composite 'n'	0.056	0.038	0.053

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MANNING'S "n" EVALUATION

FAN 6A NORTH REACH N3

PLATE F6AN-N3

FAN 6A NORTH-Reach N4

FIGURE 46: Fan 6A North (F6AN) looking east from the east side of Boulder View Drive. See MANNING'S "n" & PHOTO INDEX MAP F6A-3 for photo location and direction.

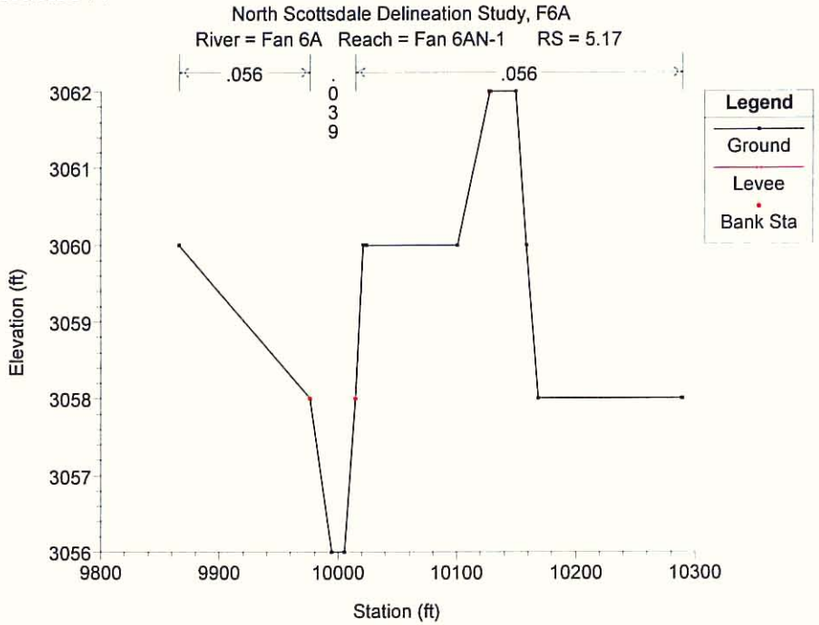

FIGURE 46-2: Channel geometry at cross section 5.17, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.018	0.001	0.018
Meandering (m_1)	1	1	1
Composite 'n'	0.056	0.039	0.056

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

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MANNING'S "n" EVALUATION

FAN 6A NORTH REACH N4

PLATE F6AN-N4

FAN 6A SOUTH-Reach S1

FIGURE 43: Fan 6A South (F6AS) looking northwest from west side of 99th Way downstream of box culverts. See MANNING'S "n" & PHOTO INDEX MAP F6A-1 for photo location and direction.

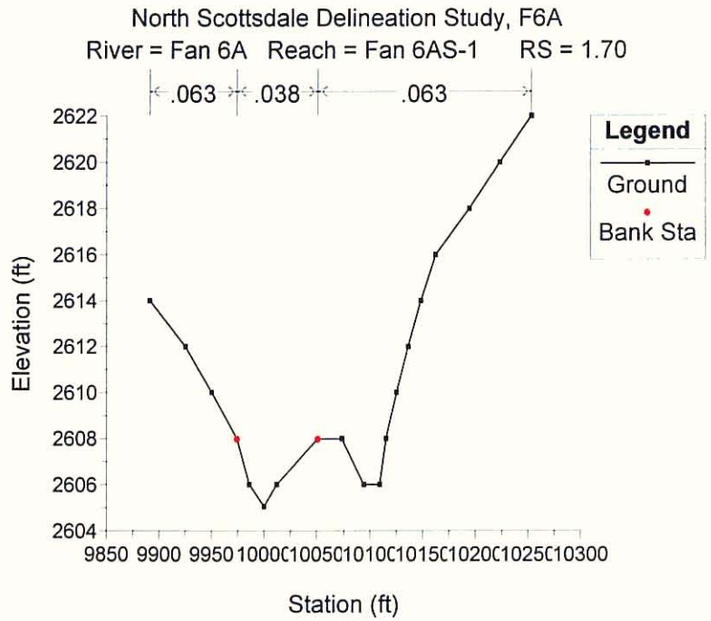

FIGURE 43-2: Channel geometry at cross section 1.70, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.025	0	0.025
Meandering (m_1)	1	1	1
Composite 'n'	0.063	0.038	0.063

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

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MANNING'S "n" EVALUATION

FAN 6A SOUTH REACH S1

PLATE F6AS-S1

FAN 6A SOUTH-Reach S2

NO PHOTO AVAILIBLE

FIGURE N/A: Fan 6A South (F6AS).

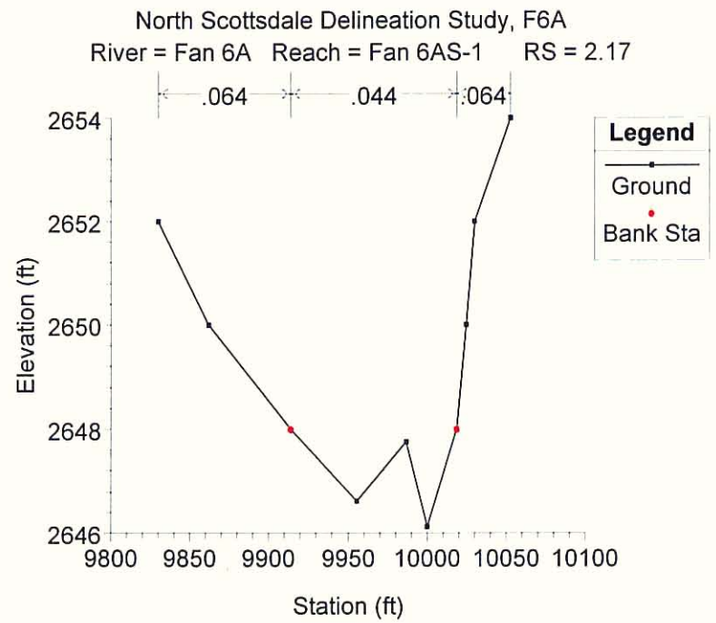

FIGURE N/A-2: Channel geometry at cross section 2.17, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where:

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.018	0	0.018
Meandering (m_1)	1.15	1.15	1.15
Composite 'n'	0.064	0.044	0.064

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

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MANNING'S "n" EVALUATION

FAN 6A SOUTH REACH S2

PLATE F6AS-S2

UPPER FAN 5-Reach A

FIGURE 1: Upper Fan 5 (UF5) looking southwest from east of Pima Road. See MANNING'S "n" & PHOTO INDEX MAP UF5-1 for photo location and direction.

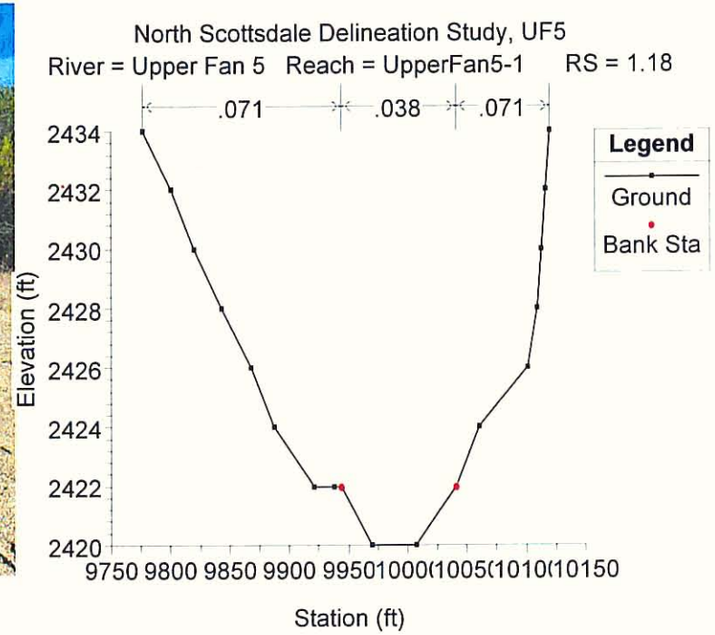

FIGURE 1-2: Channel geometry at cross section 1.18, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where :

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.003	0.003	0.003
Obstruction (n_2)	0.025	0.01	0.025
Vegetation (n_3)	0.018	0	0.018
Meandering (m_1)	1	1	1
Composite 'n'	0.071	0.038	0.071

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

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MANNING'S "n" EVALUATION

UPPER FAN 5
REACH A

PLATE UF5-A

UPPER FAN 5-Reach B

FIGURE 10: Upper Fan 5 looking northeast at confluence from Rawhide Wash apex of braided split flow on right. See MANNING'S "n" & PHOTO INDEX MAP UF5-2 for photo location and direction.

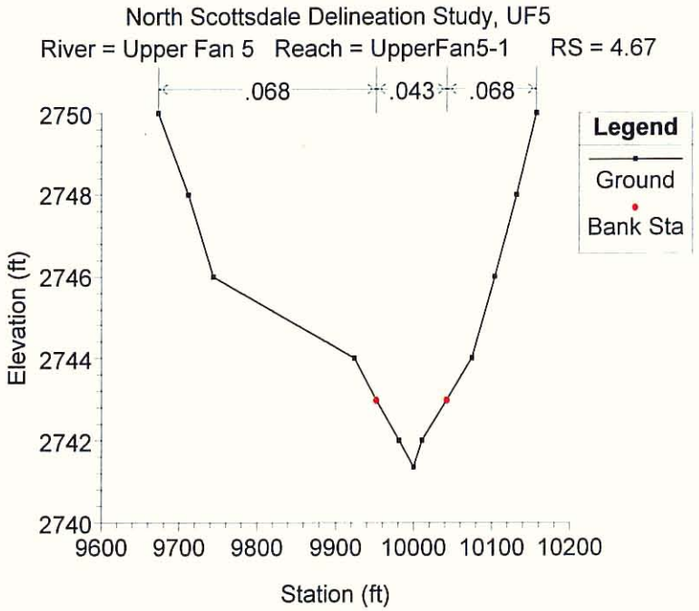

FIGURE 10-2: Channel geometry at cross section 4.67, looking downstream.

EQUATION: "n" value equation

$$n = (n_b + n_1 + n_2 + n_3) \cdot m_1$$

where :

n_b = *base value for 'n' for a straight uniform channel*

n_1 = *value for surface irregularities*

n_2 = *value for obstruction*

n_3 = *value for vegetation*

m_1 = *meandering factor*

TABLE: Selected 'n' values

Mannings 'n' Component	Left Overbank	Main Channel	Right Overbank
Base 'n' (n_b)	0.025	0.025	0.025
Irregularity (n_1)	0.008	0.008	0.008
Obstruction (n_2)	0.01	0.01	0.01
Vegetation (n_3)	0.025	0	0.025
Meandering (m_1)	1	1	1
Composite 'n'	0.068	0.043	0.068

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY

FCD CONTRACT NO. 2003C008

In Cooperation with:

City of Scottsdale

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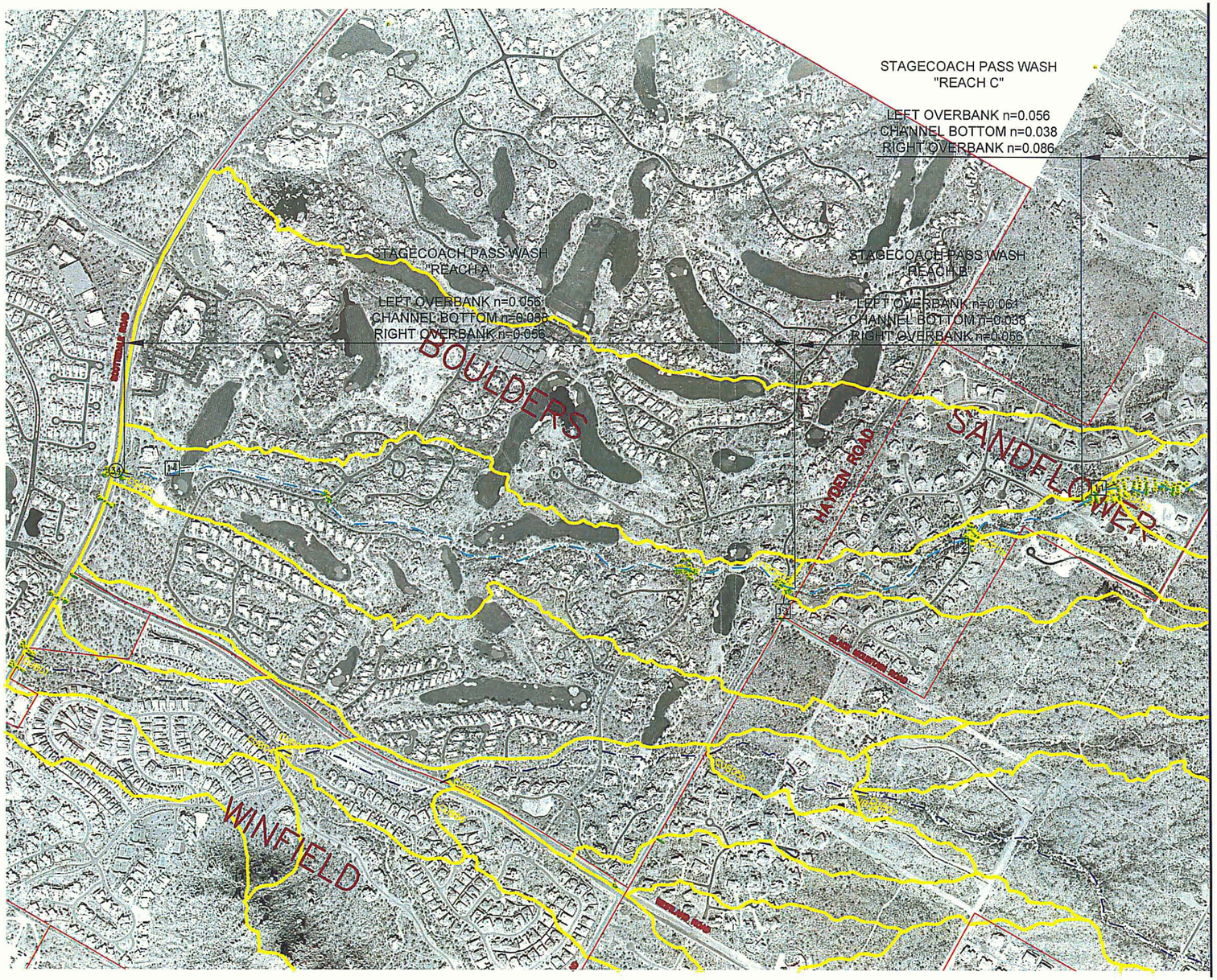
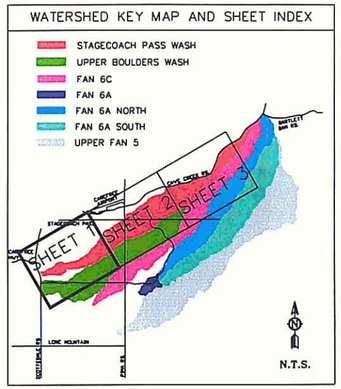
MANNING'S "n" EVALUATION

UPPER FAN 5
REACH B

PLATE UF5-B



WATERSHED KEY MAP AND SHEET INDEX



LEGEND

- DRAINAGE BASIN BOUNDARY
- HEC-1 CONCENTRATION POINT
- PROJECT STUDY WASH
- SUBJECT WASH
- SUBDIVISION BOUNDARY
- FIELD RECONNAISSANCE PHOTO LOCATION AND DIRECTION
- MANNING'S "n" VALUE PHOTO LOCATION AND DIRECTION

SCALE: 1"= 800'

0 200' 400' 800' 1200'

NO.	REVISION	BY	DATE
3			
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

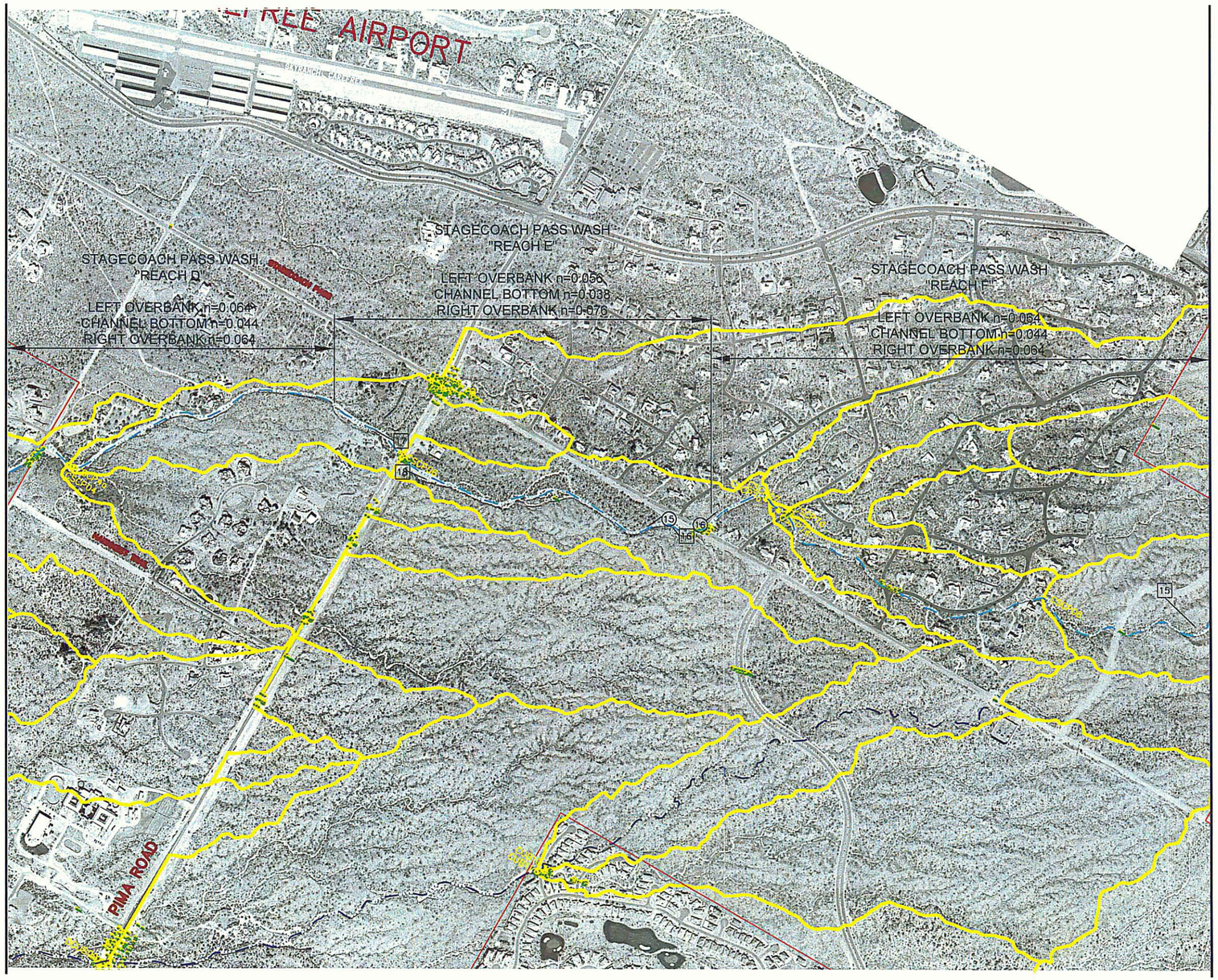
NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY
FCD 2003 C008

	BY	DATE
DESIGNED	EC	09/12/02
DRAWN	PMM	09/12/02
CHECKED	HEM	09/12/02

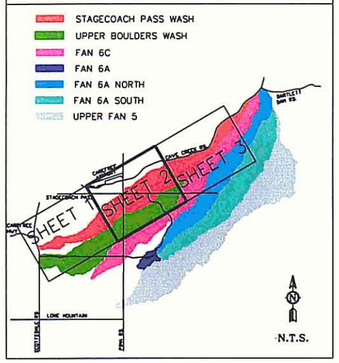
DRAWING NO. 01131NSCP.DWG

MANNING'S "n" & PHOTO INDEX MAP
STAGECOACH PASS WASH

SHEET 1 OF 3



WATERSHED KEY MAP AND SHEET INDEX



LEGEND

- DRAINAGE BASIN BOUNDARY
- HEC-1 CONCENTRATION POINT
- PROJECT STUDY WASH
- SUBJECT WASH
- SUBDIVISION BOUNDARY
- FIELD RECONNAISSANCE PHOTO LOCATION AND DIRECTION
- MANNING'S "n" VALUE PHOTO LOCATION AND DIRECTION

SCALE: 1"= 800'

0 200' 400' 800' 1200'

NO.	REVISION	BY	DATE
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FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

NORTH SCOTTSDALE FLOODPLAIN DELINEATION STUDY
FCD 2003 C008

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CHECKED	HEM	09/12/02

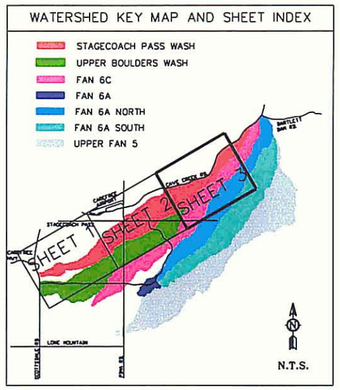
DRAWING NO. 01131NSCP.DWG

MANNING'S "n" & PHOTO INDEX MAP
STAGECOACH PASS WASH

SHEET 2 OF 3

MATCH SHEET 2

WATERSHED KEY MAP AND SHEET INDEX



LEGEND

- DRAINAGE BASIN BOUNDARY
- HEC-1 CONCENTRATION POINT
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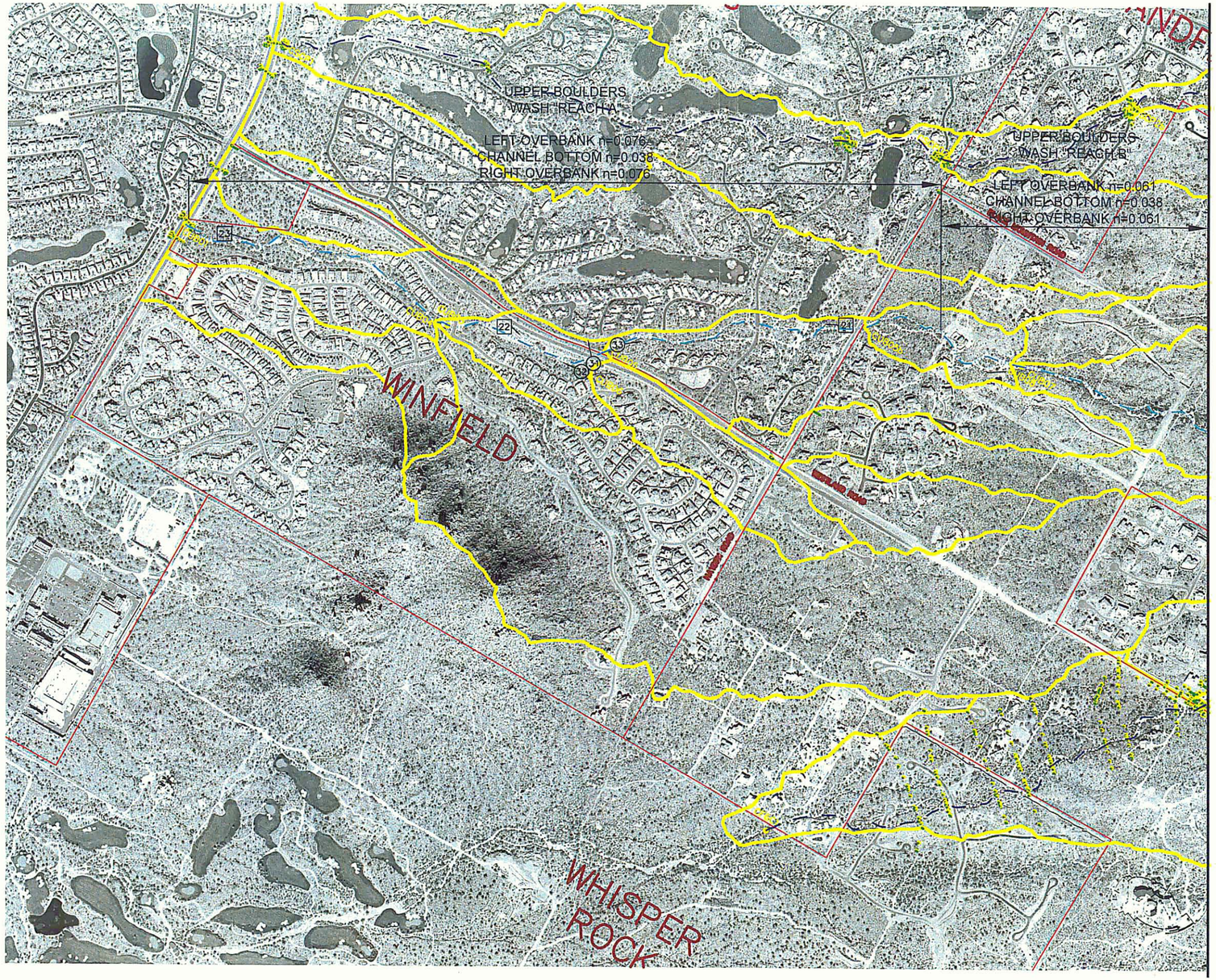
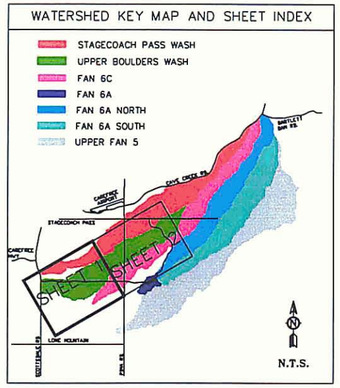
DRAWING NO. 01131NSCP.DWG

MANNING'S "n" & PHOTO INDEX MAP STAGECOACH PASS WASH

SHEET 3 OF 3



WATERSHED KEY MAP AND SHEET INDEX



LEGEND

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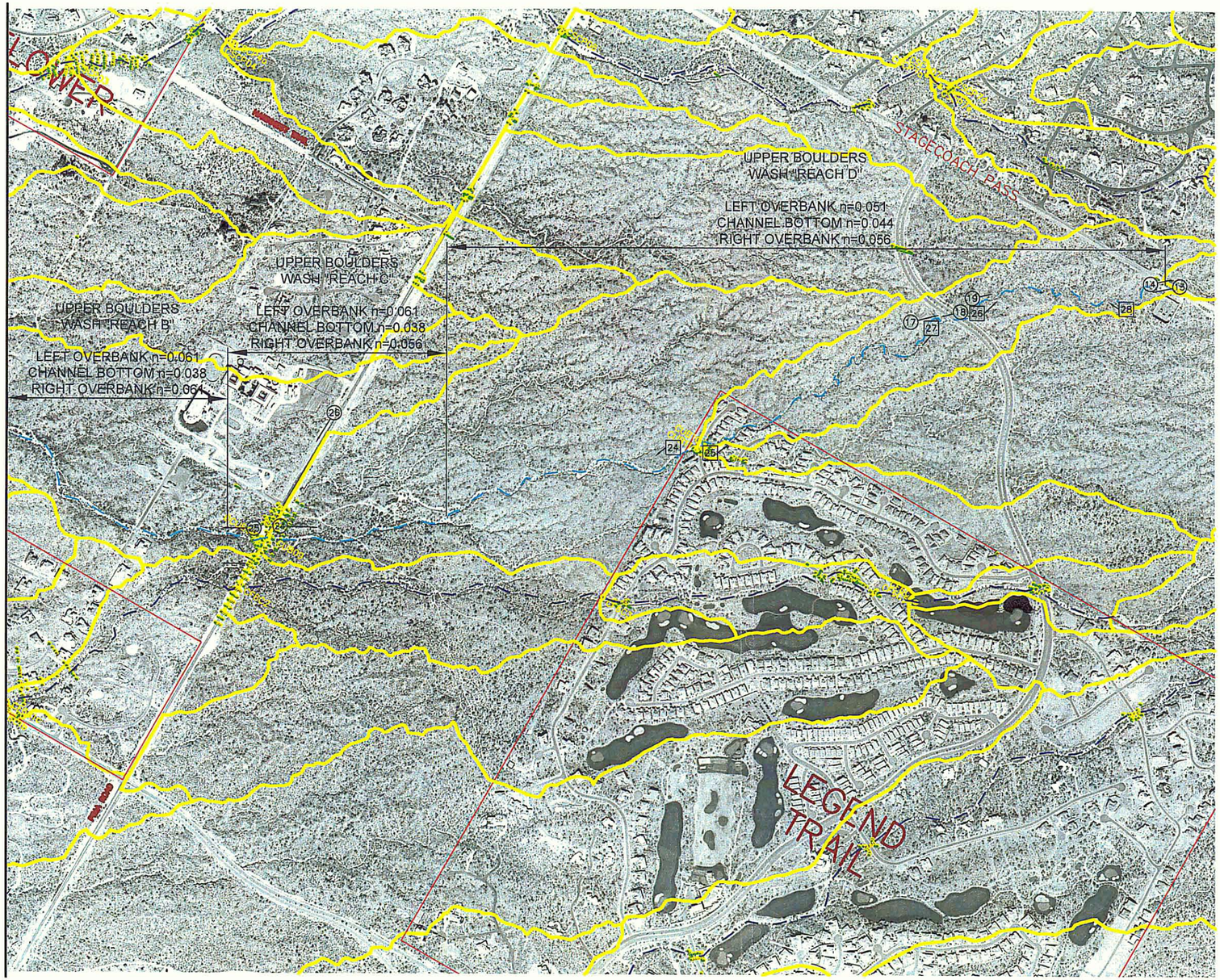
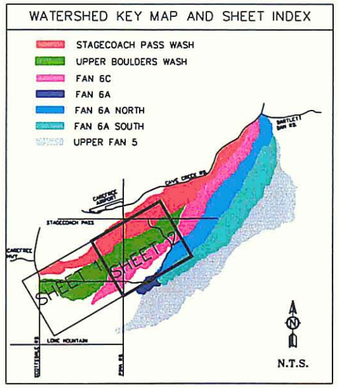
MANNING'S "n" & PHOTO INDEX MAP
UPPER BOULDERS WASH

SHEET 1 OF 2

MATCH SHEET 1



WATERSHED KEY MAP AND SHEET INDEX



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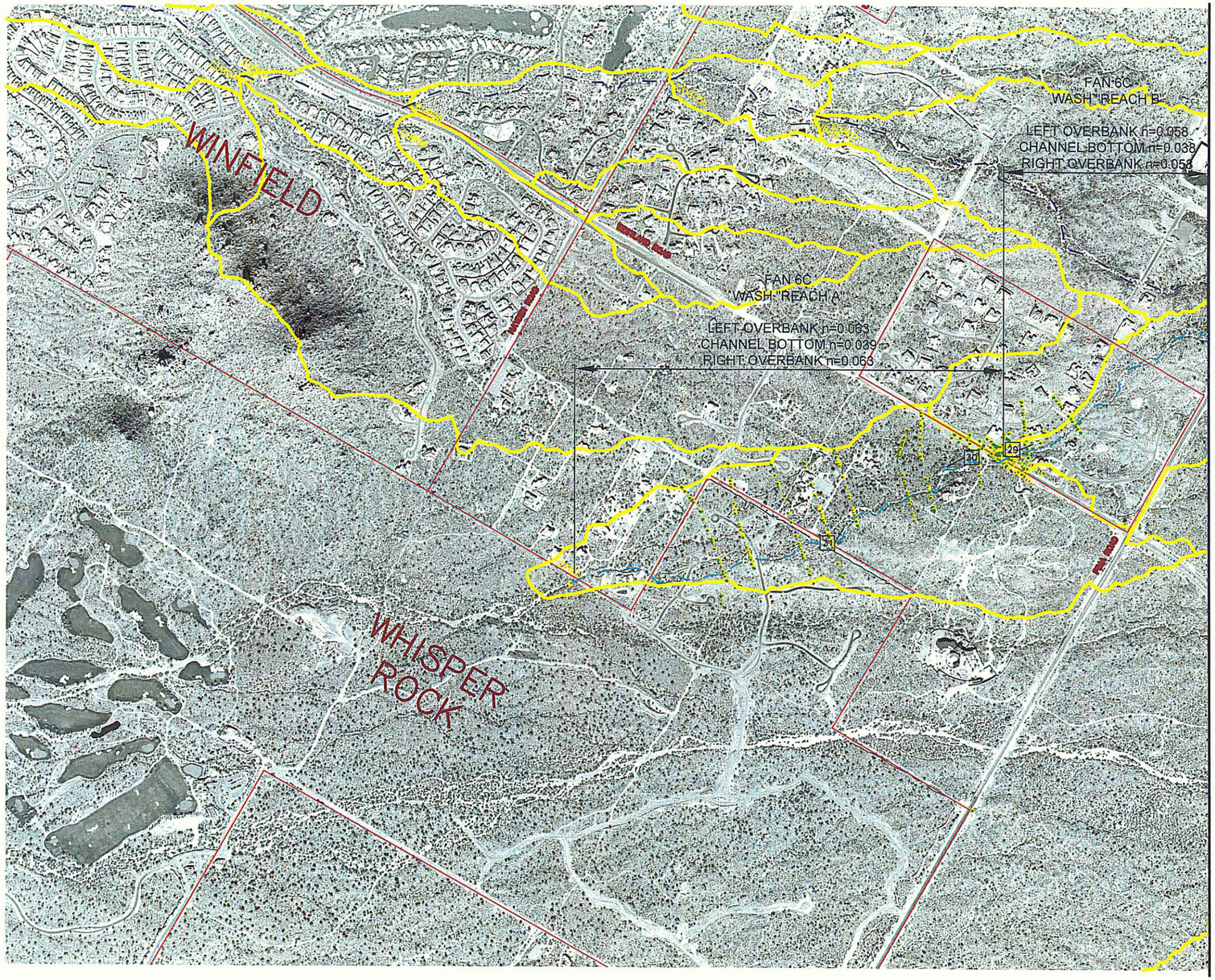
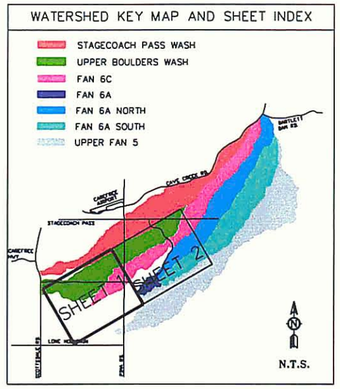
MANNING'S "n" & PHOTO INDEX MAP UPPER BOULDERS WASH

SHEET 2 OF 2



MATCH SHEET 2

WATERSHED KEY MAP AND SHEET INDEX



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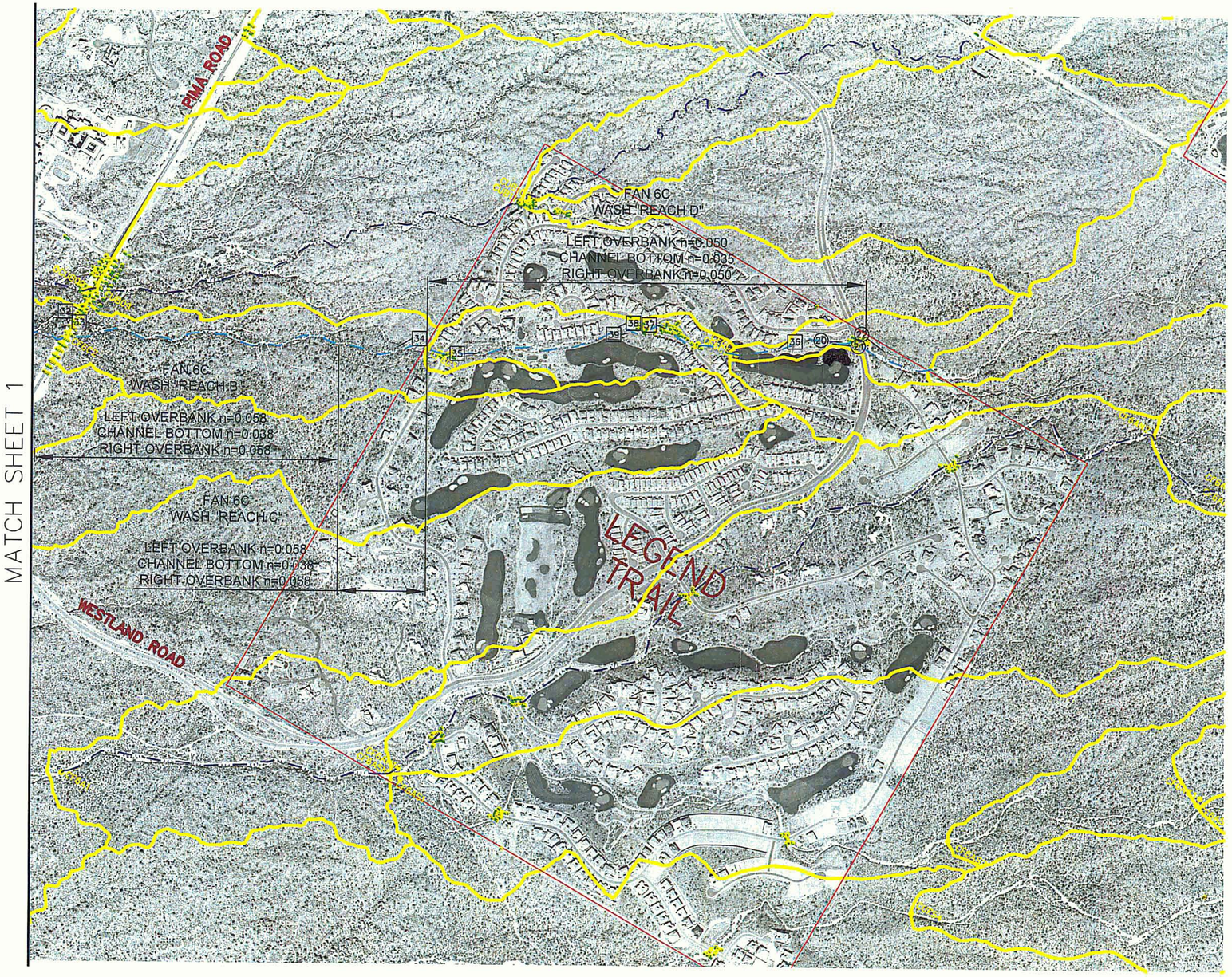
DRAWING NO. 01131NF6C.DWG

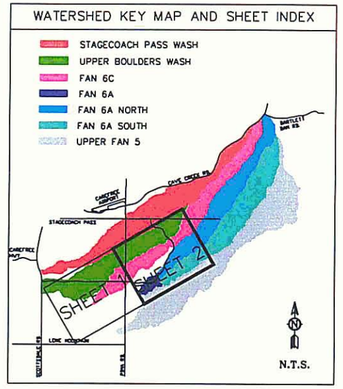
MANNING'S "n" & PHOTO INDEX MAP FAN 6C

SHEET 1 OF 2

MATCH SHEET 1



WATERSHED KEY MAP AND SHEET INDEX



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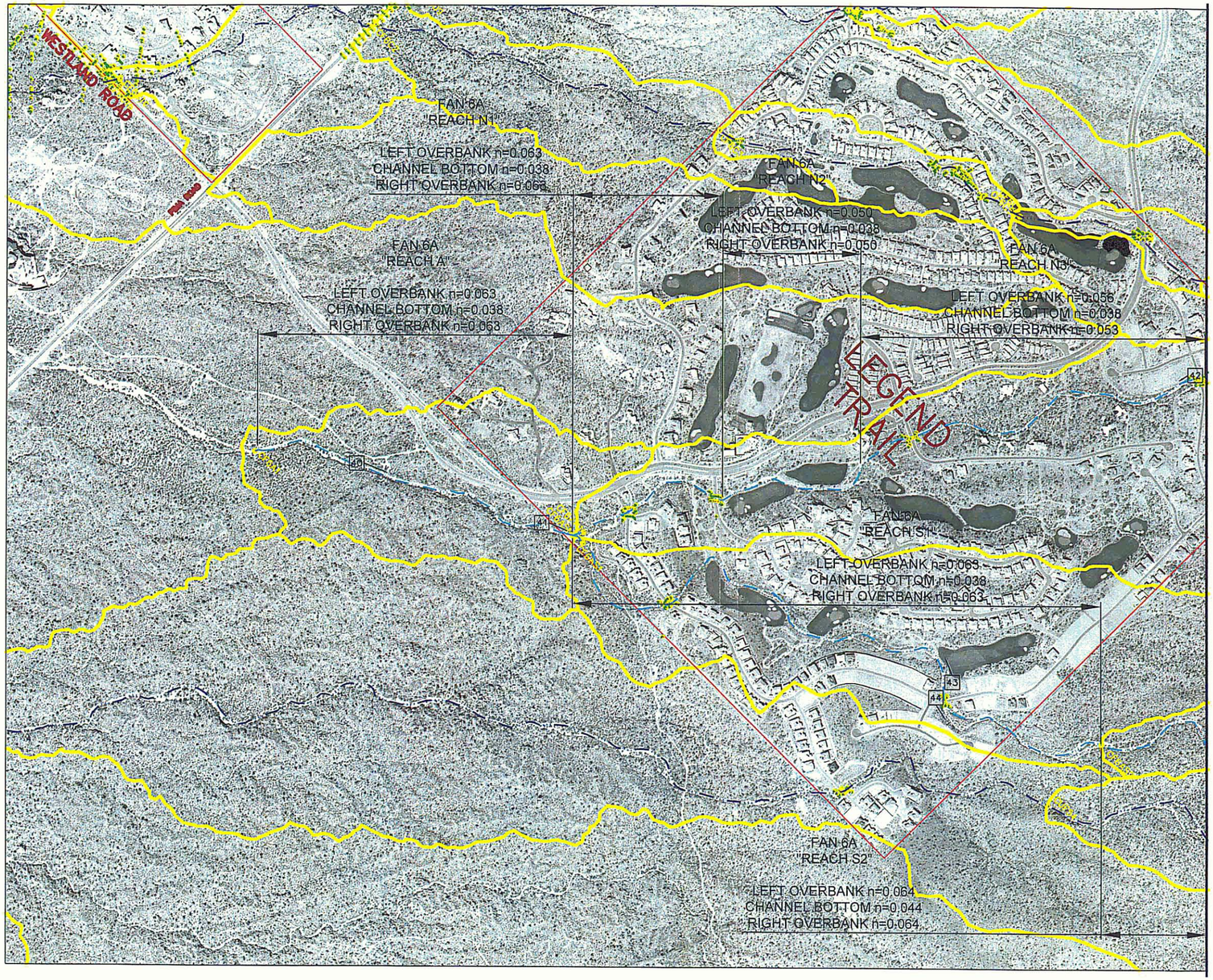
DRAWING NO. 01131NF6C.DWG

MANNING'S "n" & PHOTO INDEX MAP FAN 6C

SHEET 2 OF 2



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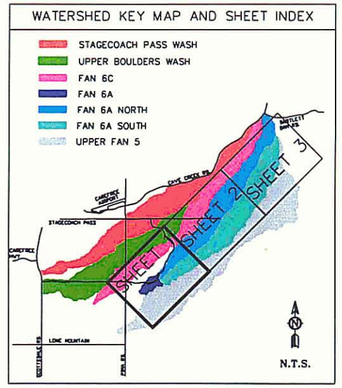
WATERSHED KEY MAP AND SHEET INDEX



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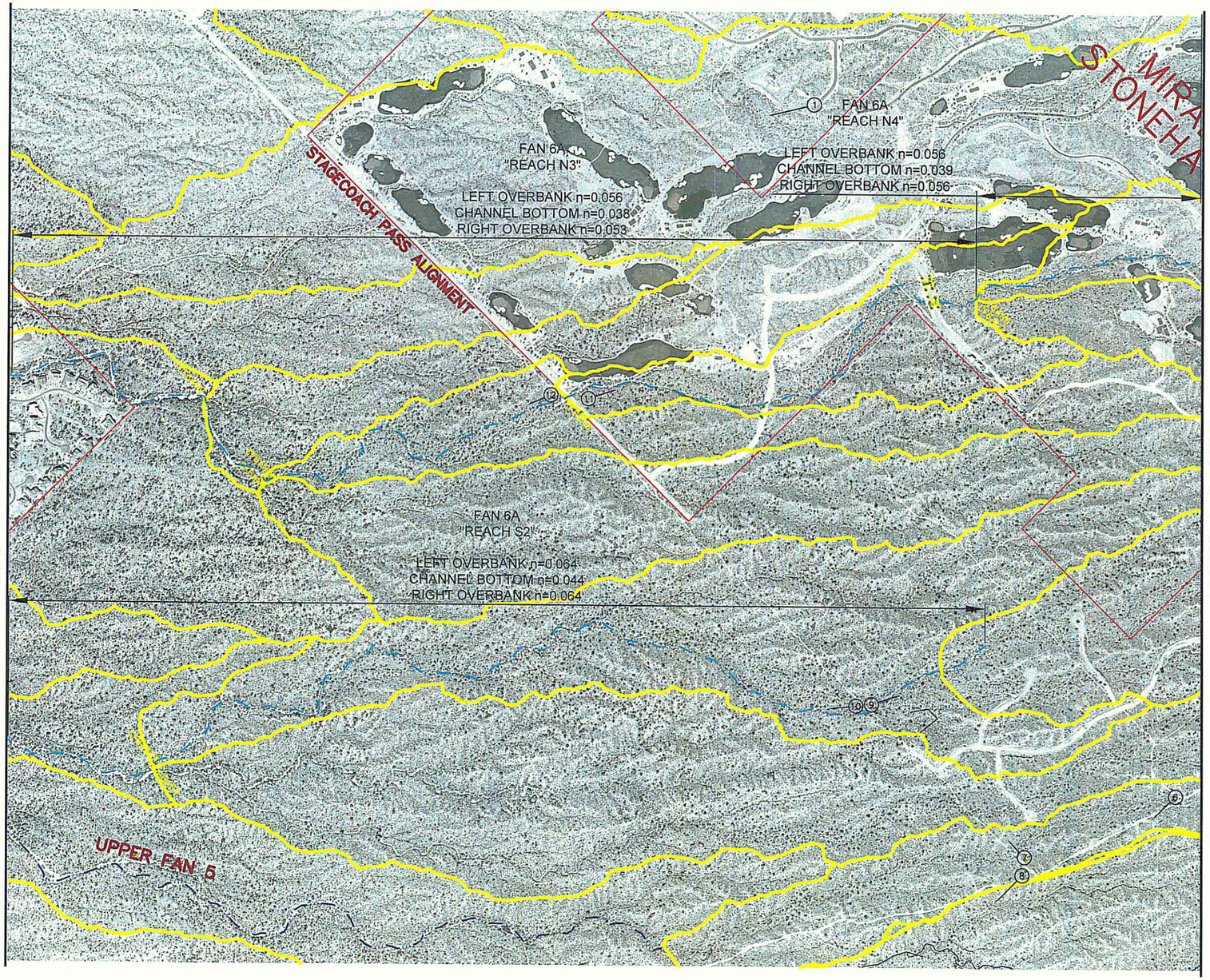
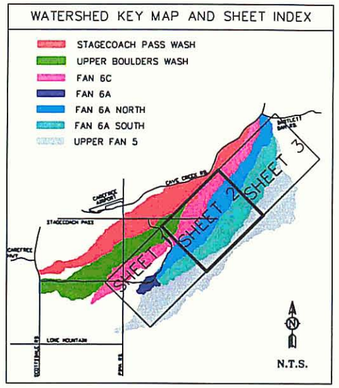
DRAWING NO. 01131NF6A.DWG

MANNING'S "n" & PHOTO INDEX MAP FAN 6A

SHEET 1 OF 3



WATERSHED KEY MAP AND SHEET INDEX



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- DRAINAGE BASIN BOUNDARY
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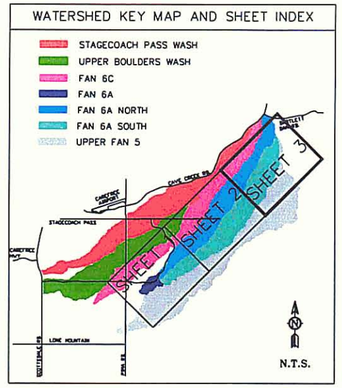
MANNING'S "n" & PHOTO INDEX MAP FAN 6A

SHEET 2 OF 3

MATCH SHEET 2

WATERSHED KEY MAP AND SHEET INDEX



LEGEND

- DRAINAGE BASIN BOUNDARY
- UFS-5 HEC-1 CONCENTRATION POINT
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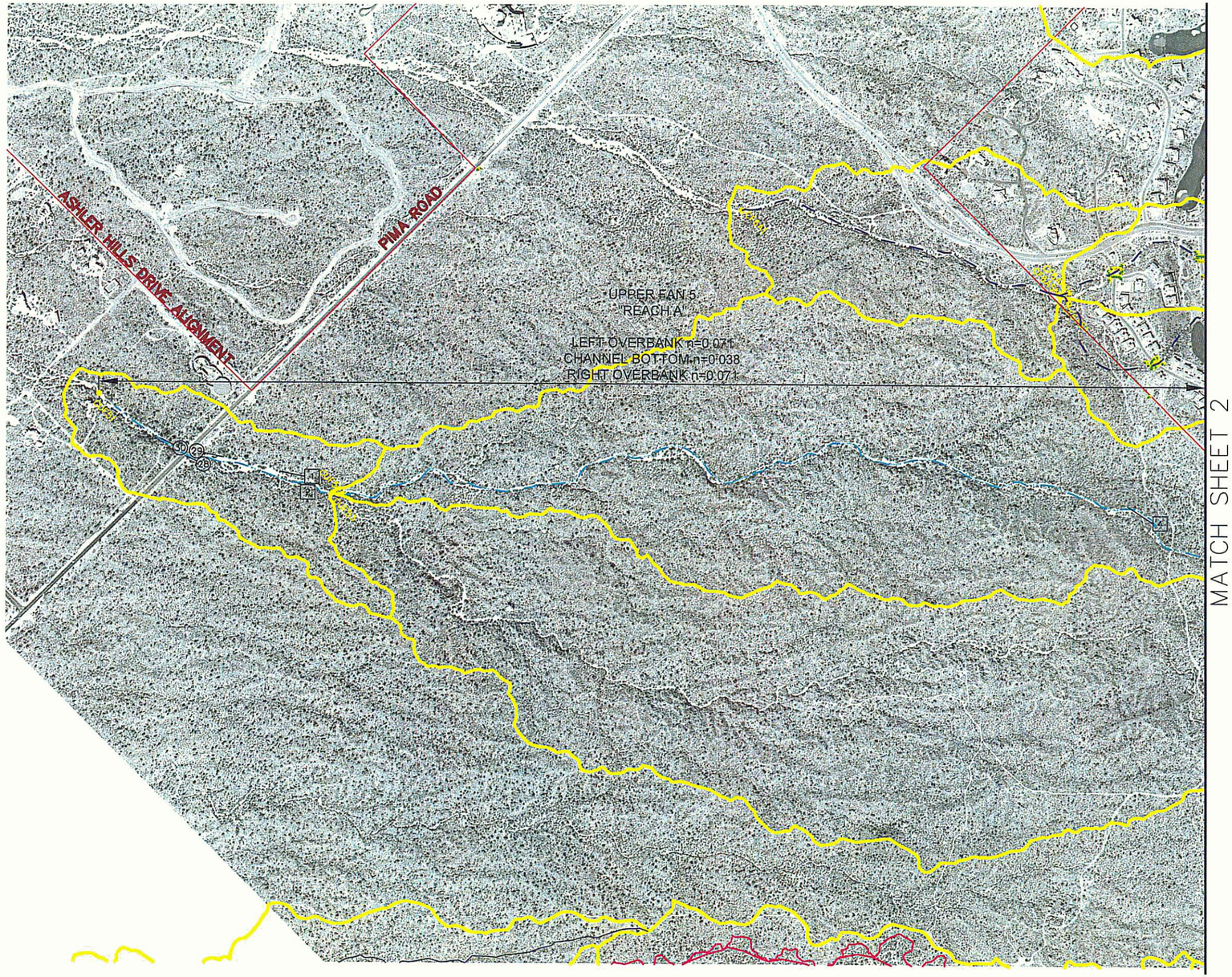
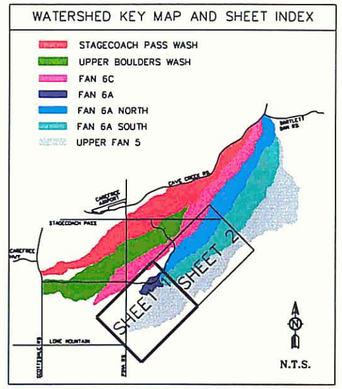
MANNING'S "n" & PHOTO INDEX MAP FAN 6A

SHEET 3 OF 3



WATERSHED KEY MAP AND SHEET INDEX



LEGEND

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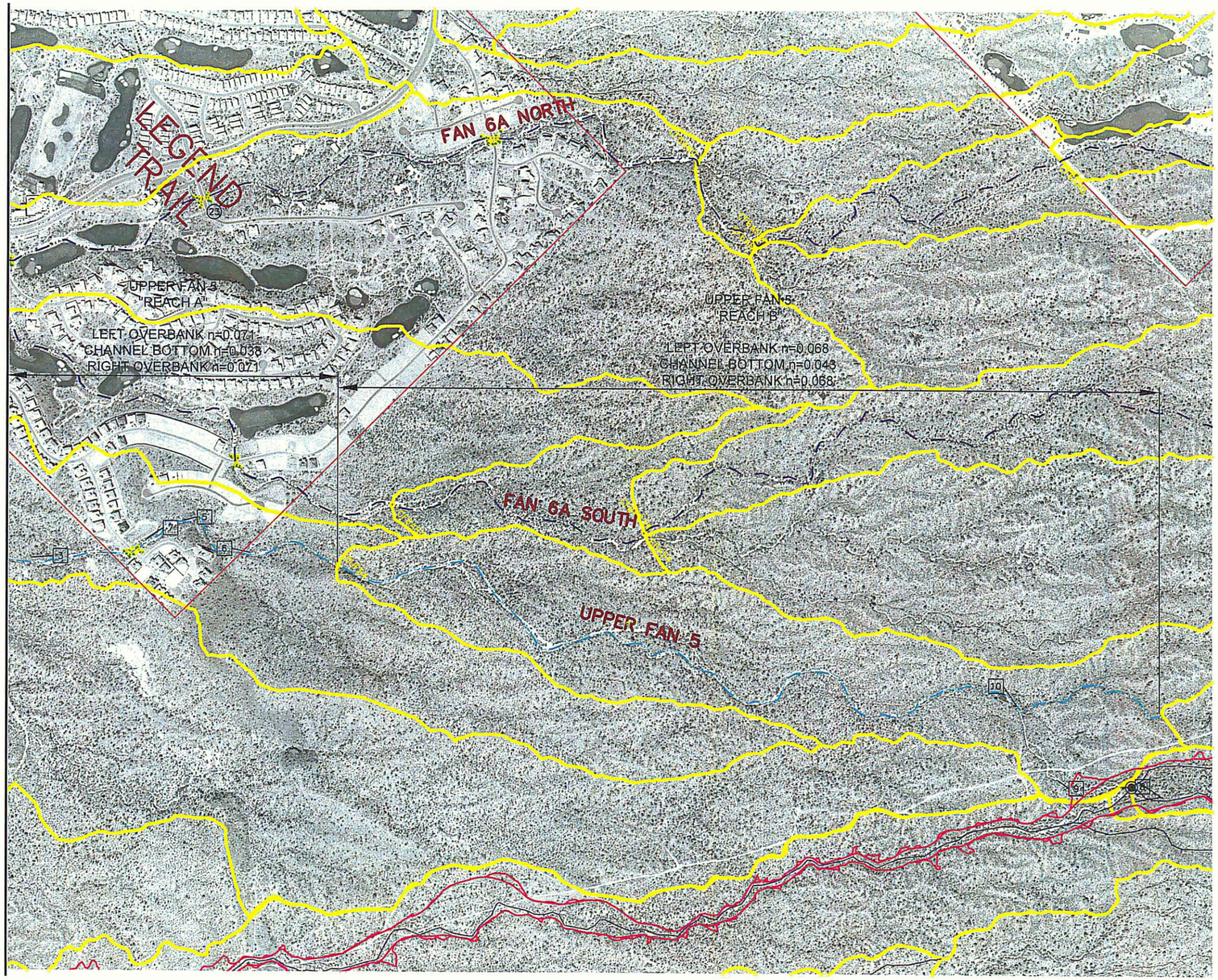
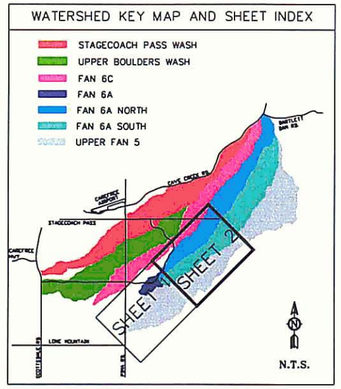
MANNING'S "n" & PHOTO INDEX MAP
UPPER FAN 5

SHEET 1 OF 2

MATCH SHEET 1



WATERSHED KEY MAP AND SHEET INDEX



LEGEND

- DRAINAGE BASIN BOUNDARY
- UFS-5 HEC-1 CONCENTRATION POINT
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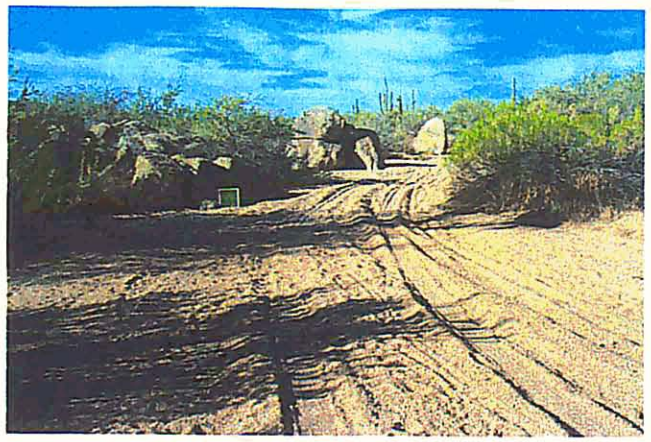
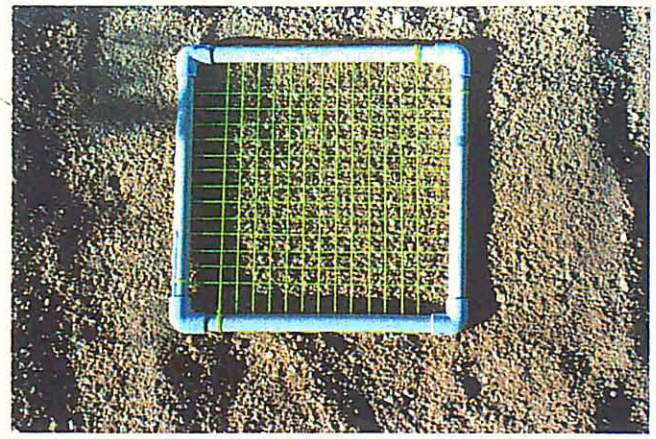
MANNING'S "n" & PHOTO INDEX MAP UPPER FAN 5

SHEET 2 OF 2

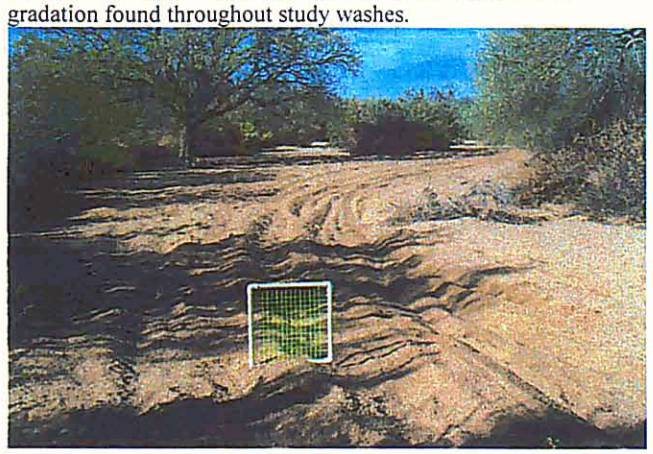


□ **Figure 1:** Upper Fan 5 looking southwest from east of Pima Road.



□ **Figure 2:** Upper Fan 5 east of Pima Road. Typical bed gradation found throughout study washes.

□ **Figure 3:** Upper Fan 5 looking southwest near southeast corner of Legend Trail Subdivision.



□ **Figure 4:** Upper Fan 5 looking southwest from south of Legend Trail Subdivision.

□ **Figure 5:** Upper Fan 5 looking southwest in the southeast corner of Legend Trail Subdivision.

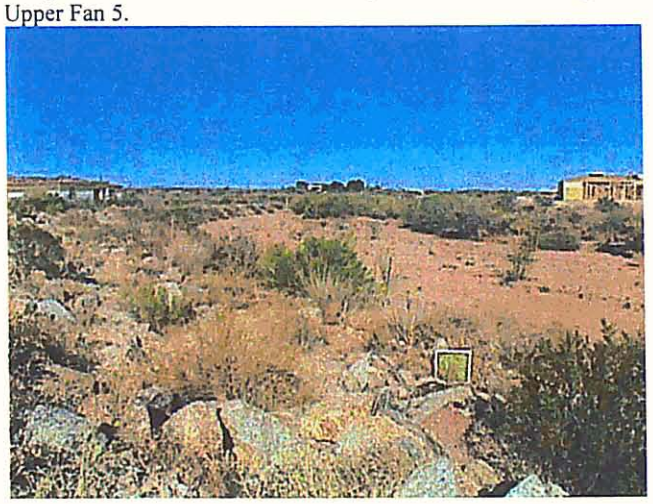
□ **Figure 6:** Upper Fan 5 looking northeast at southeast boundary of Legend Trail Subdivision.

□ **Figure 7:** Upper Fan 5 looking southwest in the southeast corner of Legend Trail Subdivision.

□ **Figure 8:** Rawhide Wash looking southwest from apex of braided split flow right channel flows toward Upper Fan 5.

□ **Figure 9:** Rawhide Wash braided split flow wash draining to Upper Fan 5.

□ **Figure 10:** Upper Fan 5 looking northeast at confluence from Rawhide Wash apex of braided split flow on right.

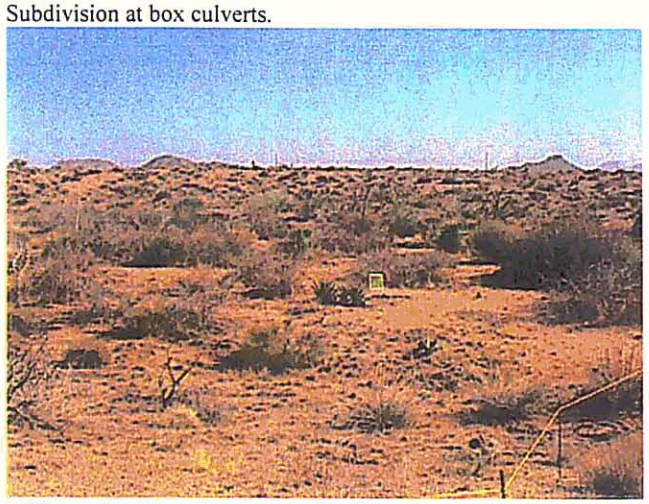


□ **Figure 11:** Stage Coach Pass Wash looking northeast in Sandflower Subdivision from top of levee.

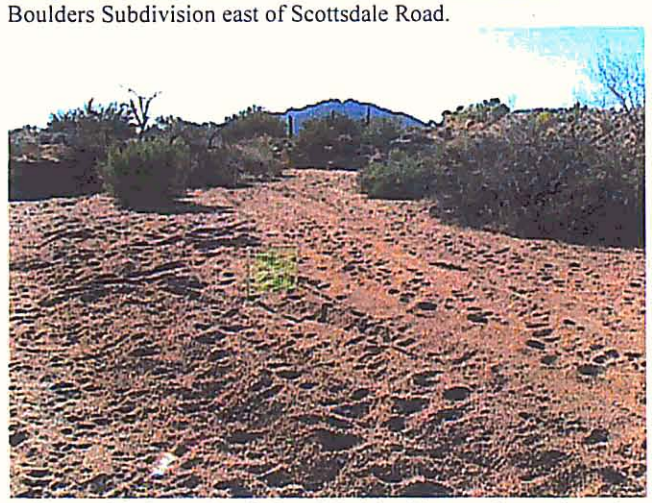
□ **Figure 12:** Stage Coach Pass Wash looking southwest in Sandflower Subdivision downstream from box culvert.

□ **Figure 13:** Stage Coach Pass Wash looking north in Boulders Subdivision at box culverts.

□ **Figure 14:** Stage Coach Pass Wash looking northeast in Boulders Subdivision east of Scottsdale Road.

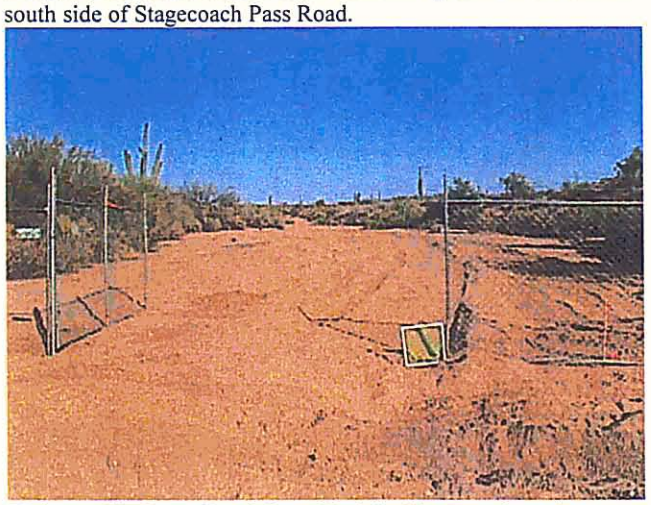


□ **Figure 15:** Stage Coach Pass Wash looking northeast from the east side of the Town of Carefree border.



□ **Figure 16:** Stage Coach Pass Wash looking southwest from the south side of Stagecoach Pass Road.

□ **Figure 17:** Stage Coach Pass Wash looking west from the west side of Pima Road.

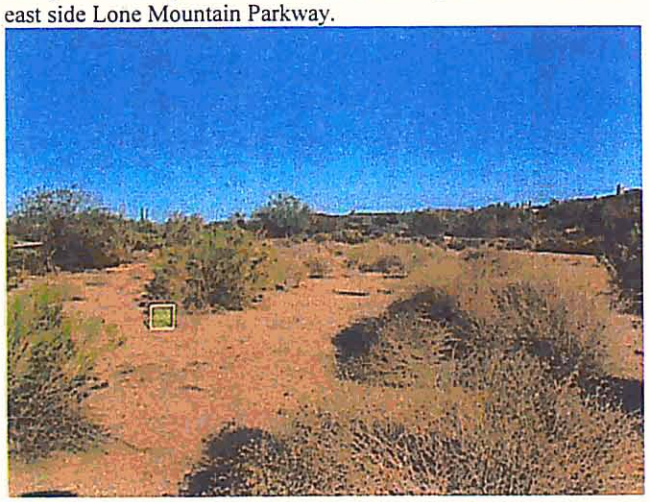


□ **Figure 18:** Stage Coach Pass Wash looking east from the east side of Pima Road.

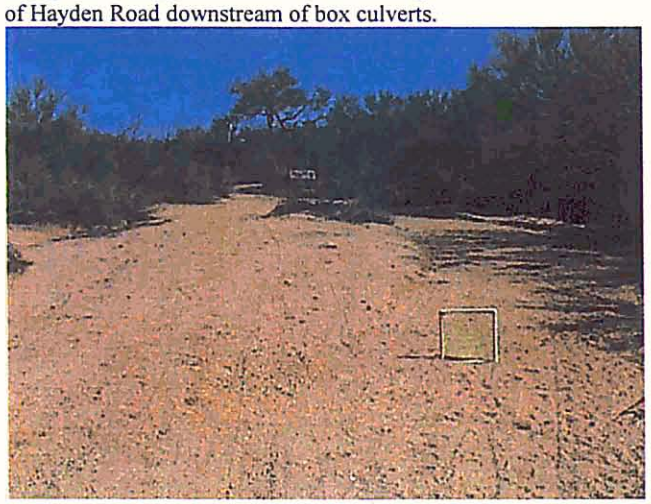
□ **Figure 19:** Stage Coach Pass Wash looking northeast from the east side of 102ND Street.

□ **Figure 20:** Stage Coach Pass Wash looking northeast from the east side Lone Mountain Parkway.

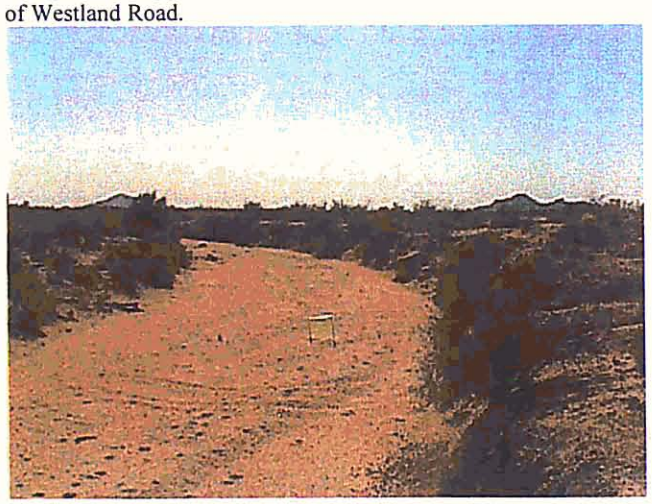
□ **Figure 21:** Upper Boulders Wash looking west on the west side of Hayden Road downstream of box culverts.



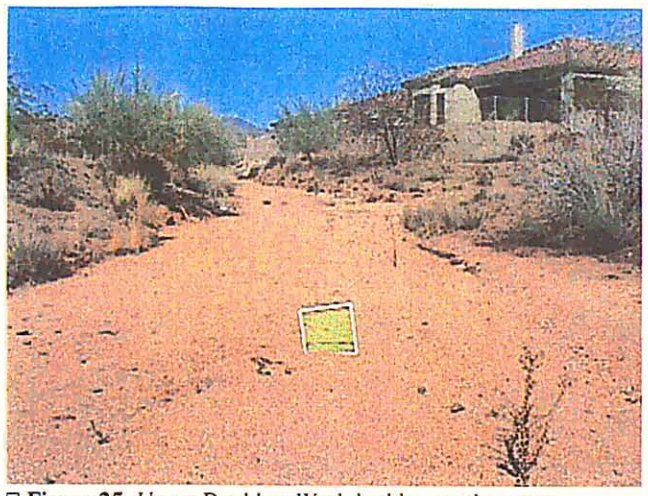
□ **Figure 22:** Upper Boulders Wash looking east on the south side of Westland Road.



□ **Figure 23:** Upper Boulders Wash looking east from the east side of Scottsdale Road upstream of box culverts.



□ **Figure 24:** Upper Boulders Wash looking southwest from the northeast corner of Legend Trail Subdivision and downstream of box culverts.

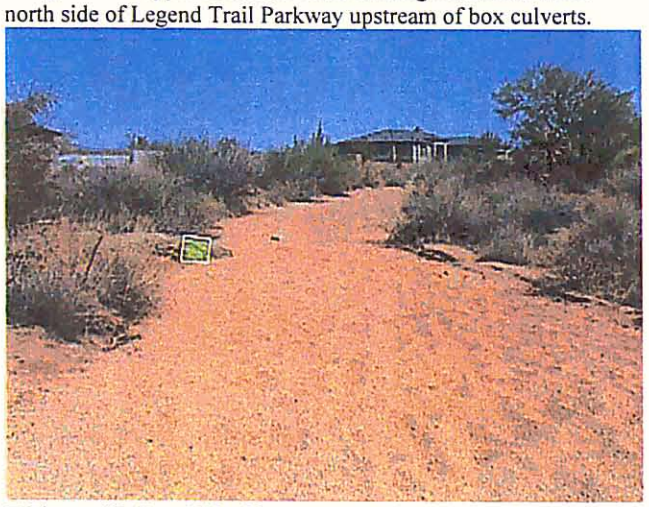


□ **Figure 25:** Upper Boulders Wash looking northeast at a subbasin confluence with left tributary wash the study wash upstream of culverts.

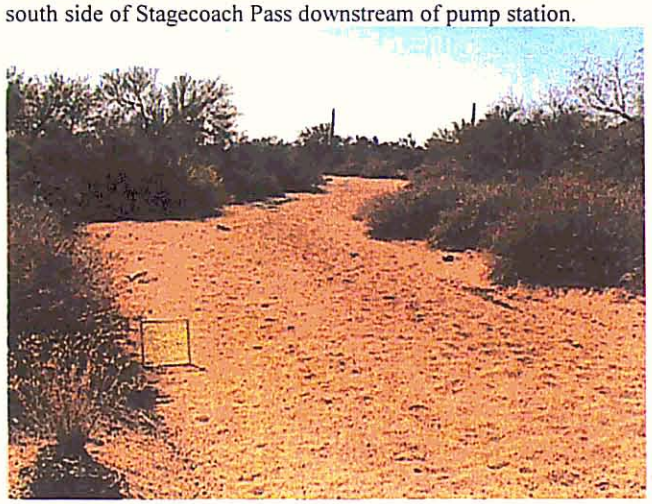
□ **Figure 26:** Upper Boulders Wash looking southwest on the south side of Legend Trail Parkway downstream of box culverts.

□ **Figure 27:** Upper Boulders Wash looking northeast on the north side of Legend Trail Parkway upstream of box culverts.

□ **Figure 28:** Upper Boulders Wash looking southwest on the south side of Stagecoach Pass downstream of pump station.



□ **Figure 29:** Fan 6C looking northeast from north side of Westland Road upstream of box culverts.



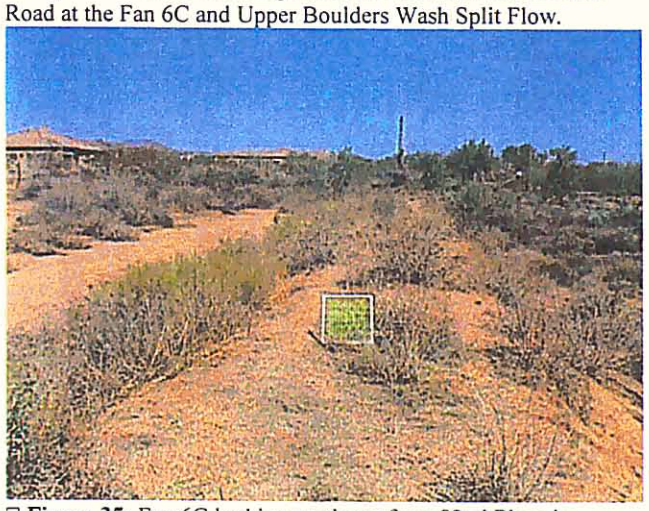
□ **Figure 30:** Fan 6C looking southwest from south side of Westland Road downstream of box culverts.

□ **Figure 31:** Fan 6C looking northeast from north side of Smokehouse Trail Road Alignment.

□ **Figure 32:** Fan 6C looking southwest from west side of Pima Road downstream of the Fan 6C and Upper Boulders Wash Split Flow.

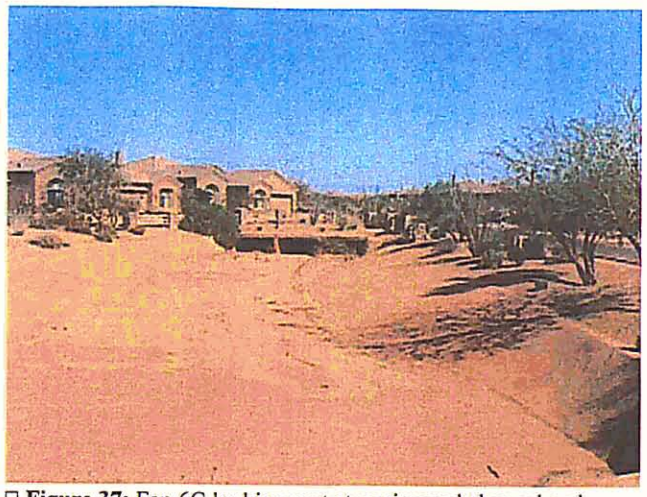
□ **Figure 33:** Fan 6C looking northeast from east side of Pima Road at the Fan 6C and Upper Boulders Wash Split Flow.

□ **Figure 34:** Fan 6C looking southwest from west boundary of Legend Trail Subdivision downstream of box culverts.



□ **Figure 35:** Fan 6C looking northeast from 92nd Place in Legend Trail Subdivision upstream of box culverts.

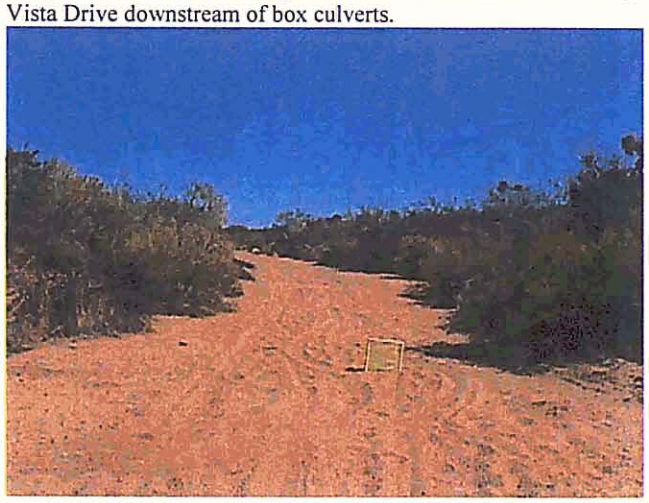
□ **Figure 36:** Fan 6C looking southwest from south side of Whitewing Drive in Legend Trail Subdivision.



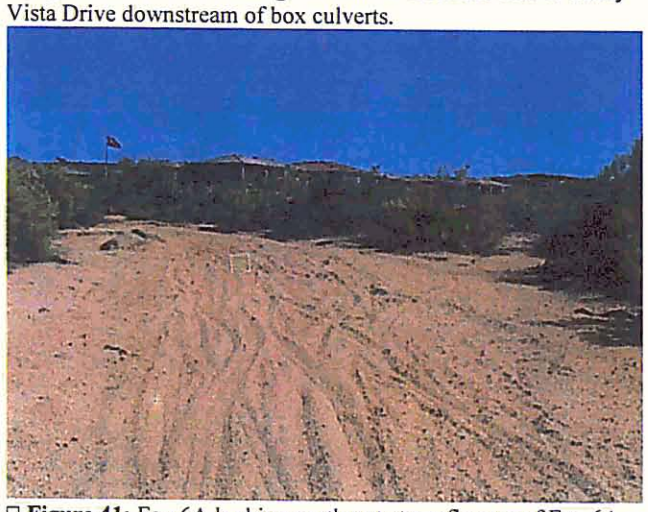
□ **Figure 37:** Fan 6C looking east at engineered channel and culverts from Sandy Vista Drive in Legend Trail Subdivision.

□ **Figure 38:** Fan 6C looking southwest from south side of Sandy Vista Drive downstream of box culverts.

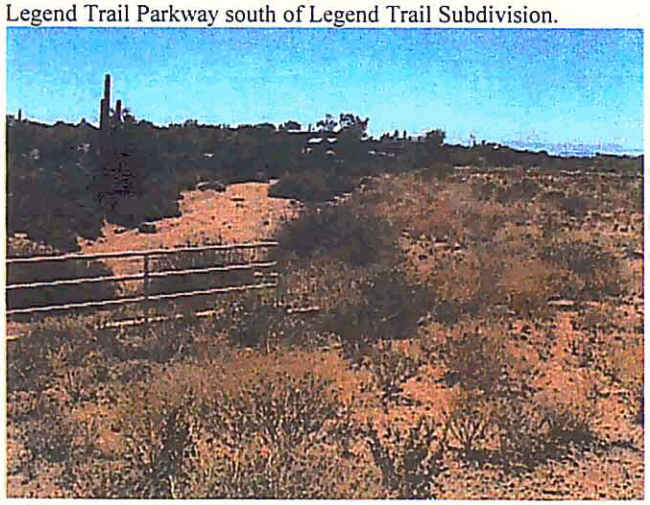
□ **Figure 39:** Fan 6C looking northeast from south side of Sandy Vista Drive downstream of box culverts.



□ **Figure 40:** Fan 6A looking northeast from the south side of Legend Trail Parkway south of Legend Trail Subdivision.



□ **Figure 41:** Fan 6A looking northeast at confluence of Fan 6A North and Fan 6A South at south boundary of Legend Trail Subdivision.

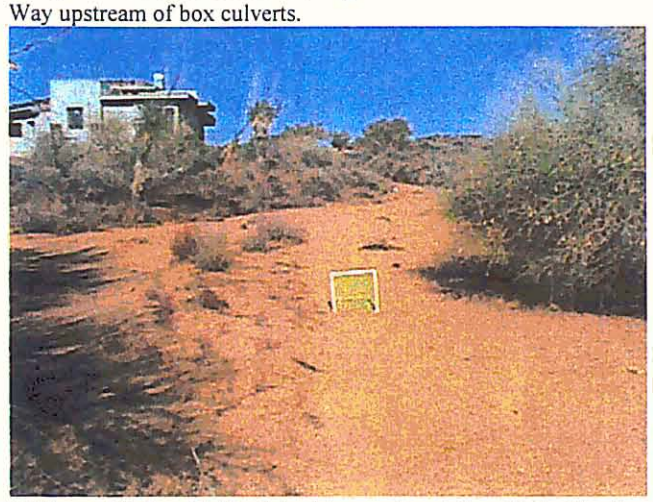


□ **Figure 42:** Fan 6A North looking southwest from Cavalry Drive from top of box culvert outlet.

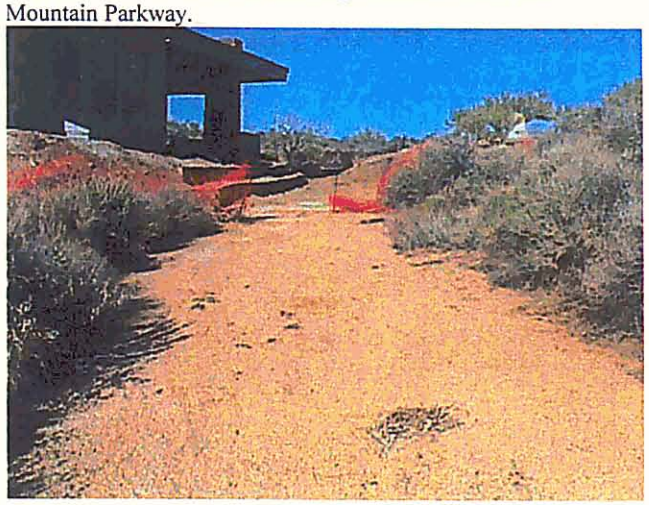
☐ **Figure 43:** Fan 6A South looking northwest from west side of 99th Way downstream of box culverts.

☐ **Figure 44:** Fan 6A South looking east from east side of 99th Way upstream of box culverts.

☐ **Figure 45:** Fan 6A North looking southwest from Lone Mountain Parkway.



☐ **Figure 46:** Fan 6A North looking northeast from East side of Boulder View Drive.



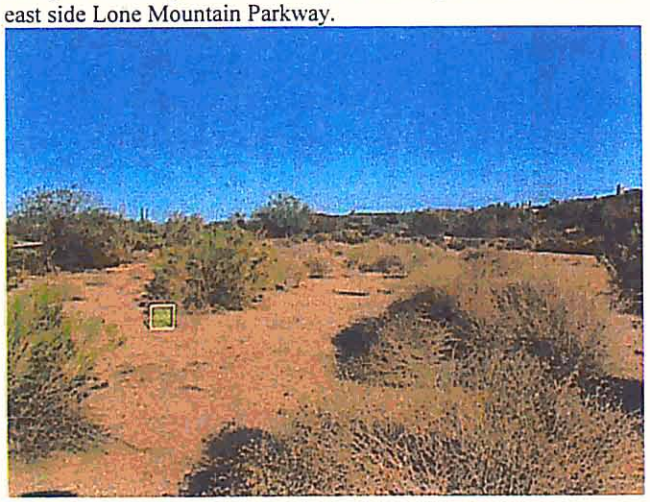
☐ **Figure 47:** Fan 6A North looking northeast toward house under construction at wash banks.

☐ **Figure 48:** Fan 6A North looking southwest at apex of split flow in braided wash section.

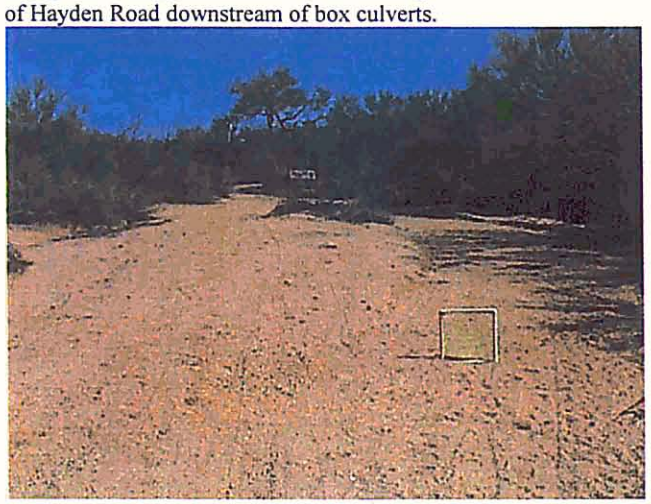
□ **Figure 19:** Stage Coach Pass Wash looking northeast from the east side of 102ND Street.

□ **Figure 20:** Stage Coach Pass Wash looking northeast from the east side Lone Mountain Parkway.

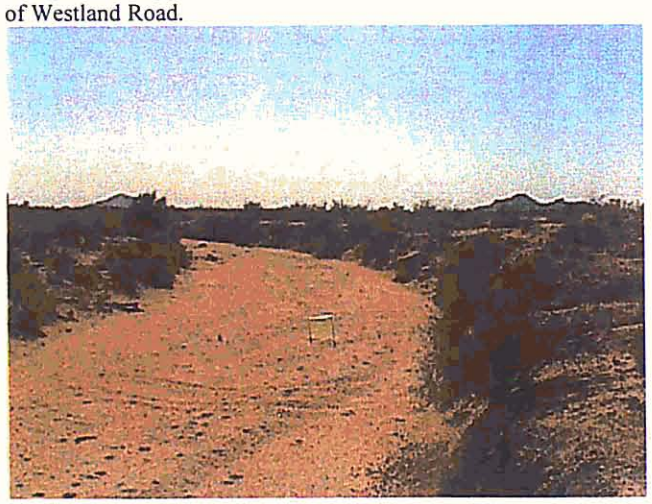
□ **Figure 21:** Upper Boulders Wash looking west on the west side of Hayden Road downstream of box culverts.



□ **Figure 22:** Upper Boulders Wash looking east on the south side of Westland Road.



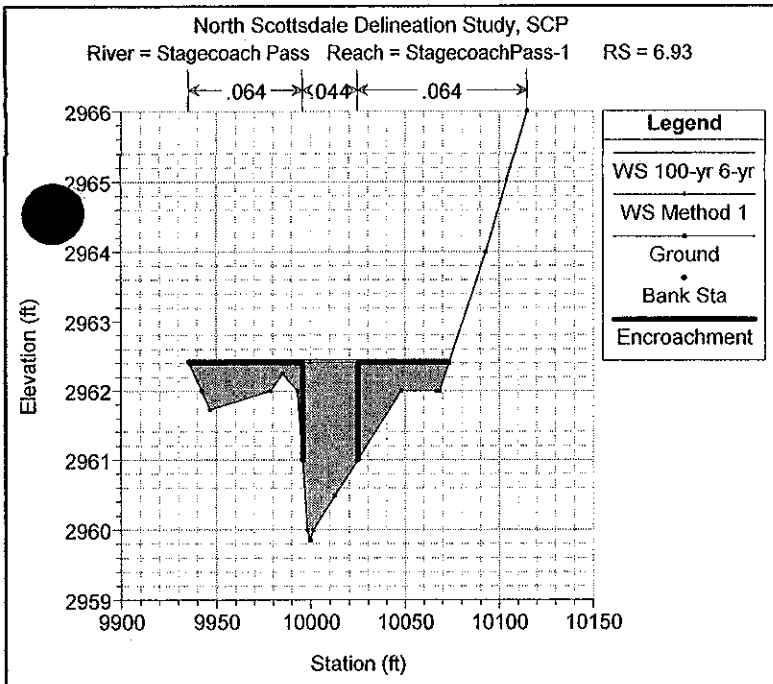
□ **Figure 23:** Upper Boulders Wash looking east from the east side of Scottsdale Road upstream of box culverts.



□ **Figure 24:** Upper Boulders Wash looking southwest from the northeast corner of Legend Trail Subdivision and downstream of box culverts.

E.2 CROSS SECTION PLOTS

STAGECOACH PASS WASH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Legend
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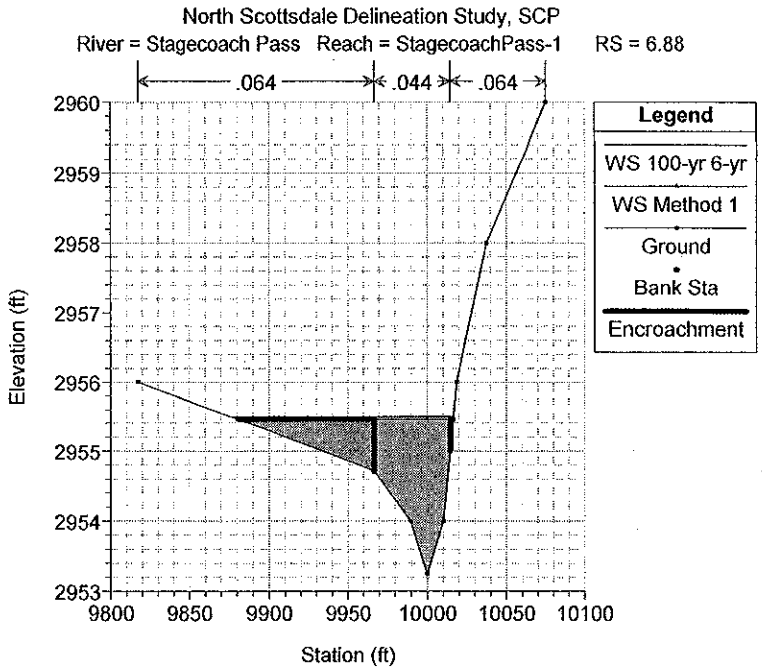
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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Legend
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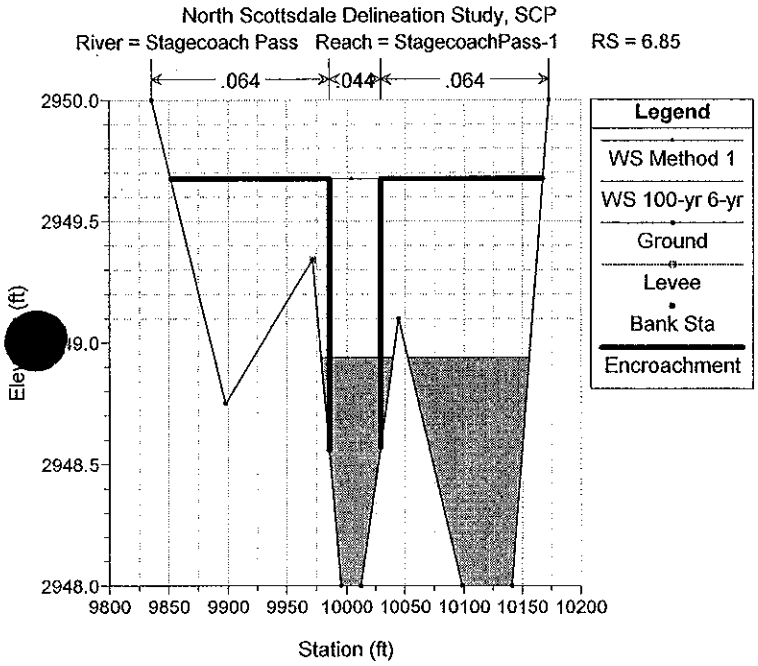
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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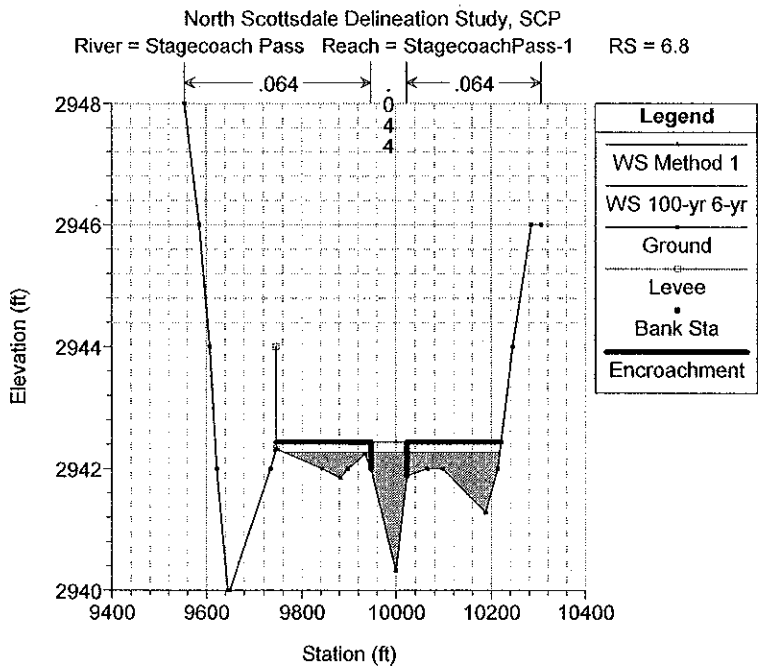
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Station (ft)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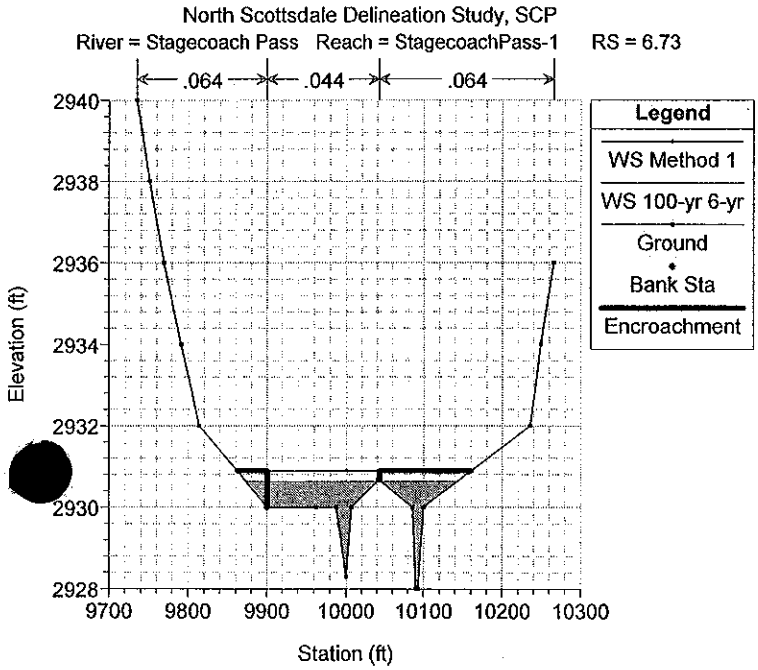
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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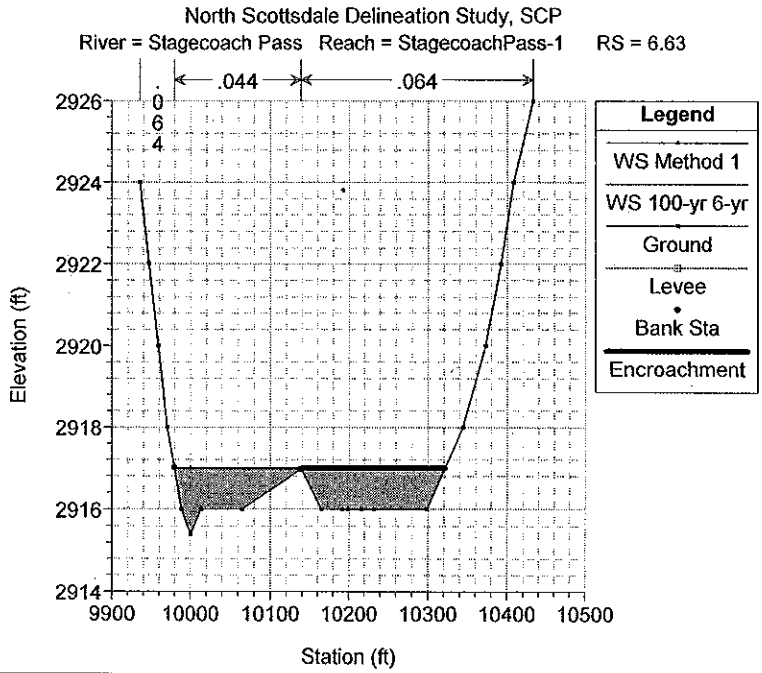
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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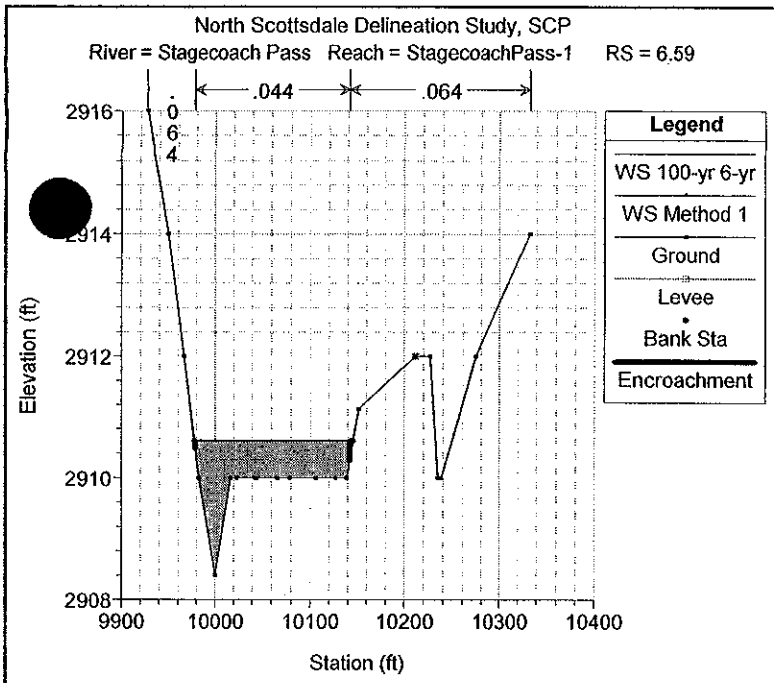
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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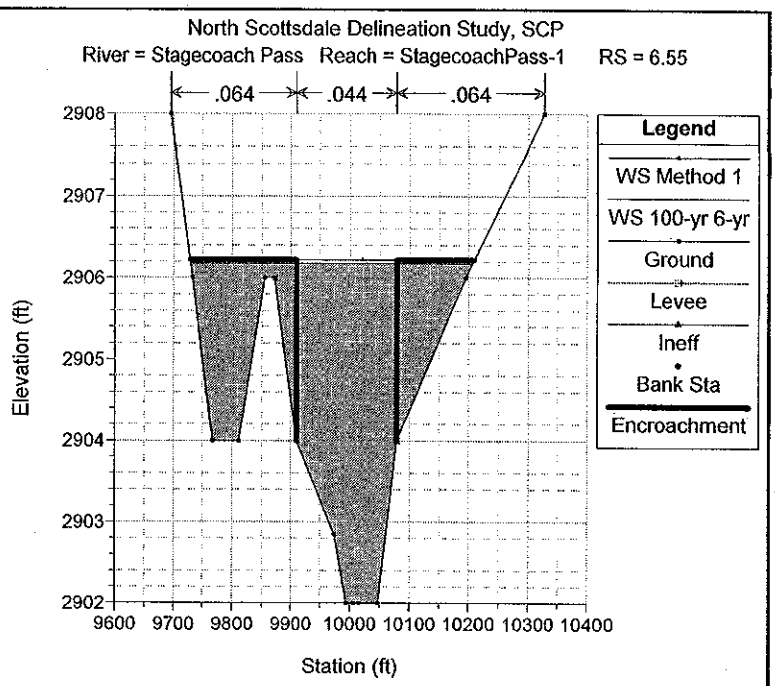
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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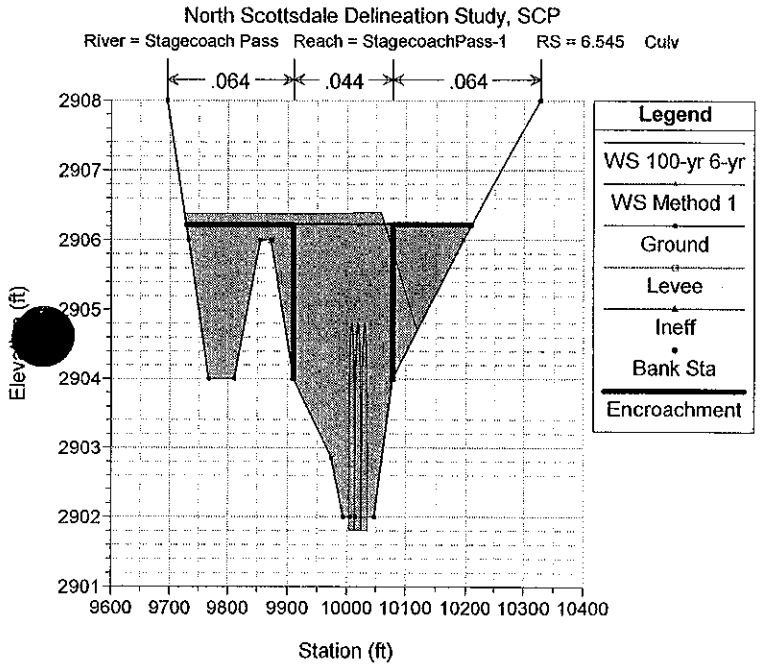
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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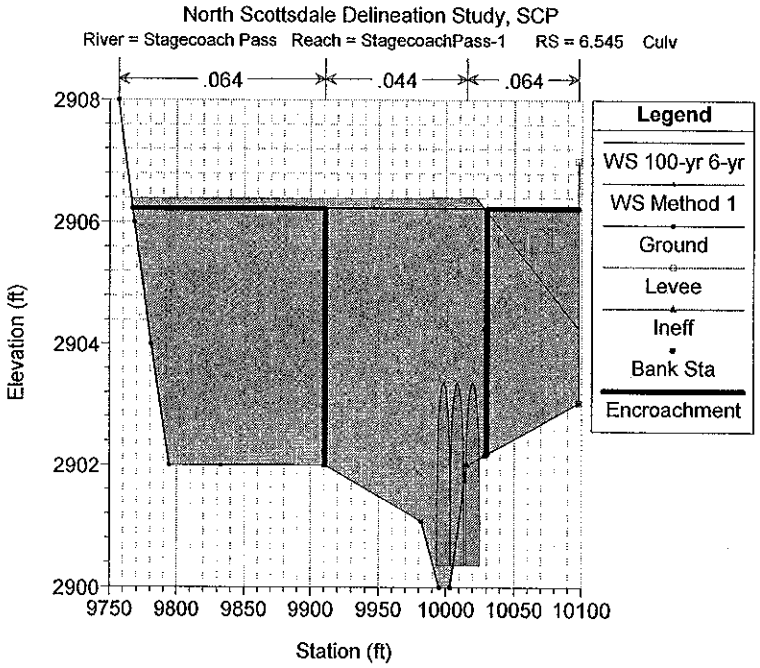
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Station (ft)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River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.545 Culv
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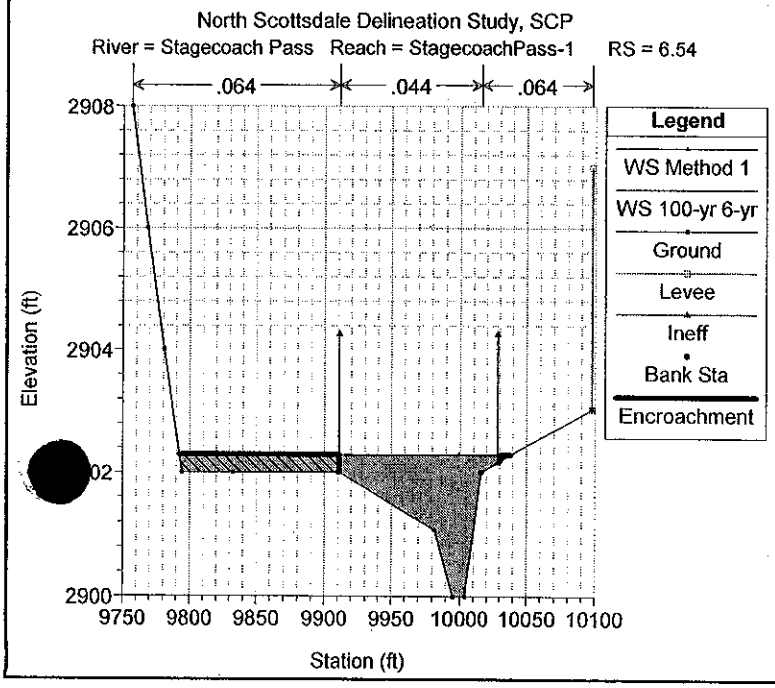
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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.044
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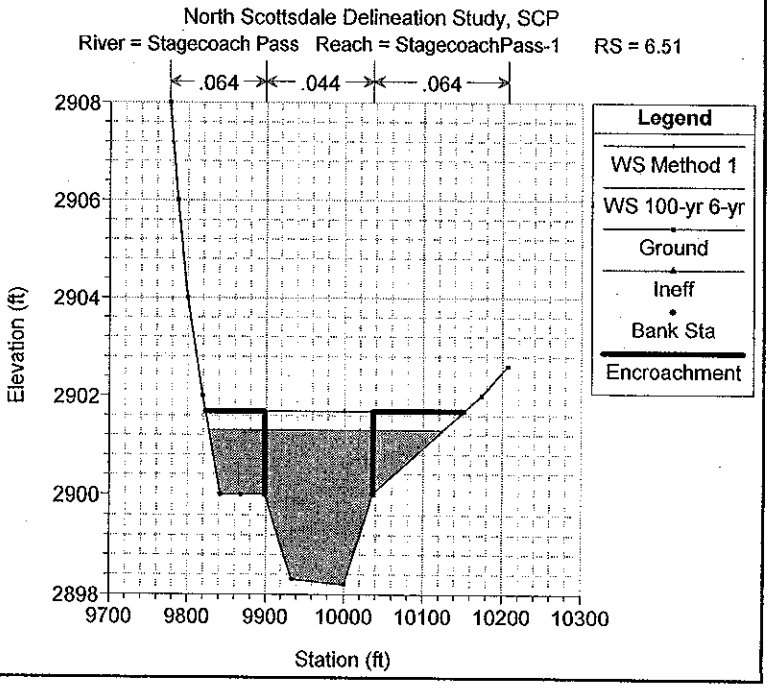
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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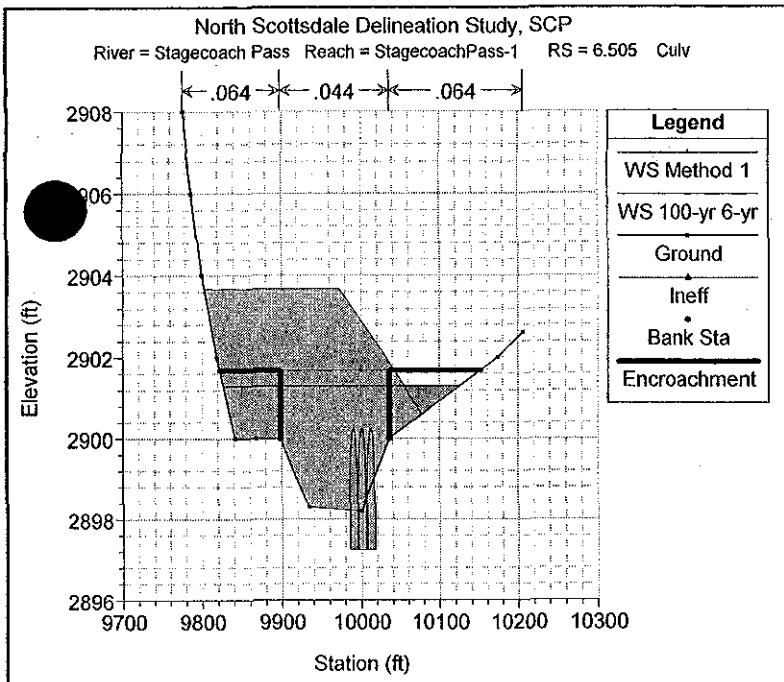
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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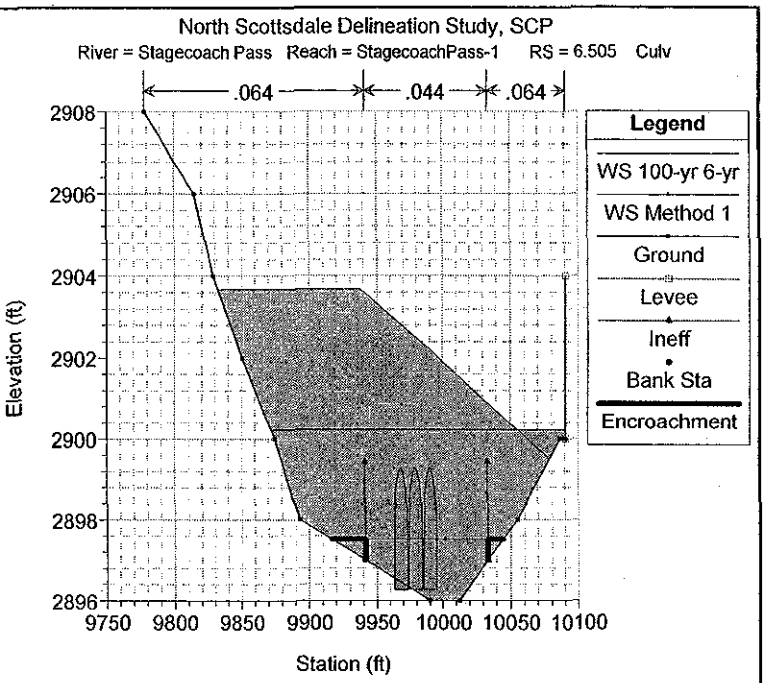
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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.064
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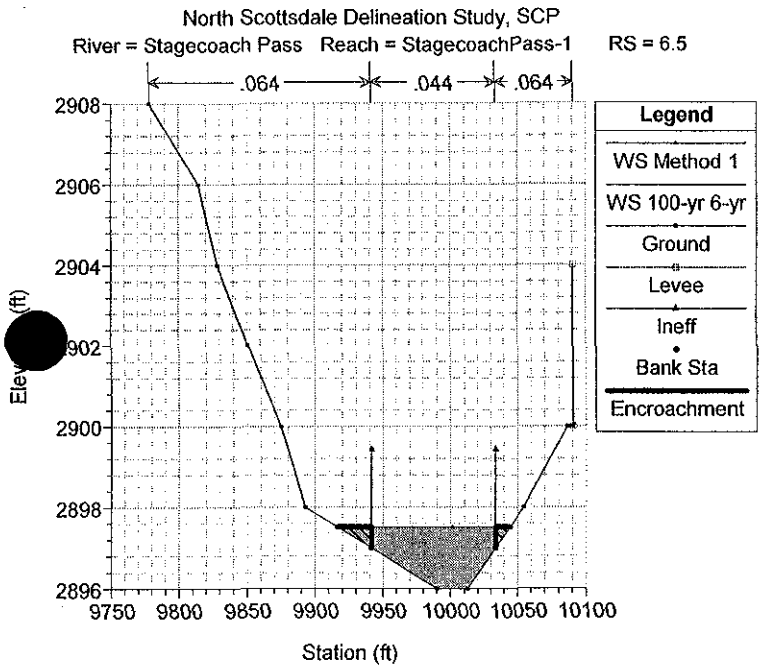
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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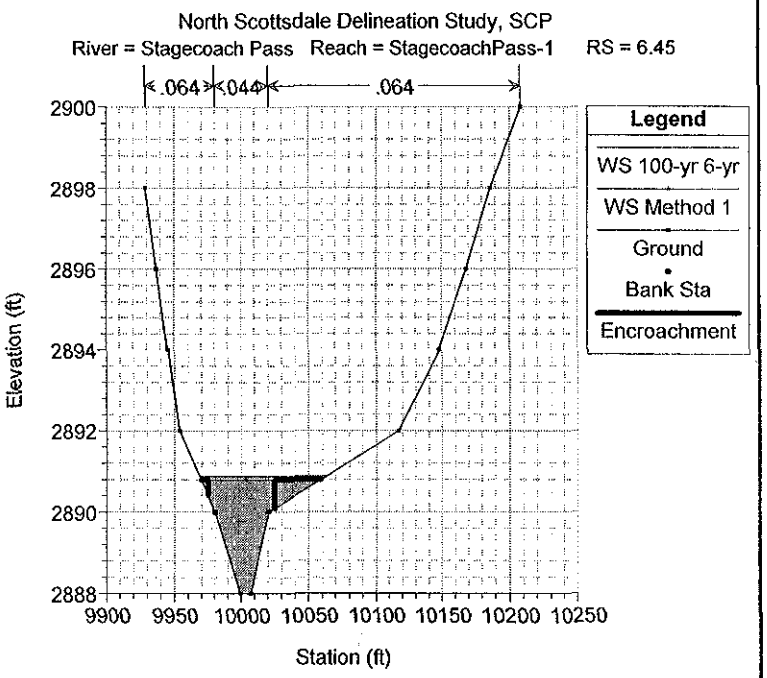
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Station (ft)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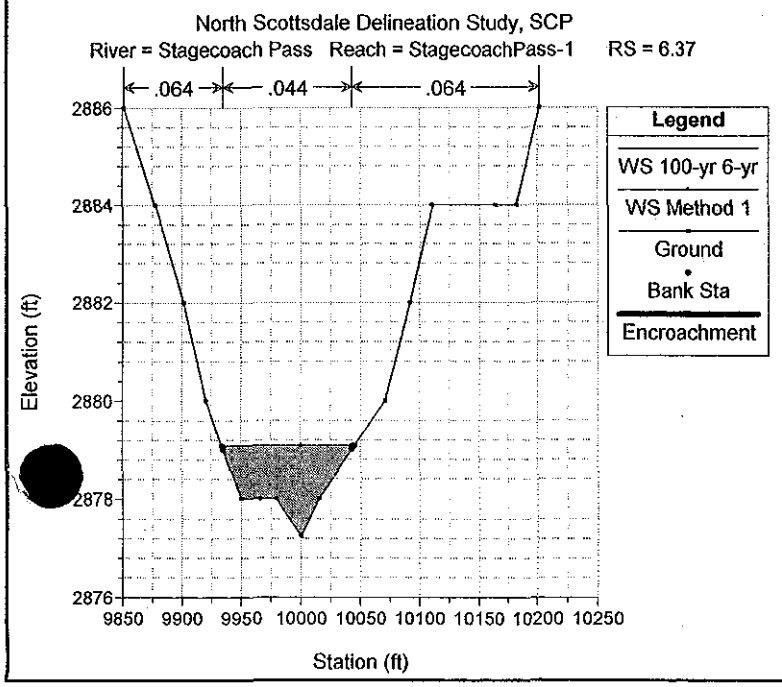
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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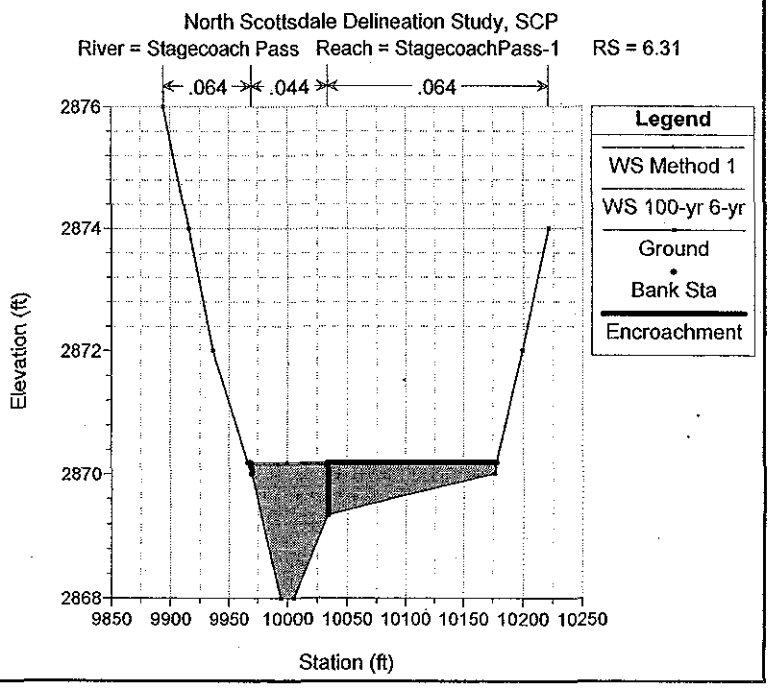
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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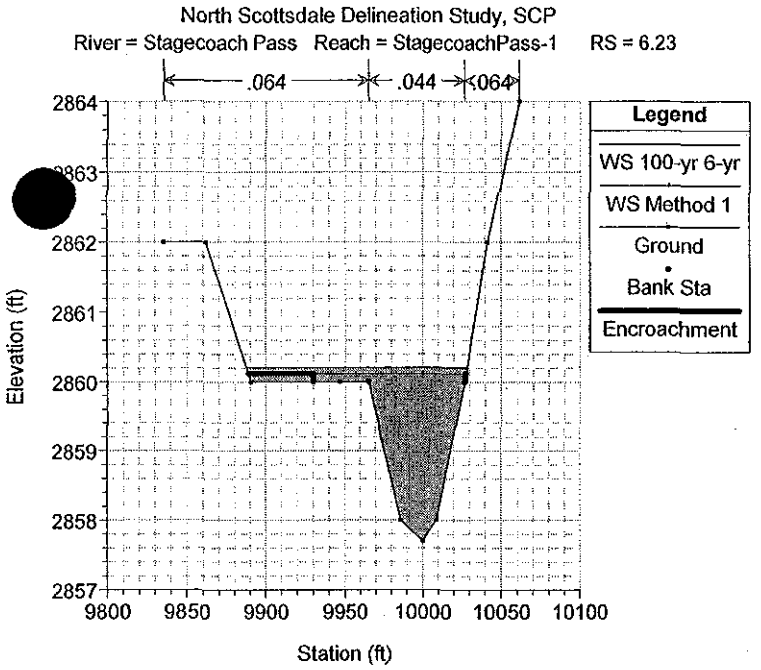
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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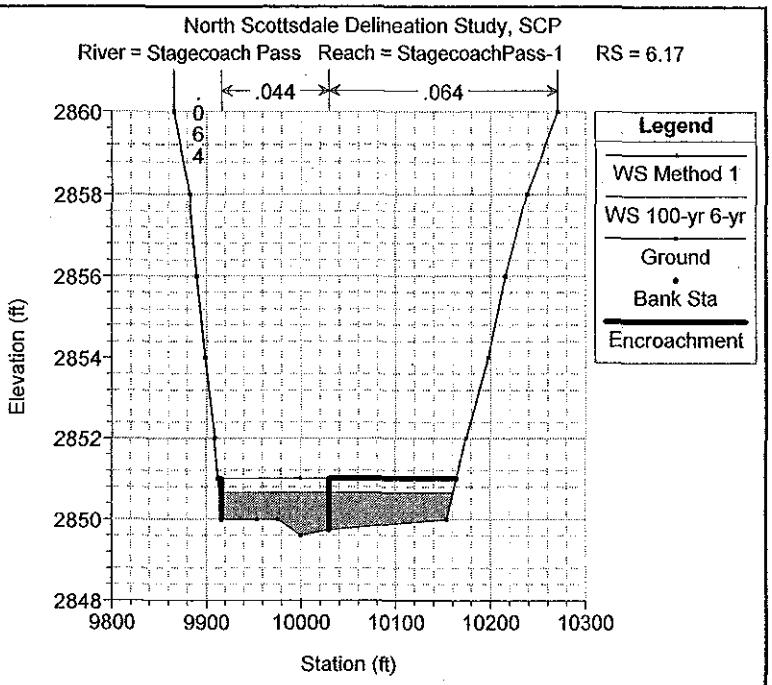
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.17
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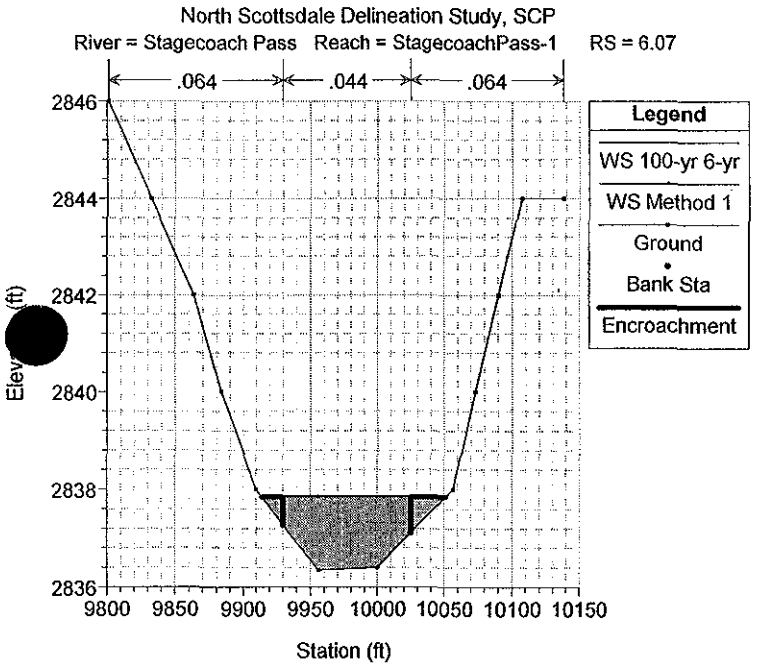
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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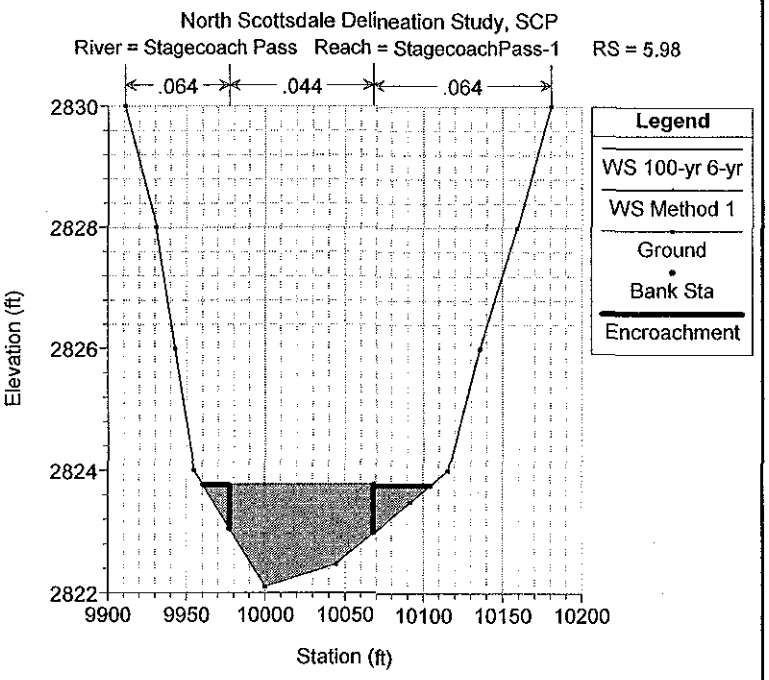
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Station (ft)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Legend
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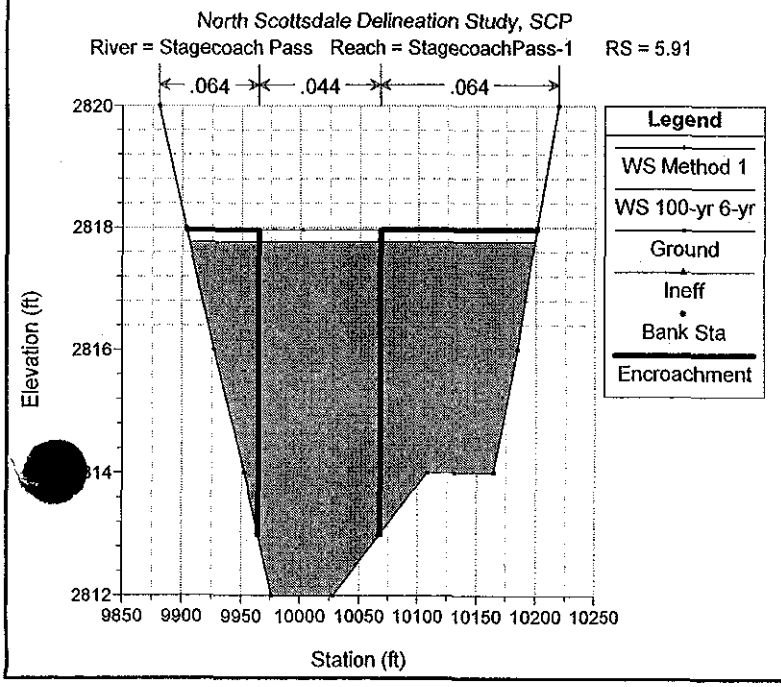
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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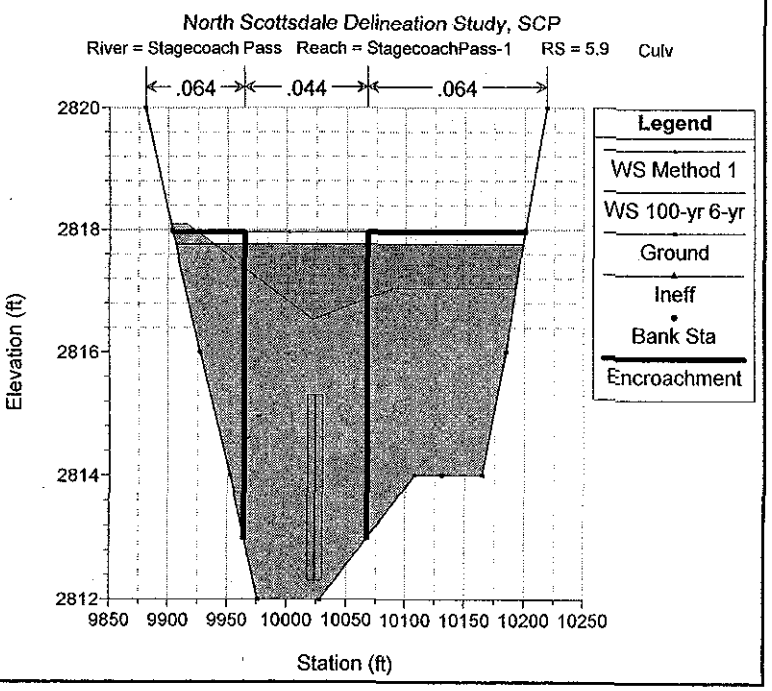
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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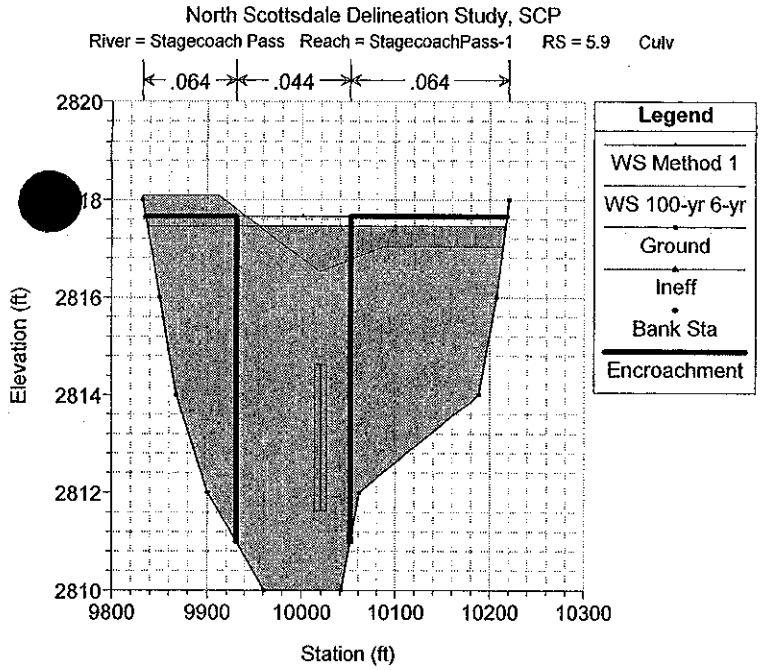
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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Legend
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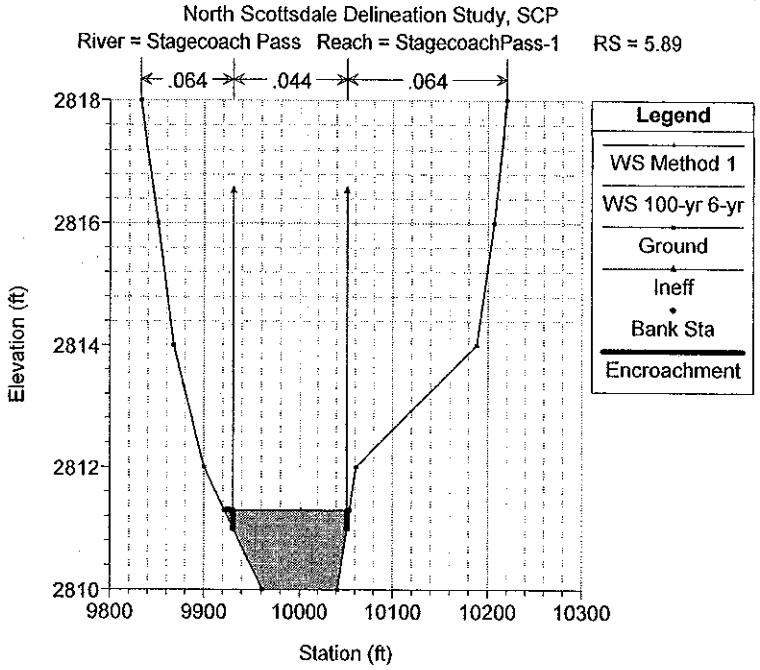
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)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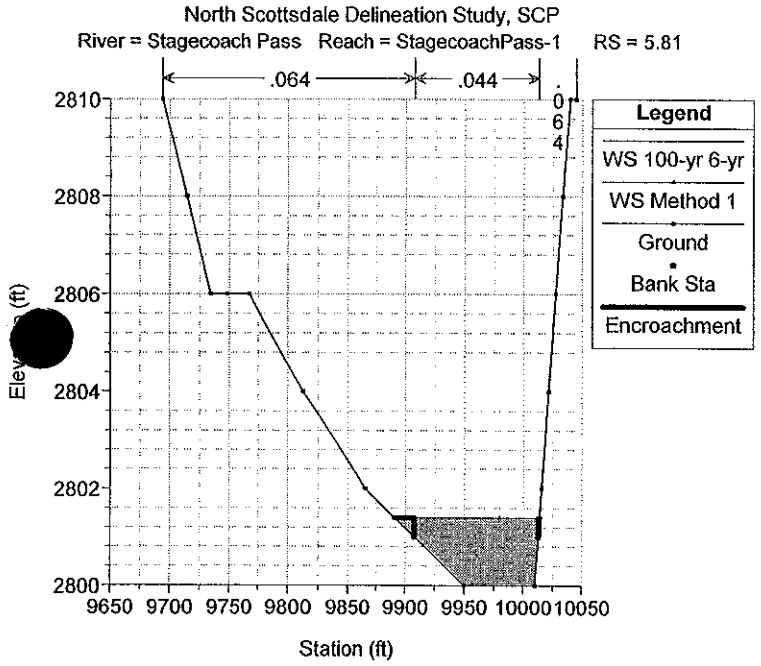
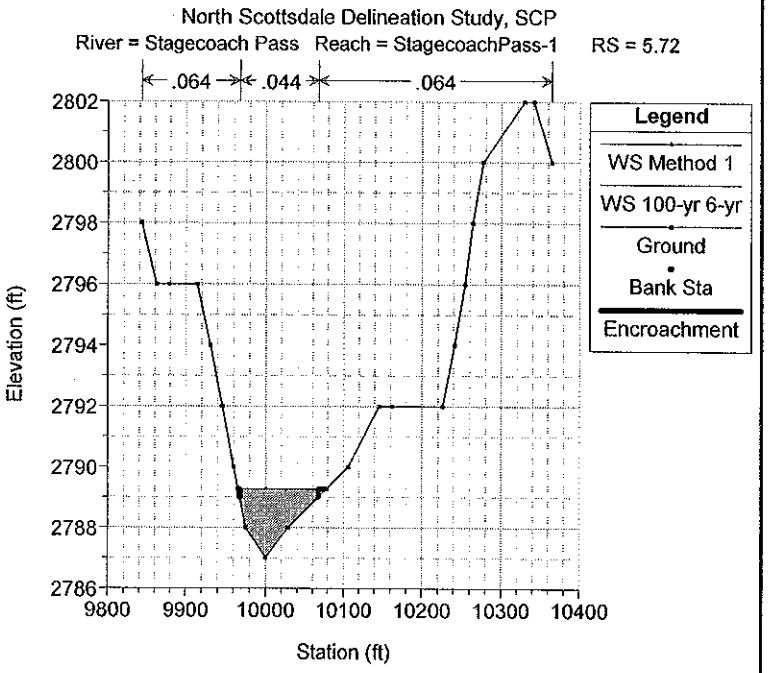
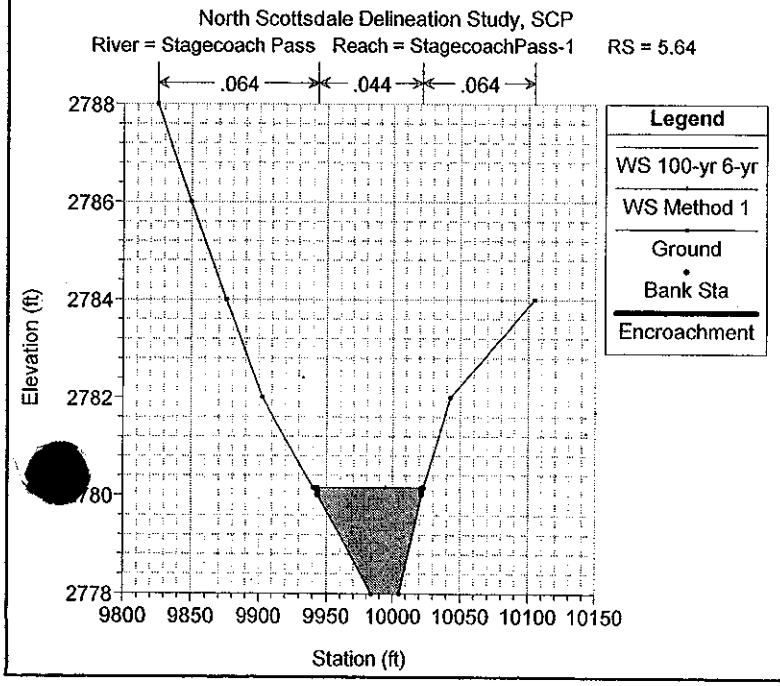
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.81
.064
.044
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.72
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.64
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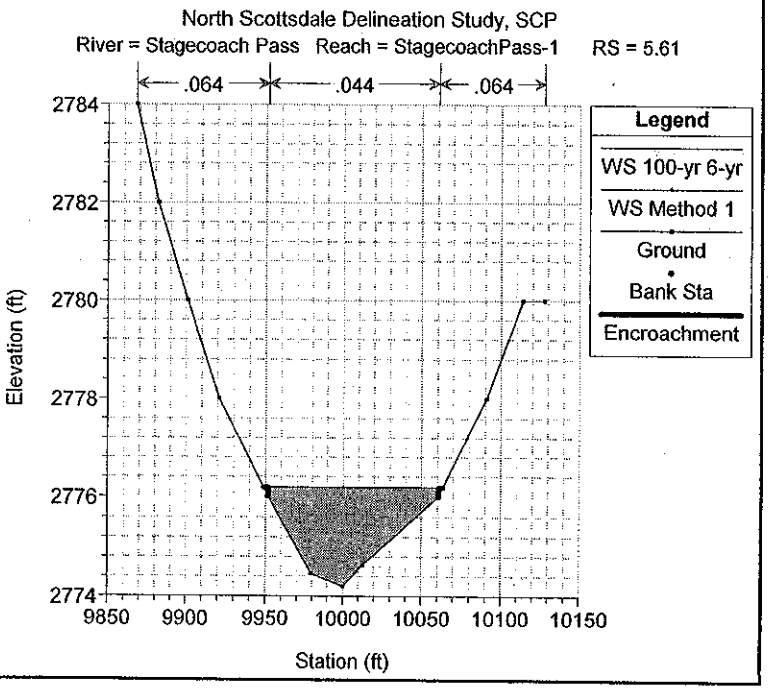
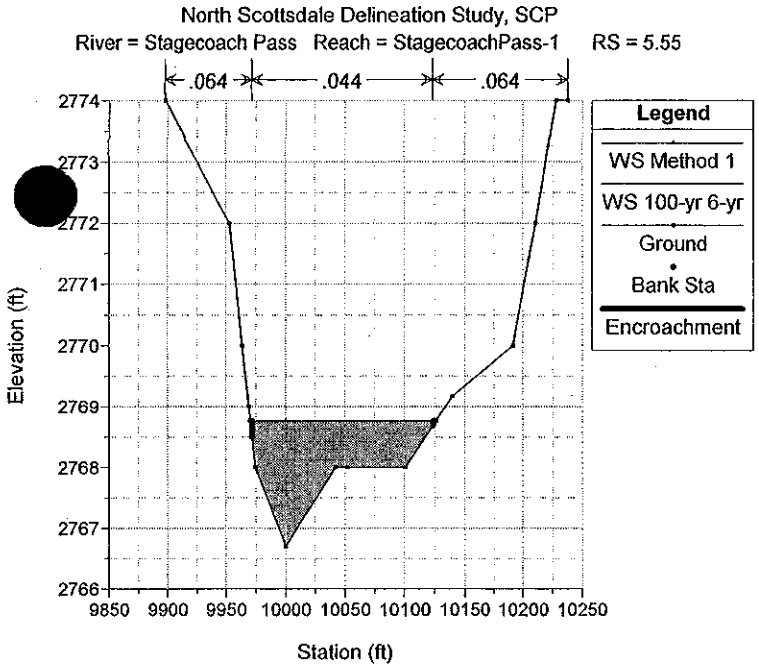
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.61
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.55
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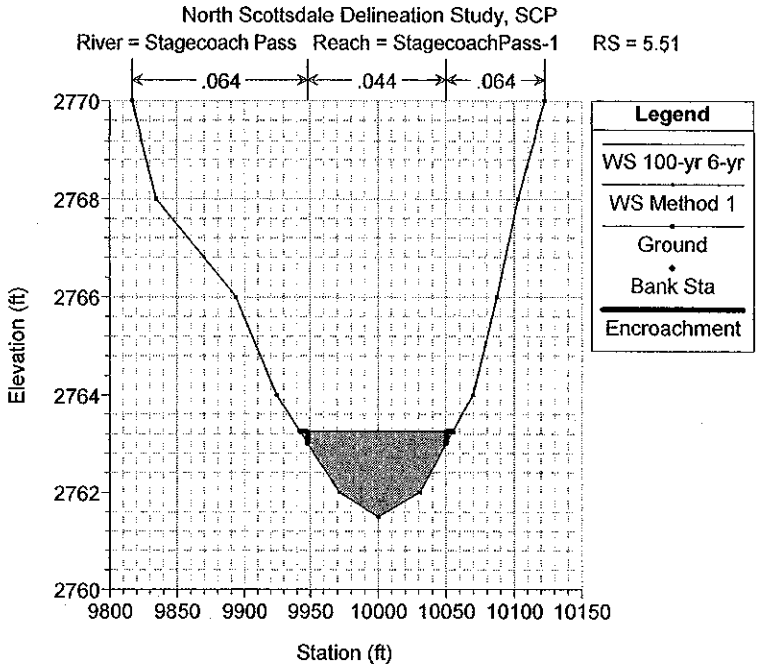
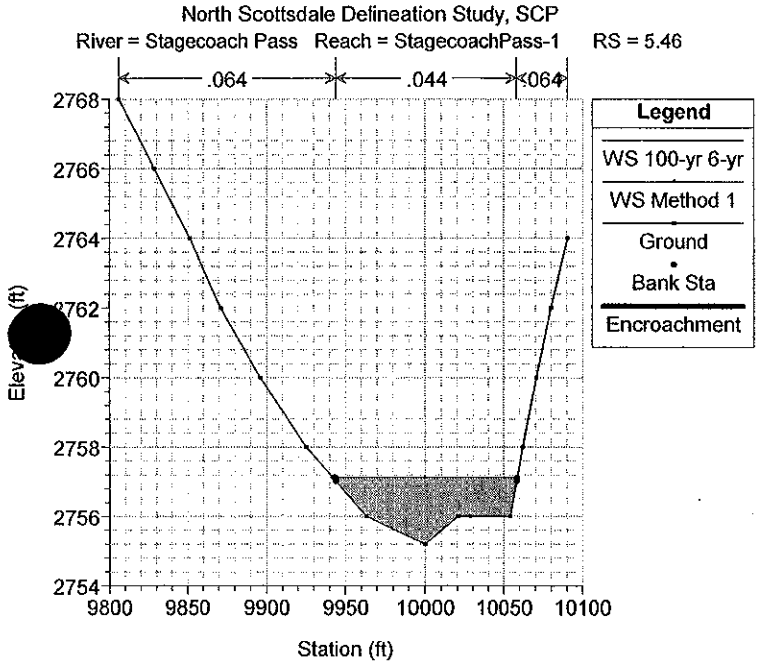
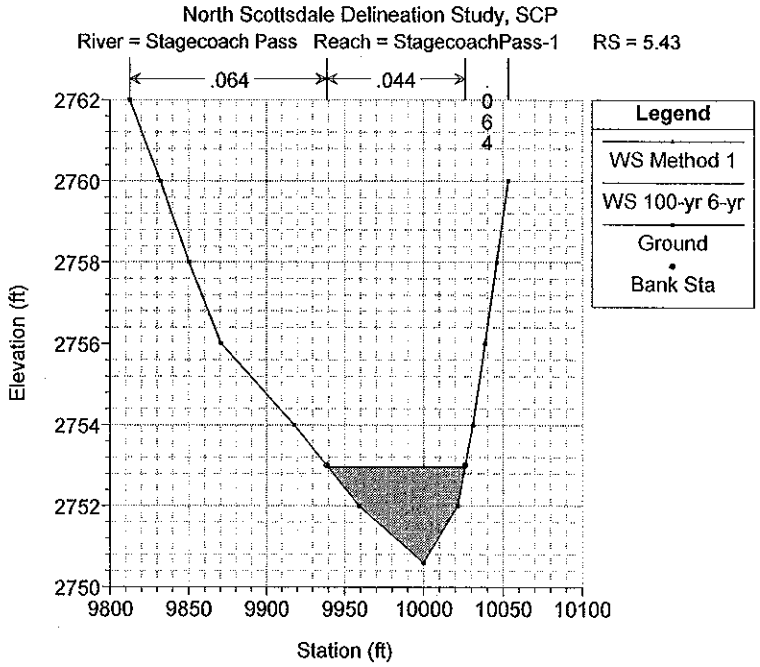
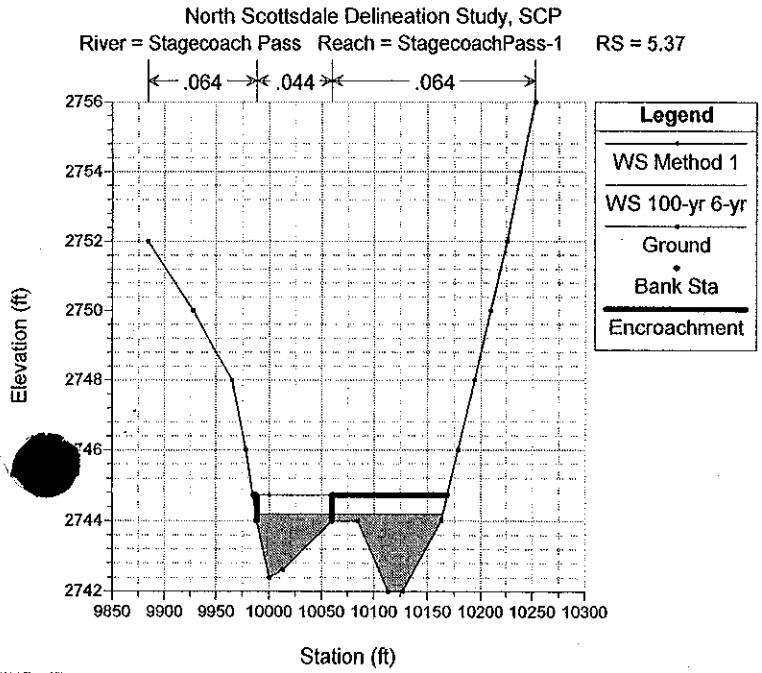
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.51
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.46
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.43
.064
.044
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.37
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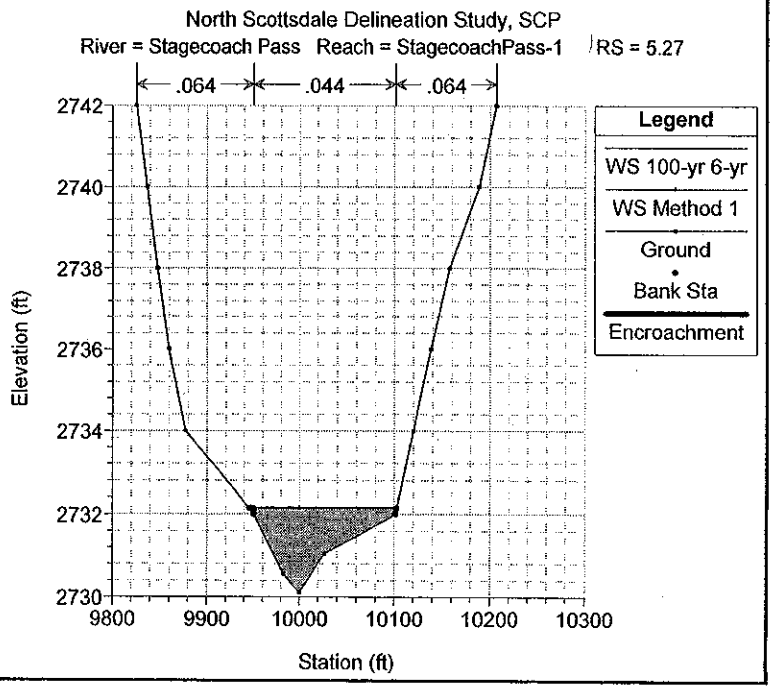
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.27
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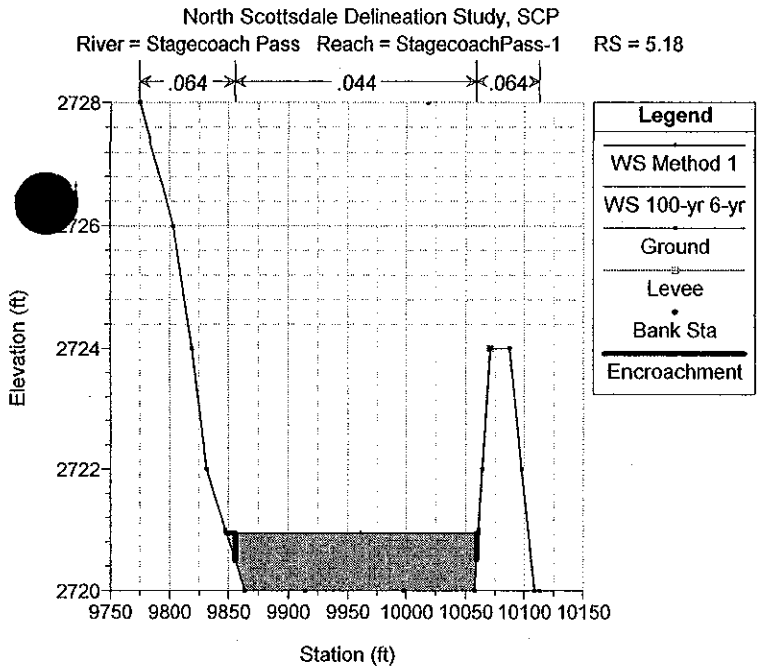
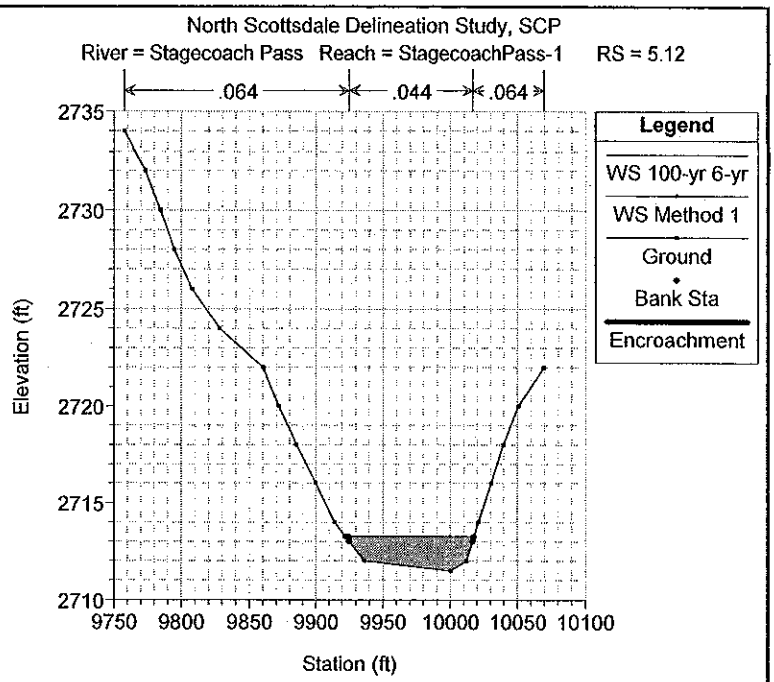
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.18
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.12
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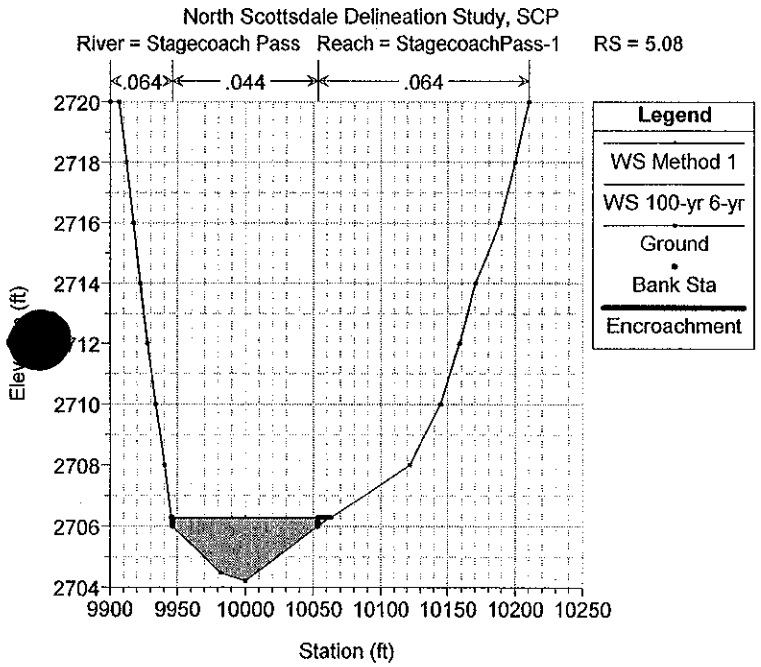
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.08
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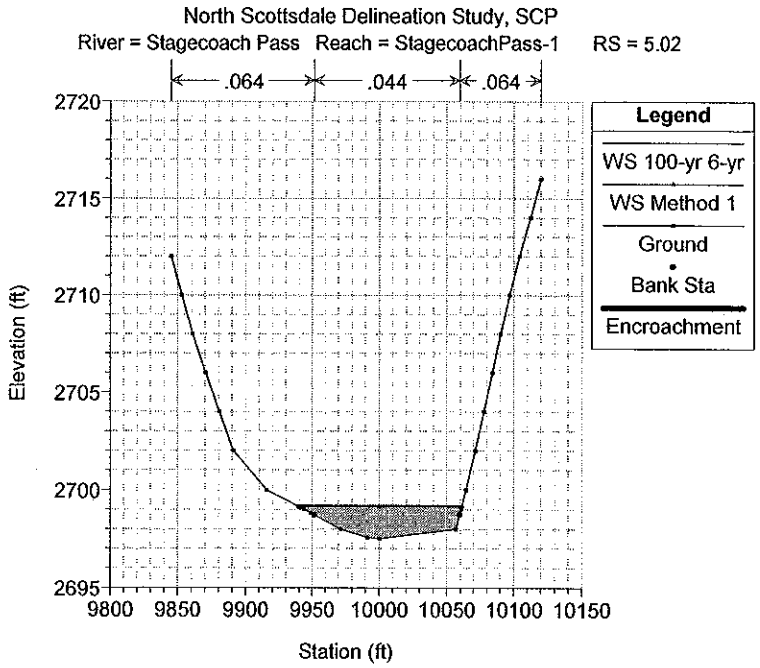
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.02
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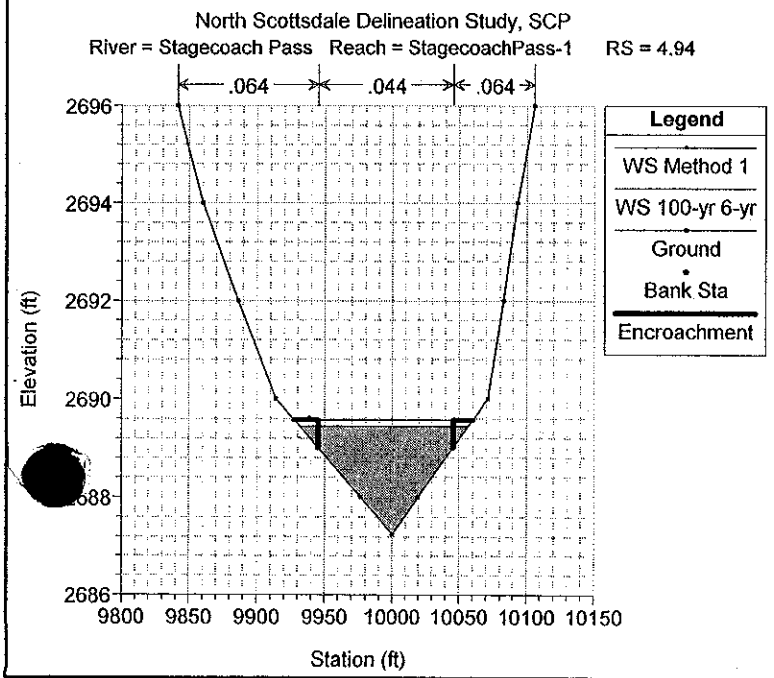
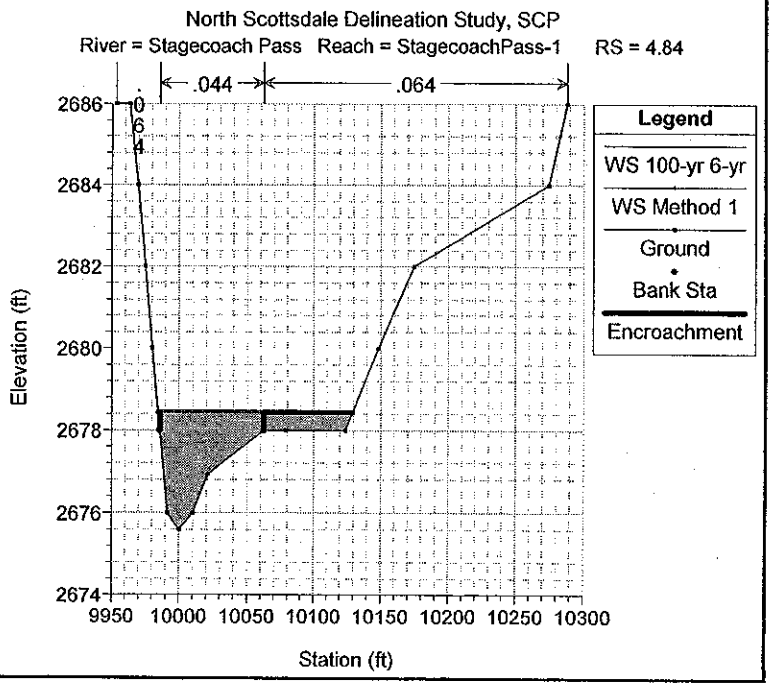
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.94
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.84
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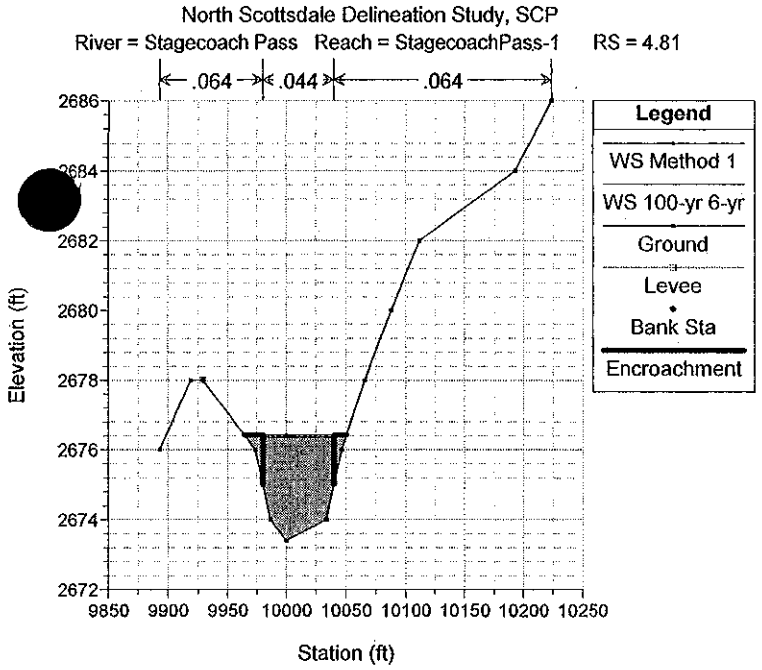
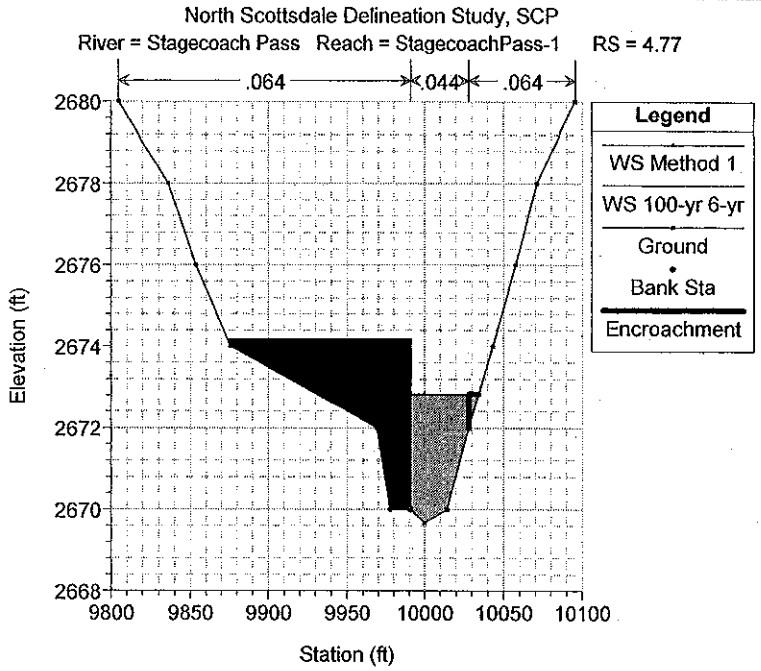
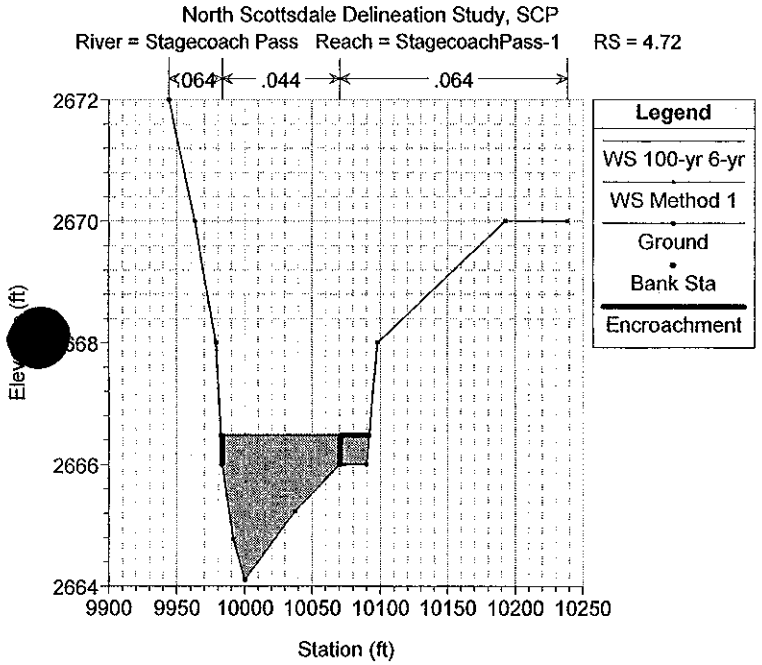
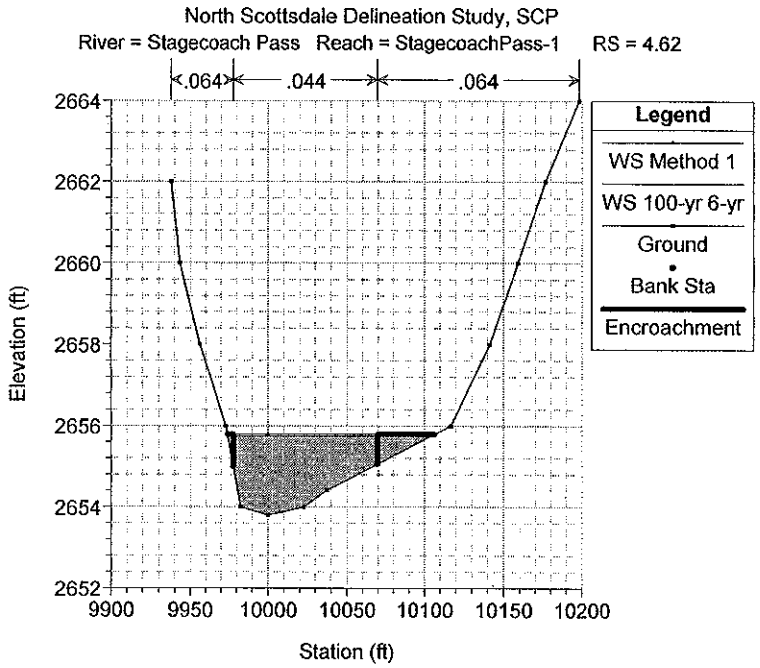
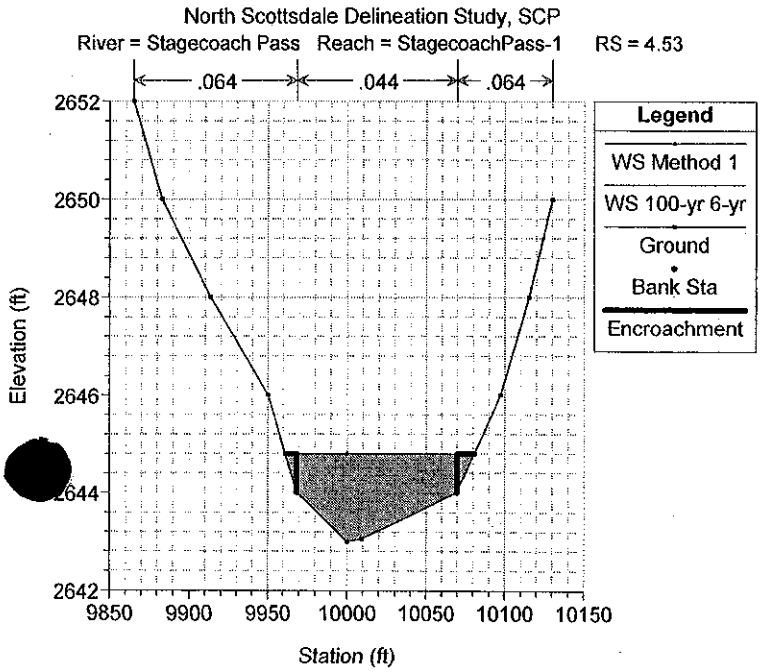
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

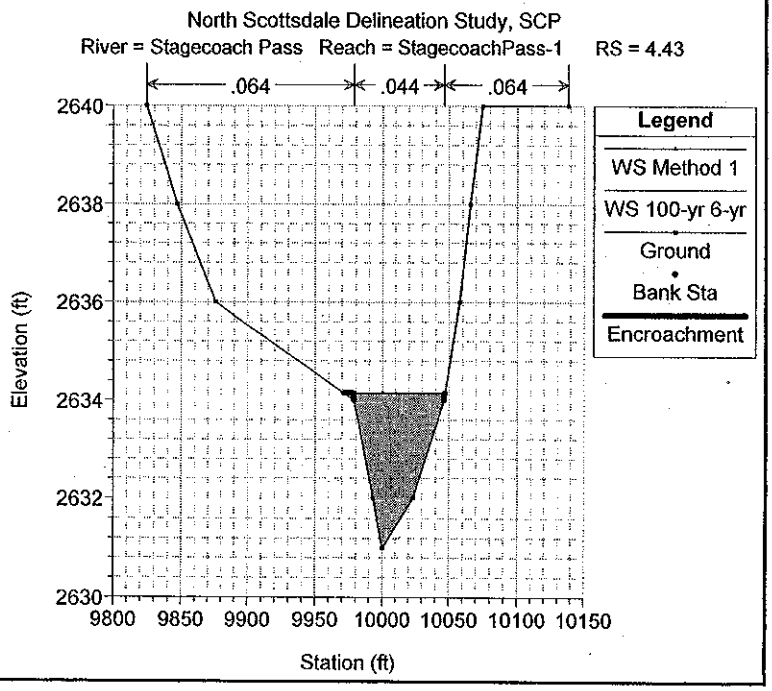

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.81
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

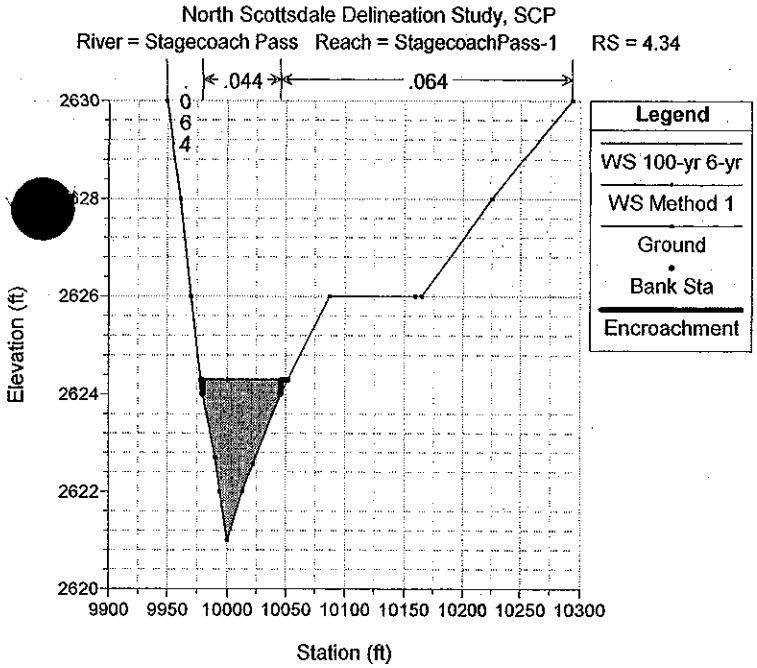

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.77
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

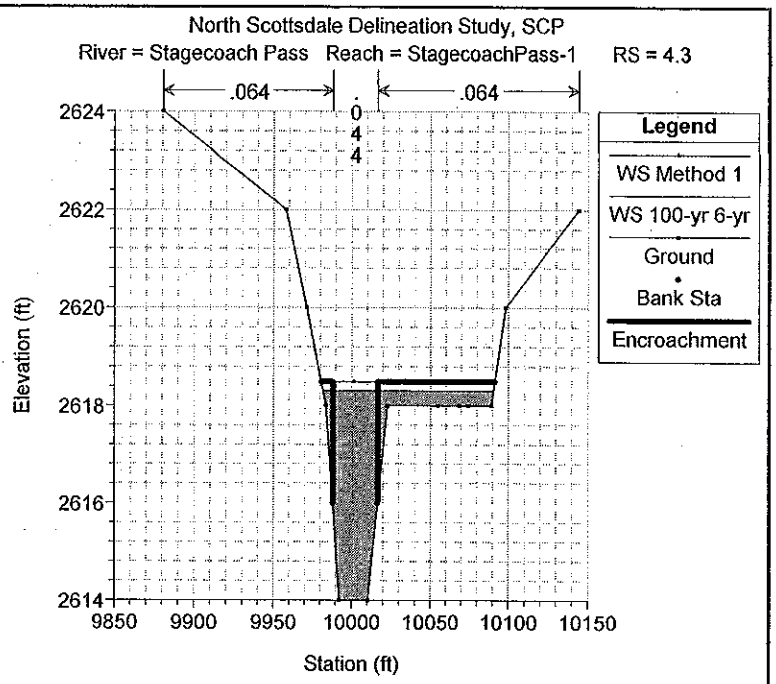

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.72
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.62
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.53
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.43
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.34
.044
.064
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.3
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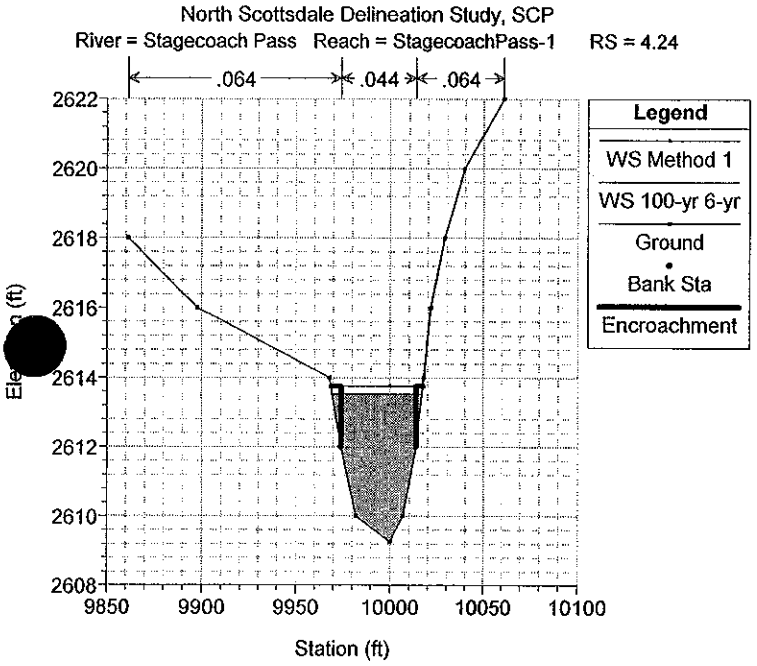
.044
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.24
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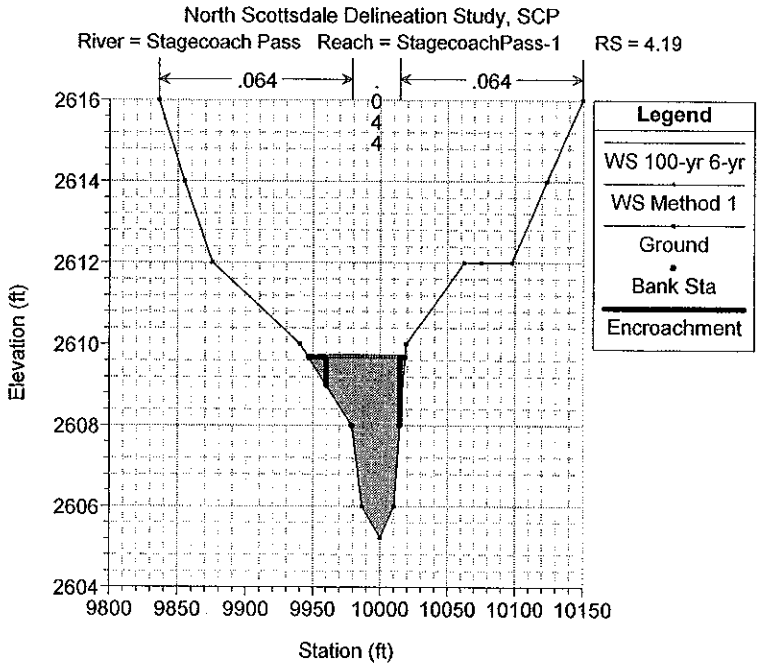
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.19
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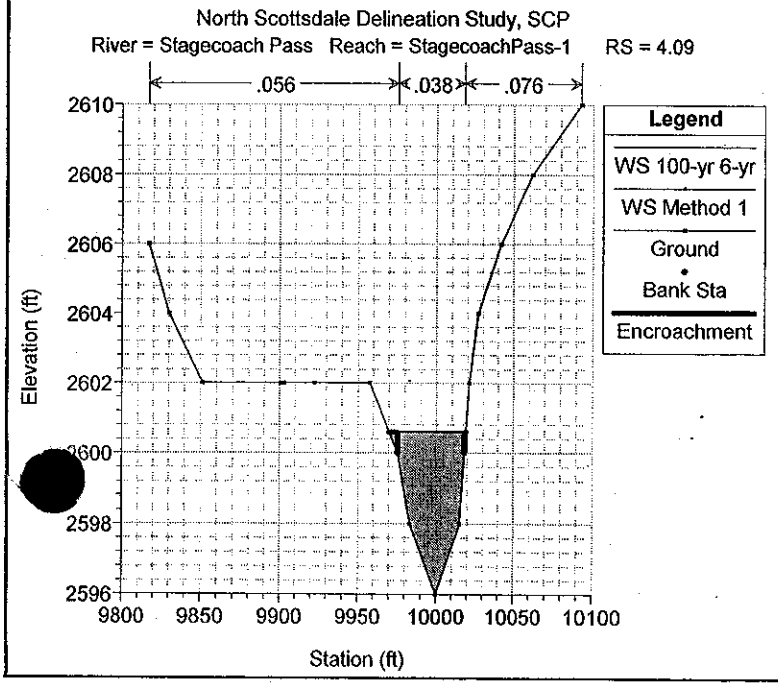
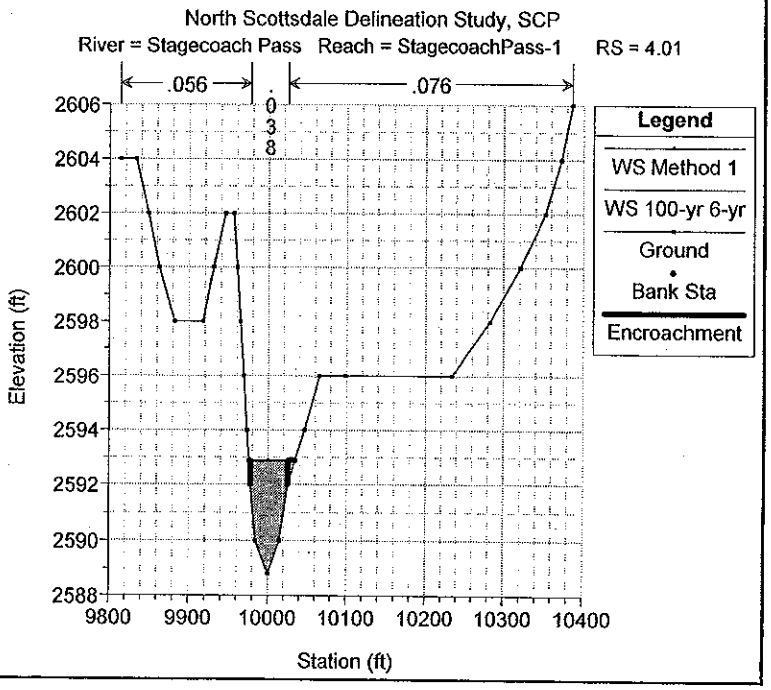
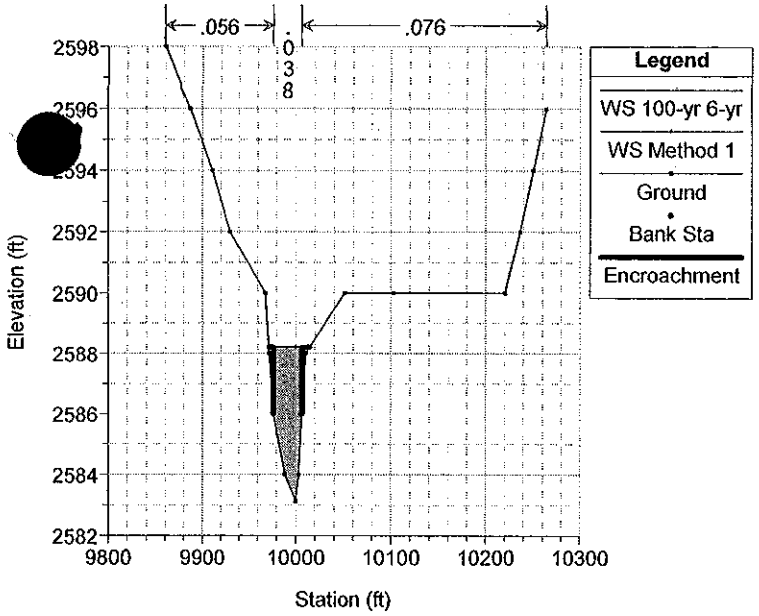
.064
.044
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

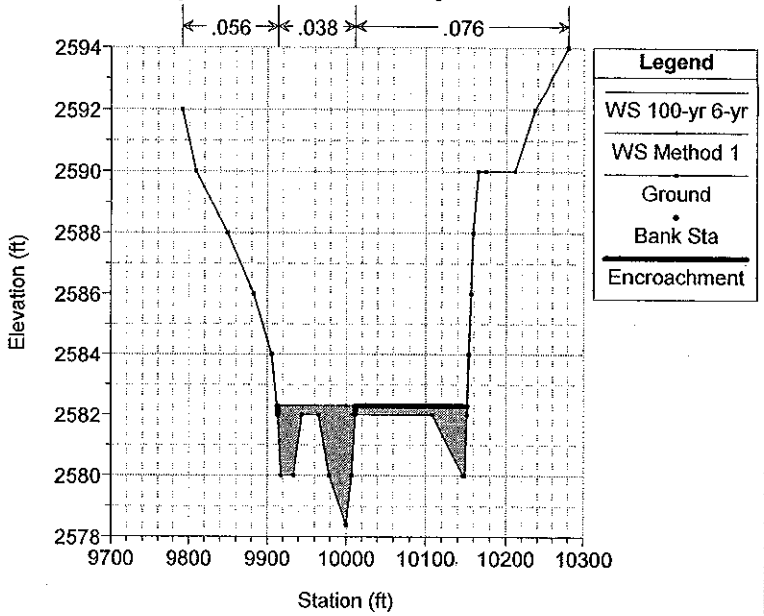

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.09
.056
.038
.076
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.01
.056
.076
.038
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

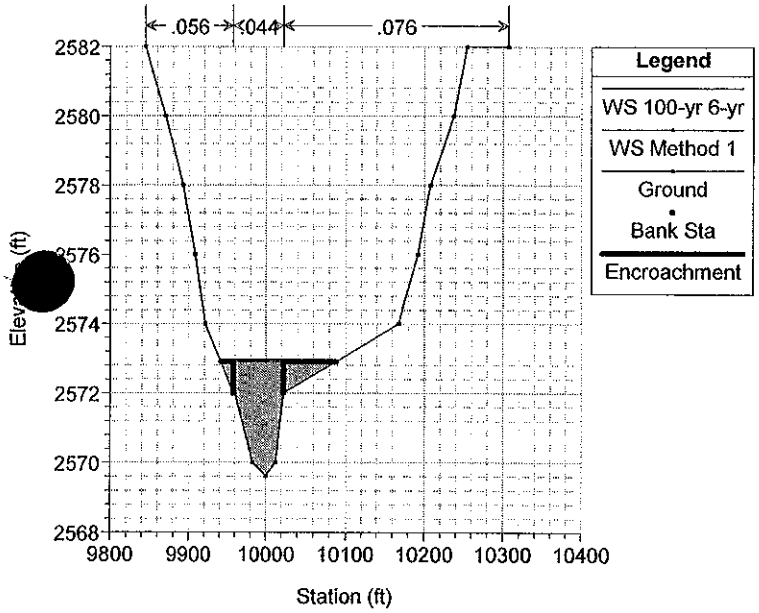
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.96



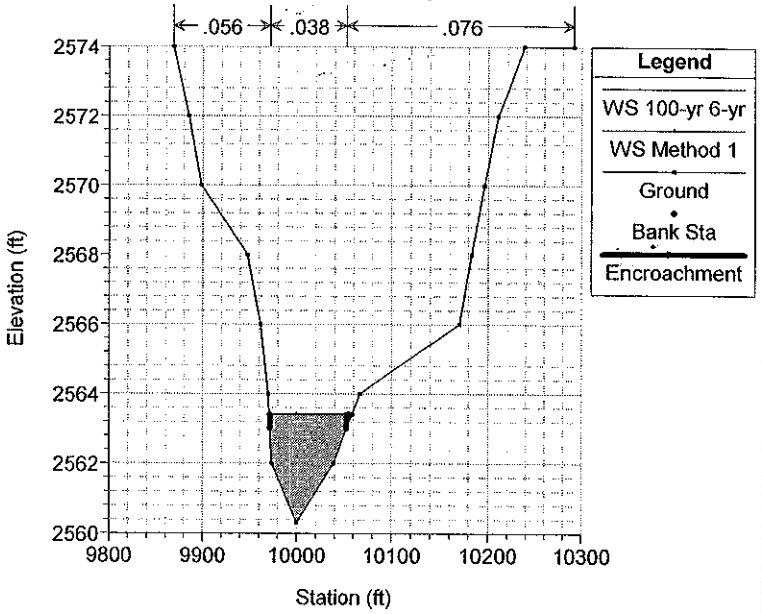
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.9



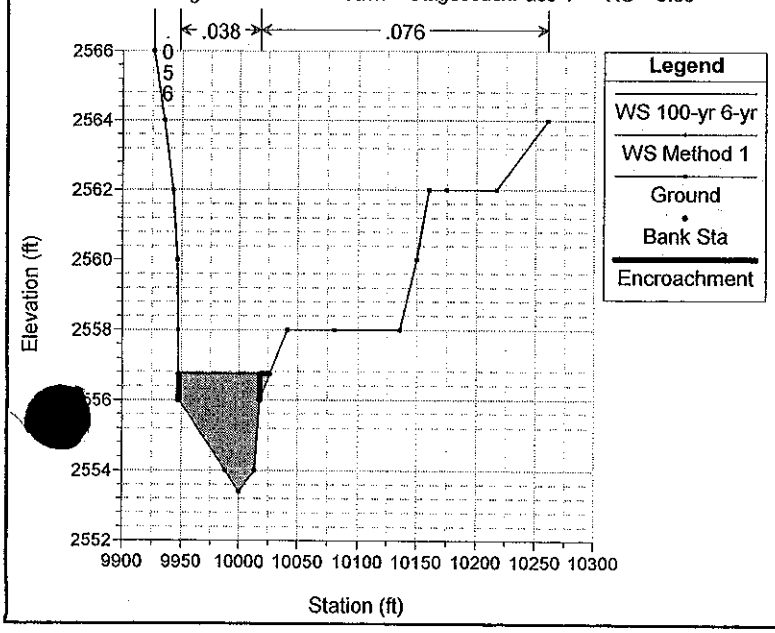
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.82



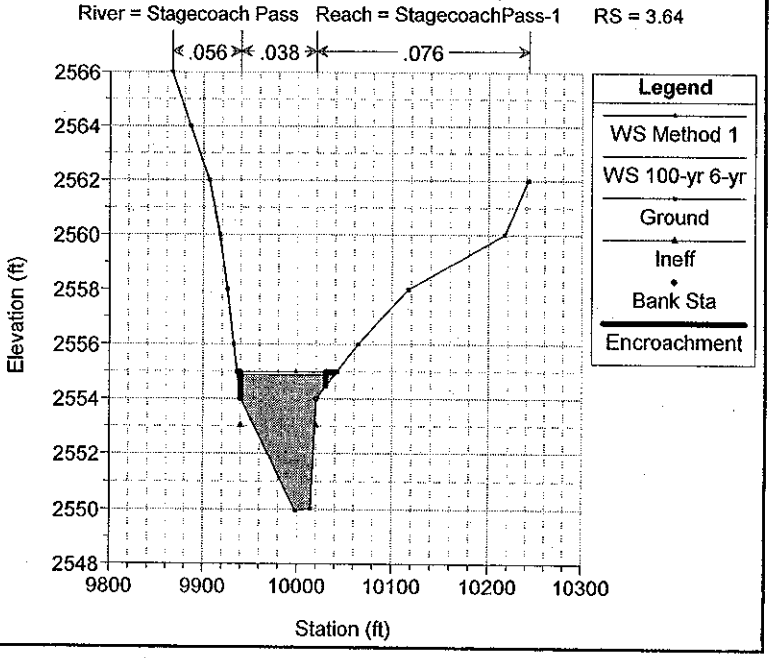
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.72

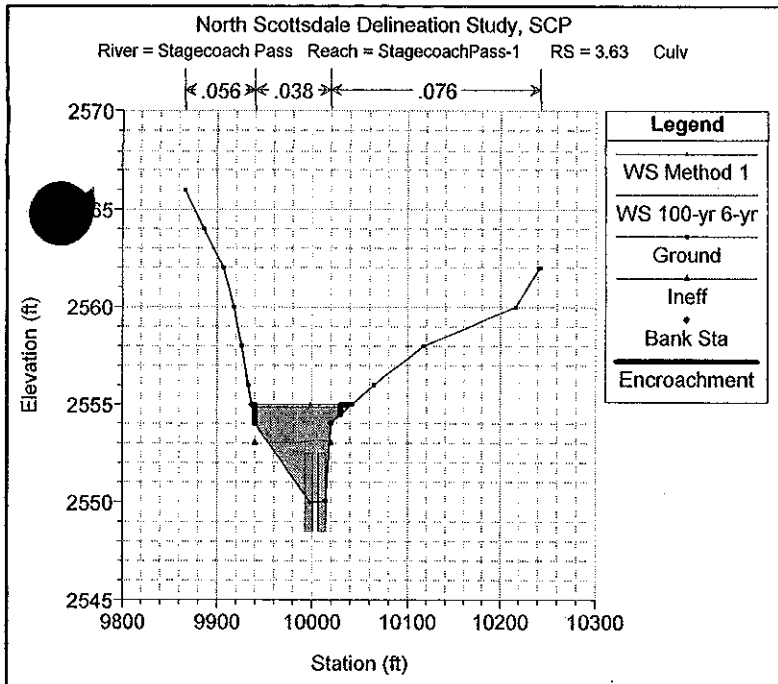


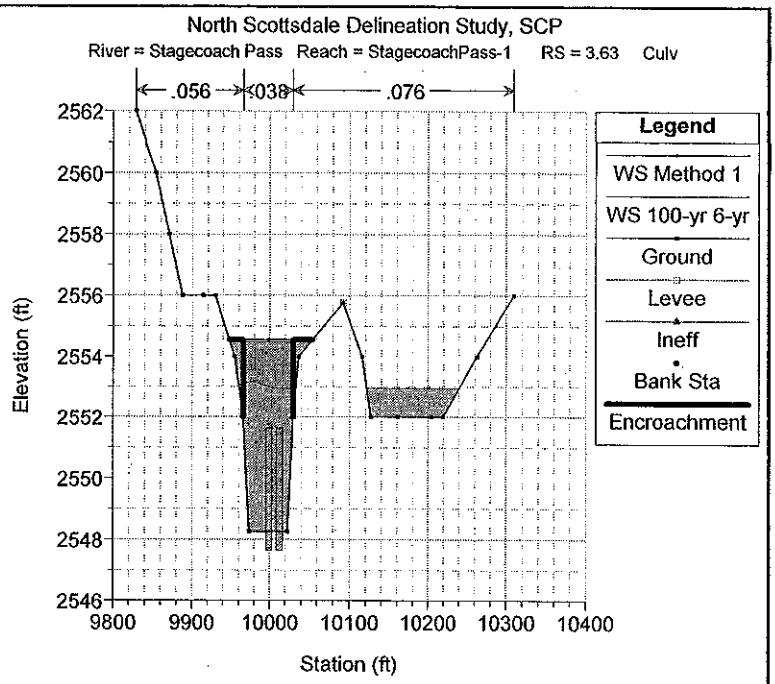
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.66

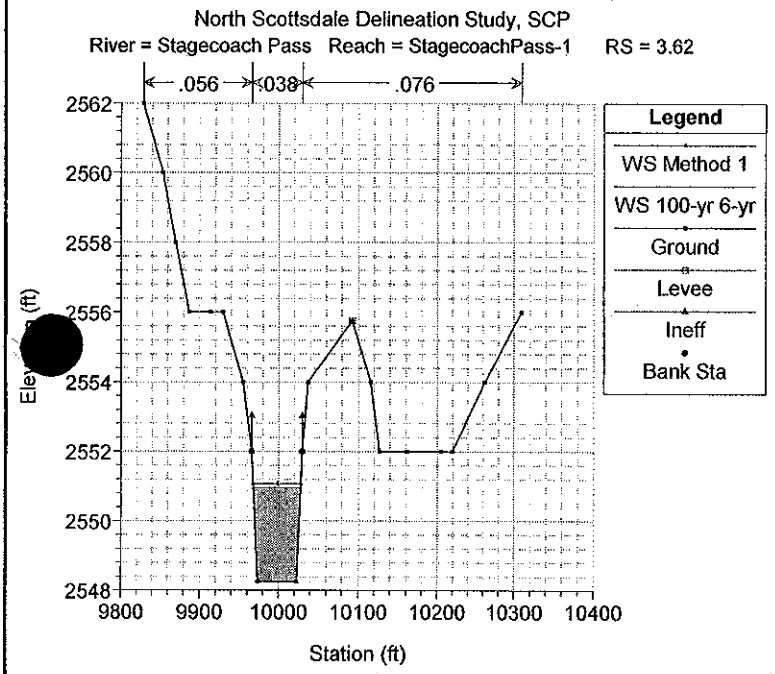


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.64




North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.63 Culv
.056
.038
.076
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.63 Culv
.056
.038
.076
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.62
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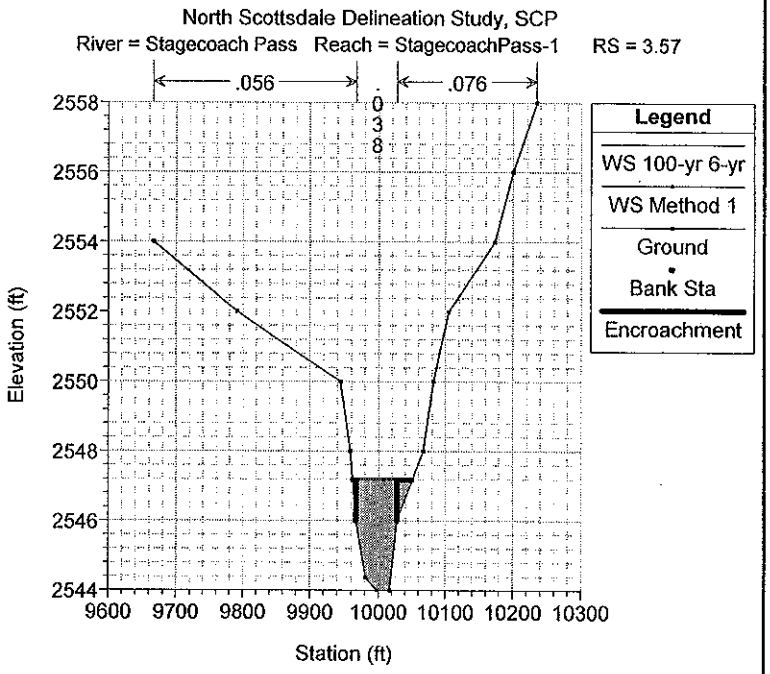
.038
.076
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.57
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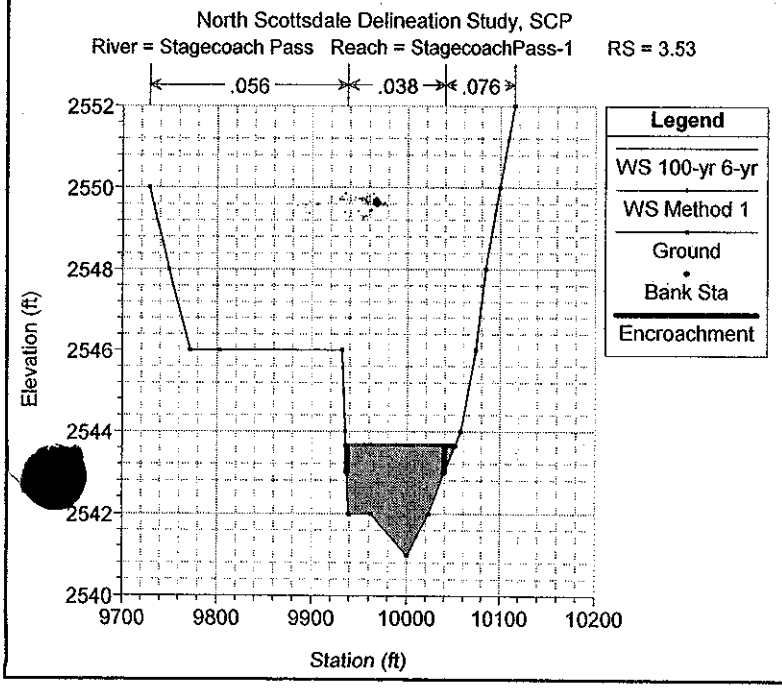
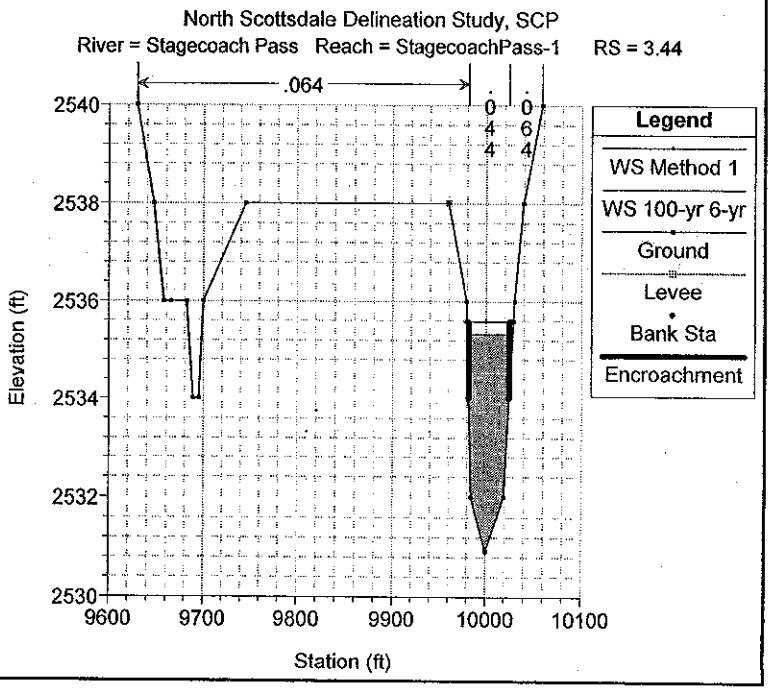
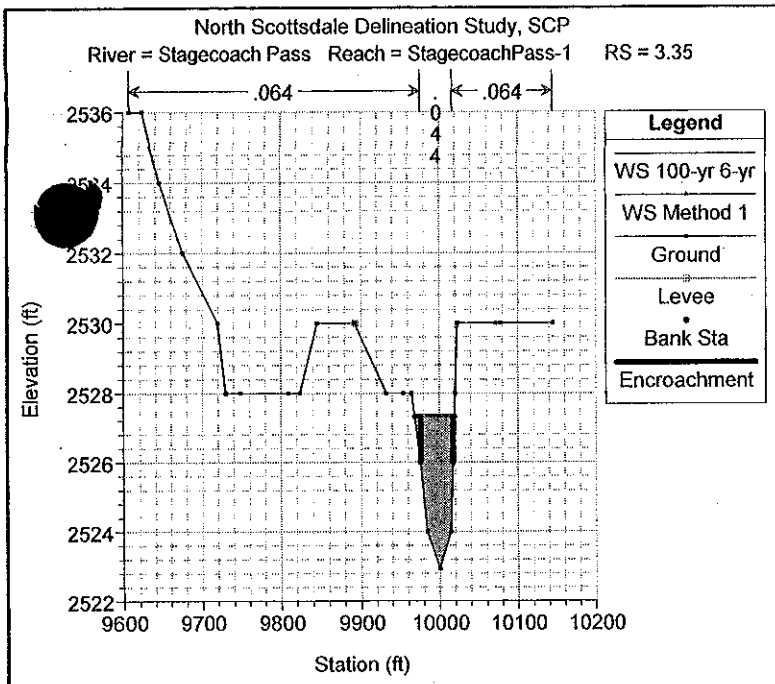
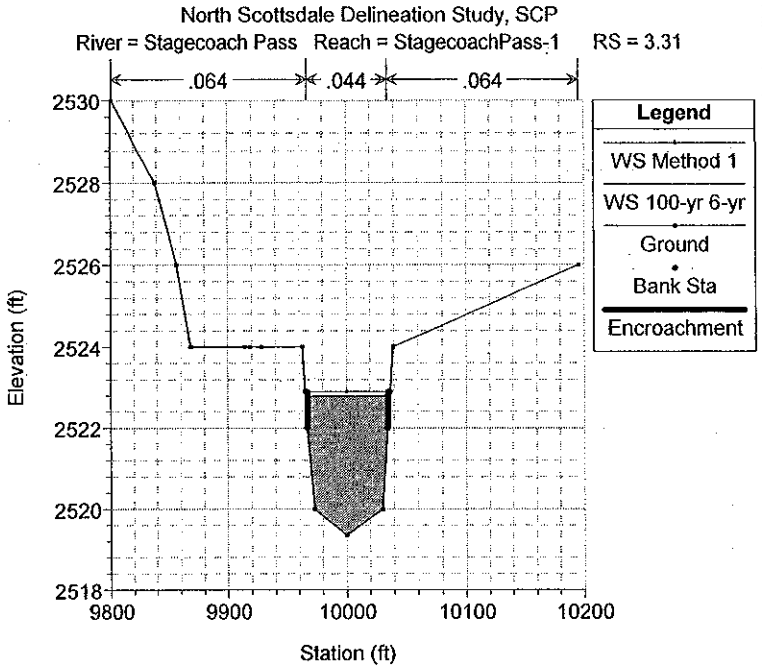
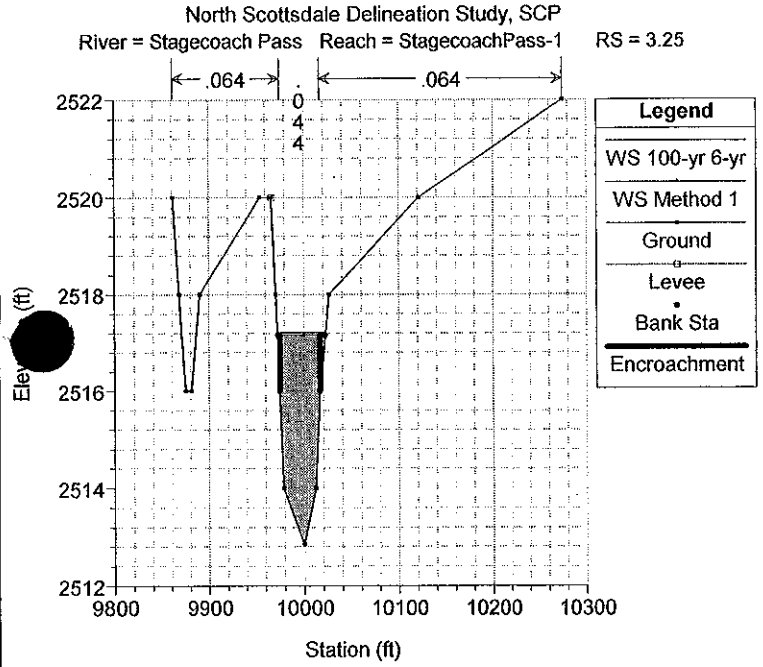
.038
.076
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

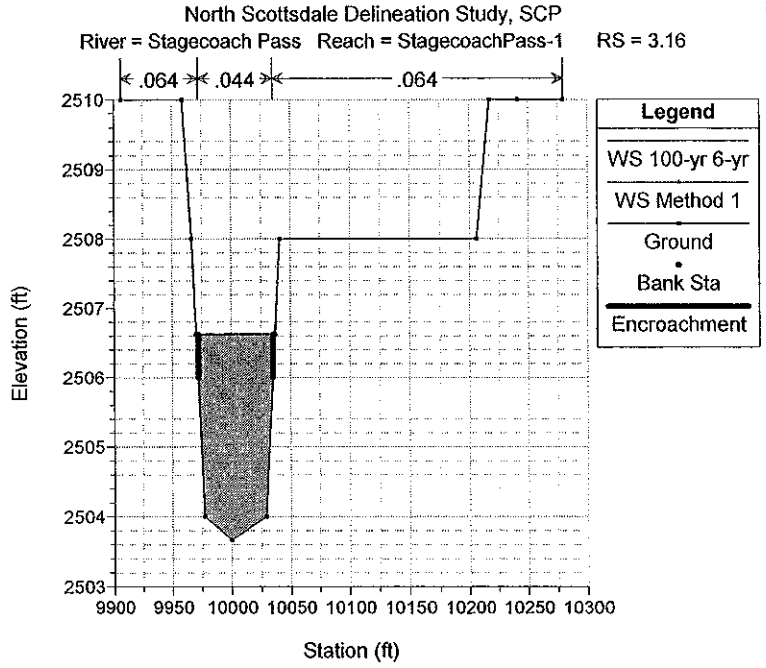

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.53
.056
.038
.076
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

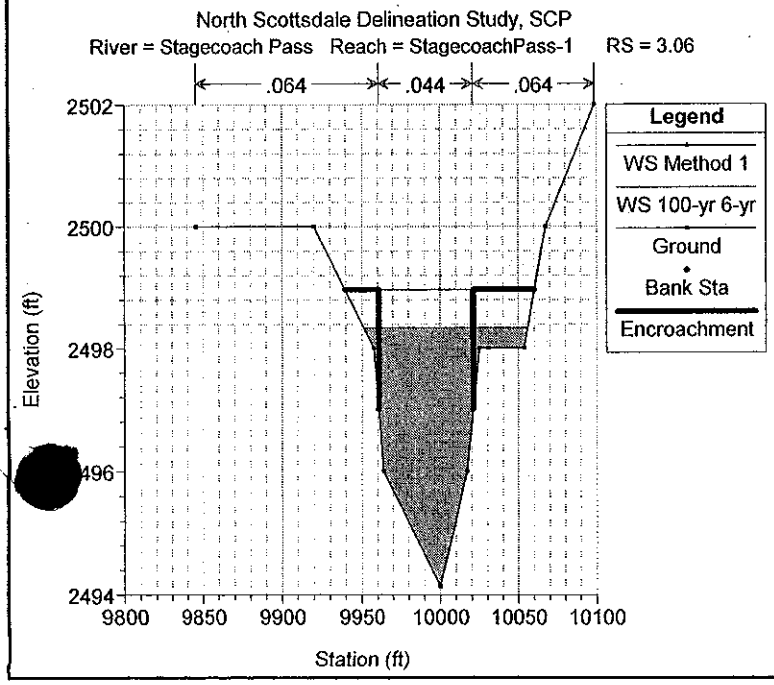

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.44
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

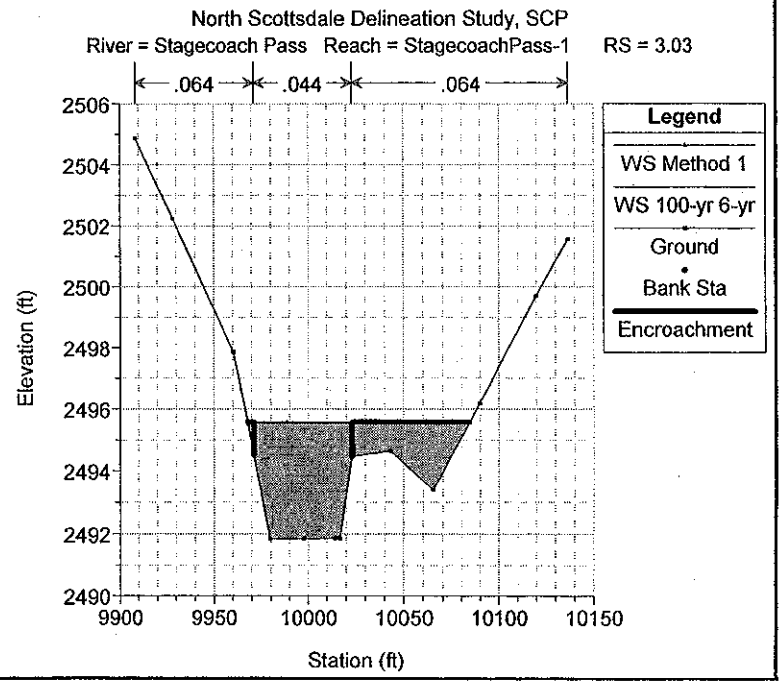

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.35
.064
.064
.044
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.31
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

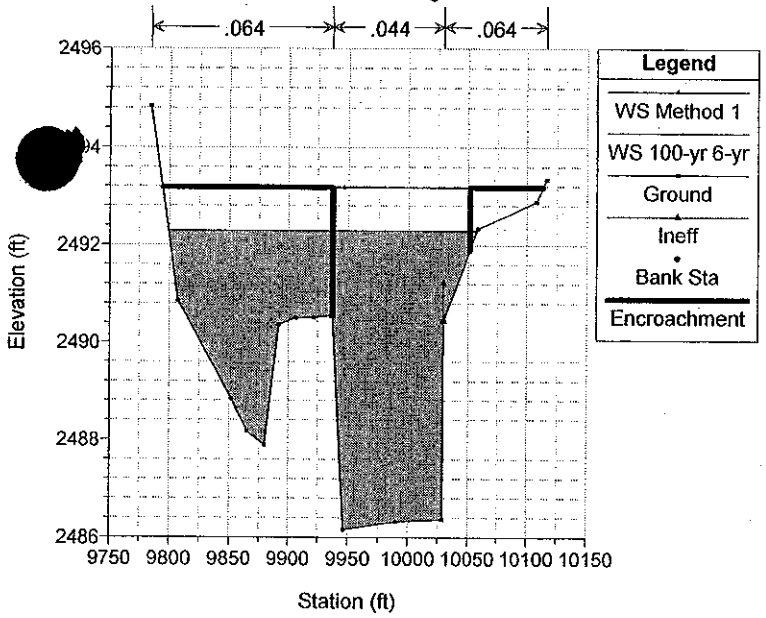

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.25
.064
.064
.044
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.16
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

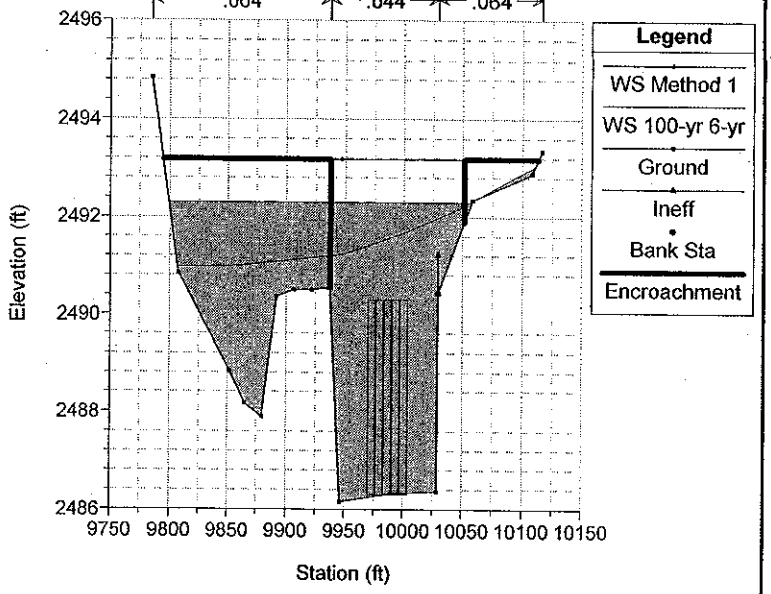

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.06
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.03
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

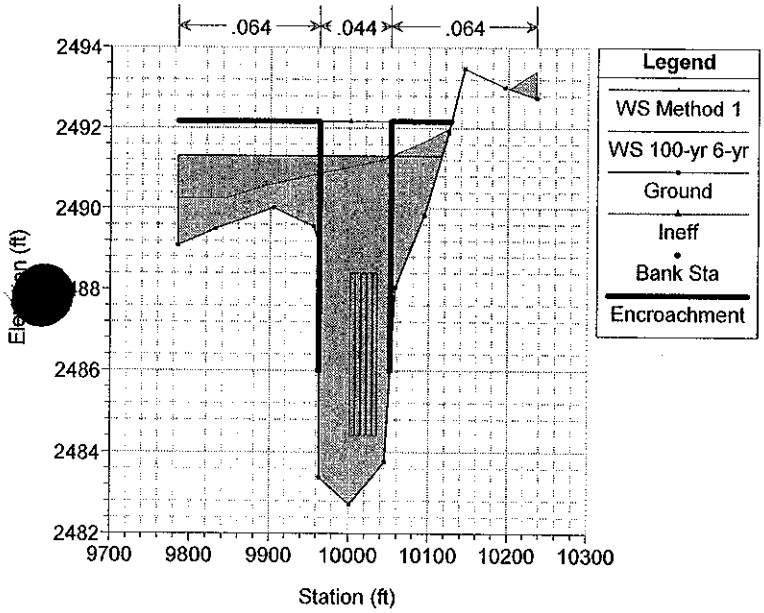
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.97



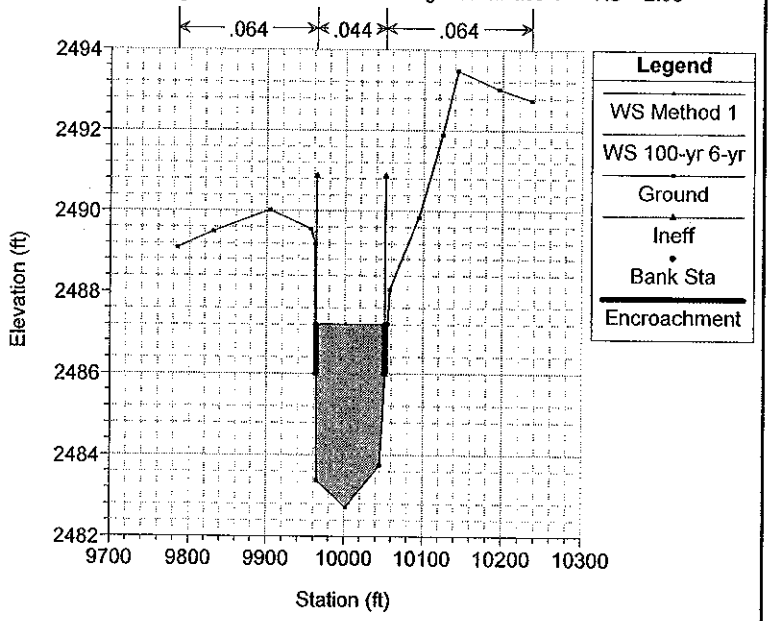
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.96 Culv



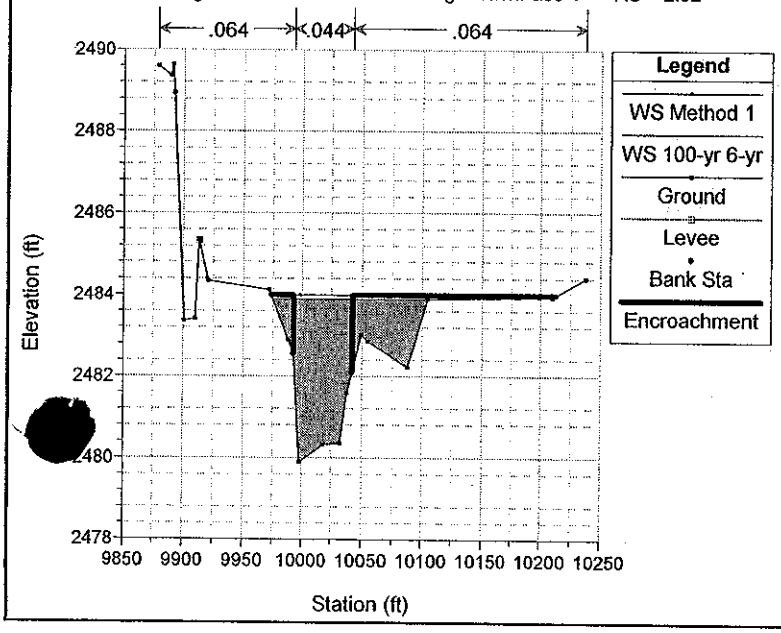
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.96 Culv



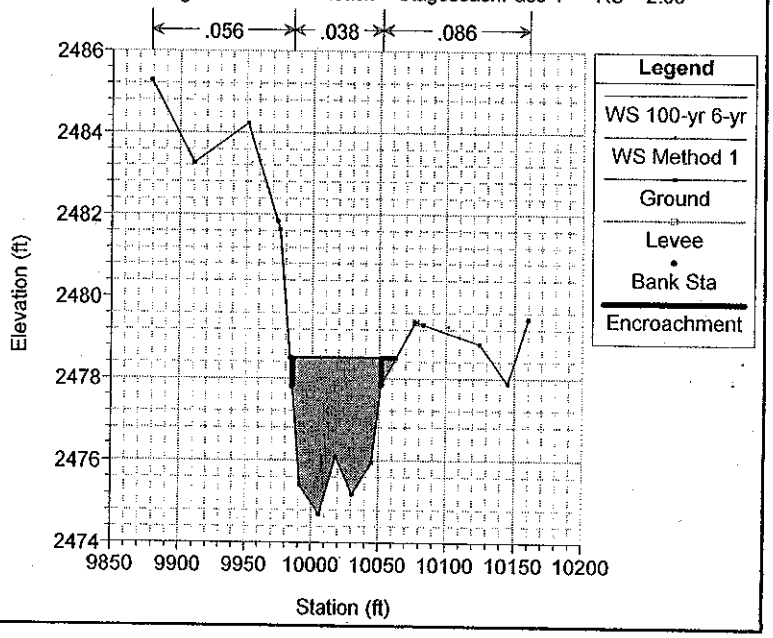
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.95

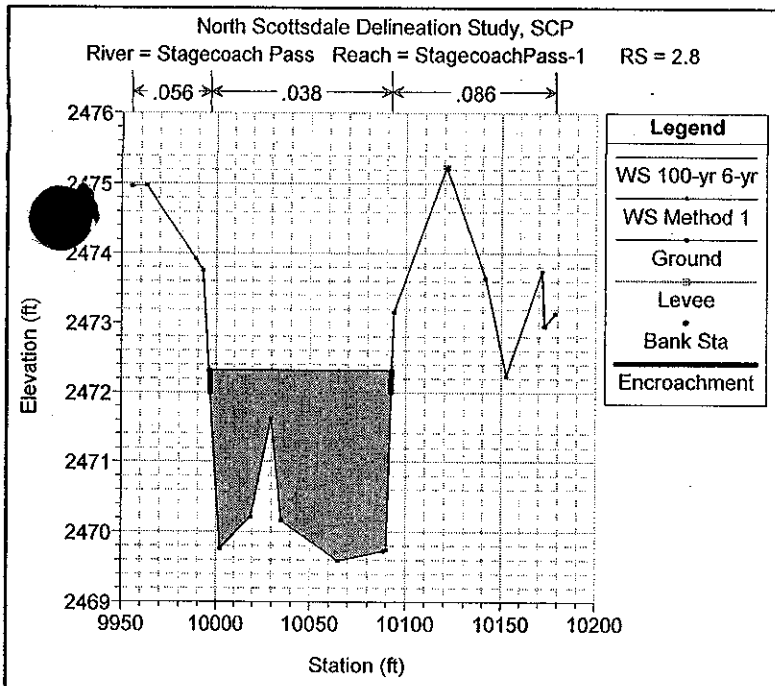


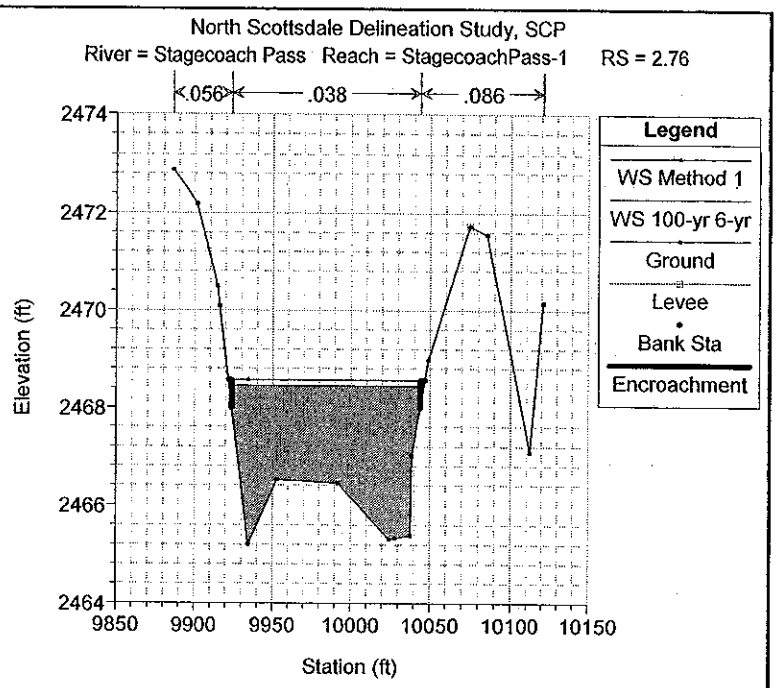
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.92

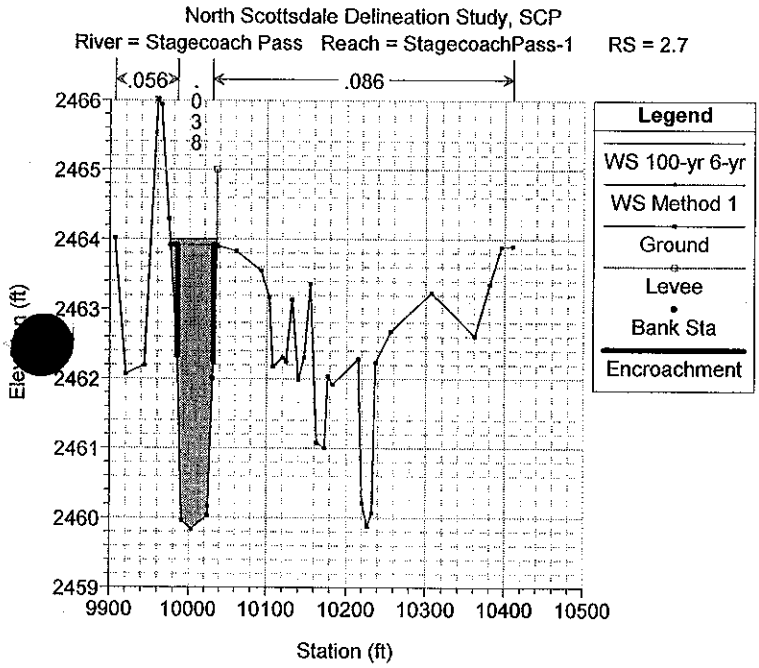


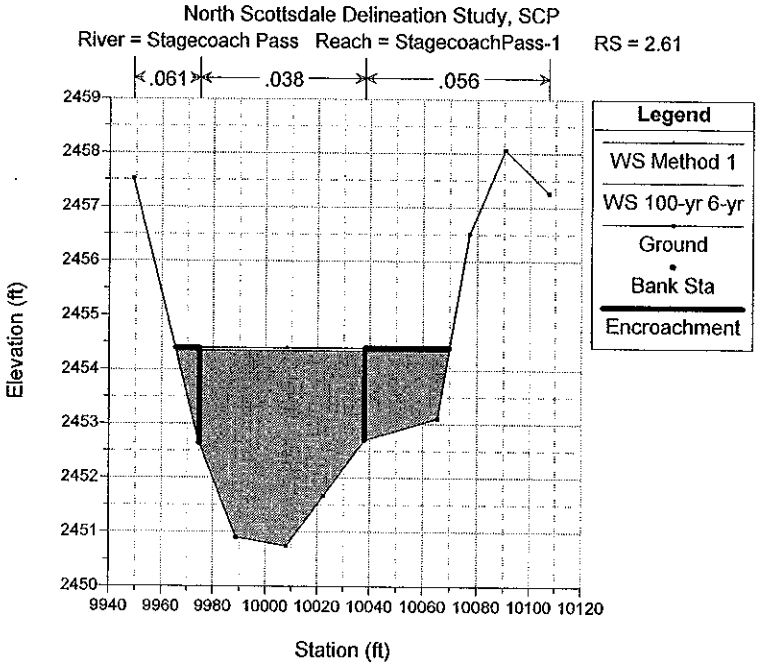
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.86

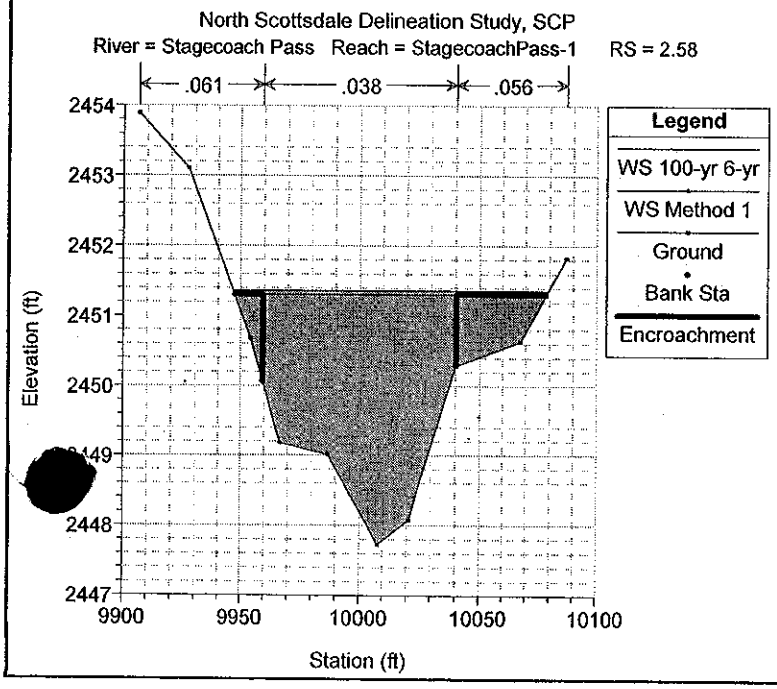


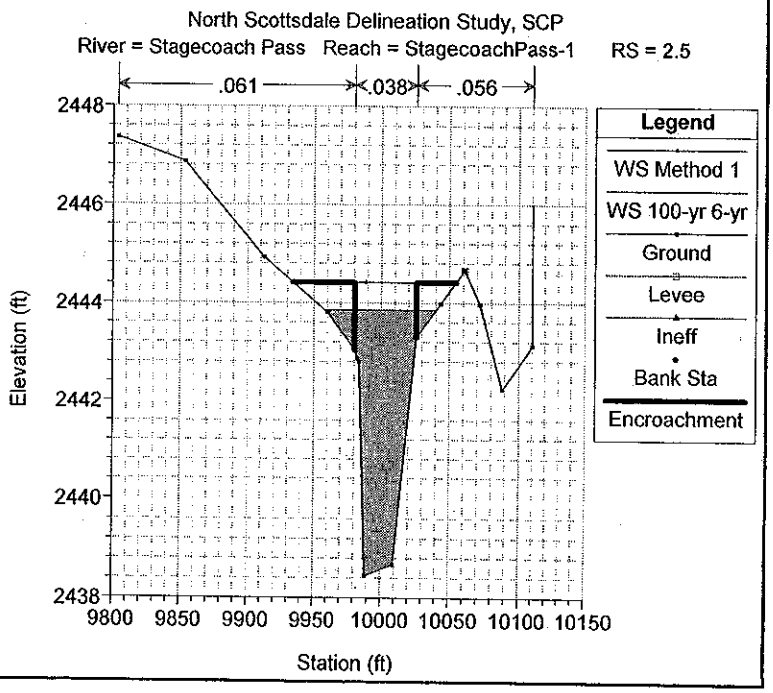

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.8
.056
.038
.086
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

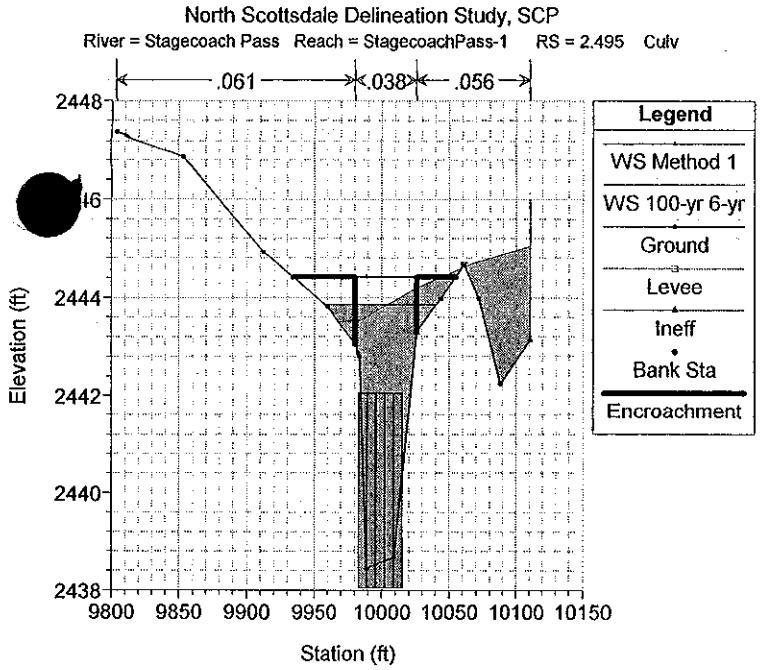

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.76
.056
.038
.086
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

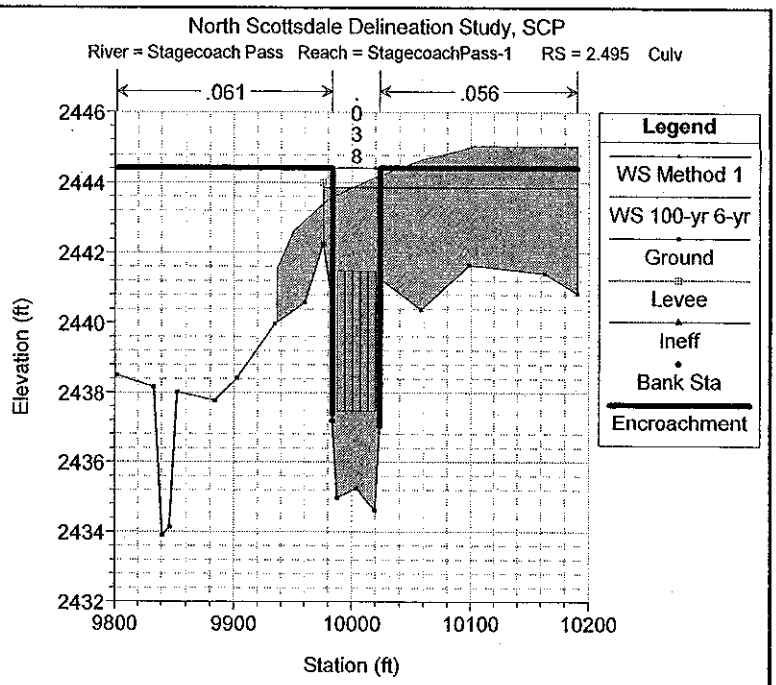

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.7
.056
.086
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Station (ft)

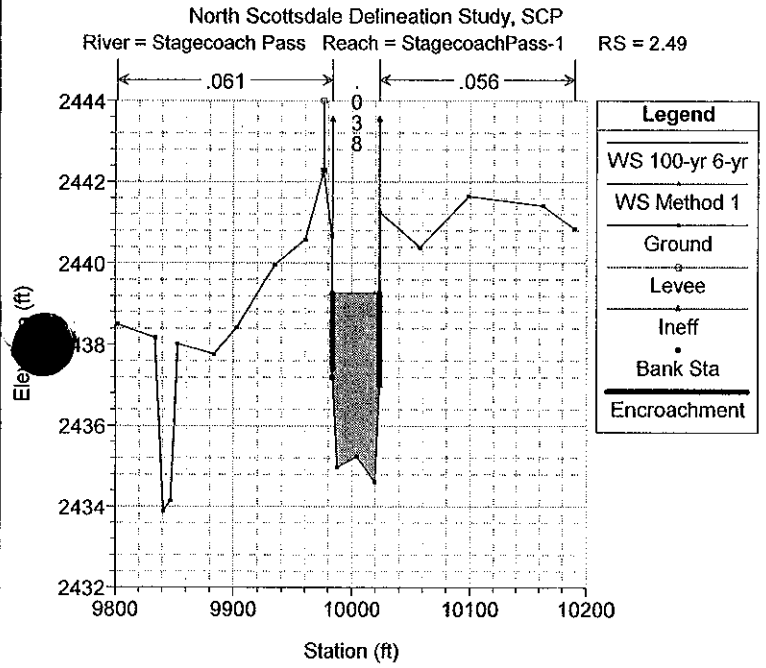

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.61
.061
.038
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

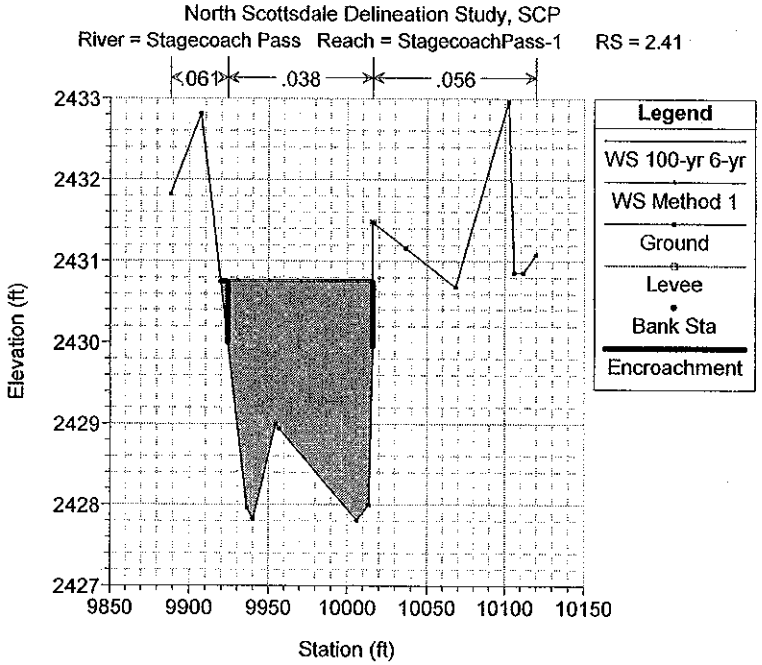

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.58
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

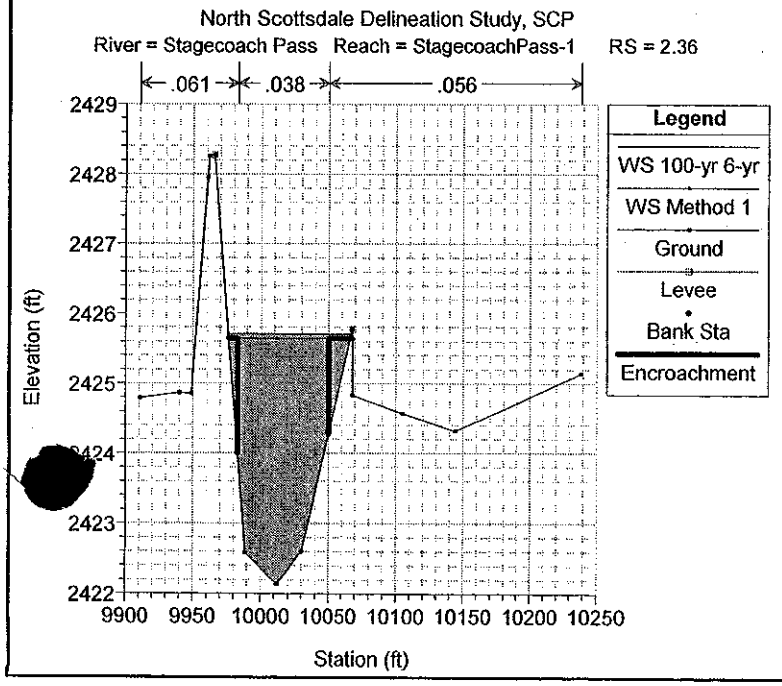

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.5
.061
.038
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

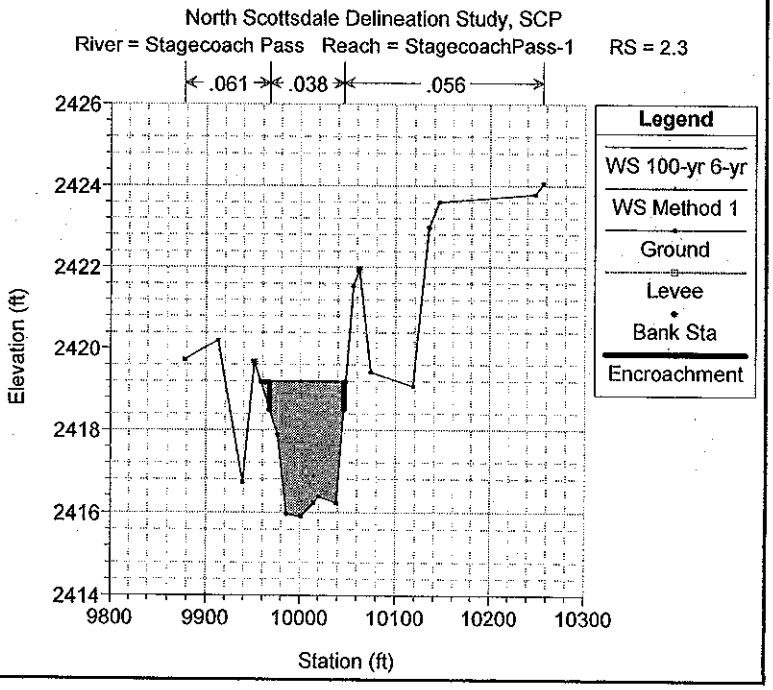

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.495 Culv
.061
.038
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.495 Culv
.061
.038
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

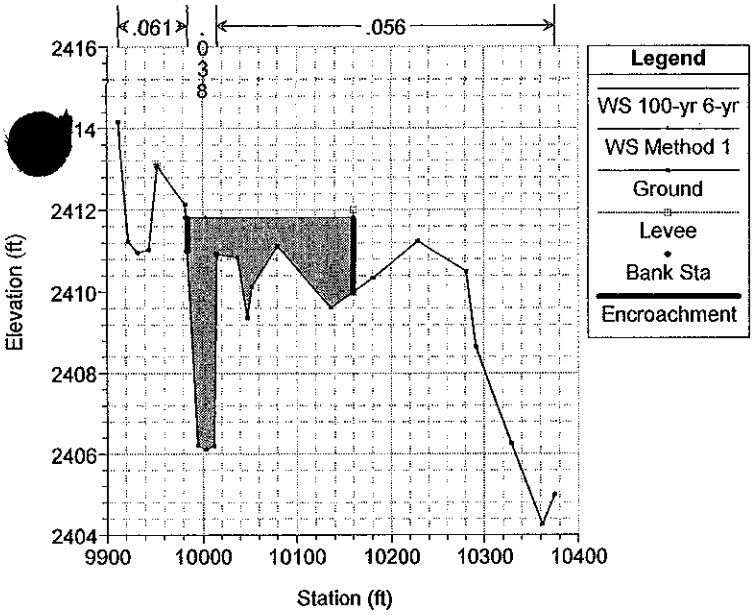

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.49
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.41
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

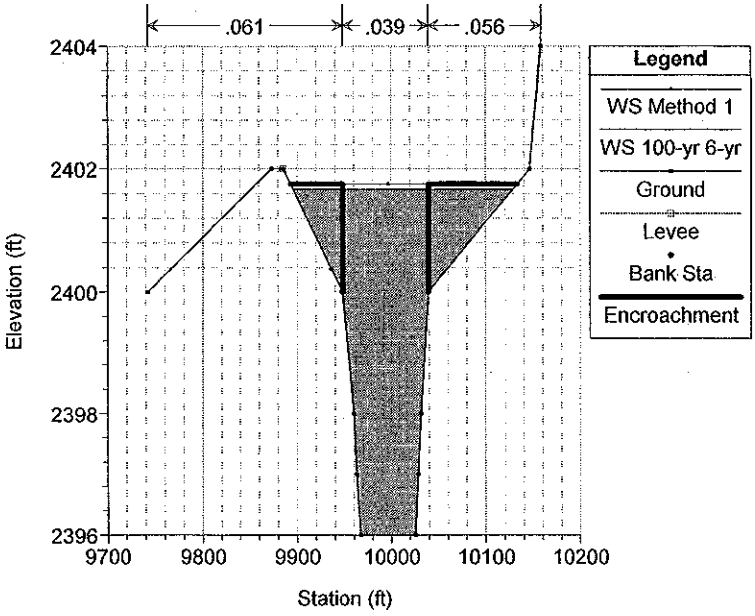

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.36
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.3
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

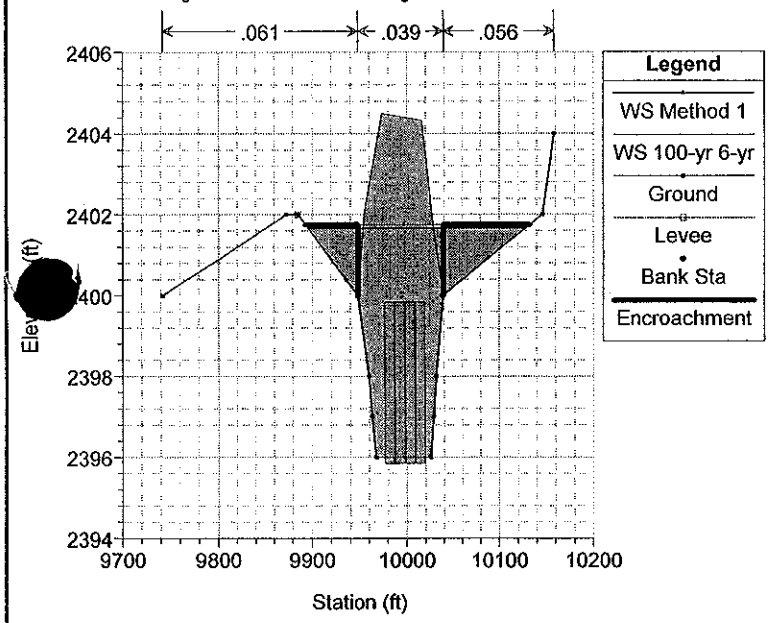
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.23



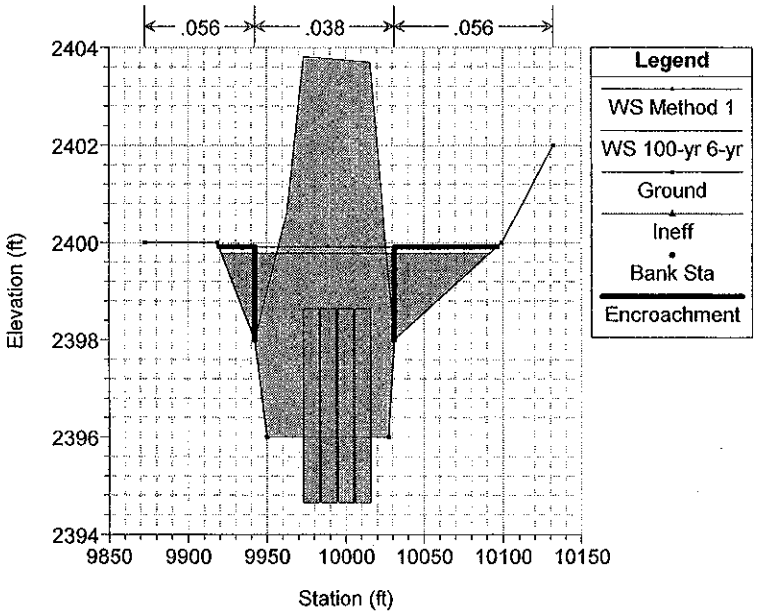
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.15



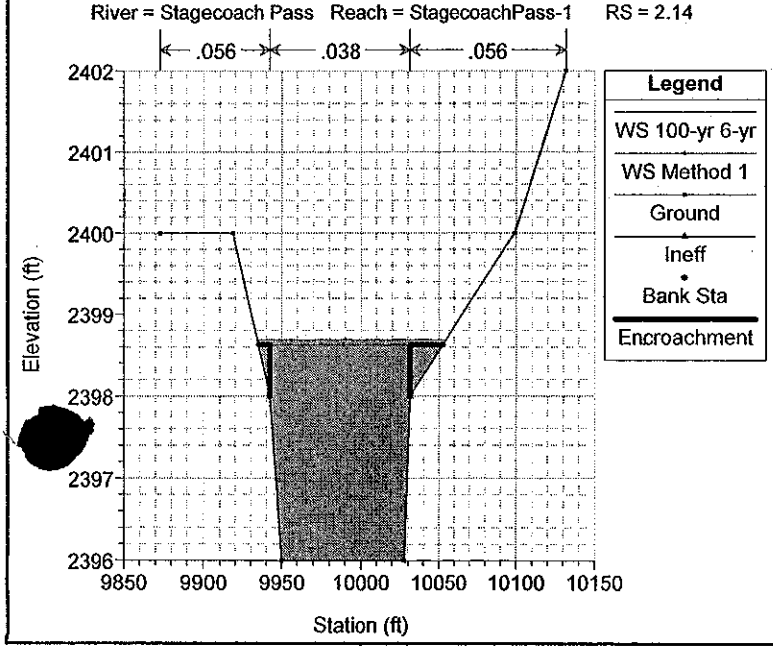
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.145 Culv



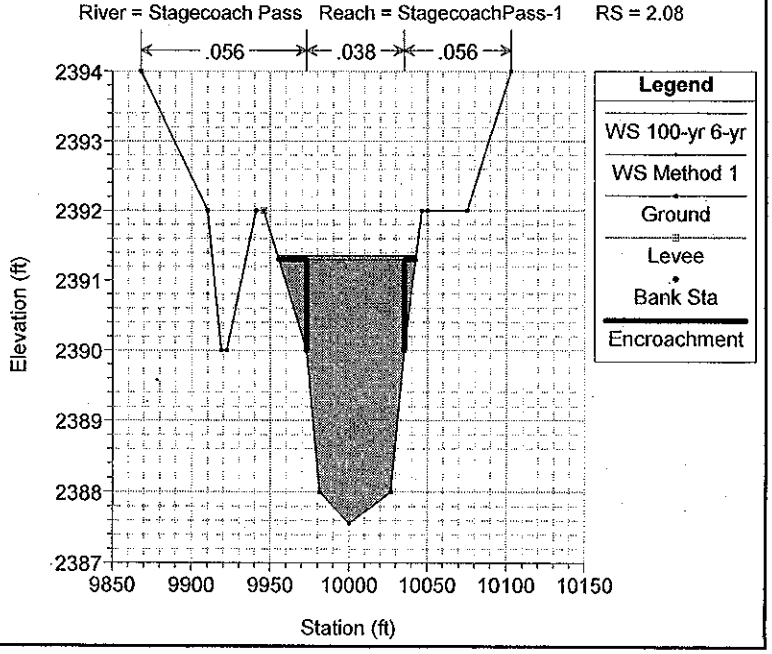
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.145 Culv

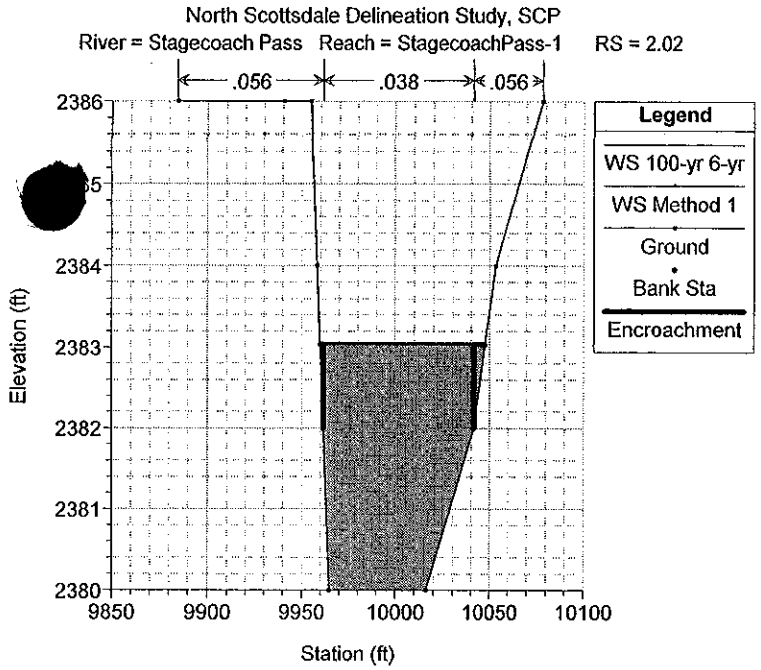


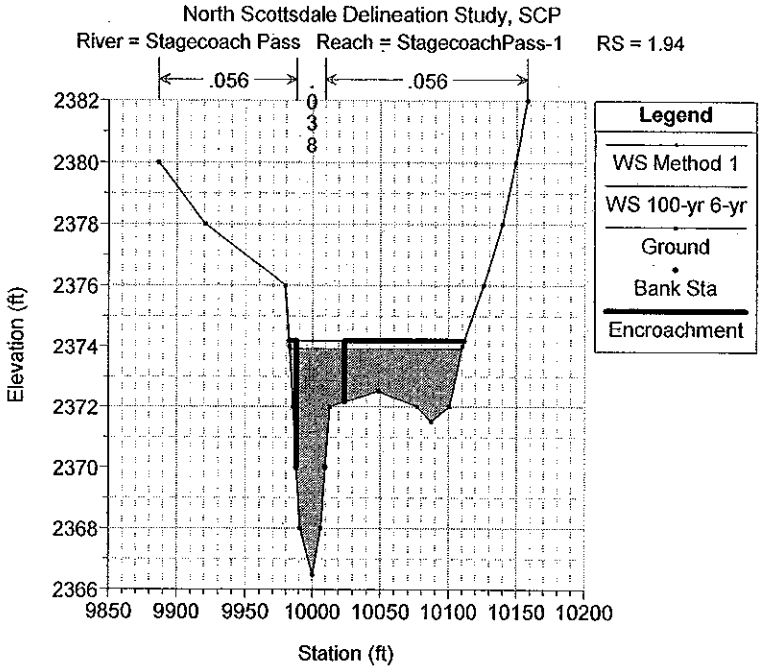
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.14

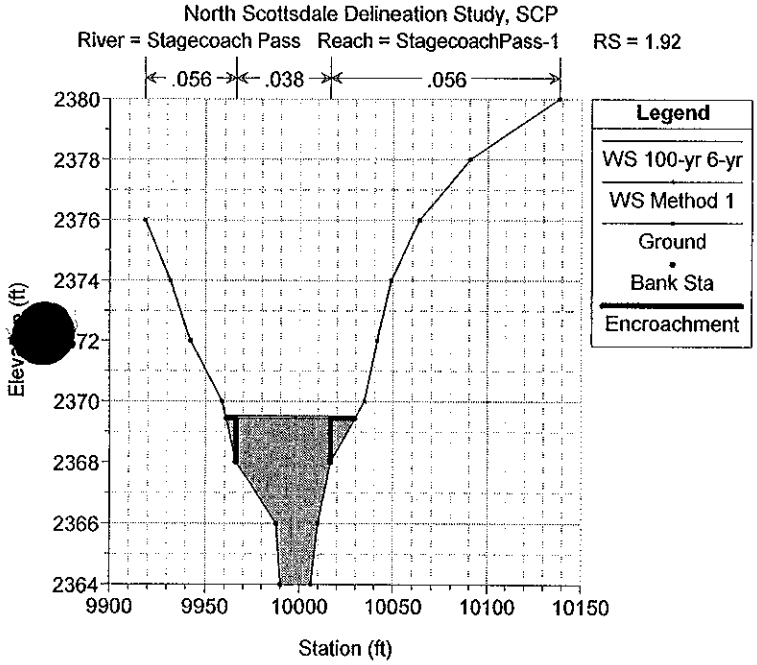


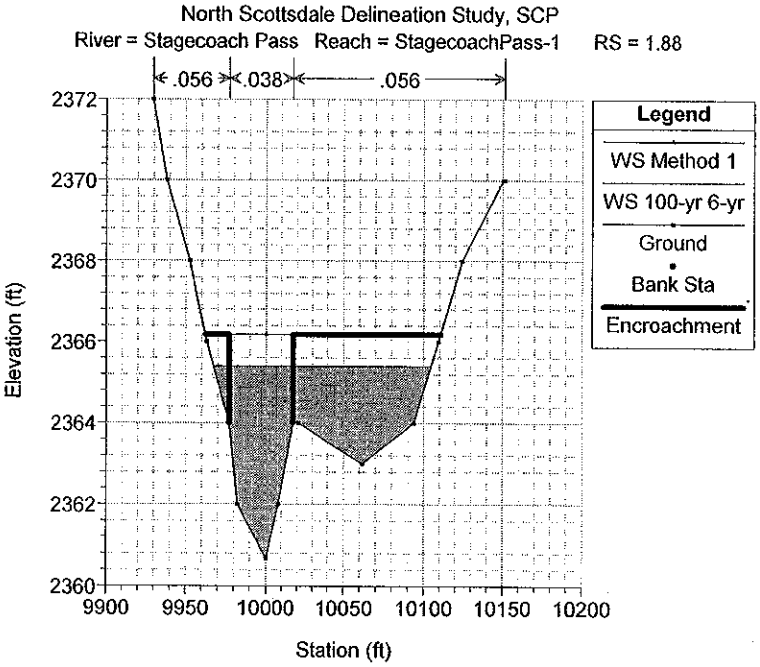
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.08

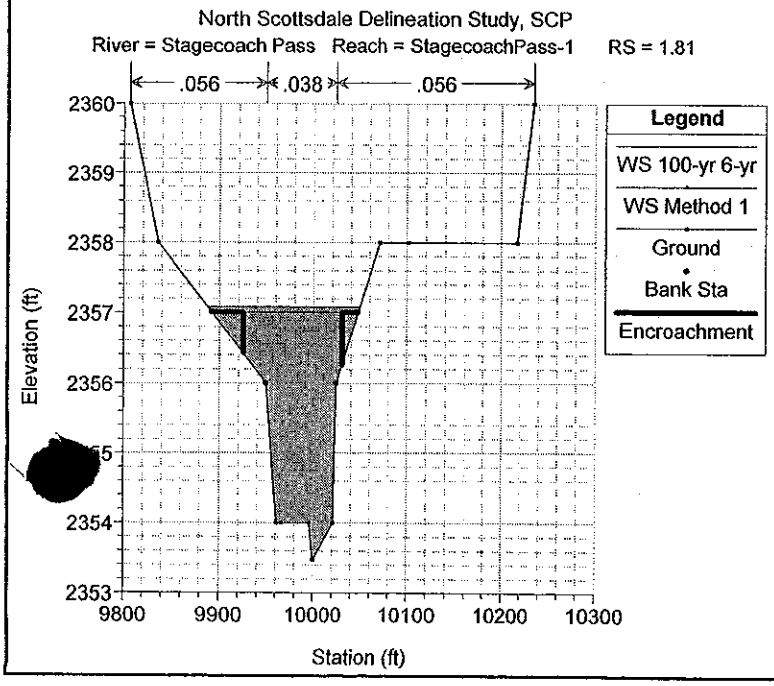


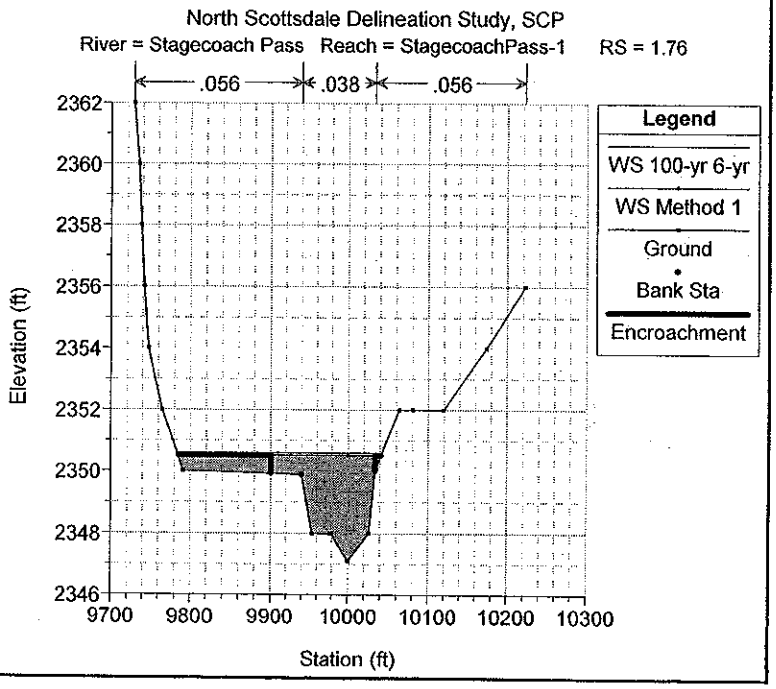

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.02
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

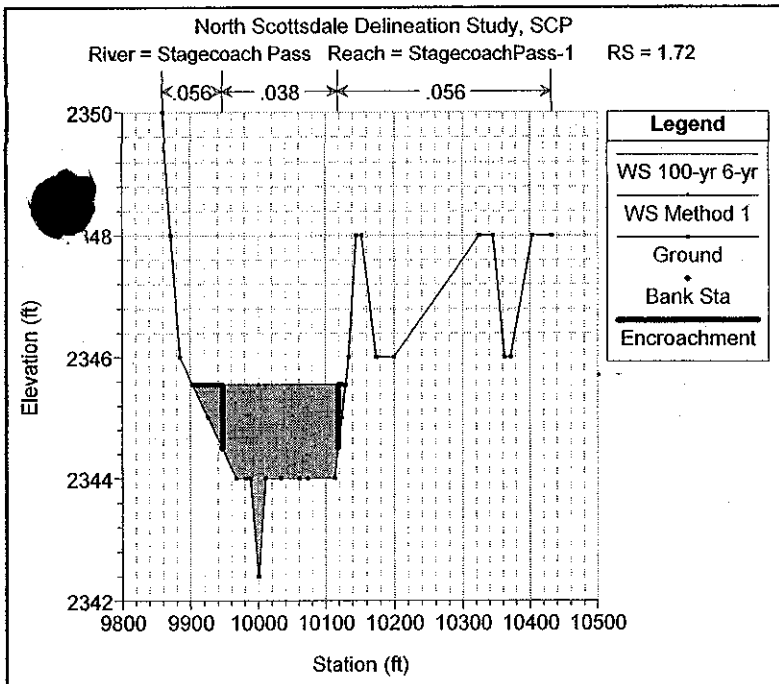

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.94
.056
.038
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

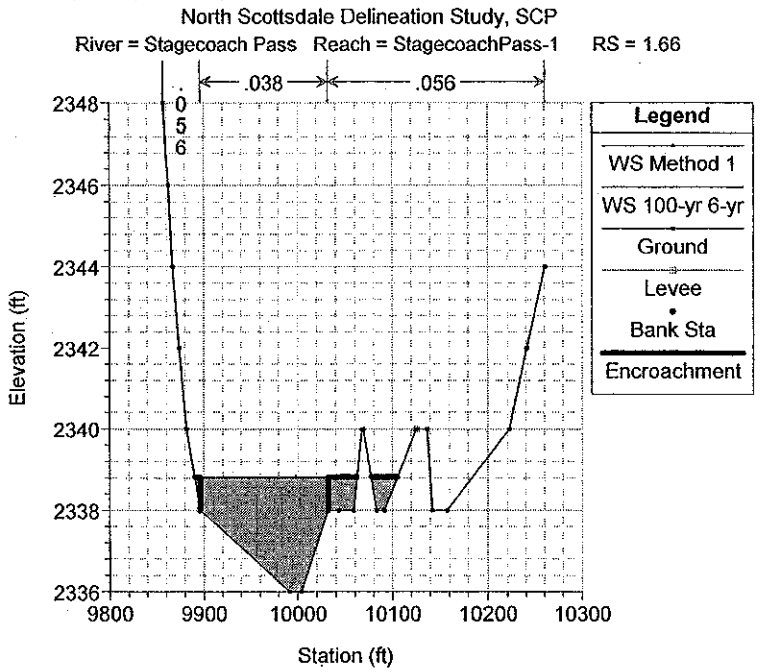

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.92
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Station (ft)

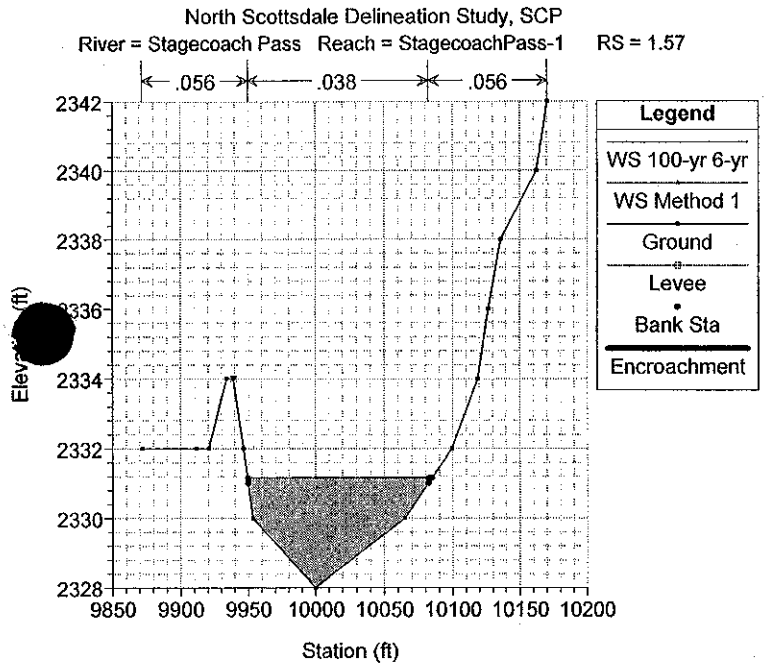

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.88
.056
.038
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

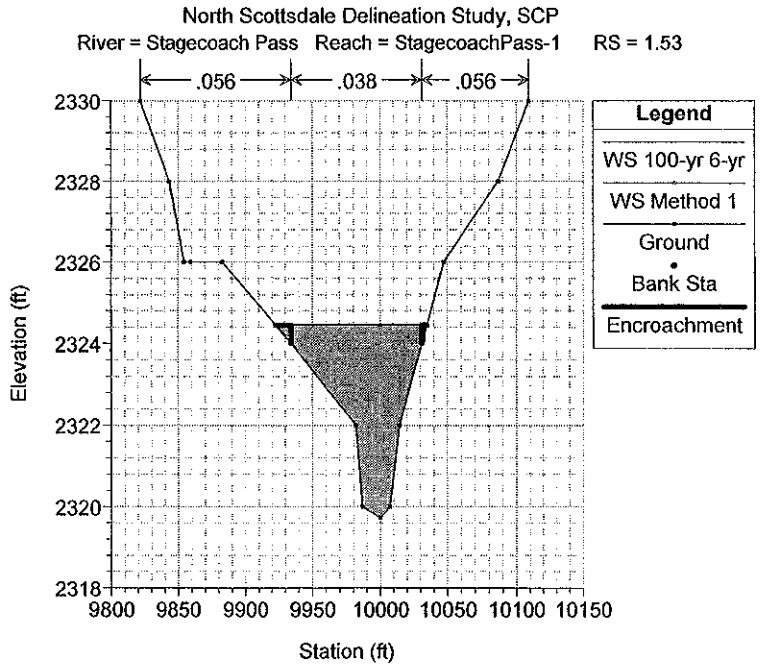

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.81
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

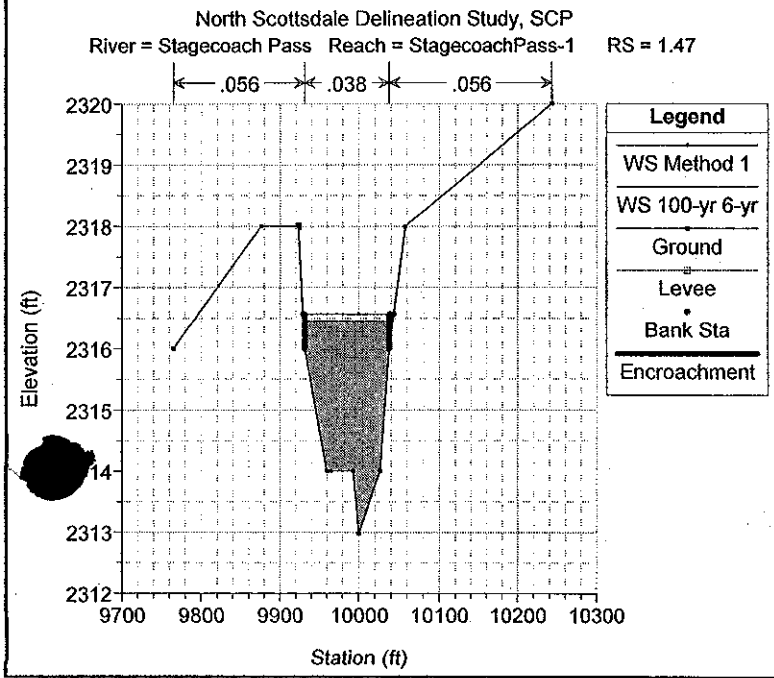

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.76
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

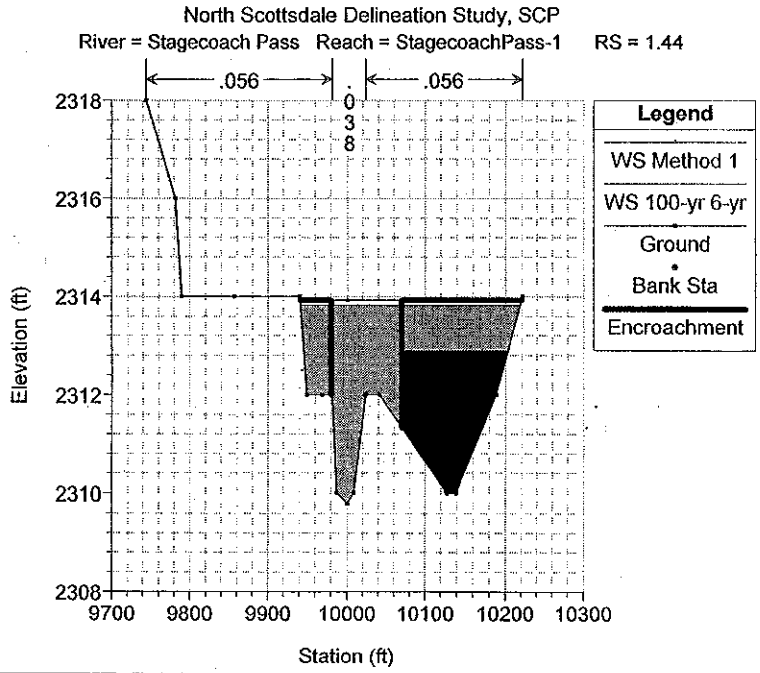

North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.72
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.66
.056
.038
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.57
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.53
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.47
.056
.038
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.44
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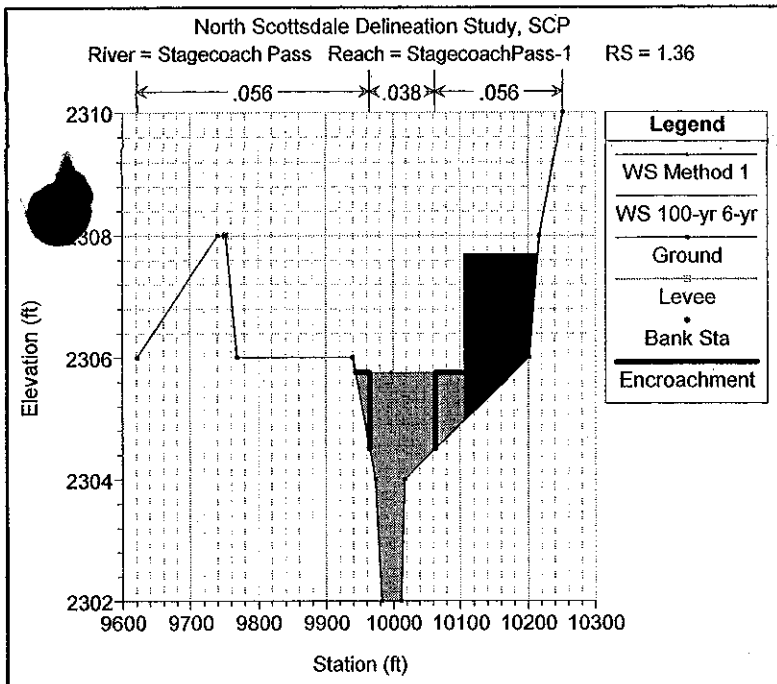
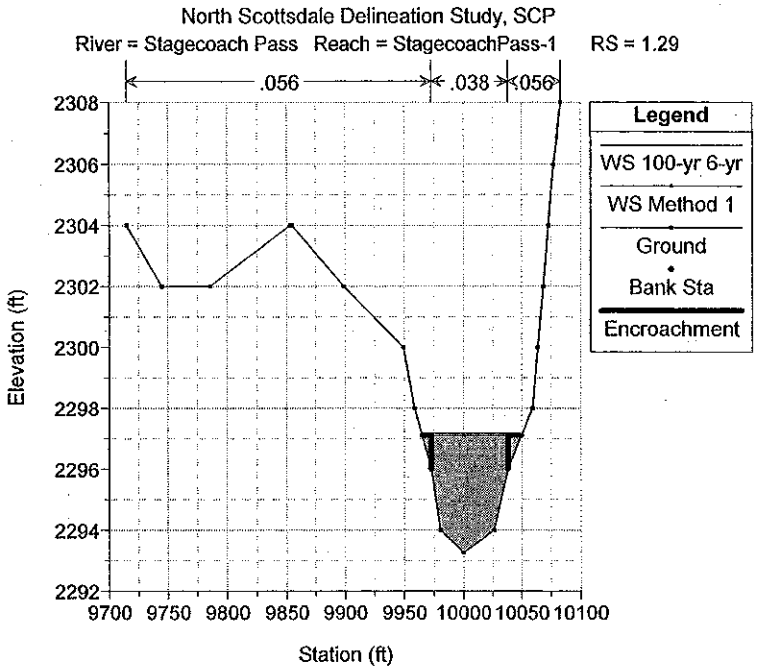
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.36
.056
.038
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.29
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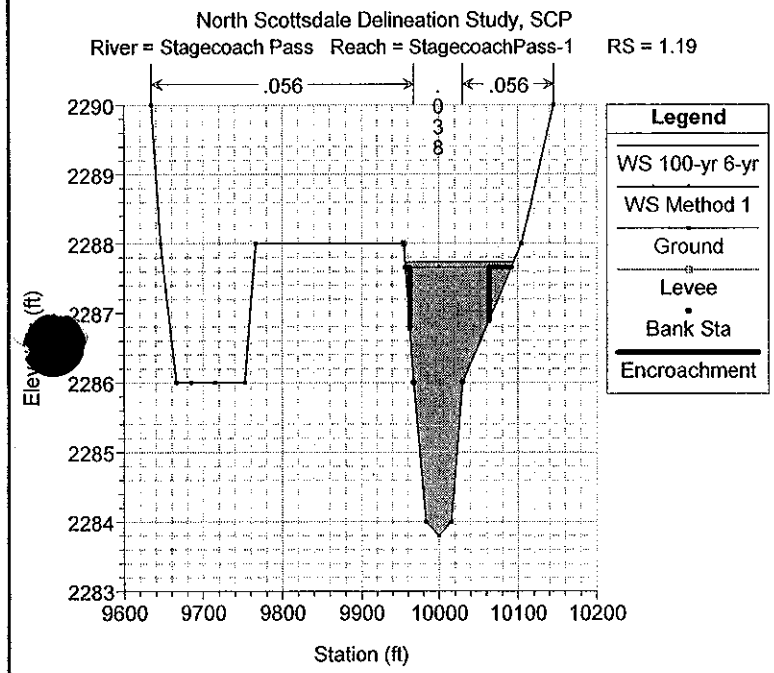
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.19
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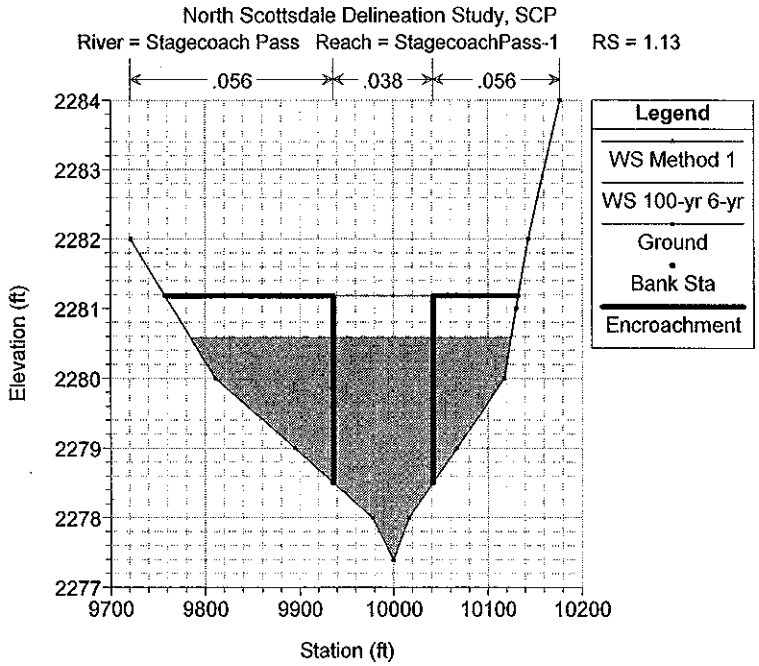
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.13
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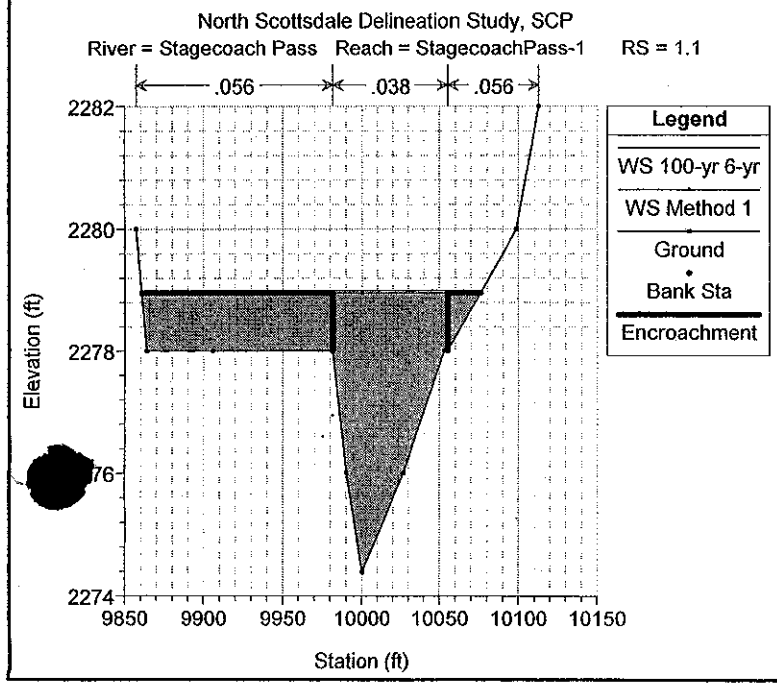
.038
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.1
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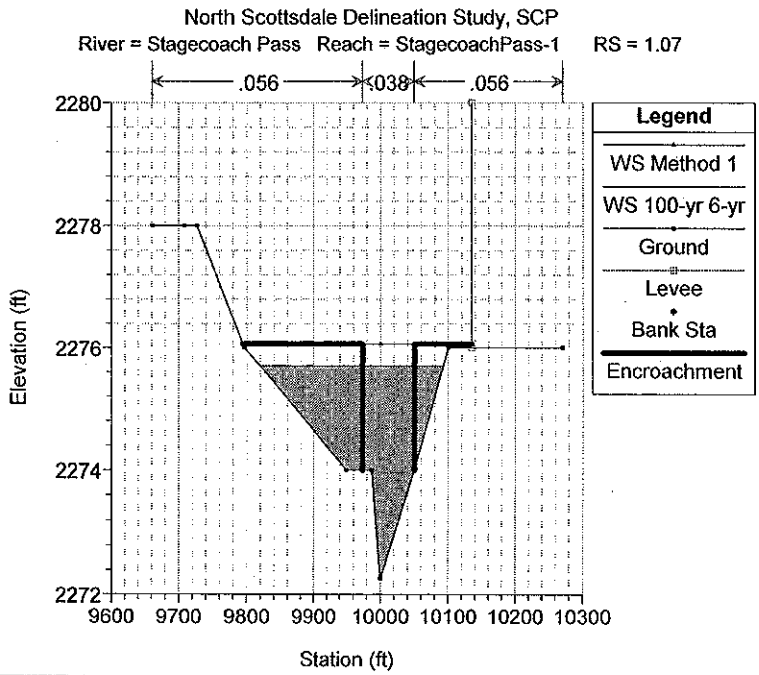
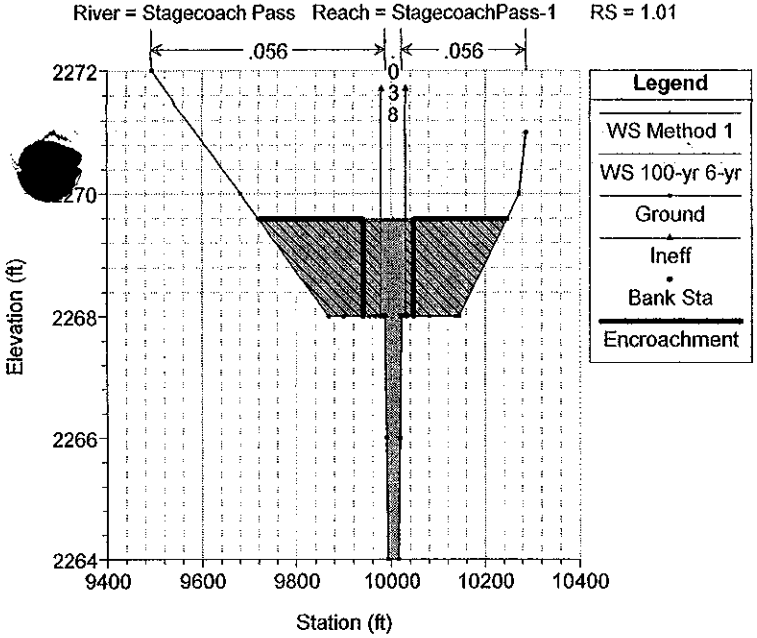
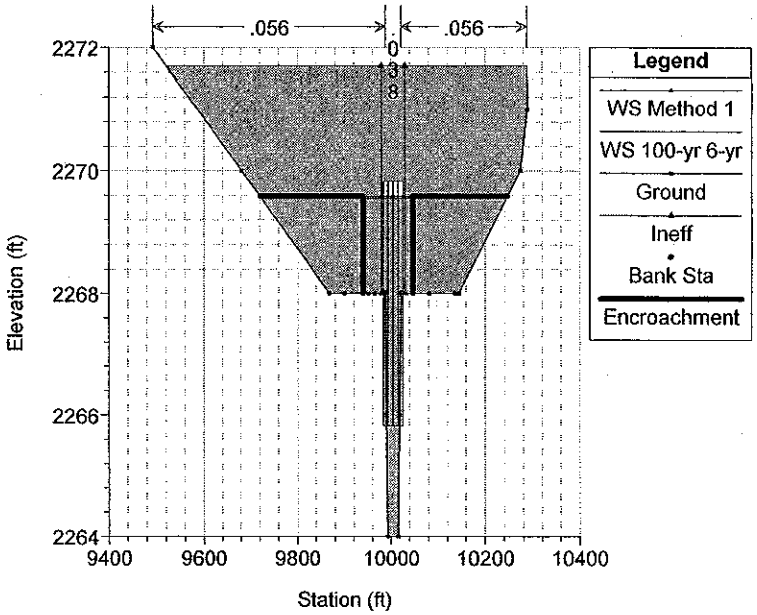
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.07
.056
.038
.056
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

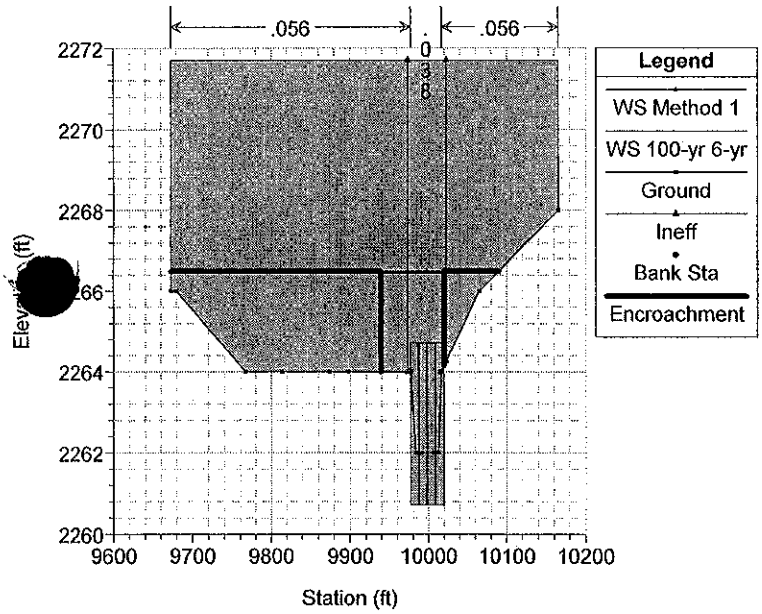
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 1.01



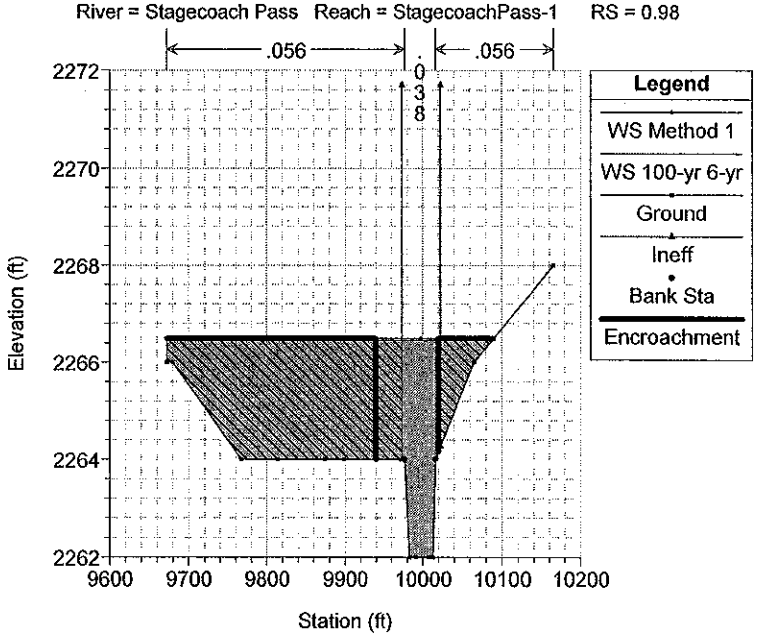
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 0.99 Culv



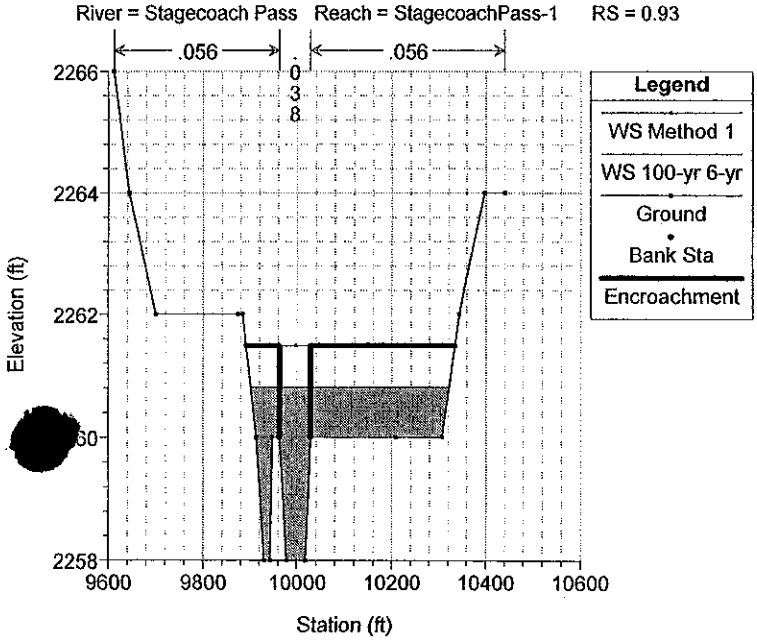
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 0.99 Culv



North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 0.98



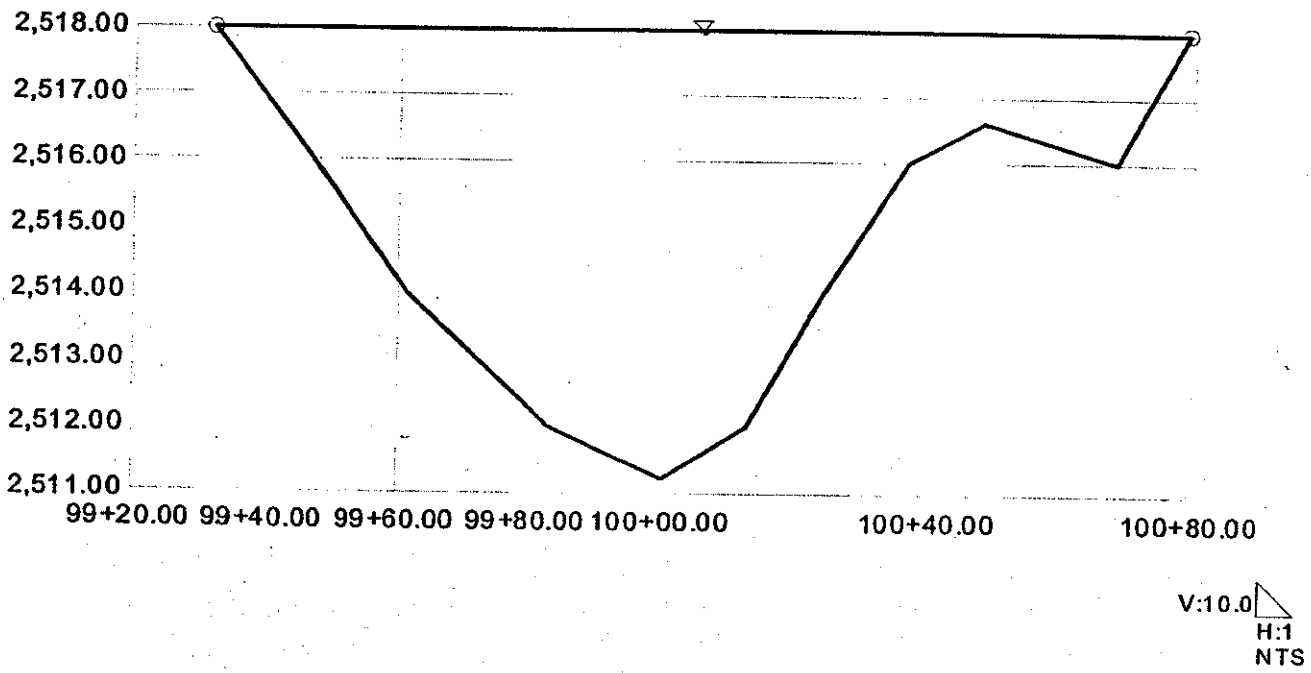
North Scottsdale Delineation Study, SCP
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 0.93



Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUF54
Flow Element	Irregular Chani
Method	Manning's Forr
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.018000	ft/ft
Water Surface Elev	2,518.00	ft
Elevation Range	11.22 to 2,518.00	
Discharge	7,813.91	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RUF52
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	017000	ft/ft
Water Surface Elev	,420.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	13.33 to 2,420.00	
Discharge	14,558.73	cfs
Flow Area	830.8	ft²
Wetted Perimete	185.87	ft
Top Width	185.09	ft
Actual Depth	6.67	ft
Critical Elevation	2,421.28	ft
Critical Slope	0.007488	ft/ft
Velocity	17.52	ft/s
Velocity Head	4.77	ft
Specific Energy	2,424.77	ft
Froude Number	1.46	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
99+04.80	100+89.8	0.030

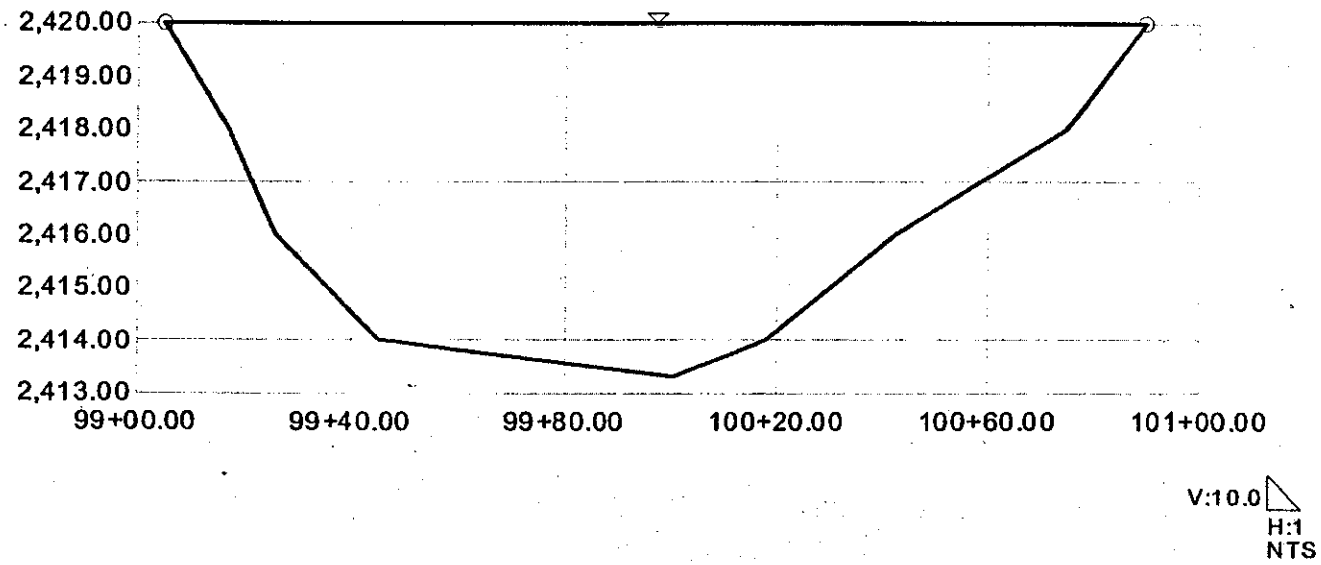
Natural Channel Points

Station (ft)	Elevation (ft)
99+04.80	2,420.00
99+16.93	2,418.00
99+25.74	2,416.00
99+44.99	2,414.00
100+00.00	2,413.33
100+17.78	2,414.00
100+42.54	2,416.00
100+74.40	2,418.00
100+89.89	2,420.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RUF52
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.017000	ft/ft
Water Surface Elev	2,420.00	ft
Elevation Range	13.33 to 2,420.00	
Discharge	14,558.73	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP07B
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	003200	ft/ft
Water Surface Elev	646.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	).00 to 646.00	
Discharge	2,442.13	cfs
Flow Area	404.5	ft²
Wetted Perimete	127.88	ft
Top Width	127.10	ft
Actual Depth	6.00	ft
Critical Elevation	644.73	ft
Critical Slope	0.009513	ft/ft
Velocity	6.04	ft/s
Velocity Head	0.57	ft
Specific Energy	646.57	ft
Froude Number	0.60	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
9+47.00	10+74.10	0.030

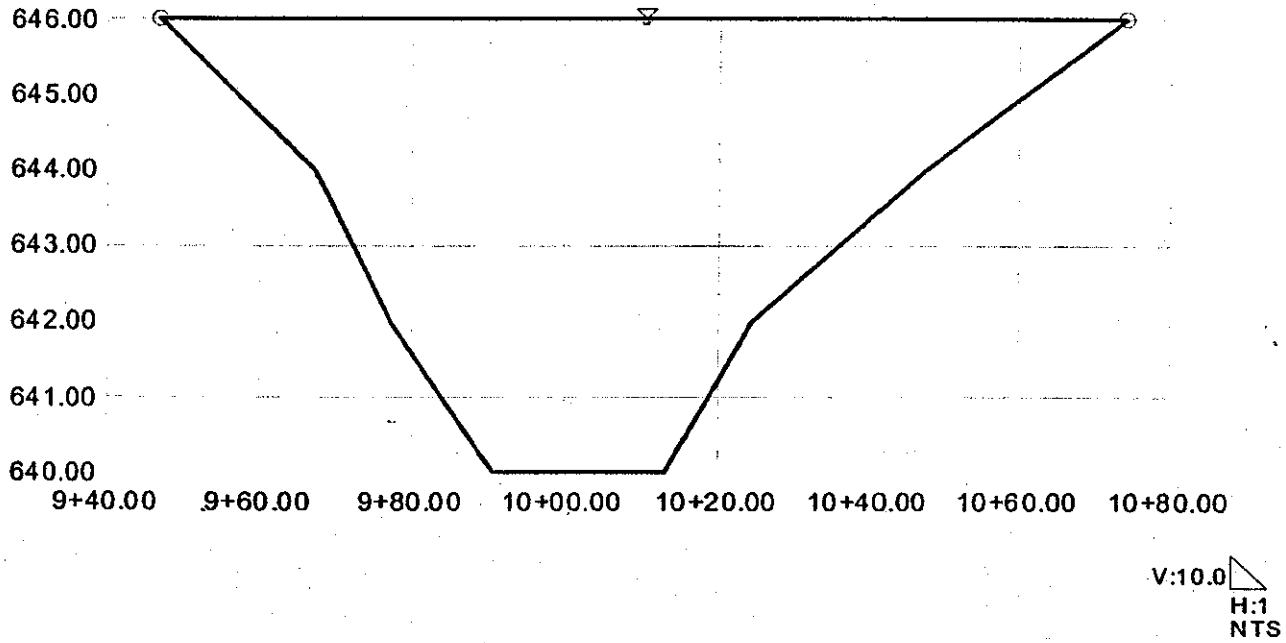
Natural Channel Points

Station (ft)	Elevation (ft)
9+47.00	646.00
9+67.30	644.00
9+77.10	642.00
9+90.70	640.00
10+13.10	640.00
10+24.40	642.00
10+47.50	644.00
10+74.10	646.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP07B
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.003200	ft/ft
Water Surface Elev	646.00	ft
Elevation Range	).00 to 646.00	
Discharge	2,442.13	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP07C
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	003200	ft/ft
Water Surface Elev	640.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	1.00 to 640.00	
Discharge	6,144.47	cfs
Flow Area	891.6	ft²
Wetted Perimete	231.14	ft
Top Width	230.60	ft
Actual Depth	6.00	ft
Critical Elevation	638.80	ft
Critical Slope	0.009134	ft/ft
Velocity	6.89	ft/s
Velocity Head	0.74	ft
Specific Energy	640.74	ft
Froude Number	0.62	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
8+27.00	10+57.60	0.030

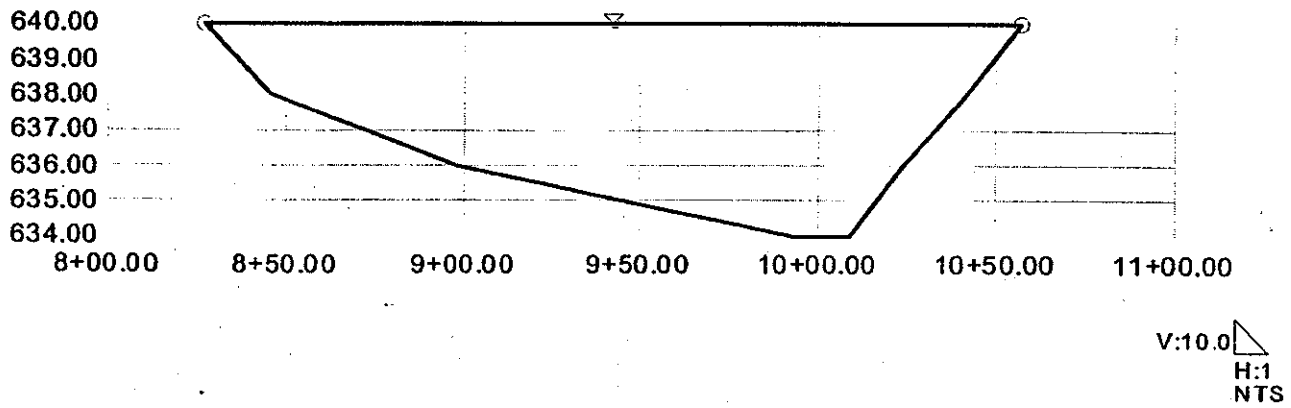
Natural Channel Points

Station (ft)	Elevation (ft)
8+27.00	640.00
8+45.30	638.00
8+98.00	636.00
9+93.50	634.00
10+08.90	634.00
10+24.00	636.00
10+42.10	638.00
10+57.60	640.00

Cross Section
Cross Section for Irregular Channel

Project Description	
Worksheet	RSCP07C
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Section Data		
Mannings Coefficie	0.030	
Slope	0.003200	ft/ft
Water Surface Elev	640.00	ft
Elevation Range	1.00 to 640.00	
Discharge	6,144.47	cfs



Worksheet
Worksheet for Irregular Channel

Project Description	
Worksheet	RSCP07D
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

Input Data		
Slope	003200	ft/ft
Water Surface Elev	619.00	ft

Options	
Current Roughness Meth	ved Lotter's Method
Open Channel Weighting	ved Lotter's Method
Closed Channel Weightin	Horton's Method

Results		
Mannings Coeffic	0.030	
Elevation Range	1.00 to 620.00	
Discharge	1,169.87	cfs
Flow Area	219.1	ft²
Wetted Perimete	83.29	ft
Top Width	82.10	ft
Actual Depth	5.00	ft
Critical Elevation	617.79	ft
Critical Slope	0.010136	ft/ft
Velocity	5.34	ft/s
Velocity Head	0.44	ft
Specific Energy	619.44	ft
Froude Number	0.58	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
9+56.30	10+44.80	0.030

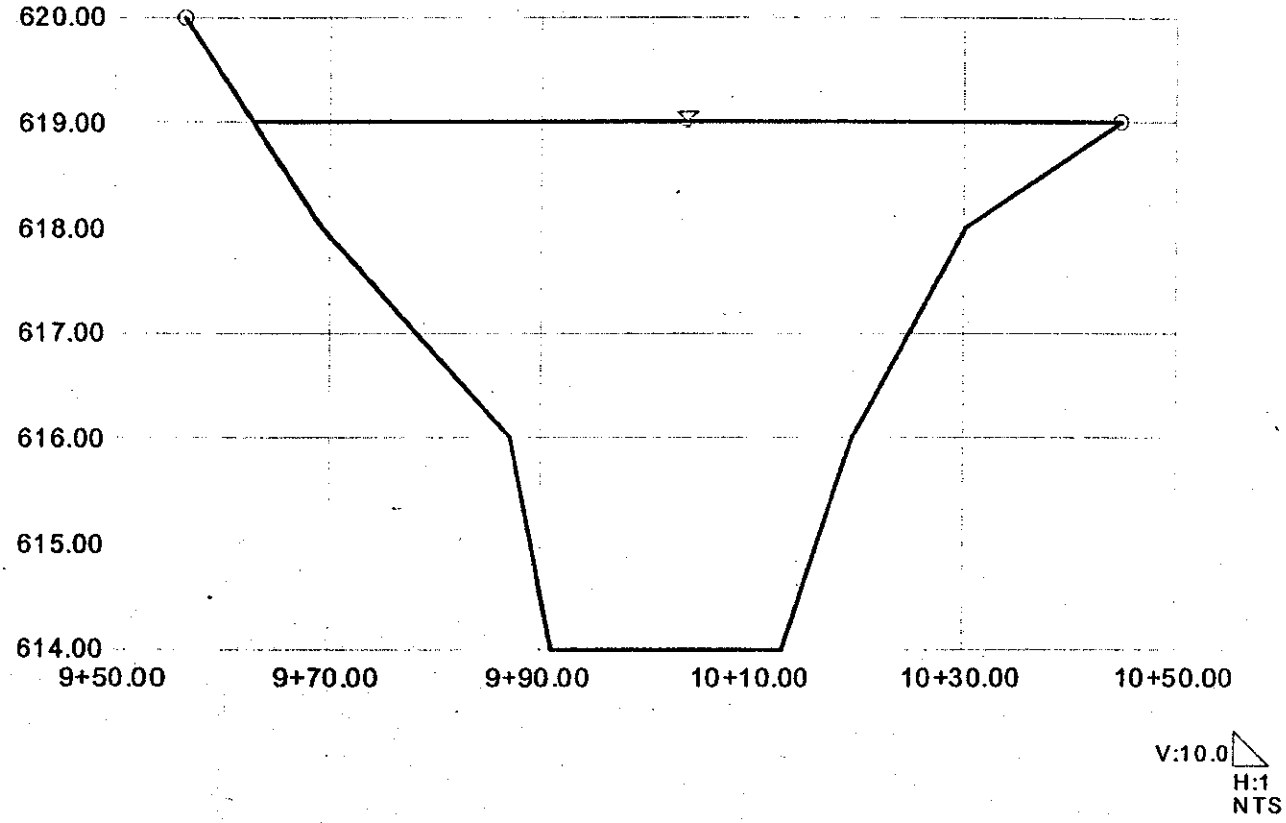
Natural Channel Points

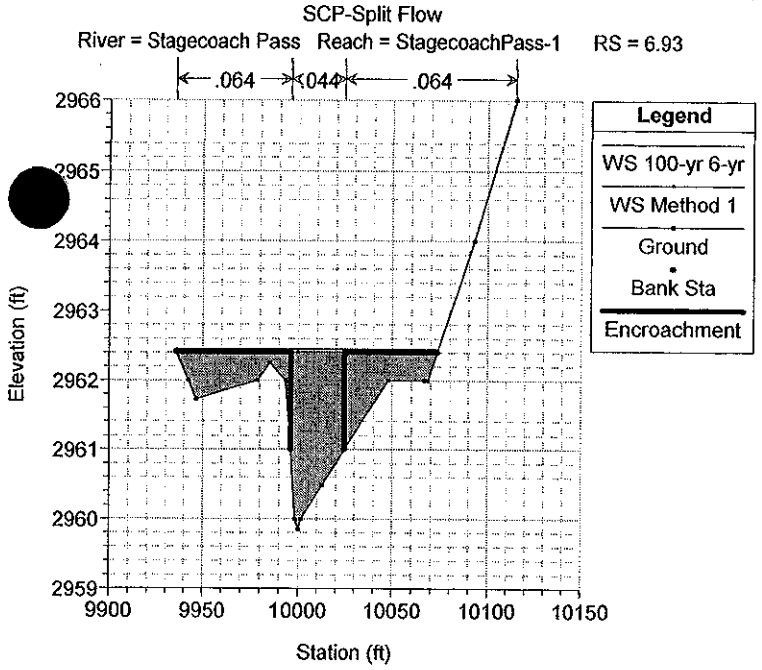
Station (ft)	Elevation (ft)
9+56.30	620.00
9+69.10	618.00
9+87.20	616.00
9+91.10	614.00
10+12.90	614.00
10+19.50	616.00
10+30.20	618.00
10+44.80	619.00

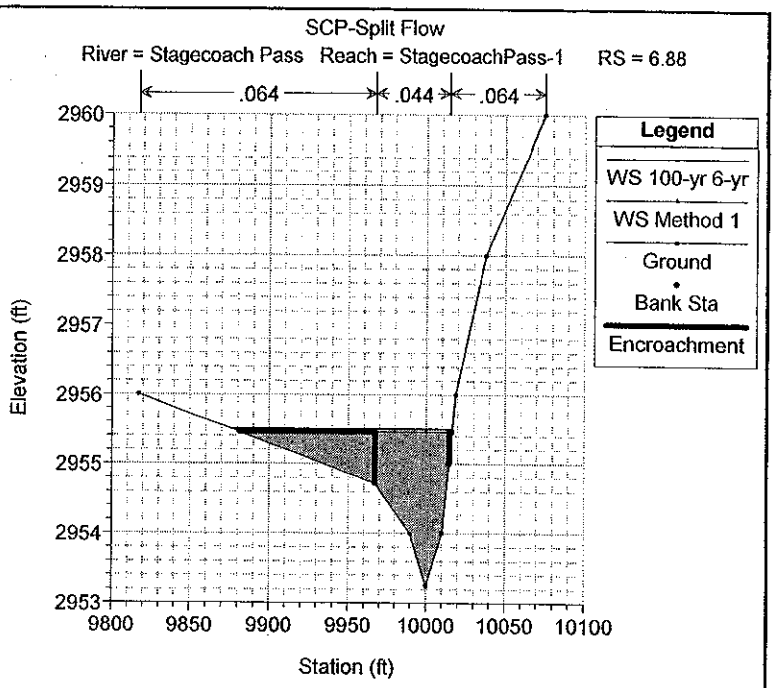
Cross Section
Cross Section for Irregular Channel

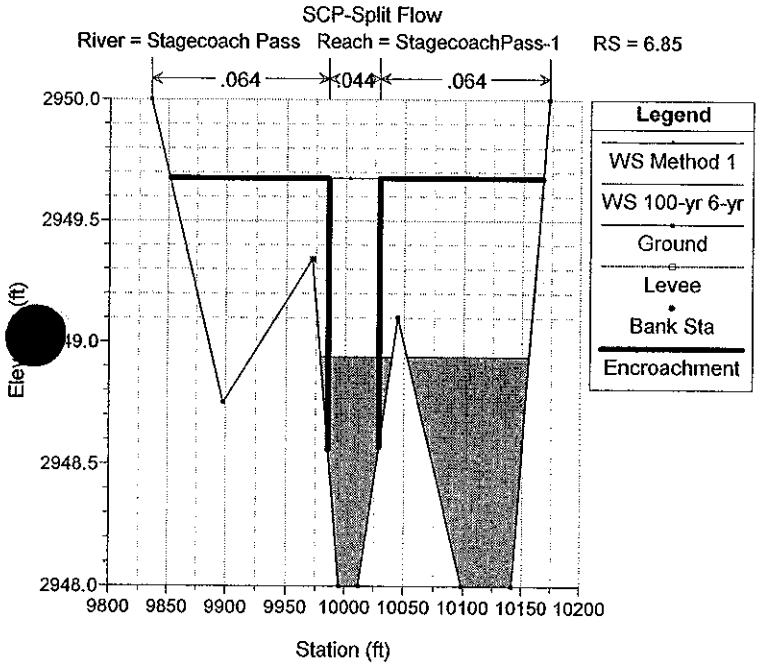
Project Description	
Worksheet	RSCP07D
Flow Element	Irregular Chan
Method	Manning's For
Solve For	Discharge

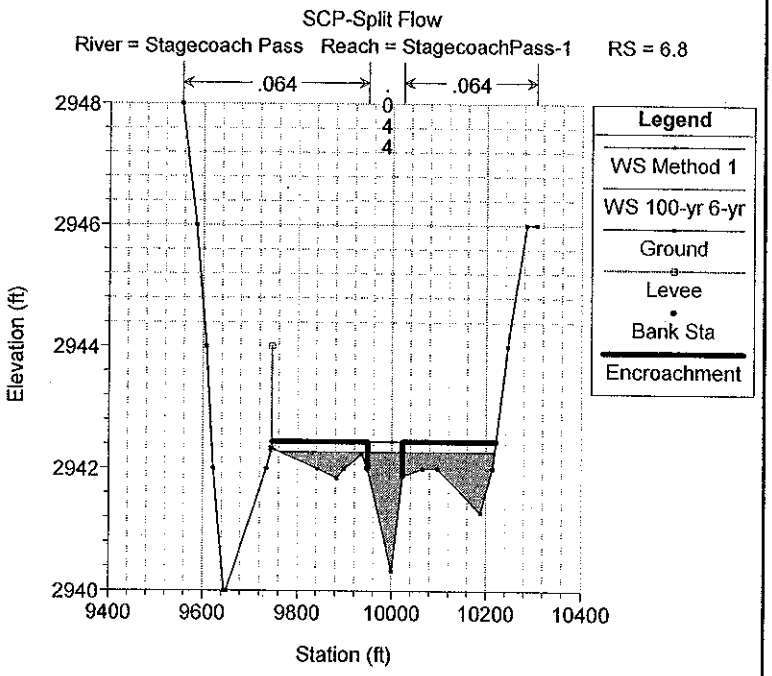
Section Data		
Mannings Coefficie	0.030	
Slope	0.003200	ft/ft
Water Surface Elev	619.00	ft
Elevation Range	1.00 to 620.00	
Discharge	1,169.87	cfs

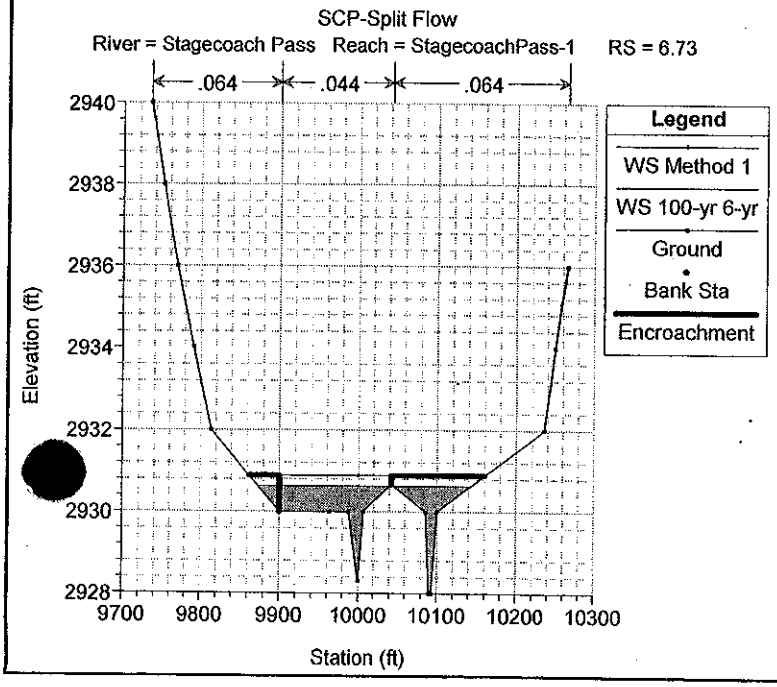


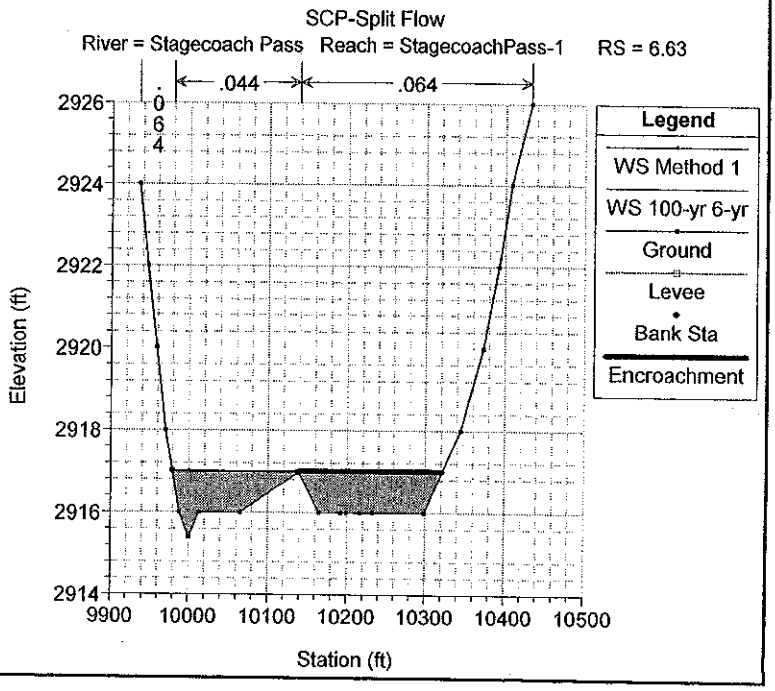

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.93
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

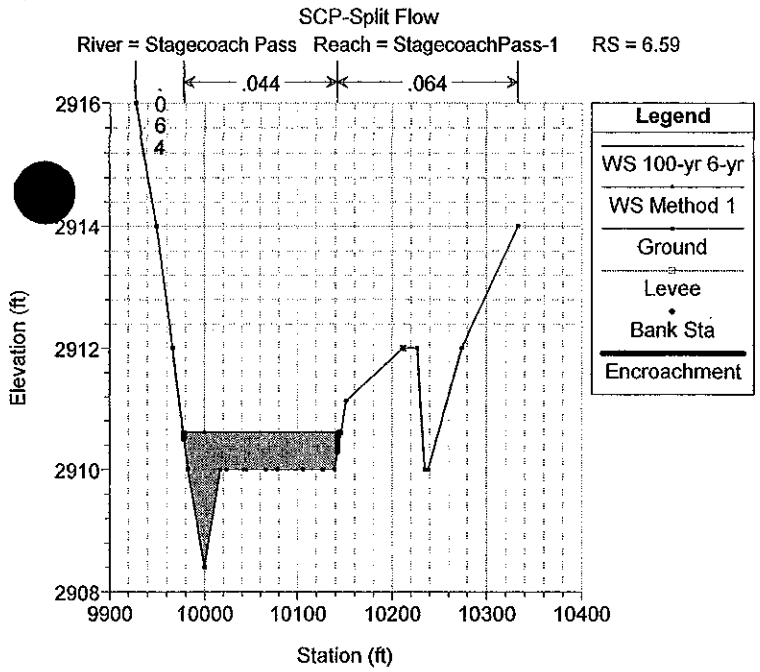

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.88
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

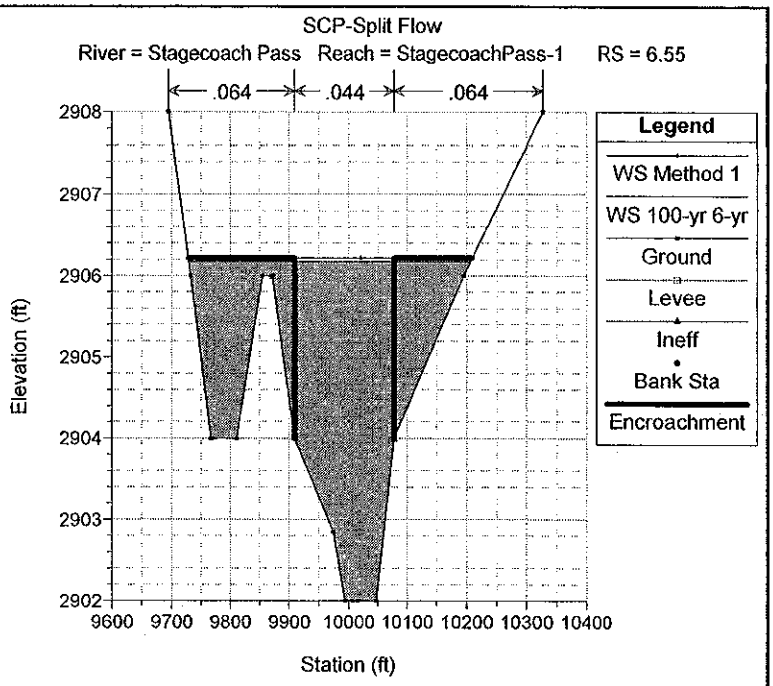

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.85
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

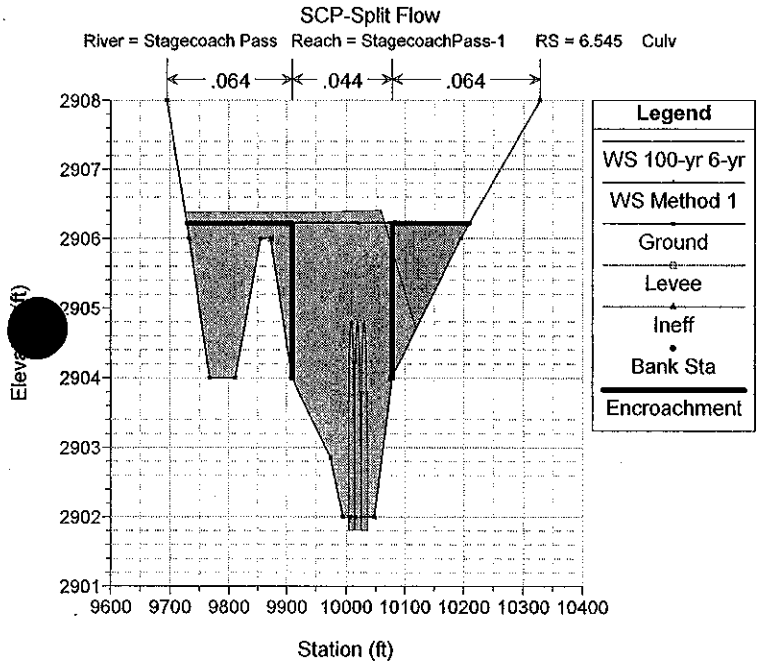

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.8
.064
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

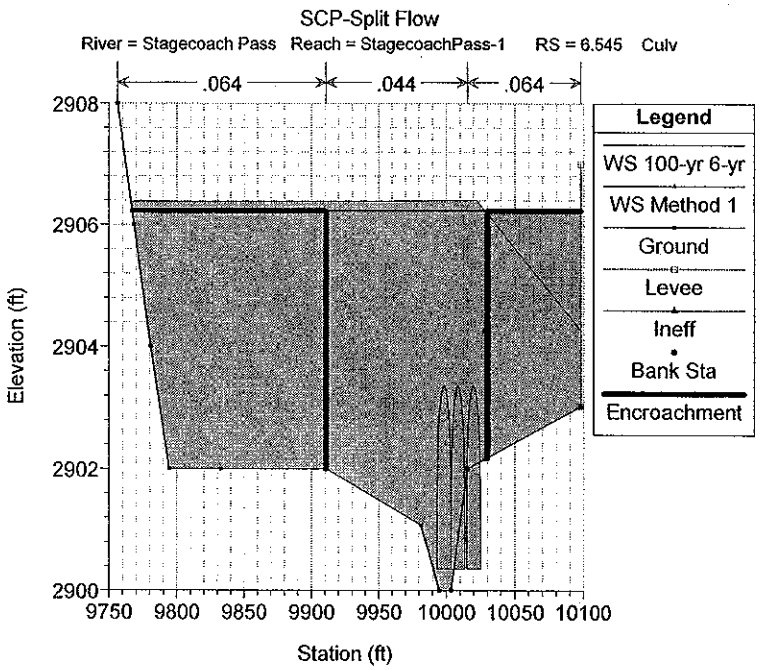

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.73
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

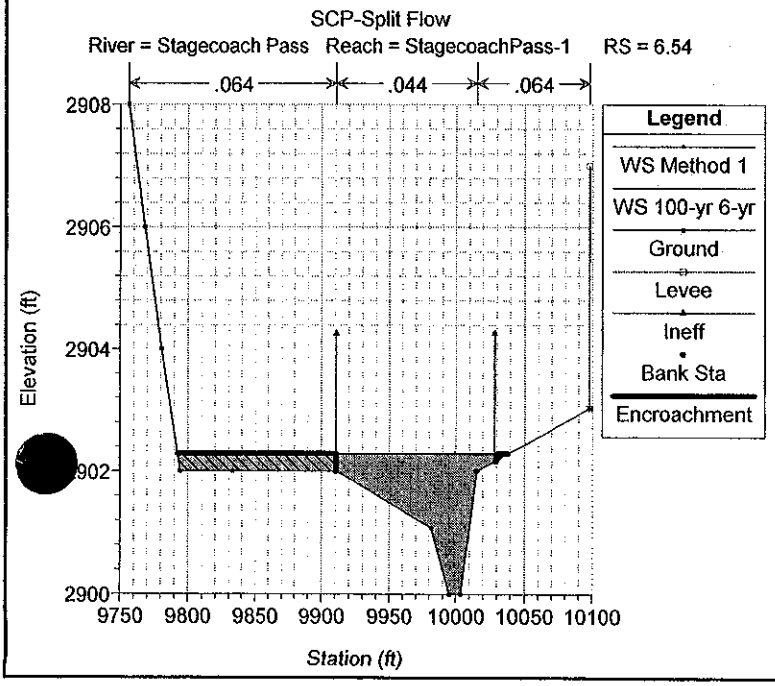

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.63
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

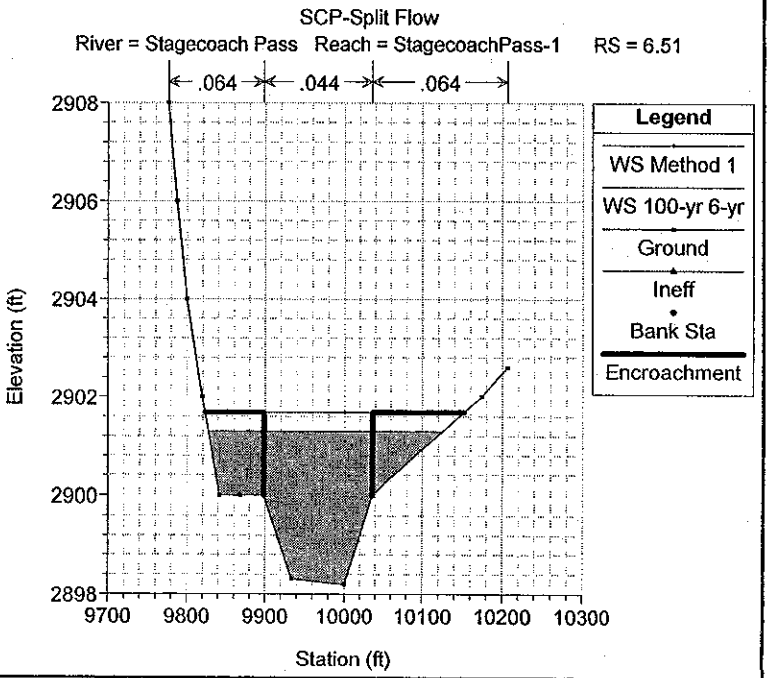

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.59
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

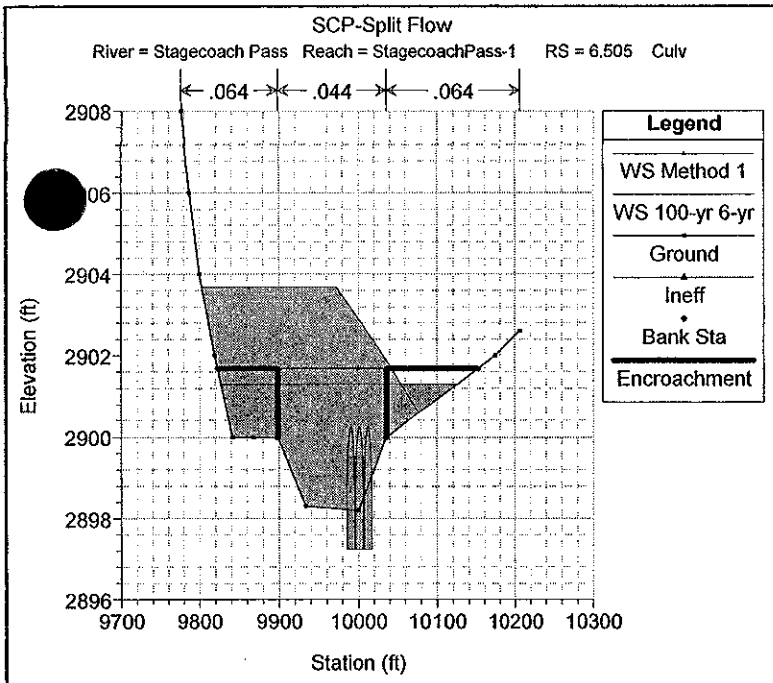

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.55
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

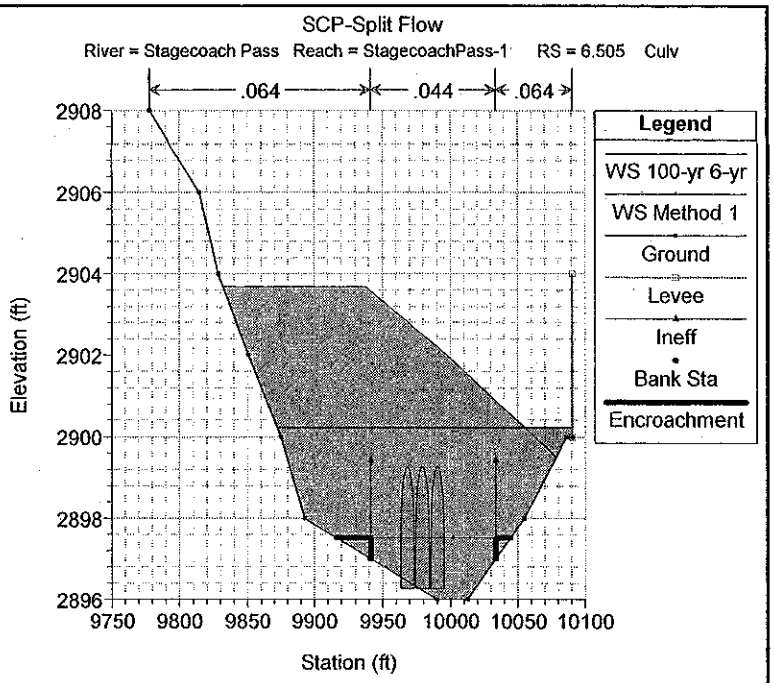

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.545 Culv
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Station (ft)

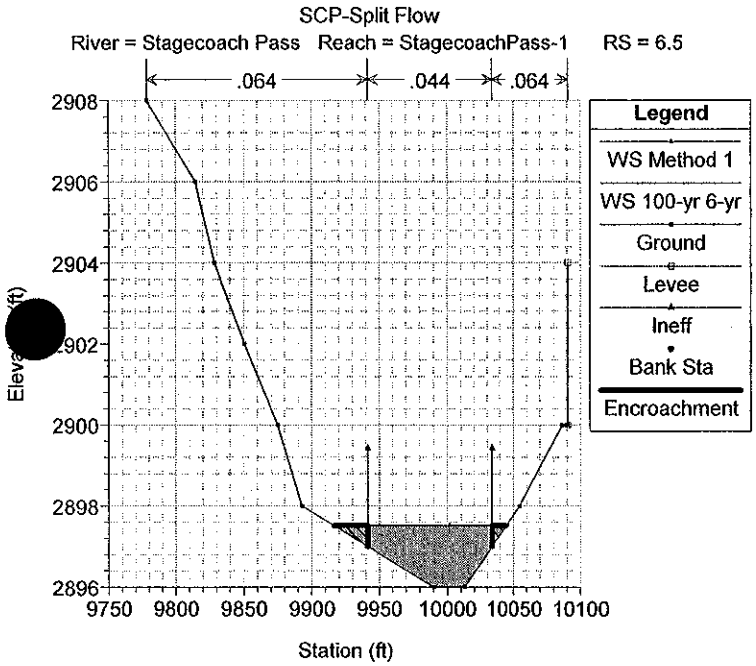

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.545 Culv
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

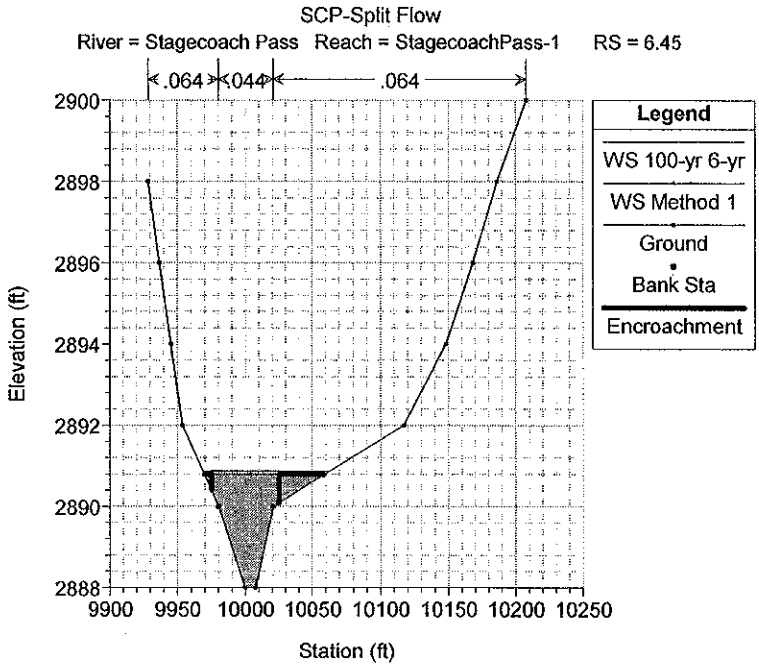

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.54
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

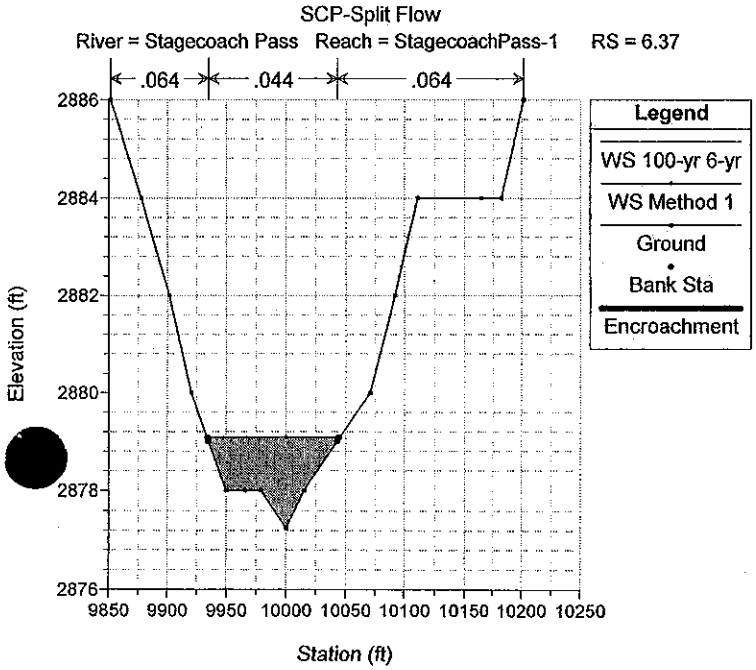

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.51
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

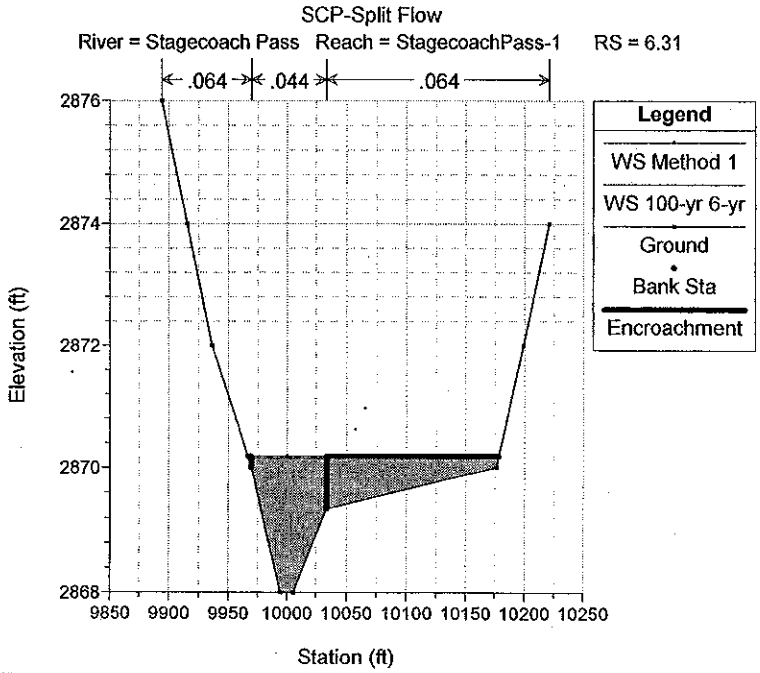

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.505 Culv
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

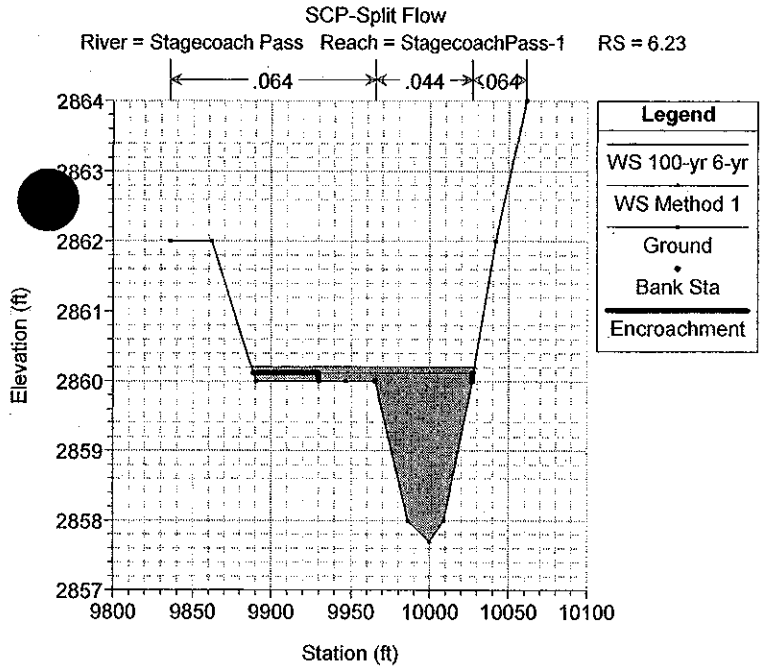

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.505 Culv
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

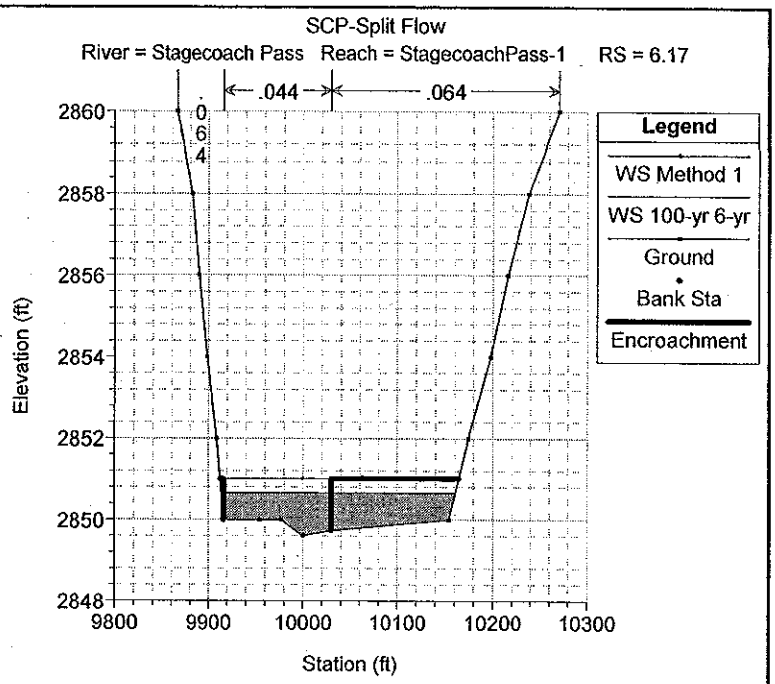

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.5
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Station (ft)

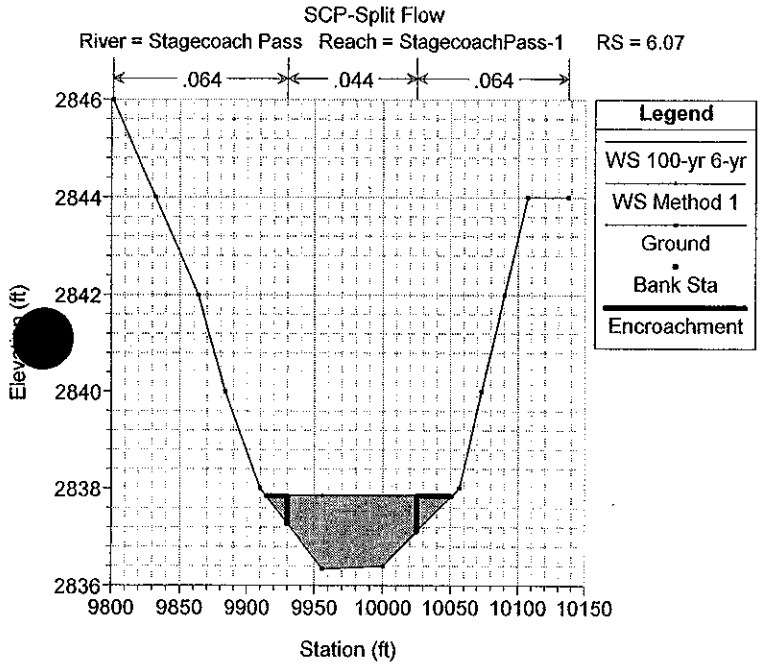

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.45
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

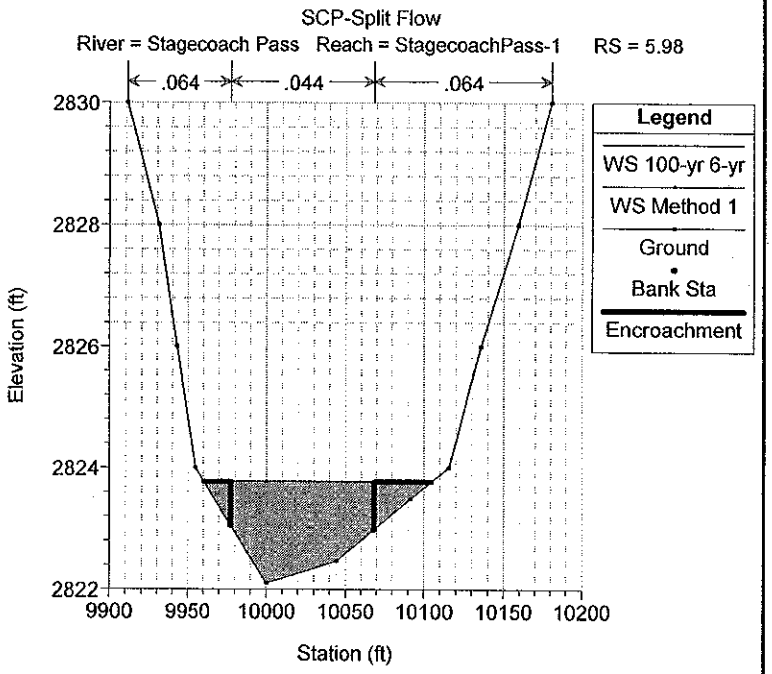

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.37
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

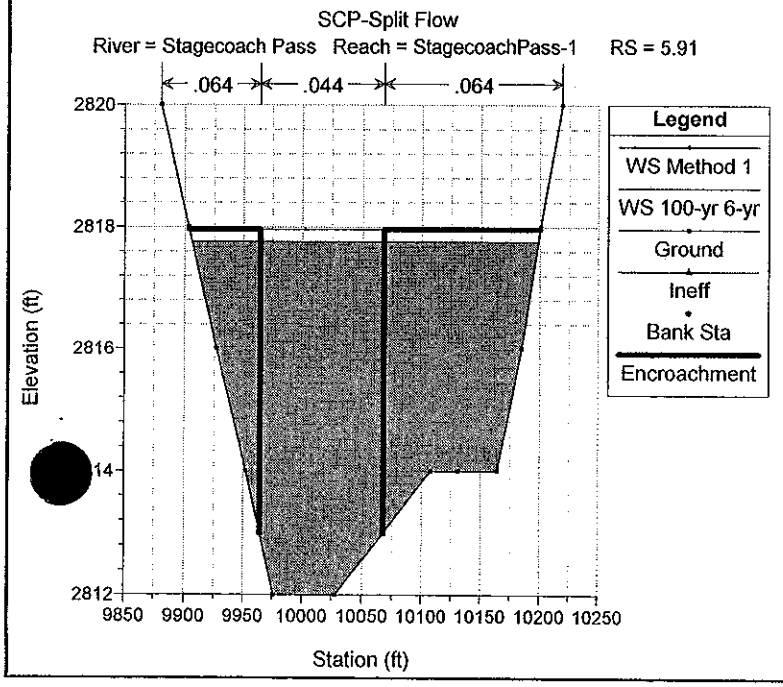

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.31
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

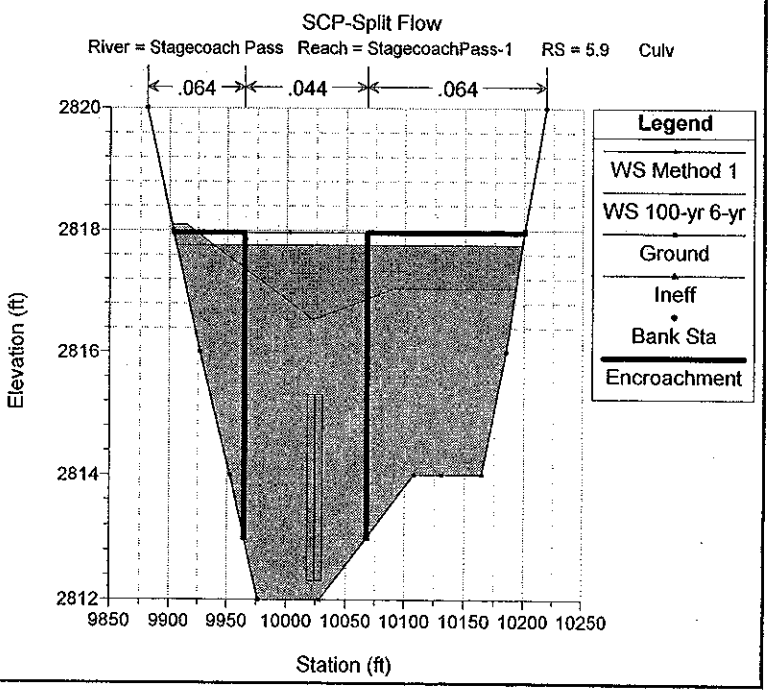

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.23
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

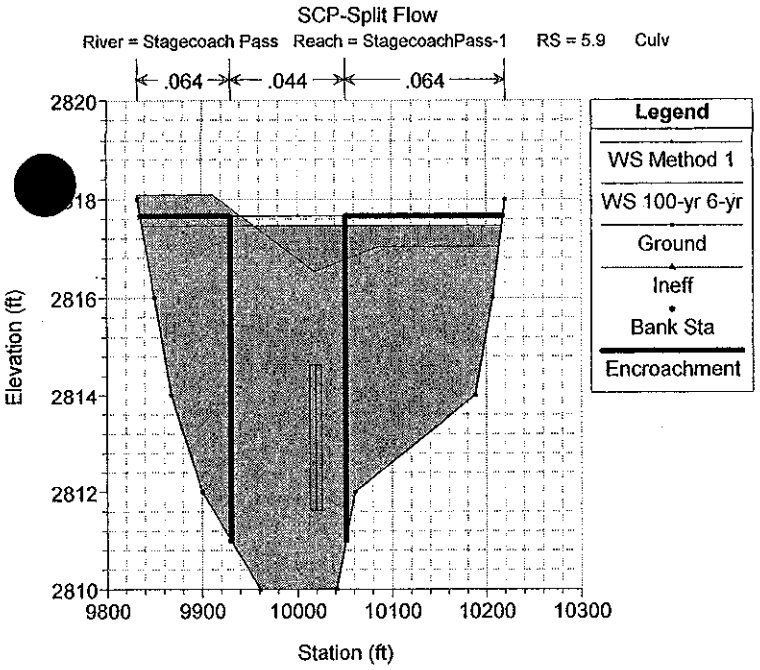

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.17
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

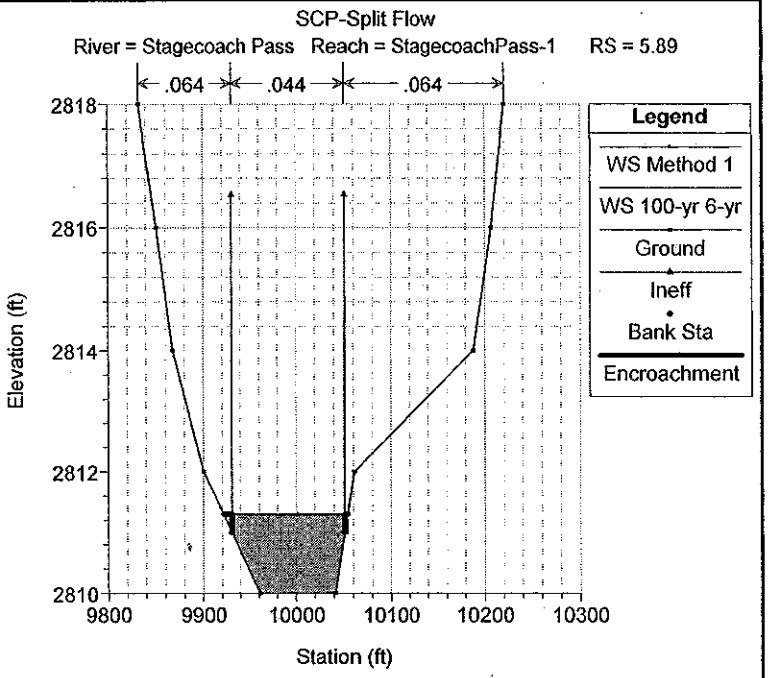

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 6.07
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Station (ft)

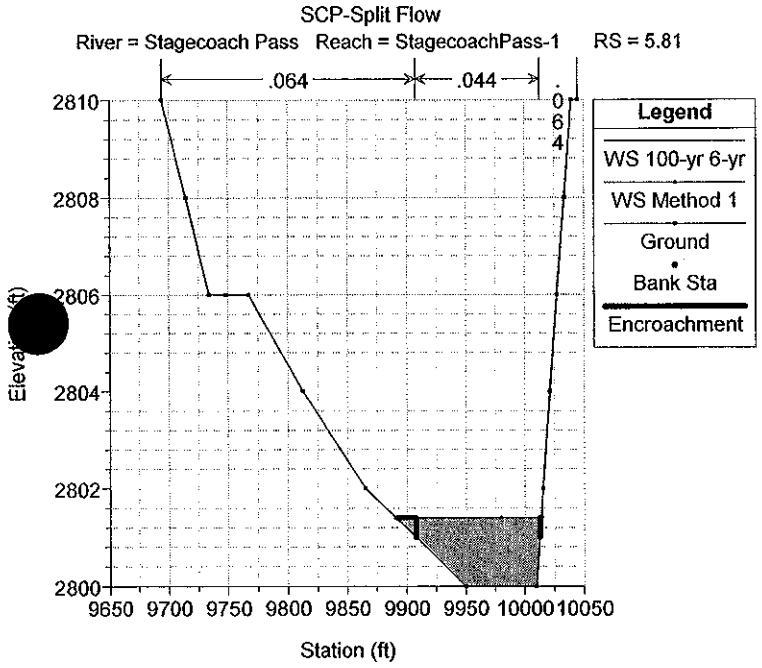

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.98
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

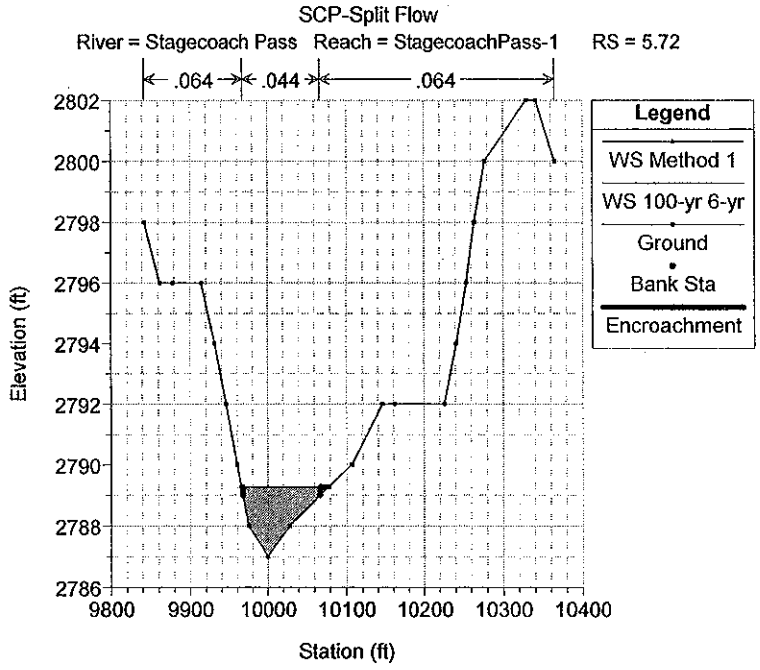

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.91
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

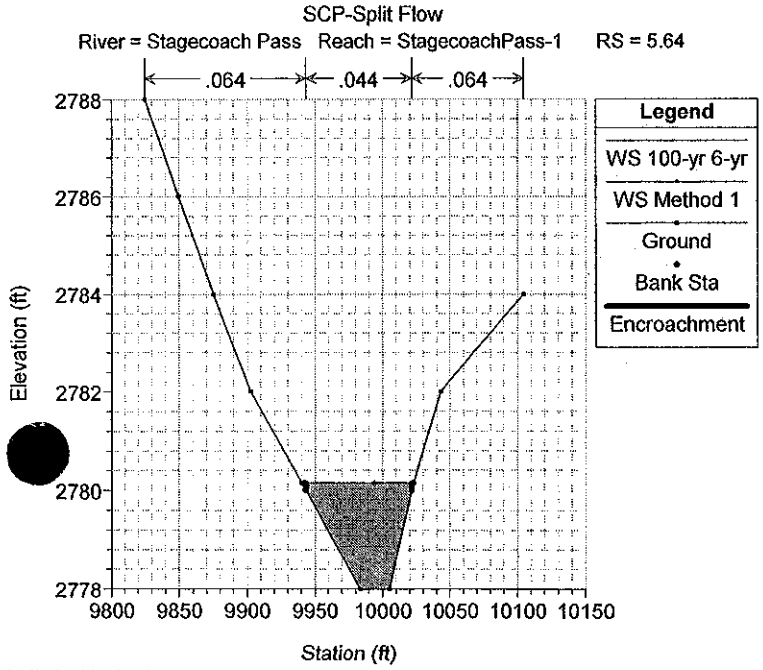

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.9 Culv
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

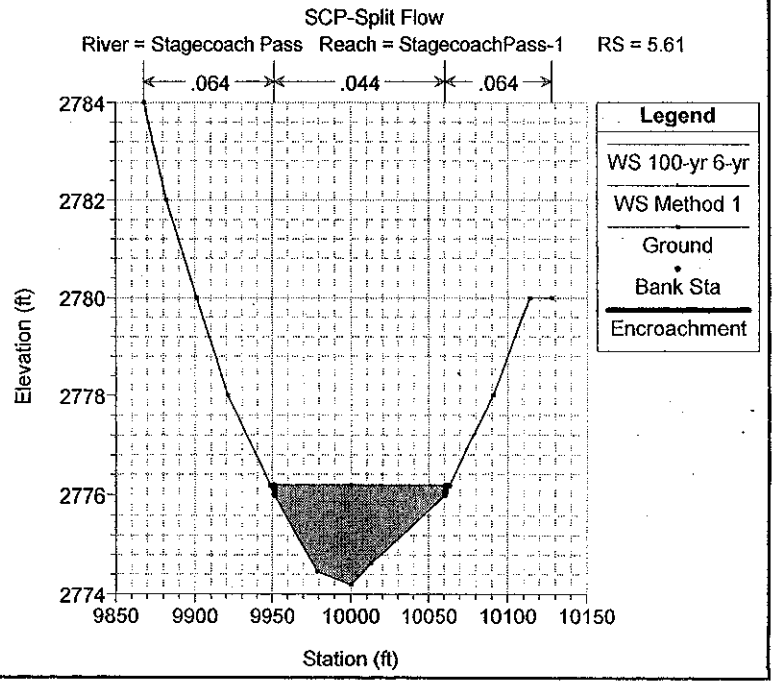

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.9 Culv
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

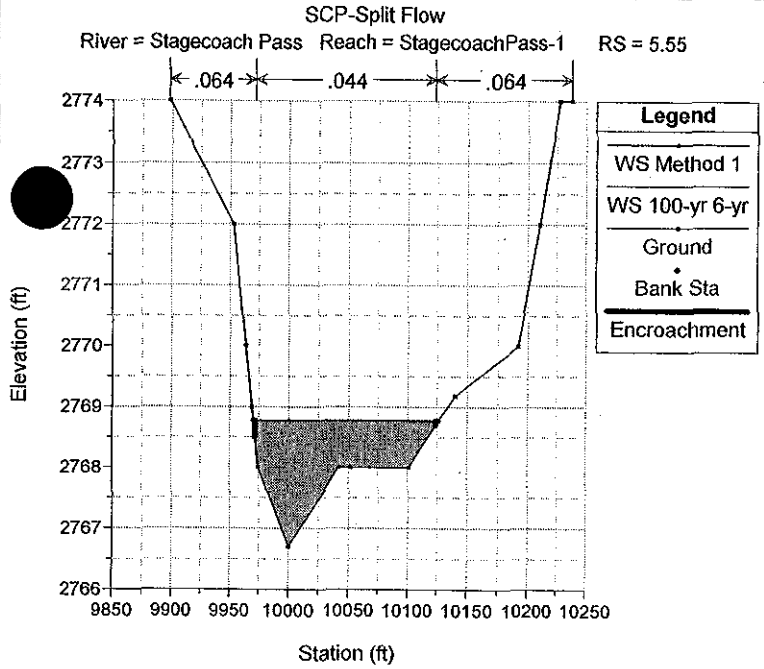

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.89
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

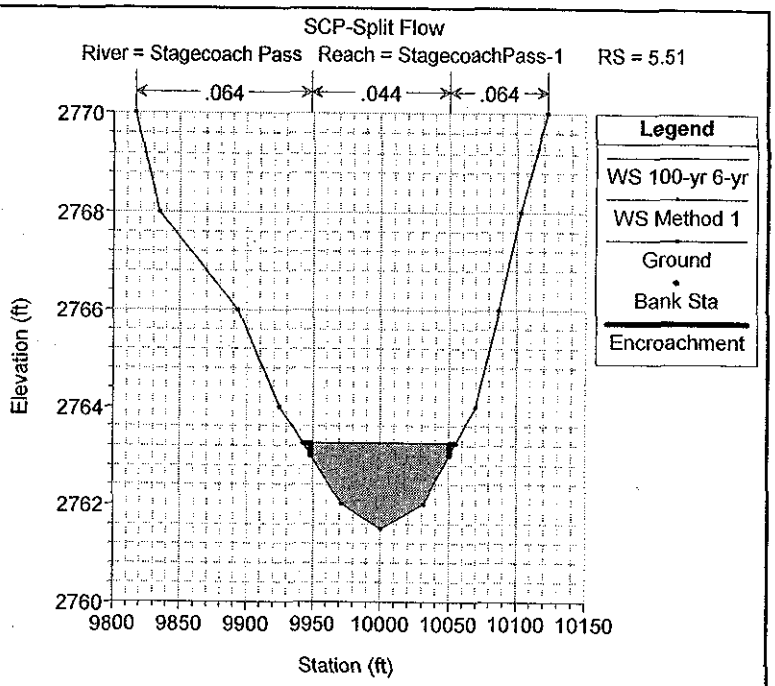

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.81
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Station (ft)

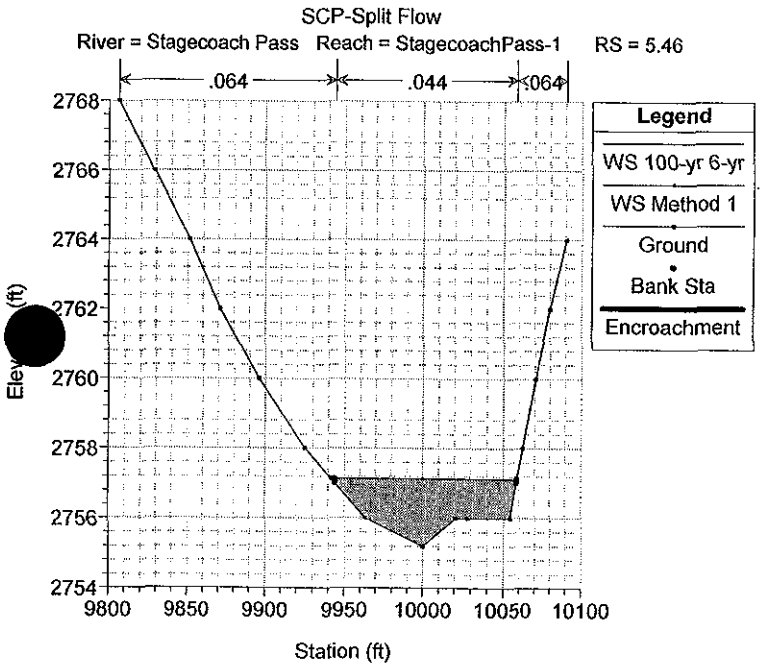

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.72
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

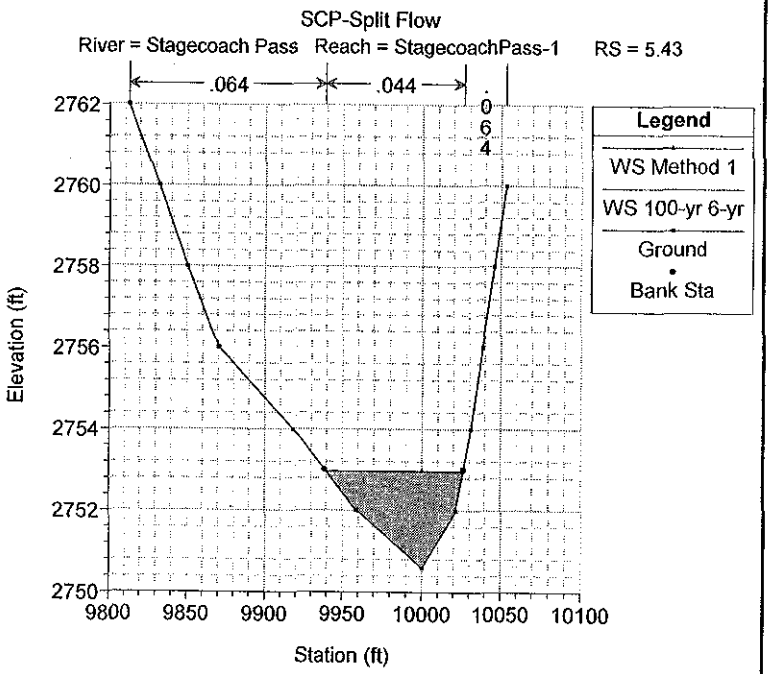

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.64
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

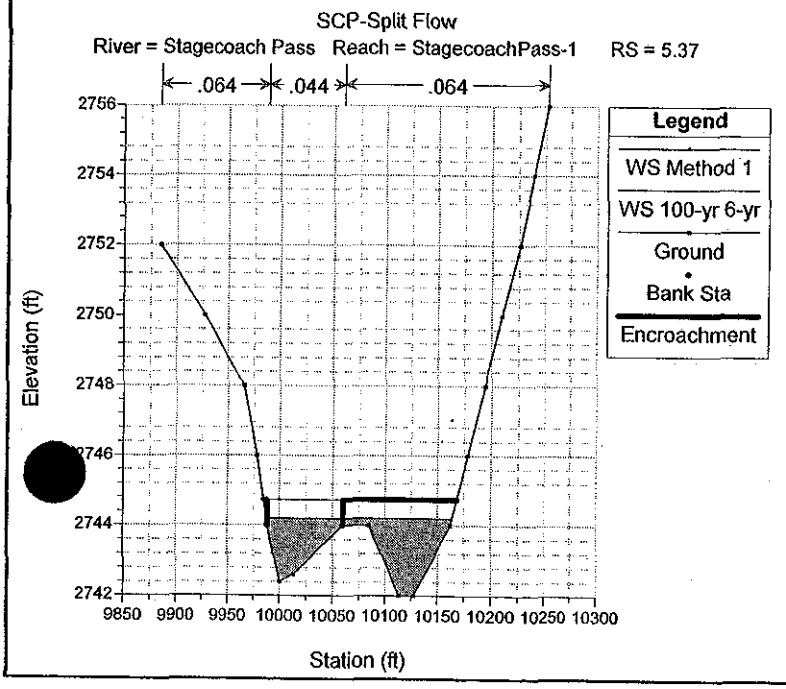

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.61
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

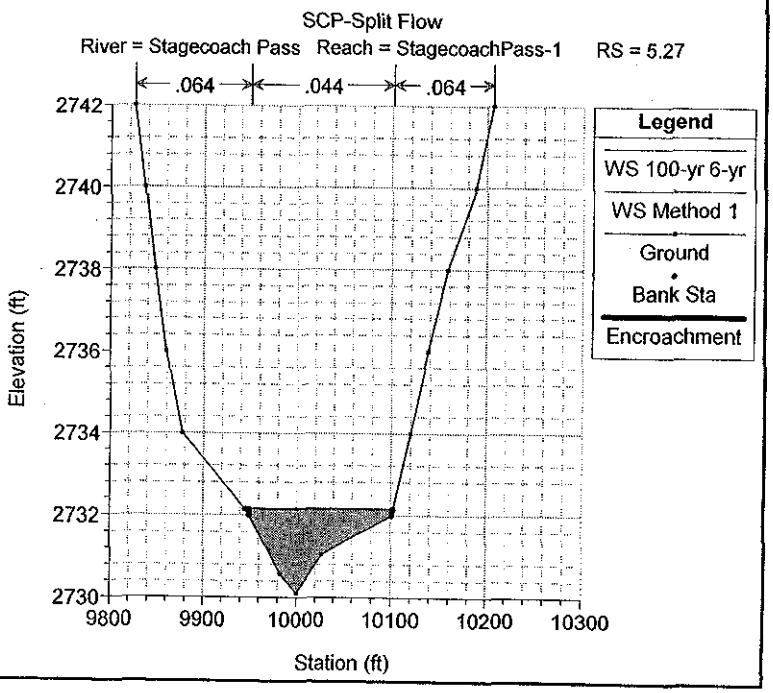

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.55
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

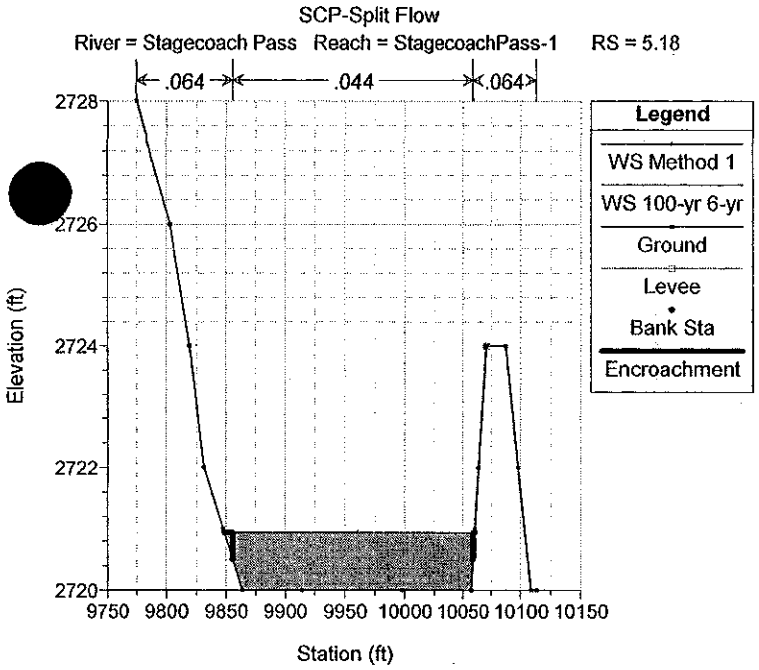

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.51
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

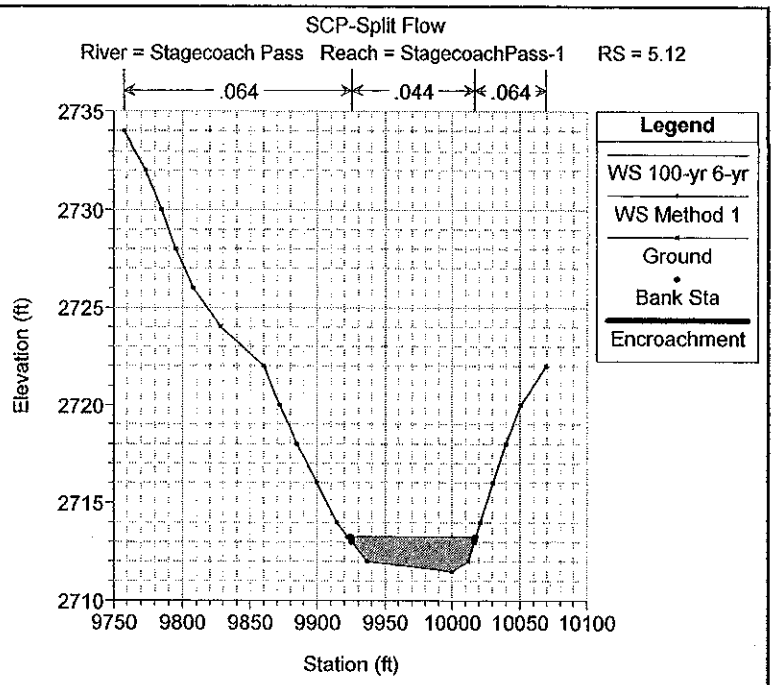

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.46
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Station (ft)

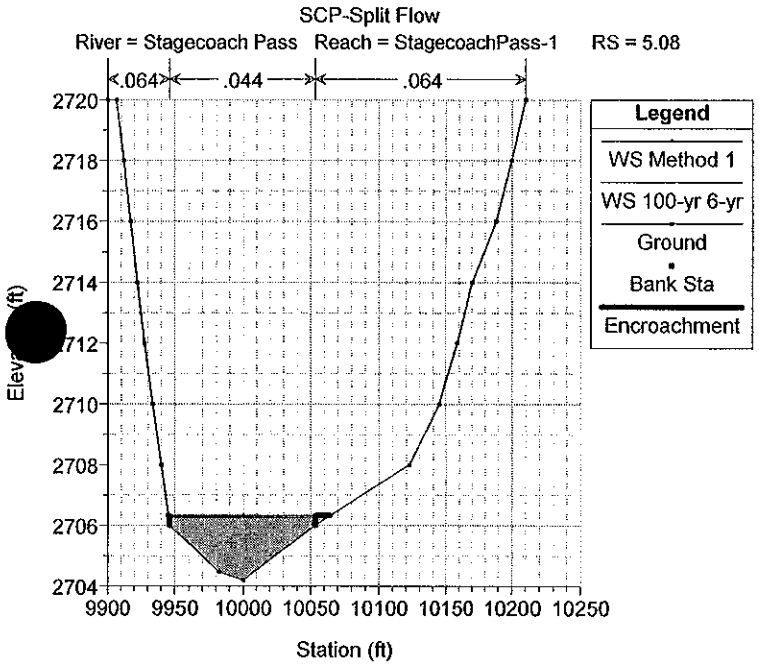

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.43
.064
.044
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Elevation (ft)
Station (ft)

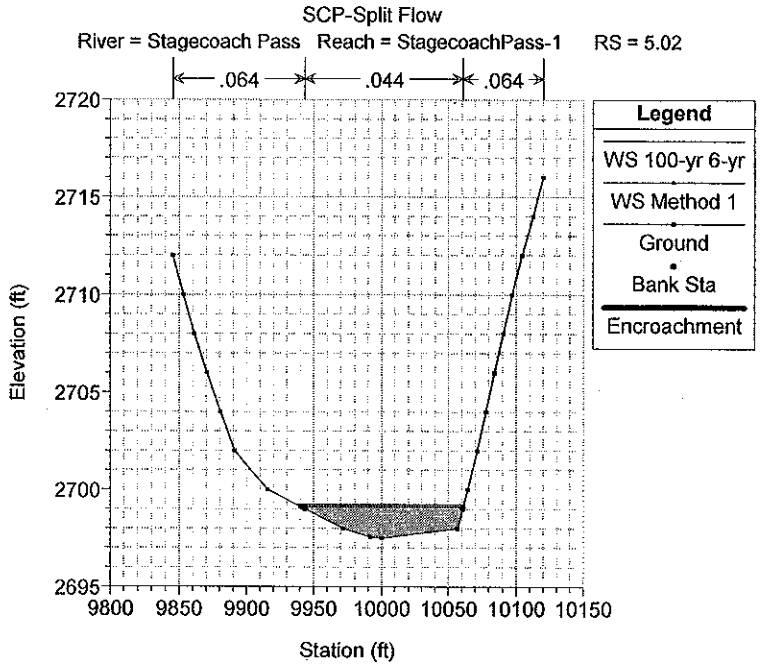

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.37
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

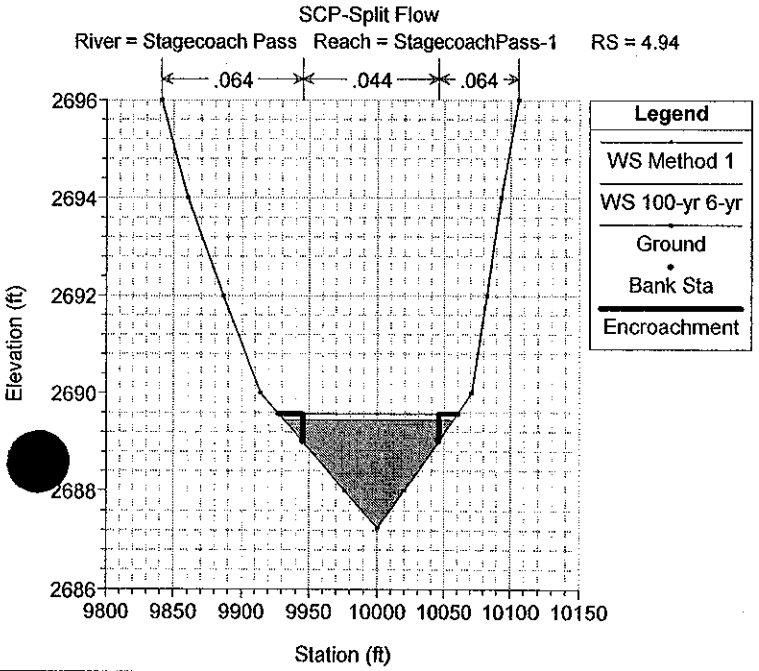

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.27
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

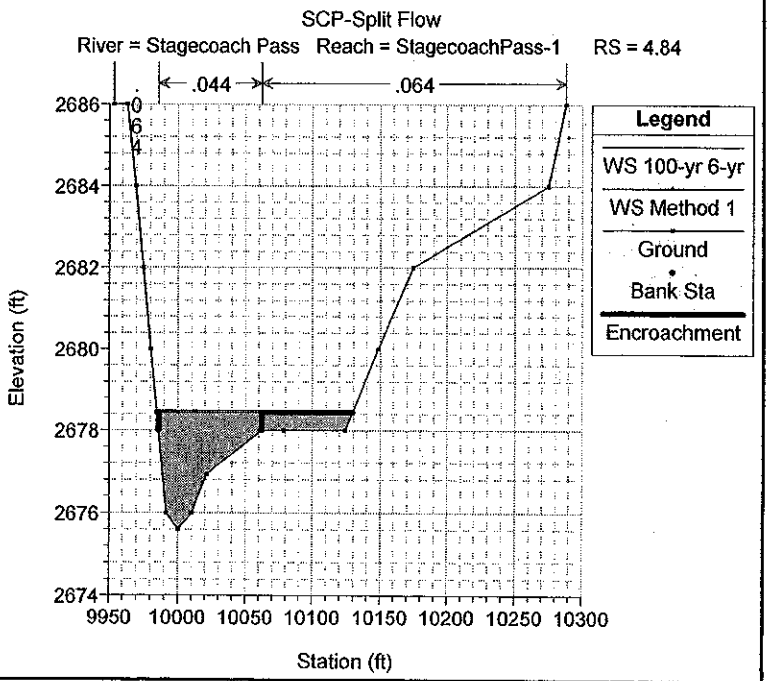

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.18
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

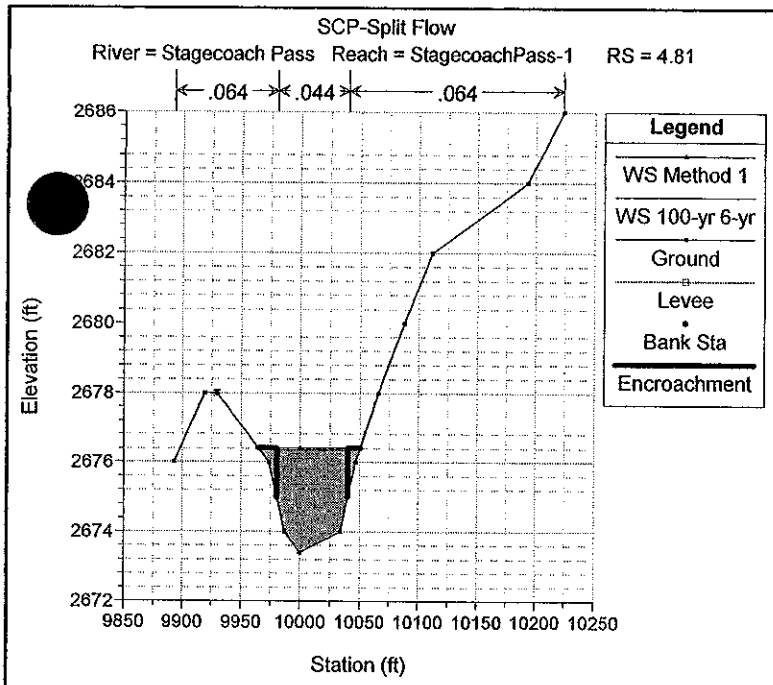

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.12
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

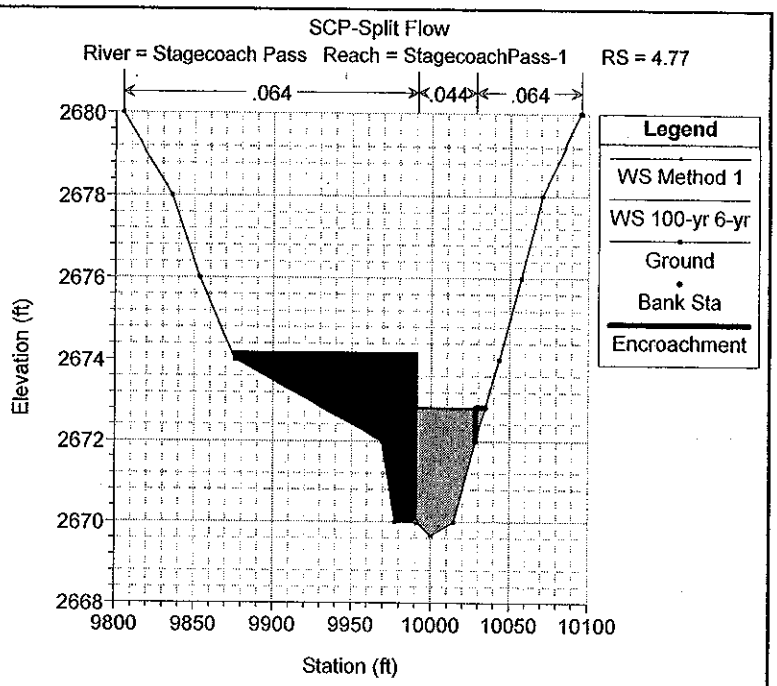

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.08
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Station (ft)

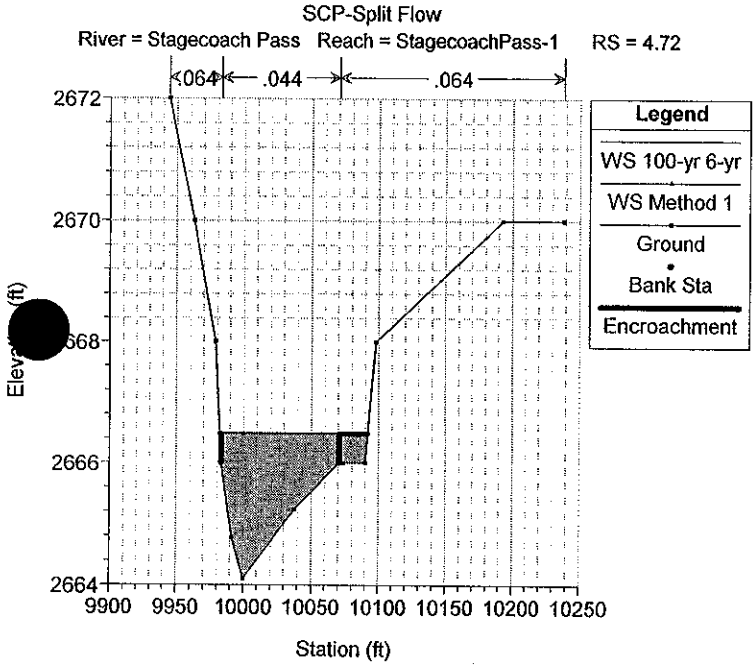

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 5.02
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

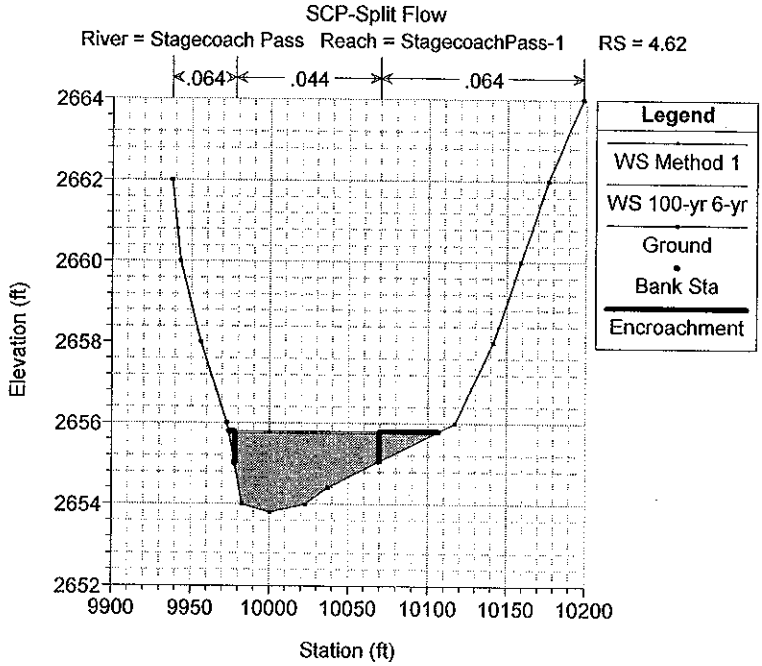

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.94
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

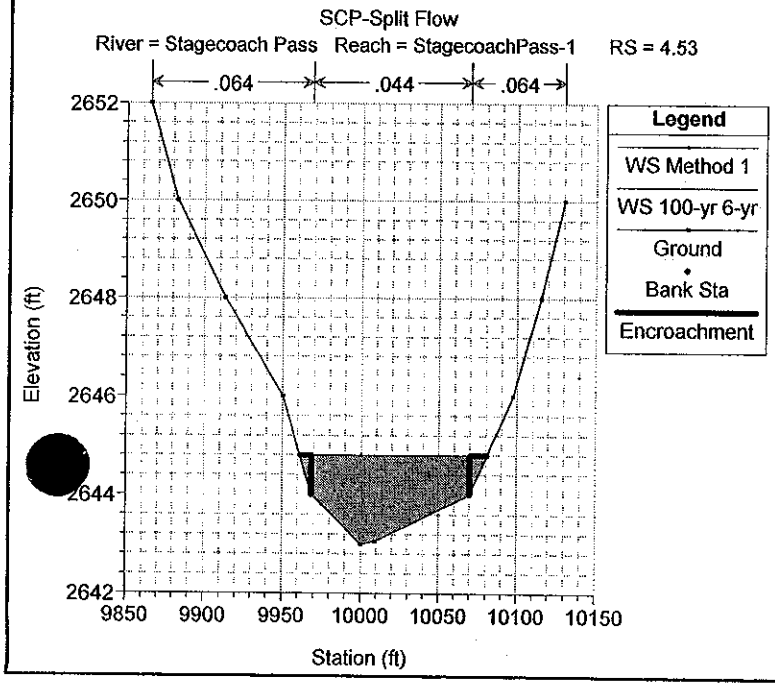

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.84
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

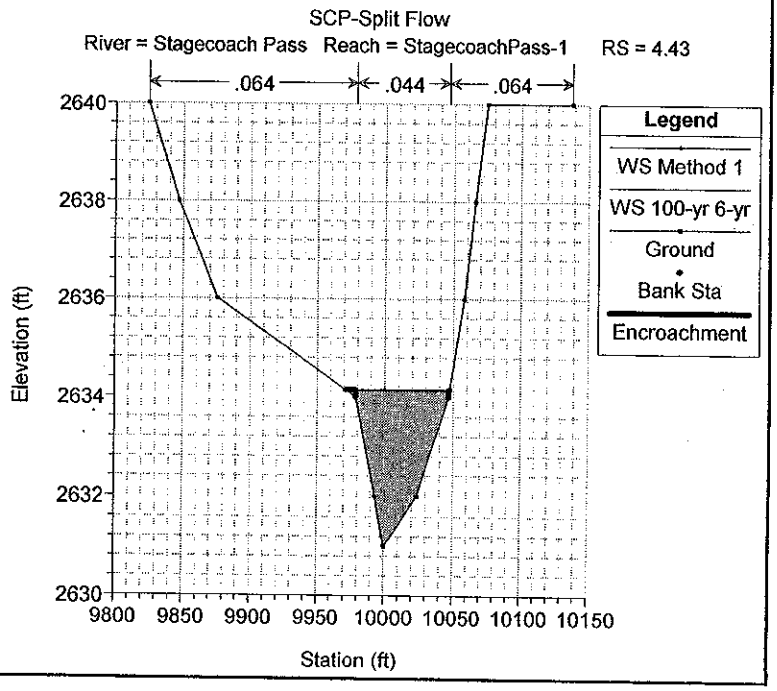

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.81
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

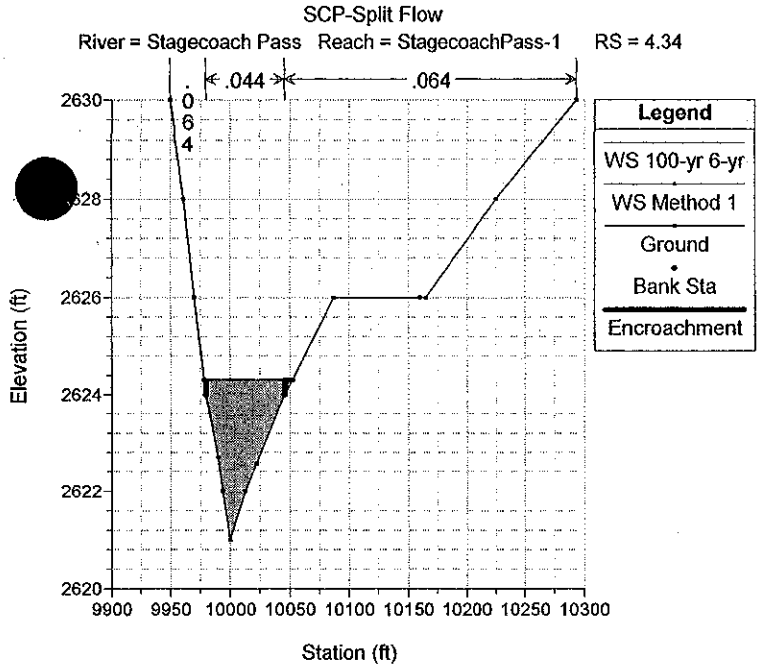

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.77
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

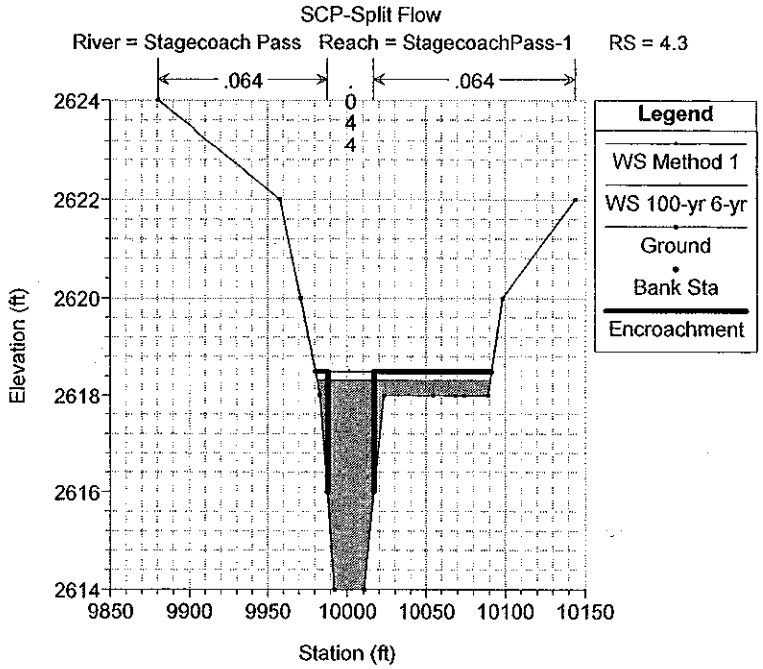

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.72
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Station (ft)

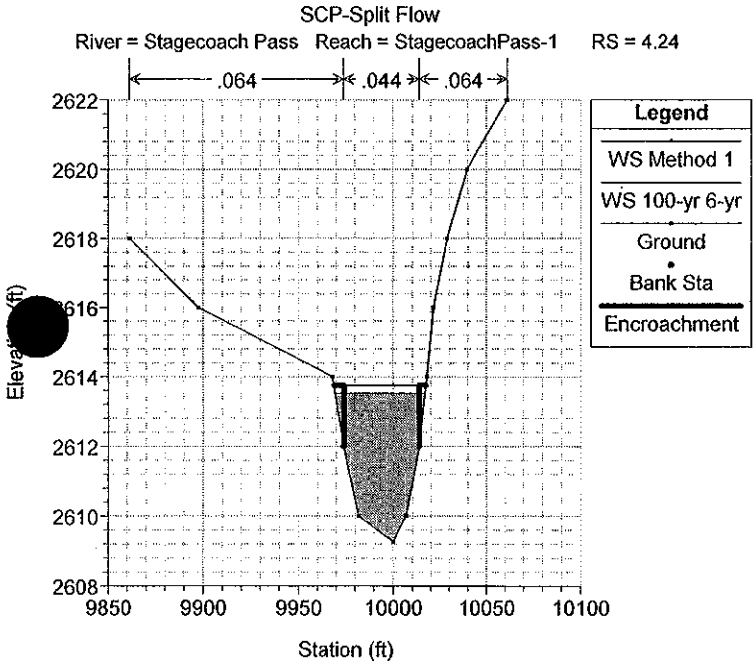

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.62
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

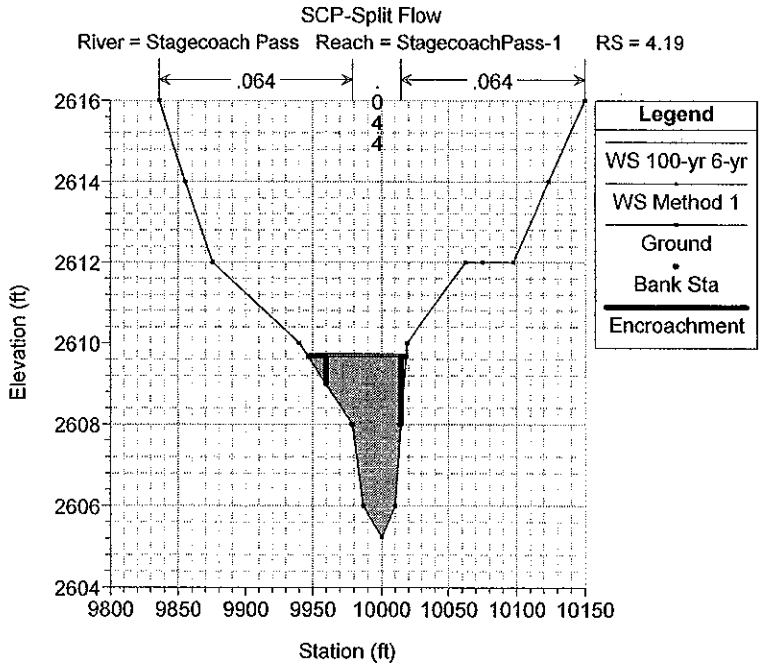

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.53
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

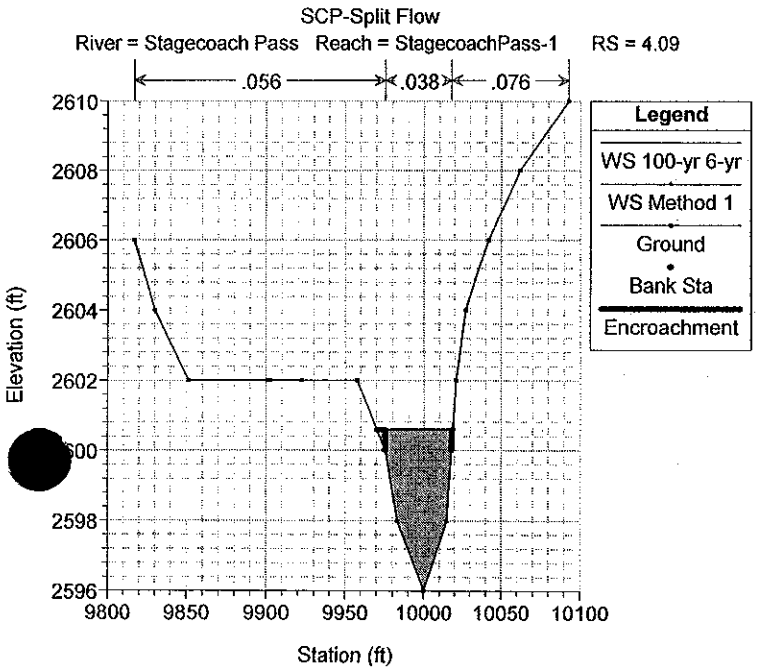

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.43
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

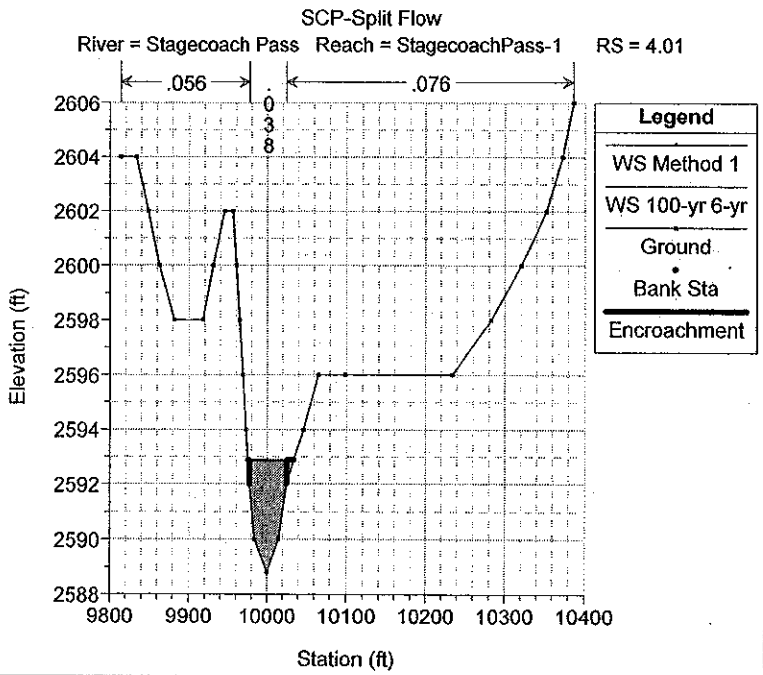

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.34
.044
.064
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

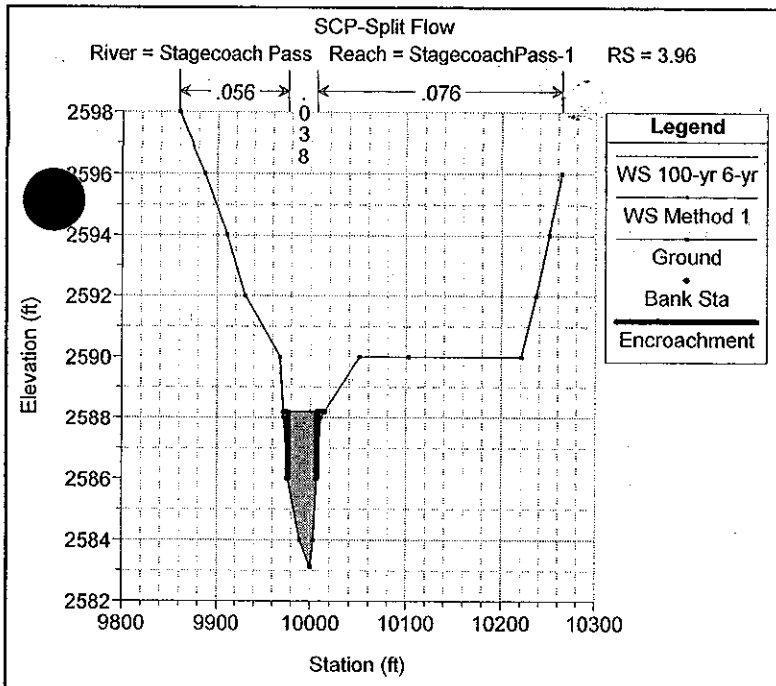

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.3
.064
.064
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

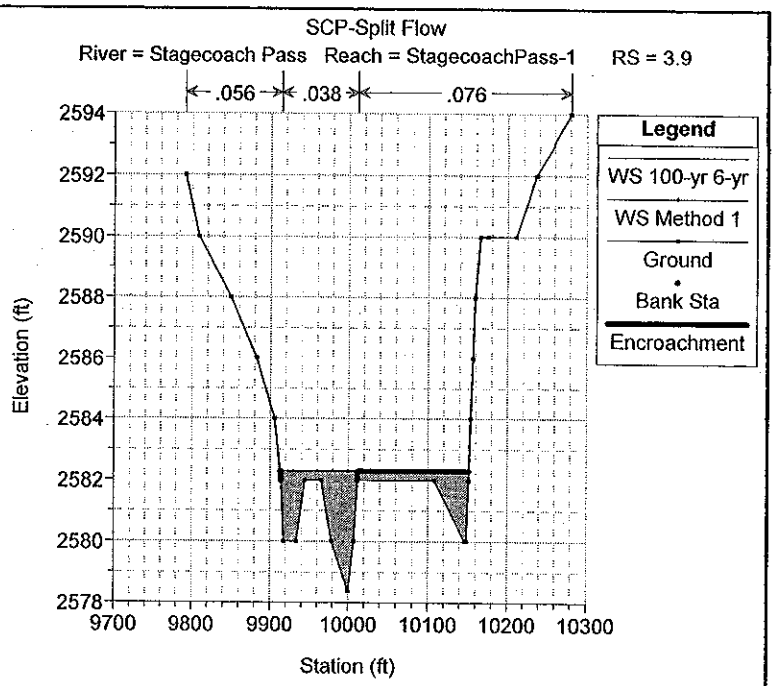

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.24
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Station (ft)

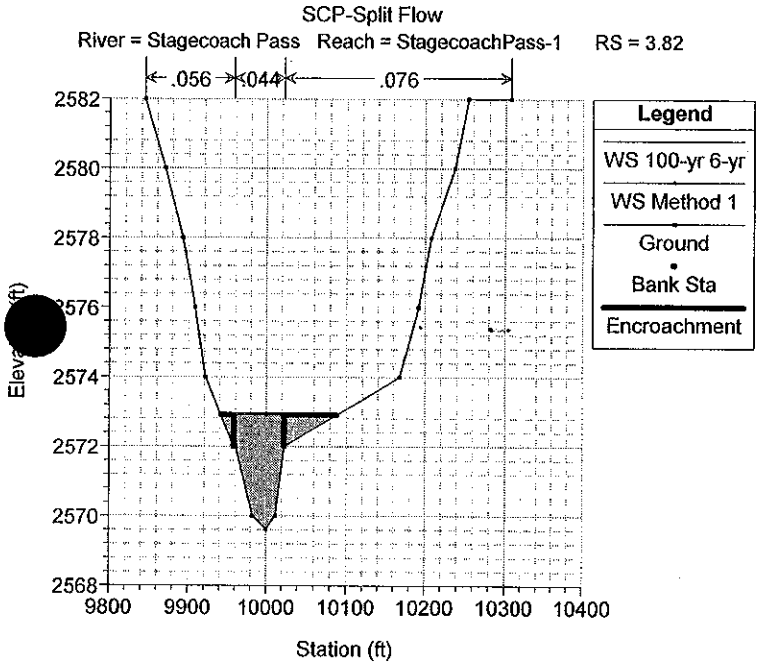

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.19
.064
.064
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

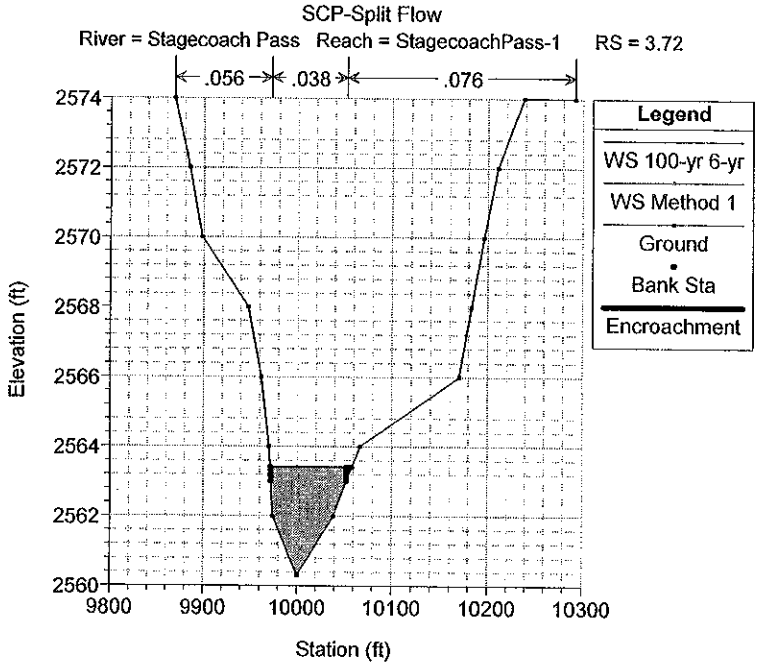

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.09
.056
.038
.076
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

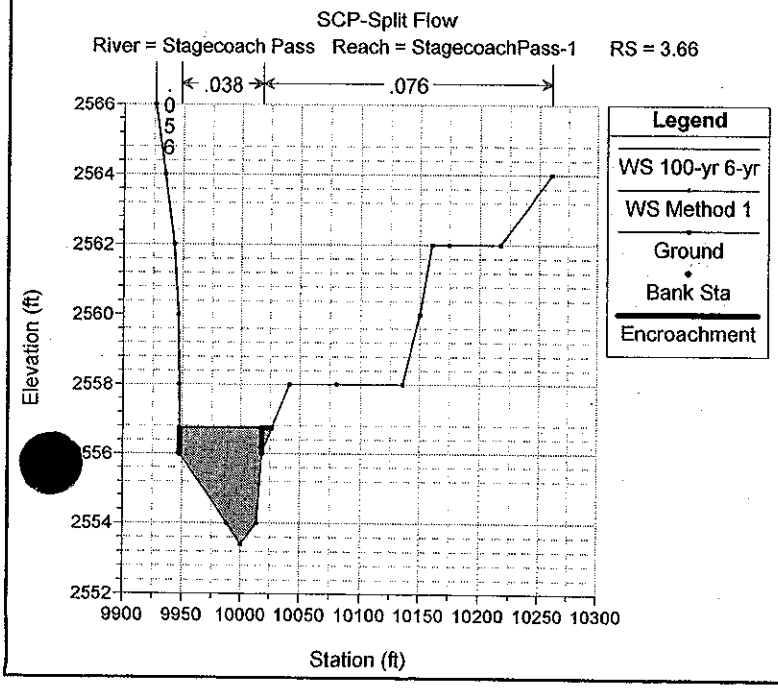

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 4.01
.056
.076
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

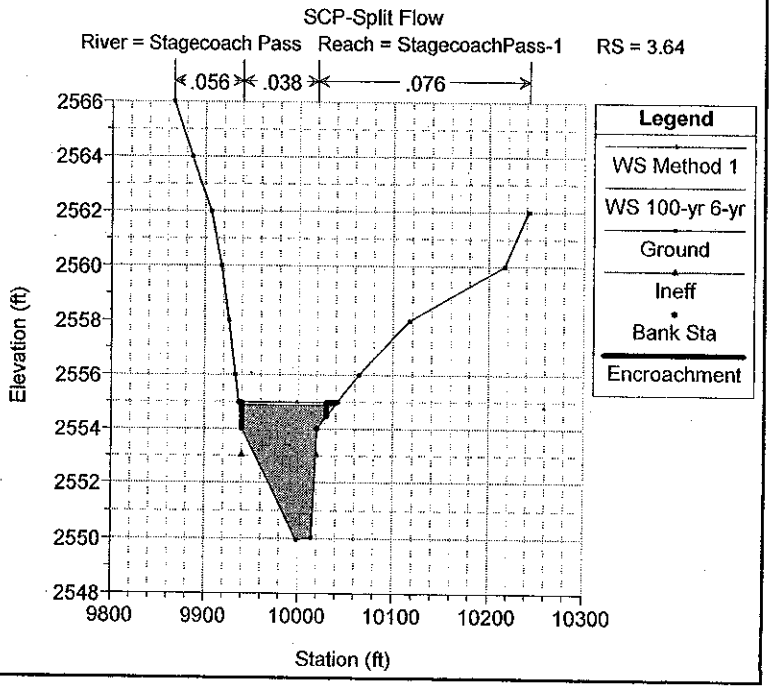

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.96
.056
.038
.076
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

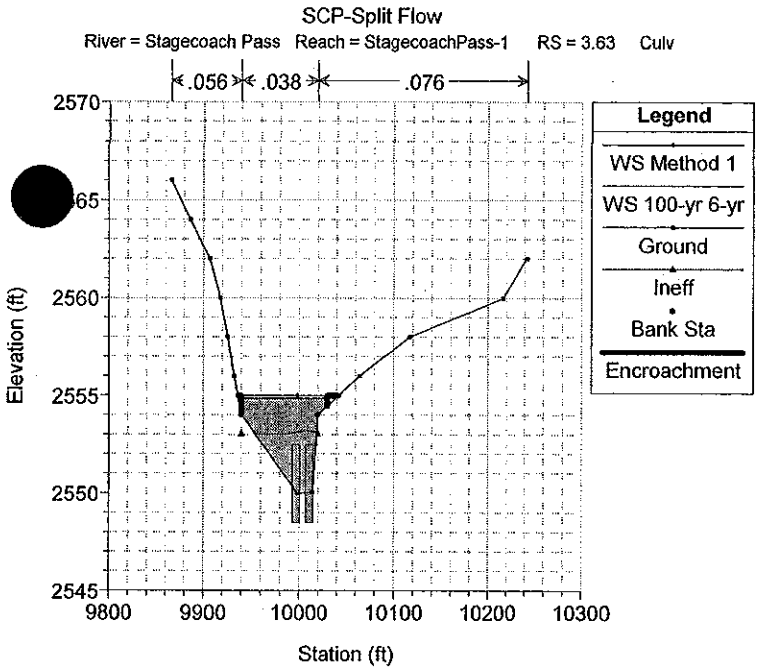

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.9
.056
.038
.076
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

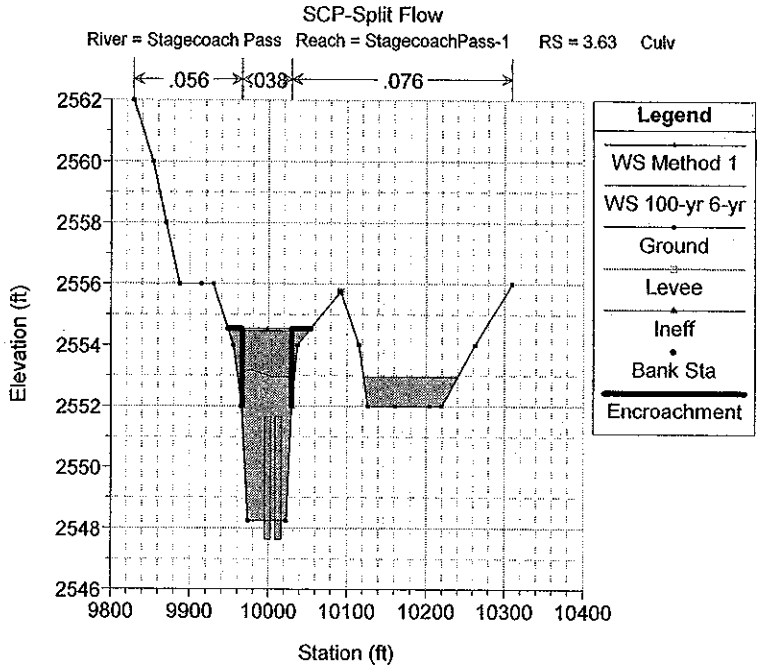

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.82
.056
.044
.076
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Station (ft)

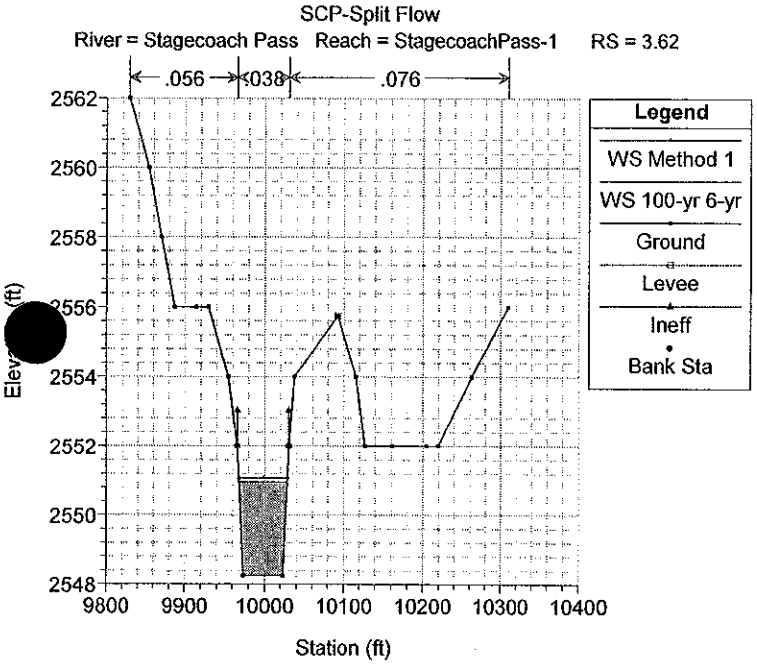

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.72
.056
.038
.076
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

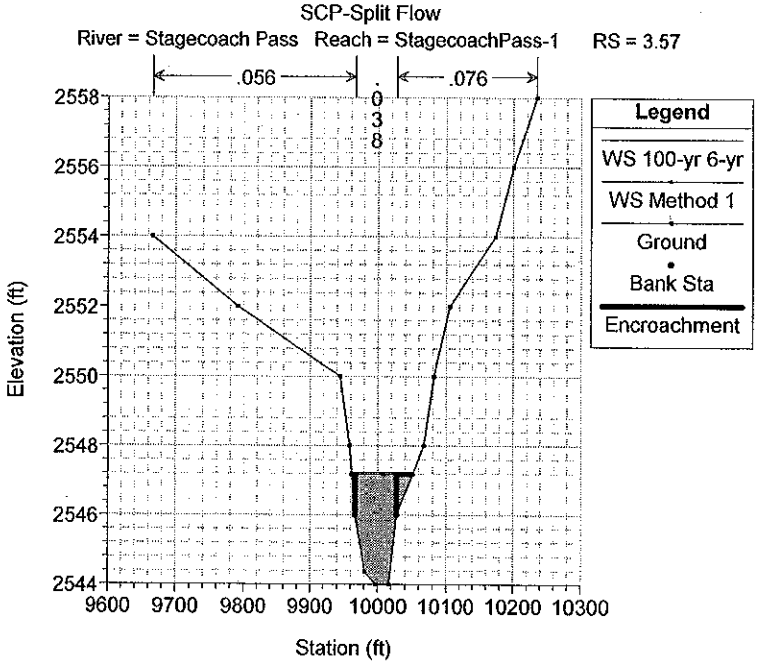

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.66
.056
.038
.076
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

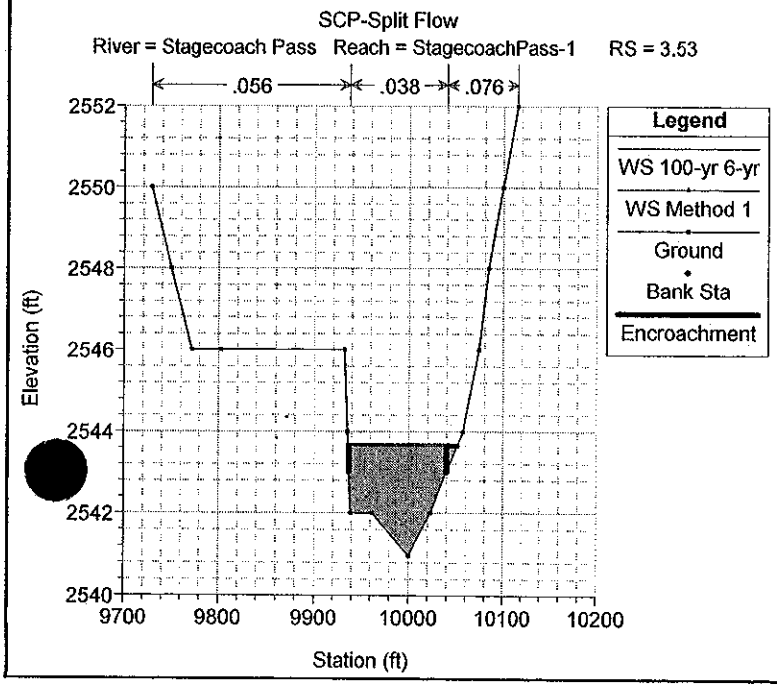

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.64
.056
.038
.076
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

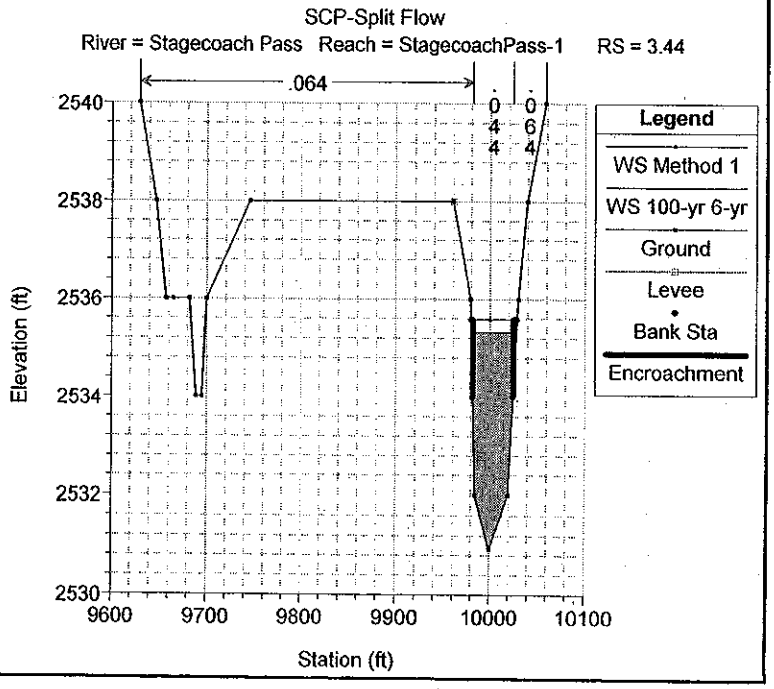

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.63 Culv
.056
.038
.076
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

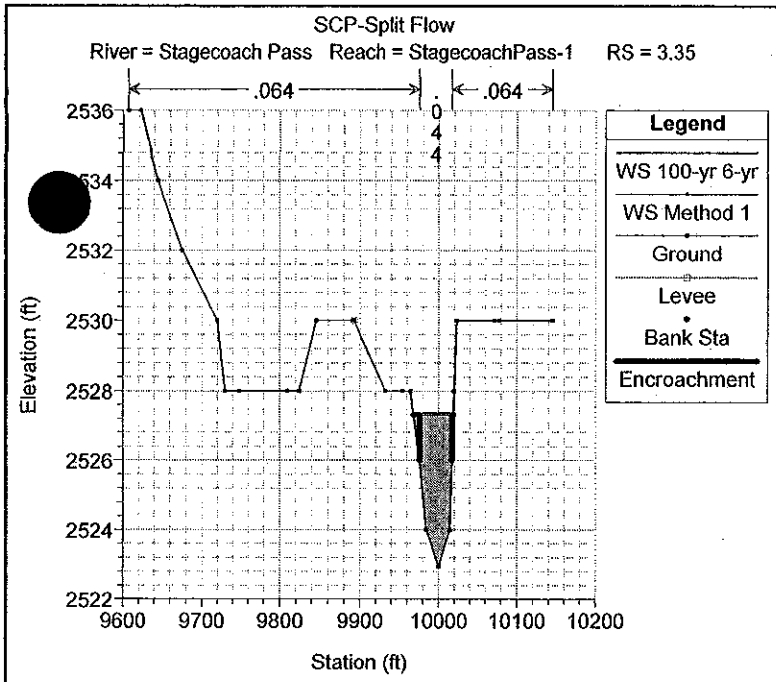

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.63 Culv
.056
.038
.076
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

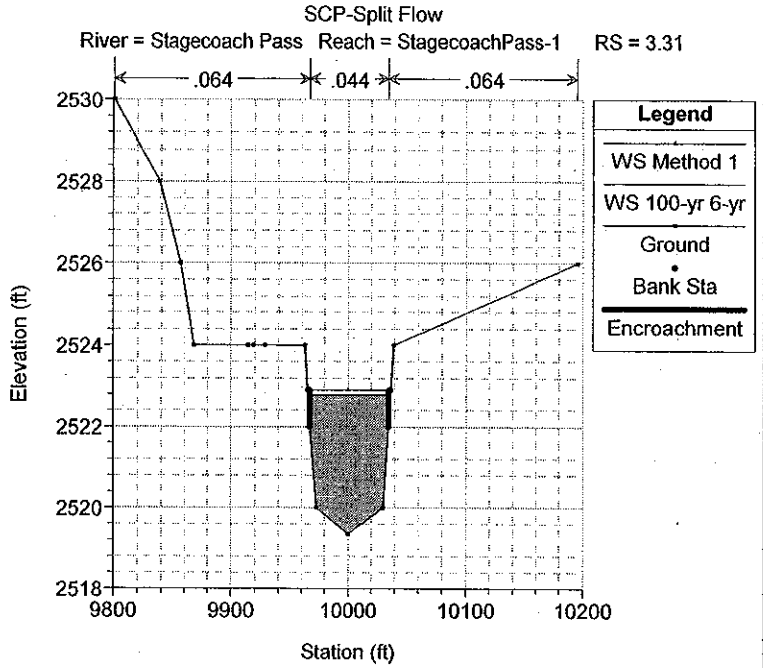

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.62
.056
.038
.076
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

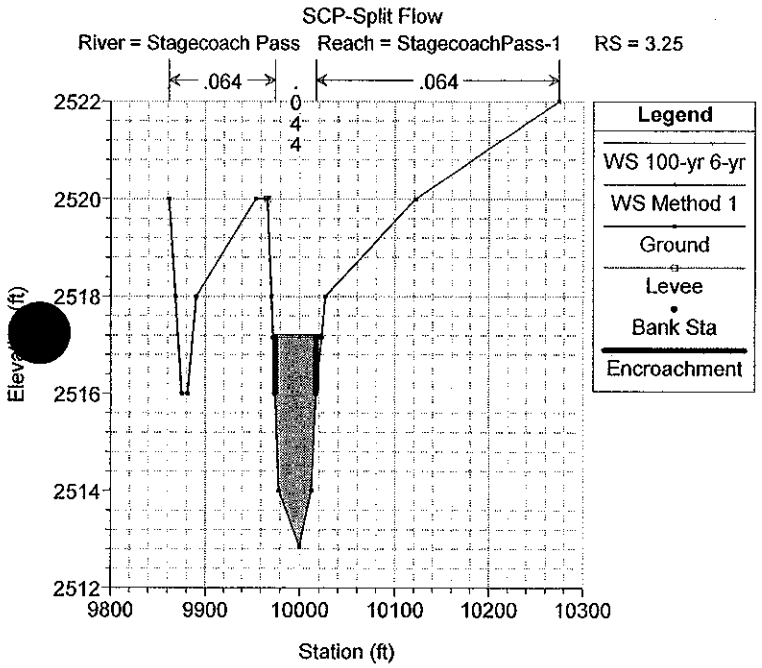

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.57
.056
.038
.076
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

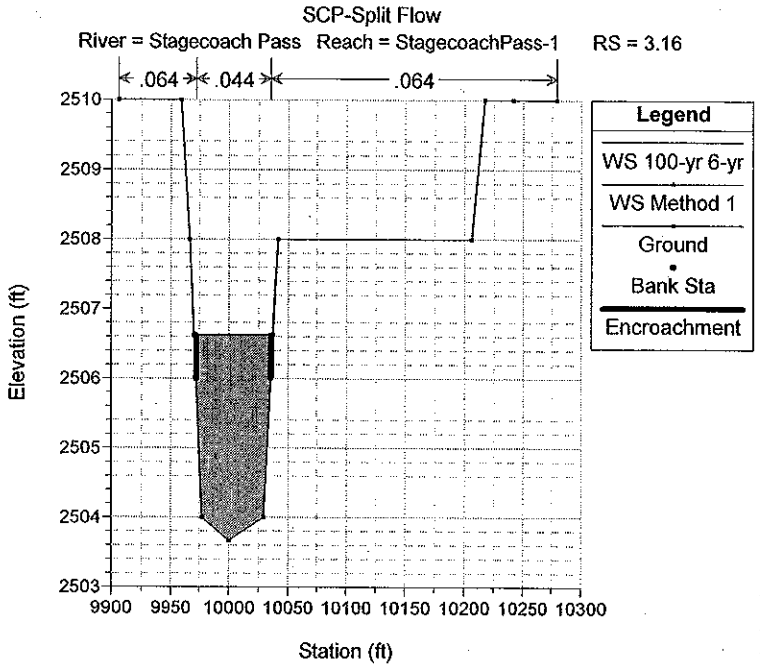

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.53
.056
.038
.076
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

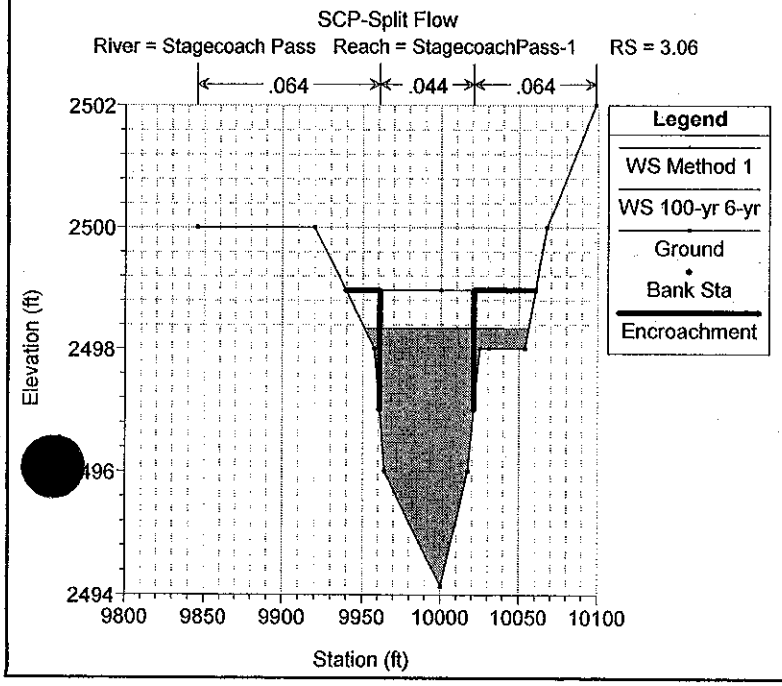

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.44
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

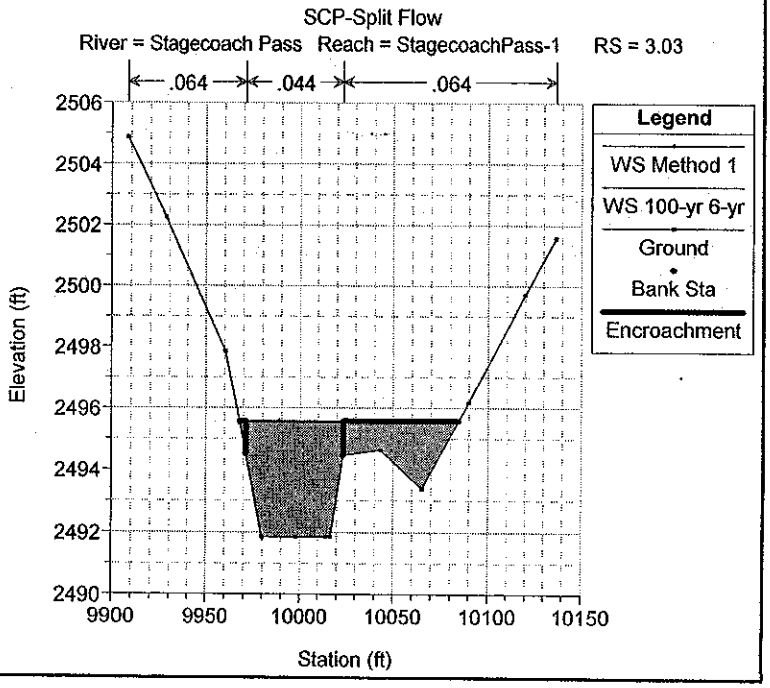

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.35
.064
.064
.044
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

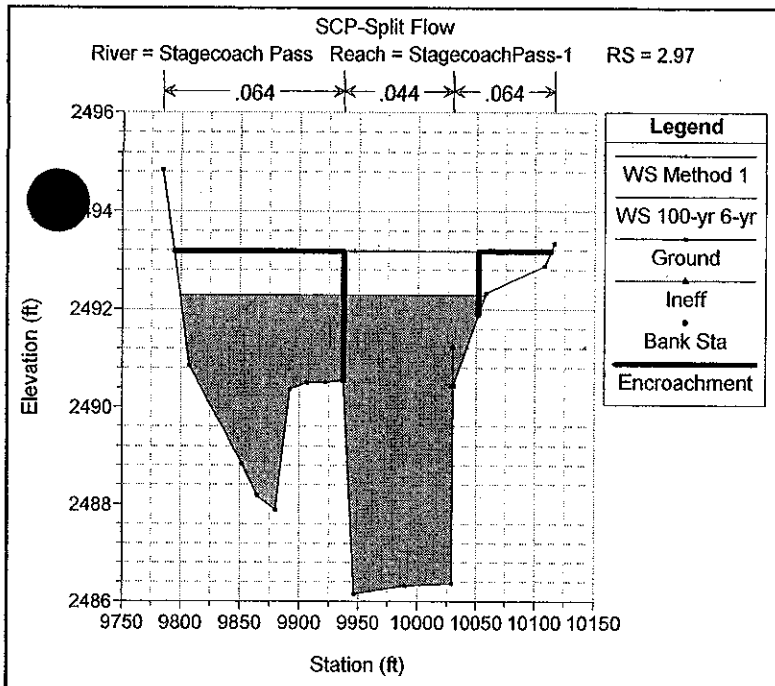

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.31
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

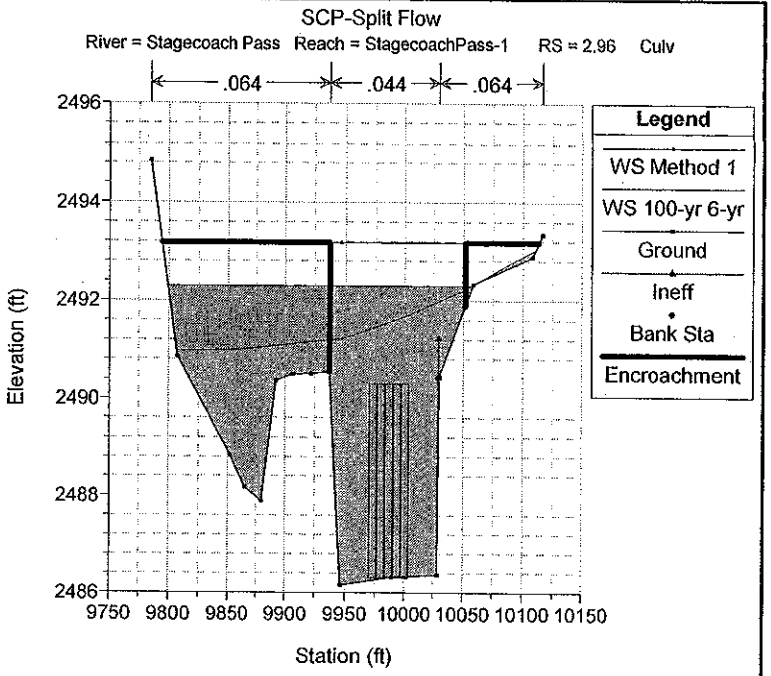

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.25
.064
.064
.044
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Station (ft)

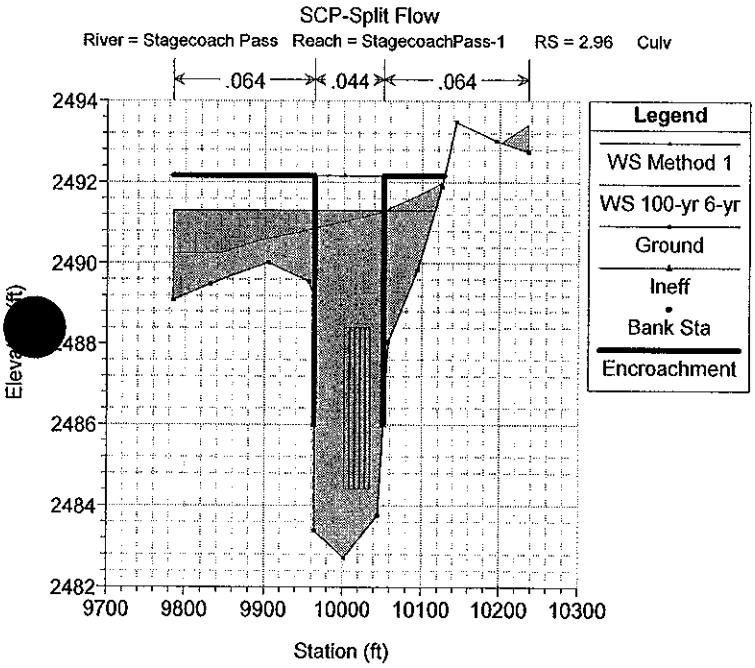

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.16
.064
.044
.064
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

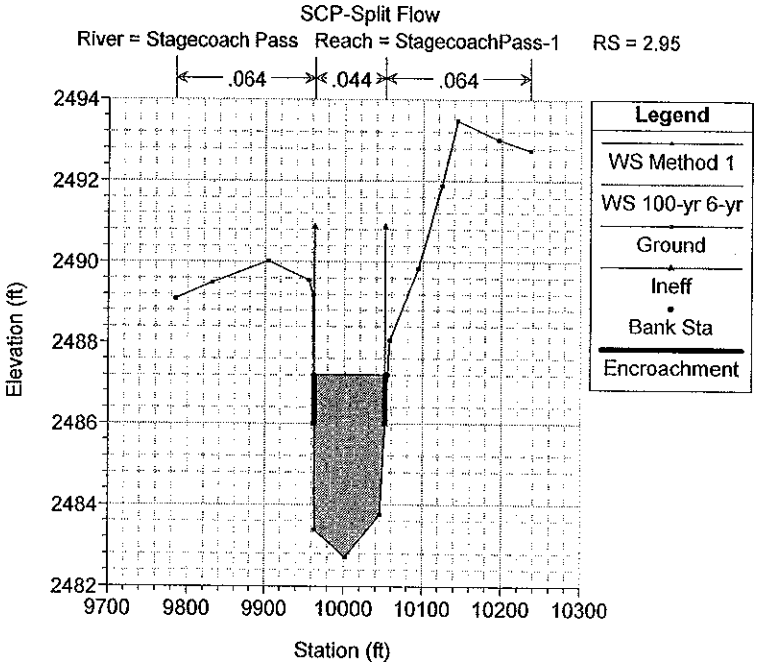

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.06
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

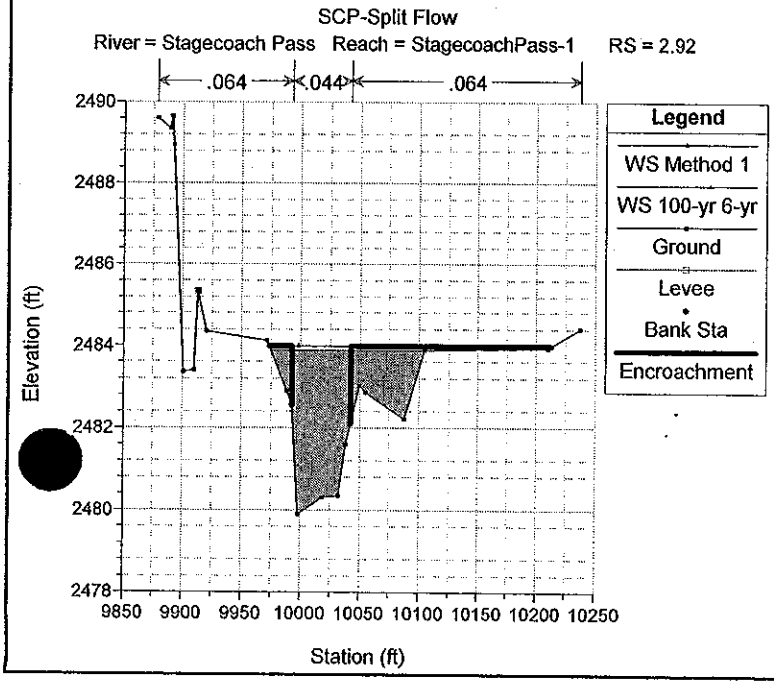

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 3.03
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

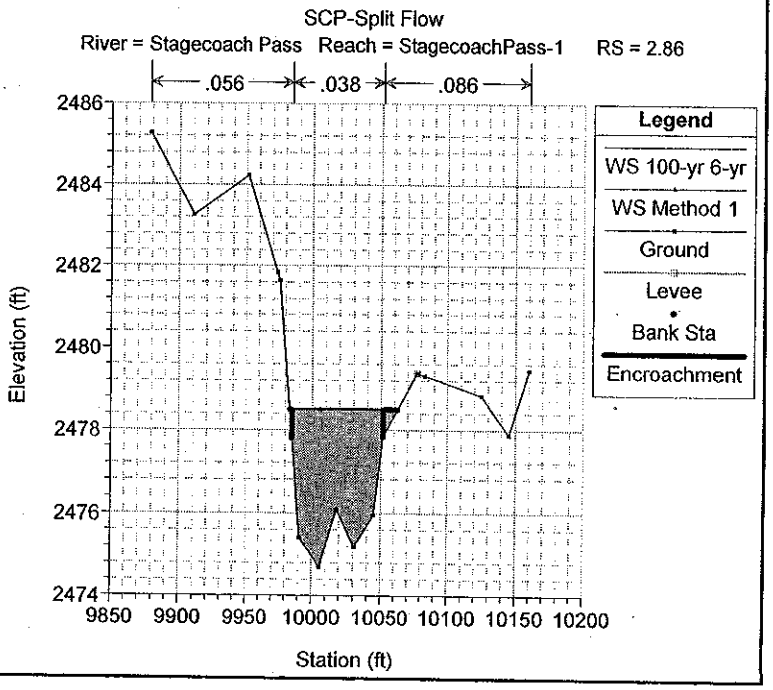

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.97
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

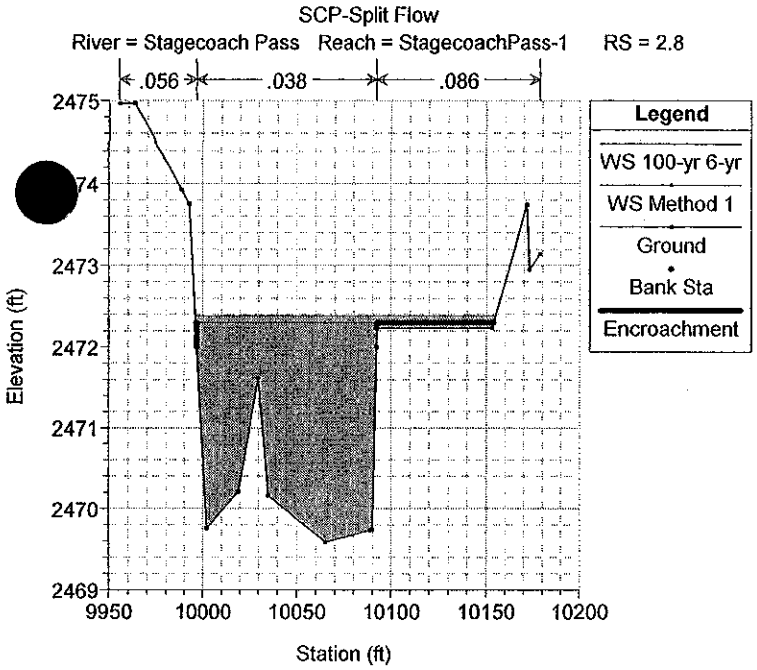

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.96 Culv
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

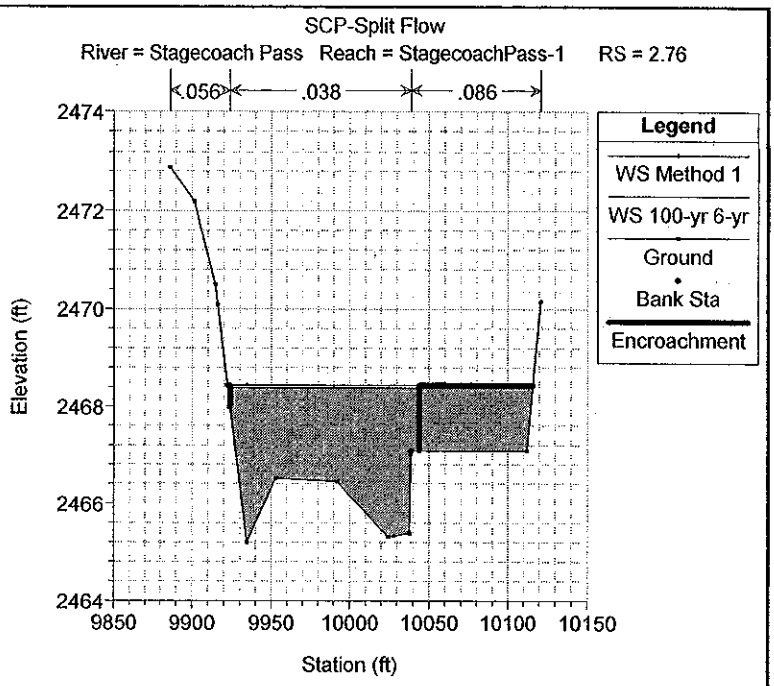

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.96 Culv
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Station (ft)

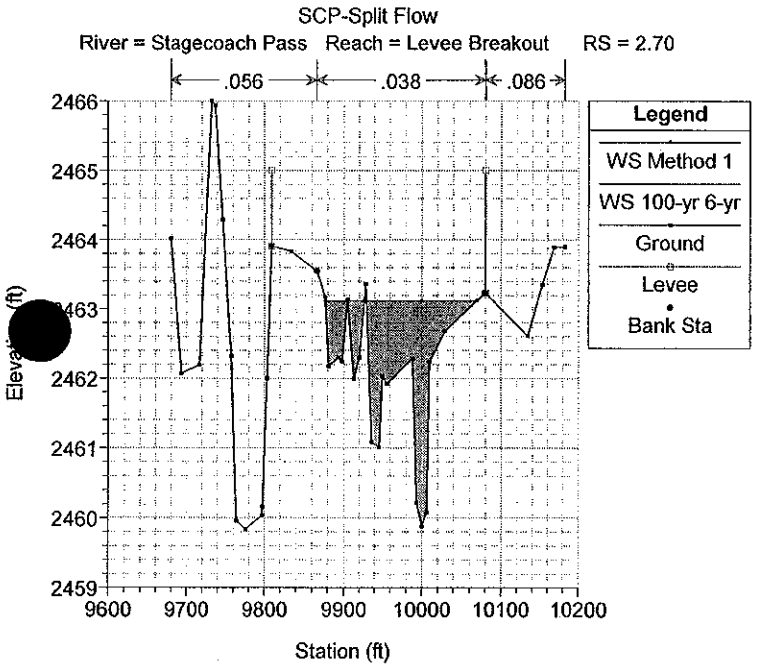

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.95
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

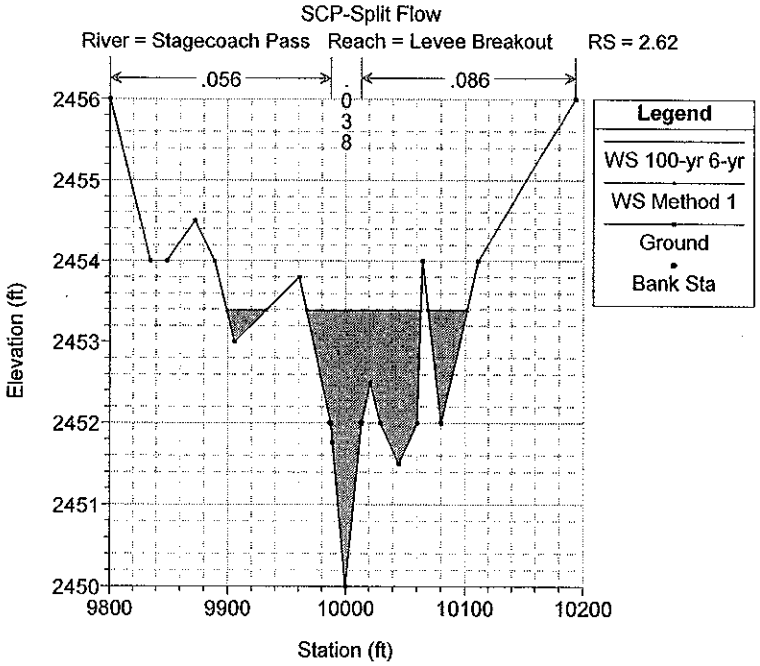

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.92
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

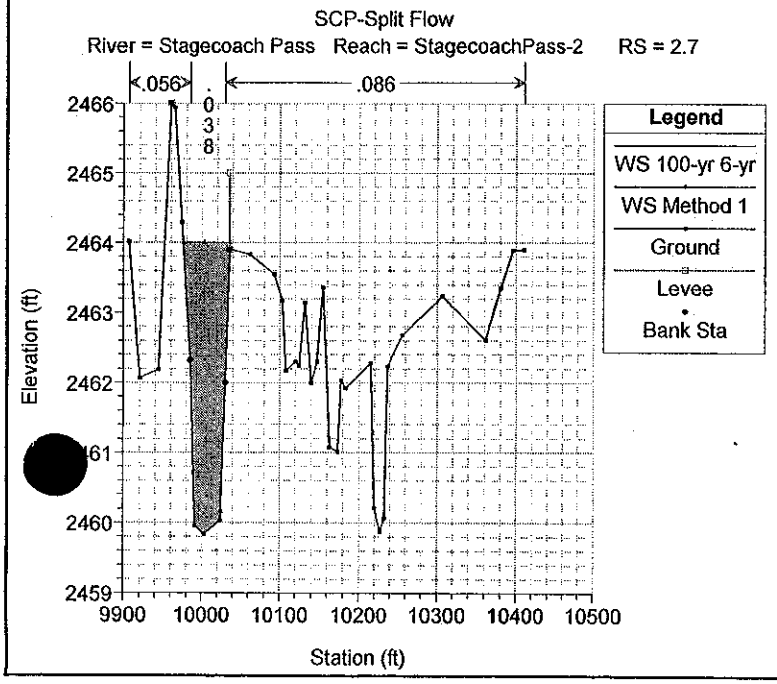

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.86
.056
.038
.086
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

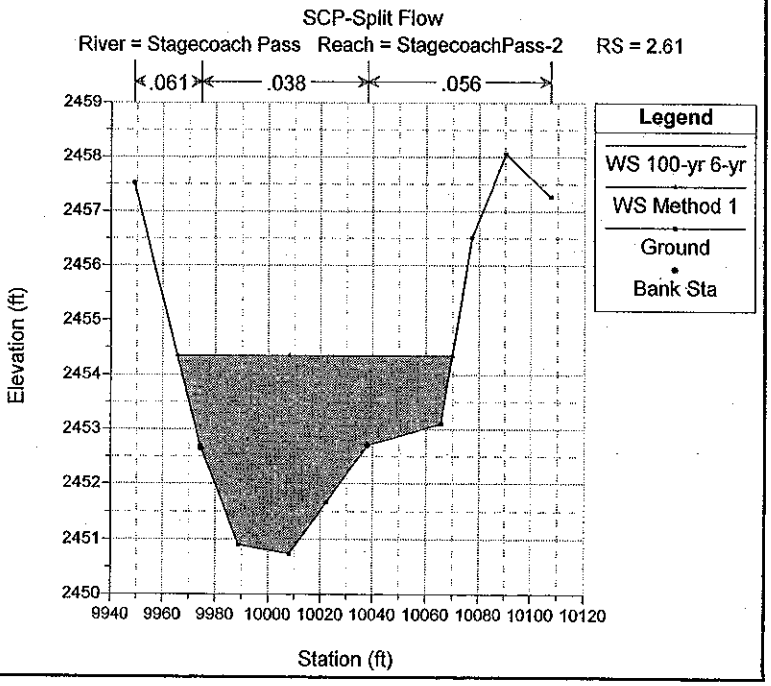

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.8
.056
.038
.086
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

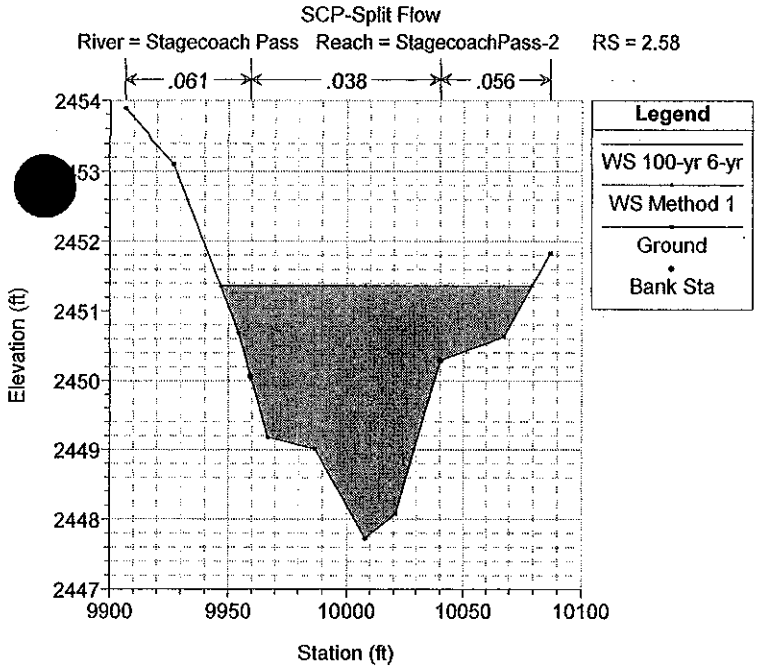

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-1 RS = 2.76
.056
.038
.086
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

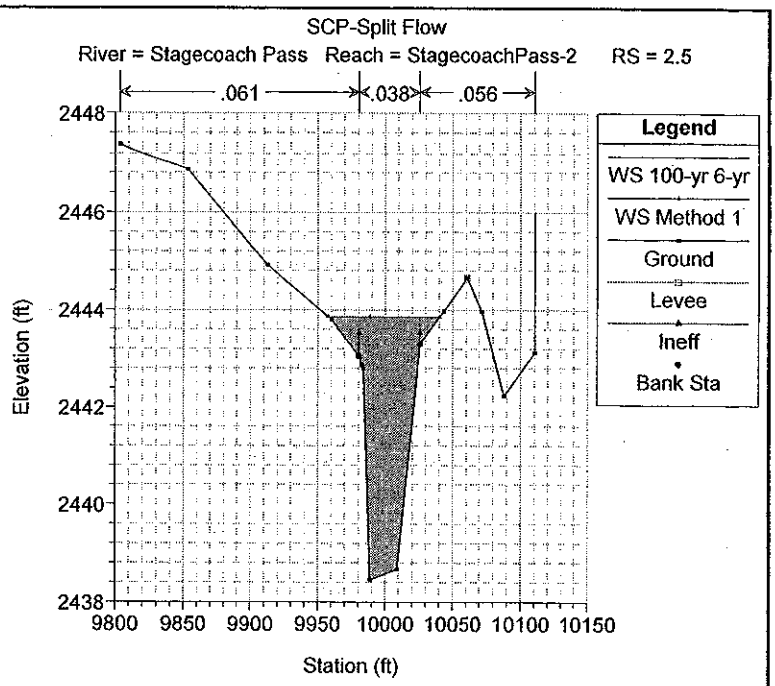

SCP-Split Flow
River = Stagecoach Pass Reach = Levee Breakout RS = 2.70
.056
.038
.086
Legend
WS Method 1
WS 100-yr 6-yr
Ground
Levee
Bank Sta
Station (ft)

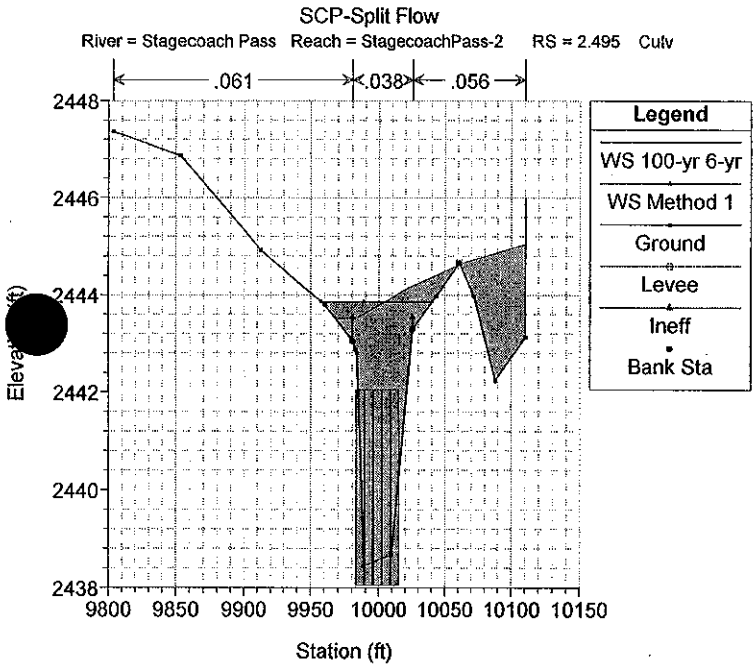

SCP-Split Flow
River = Stagecoach Pass Reach = Levee Breakout RS = 2.62
.056
.038
.086
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

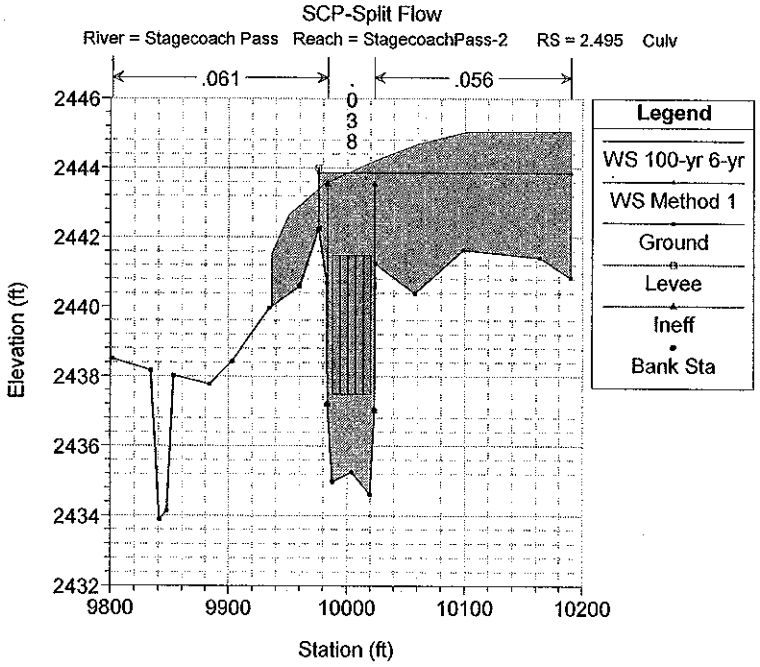

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.7
.056
.038
.086
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

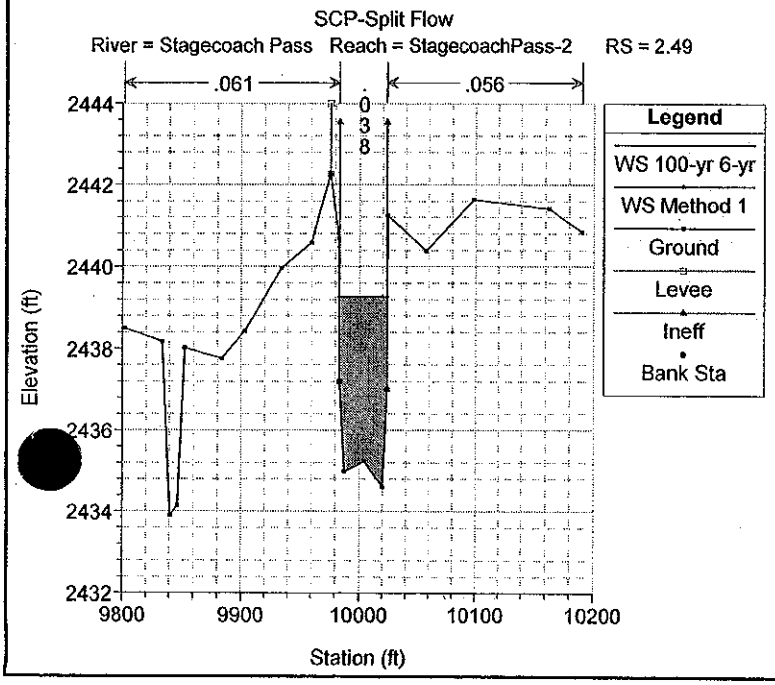

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.61
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

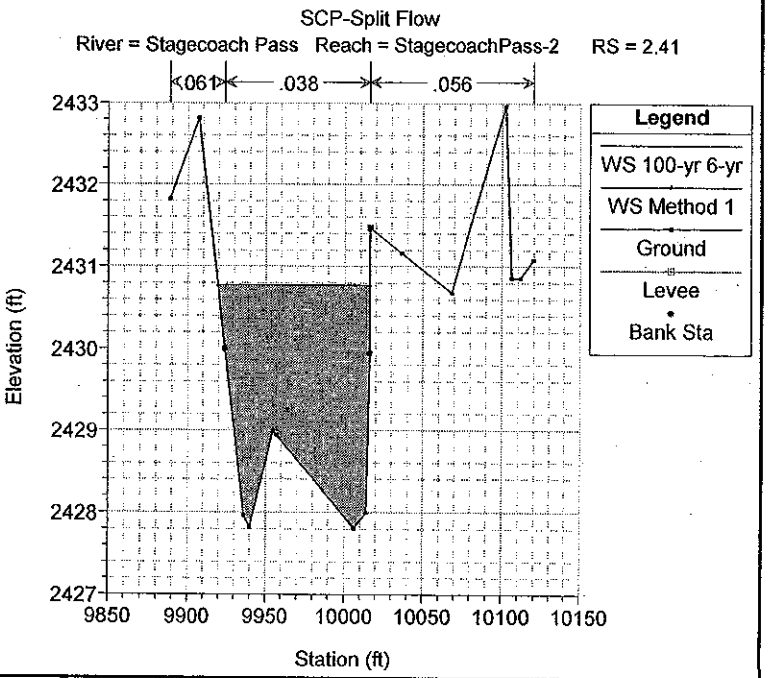

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.58
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

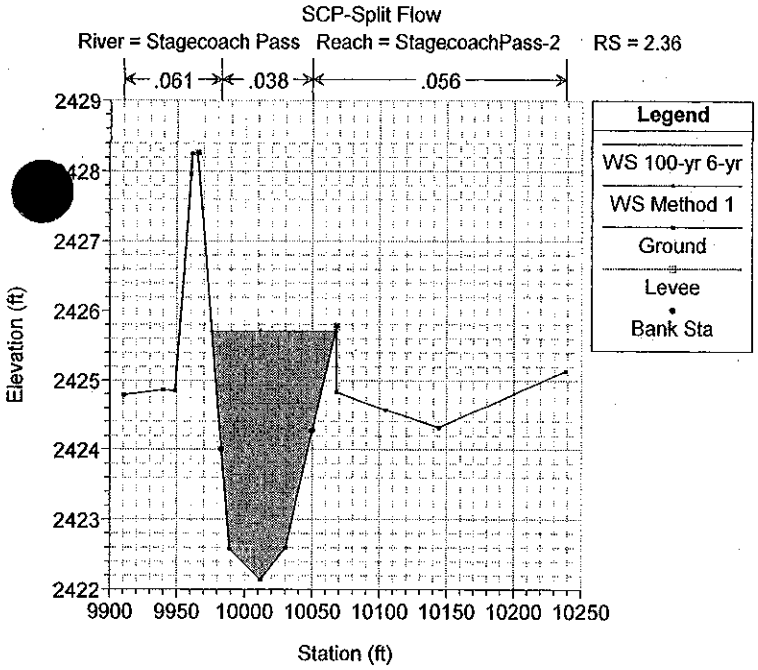

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.5
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

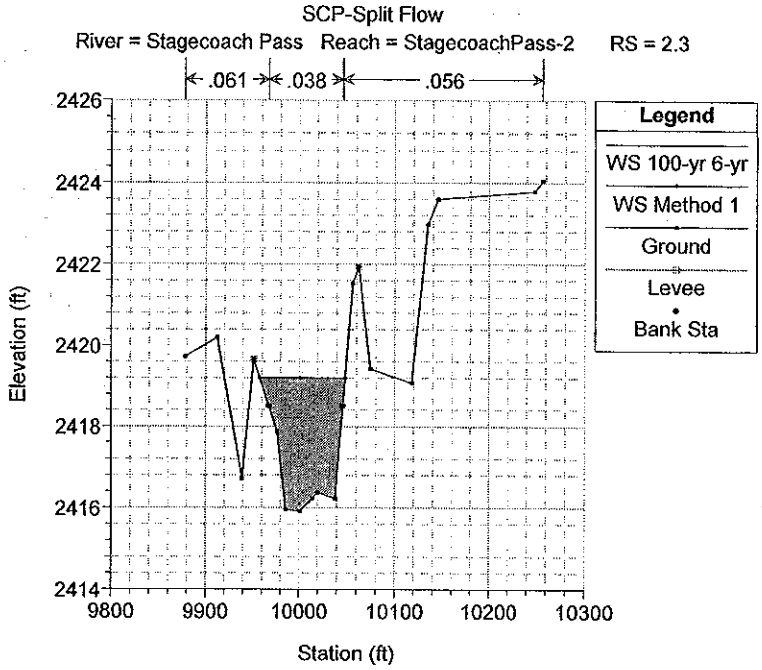

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.495 Culv
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Station (ft)

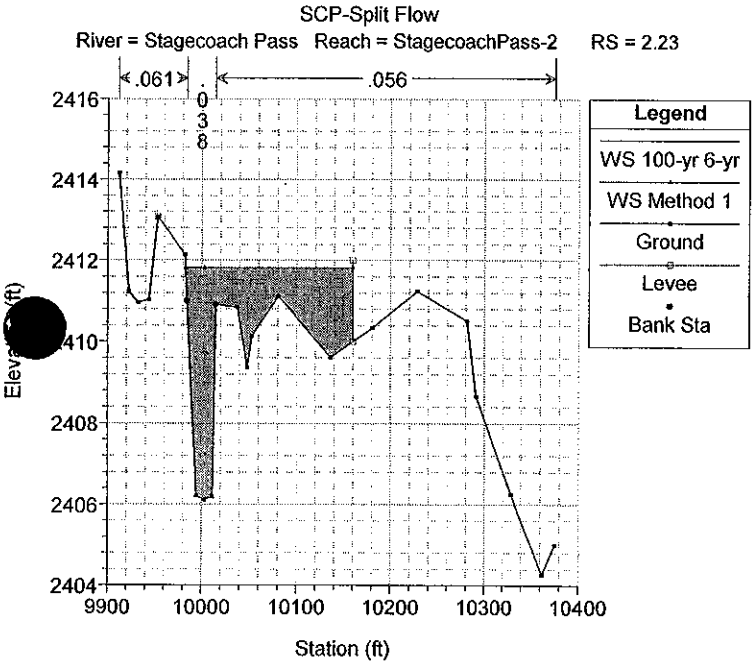

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.495 Culv
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

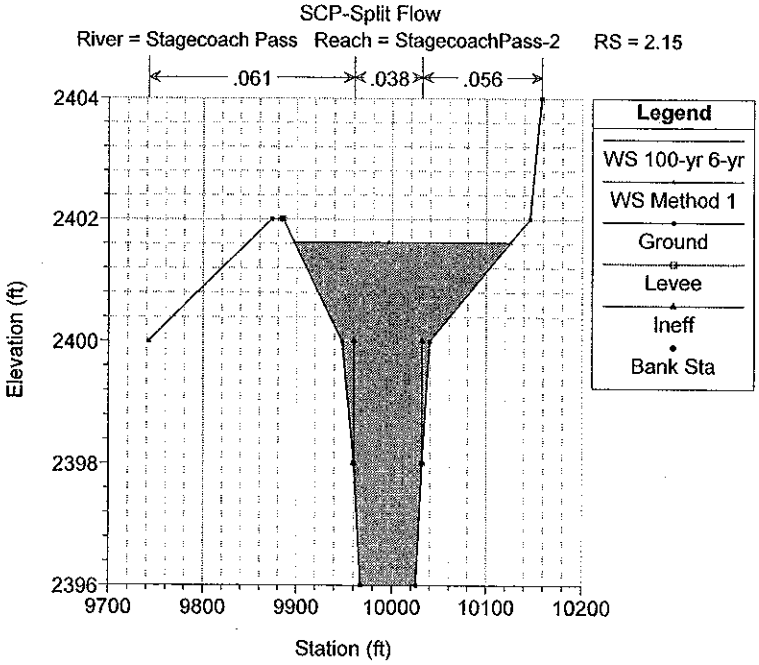

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.49
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

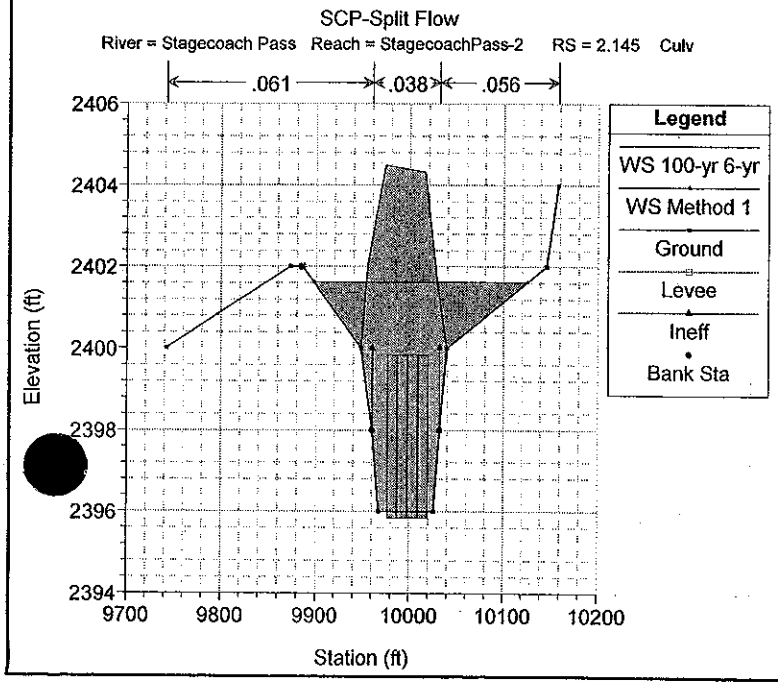

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.41
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

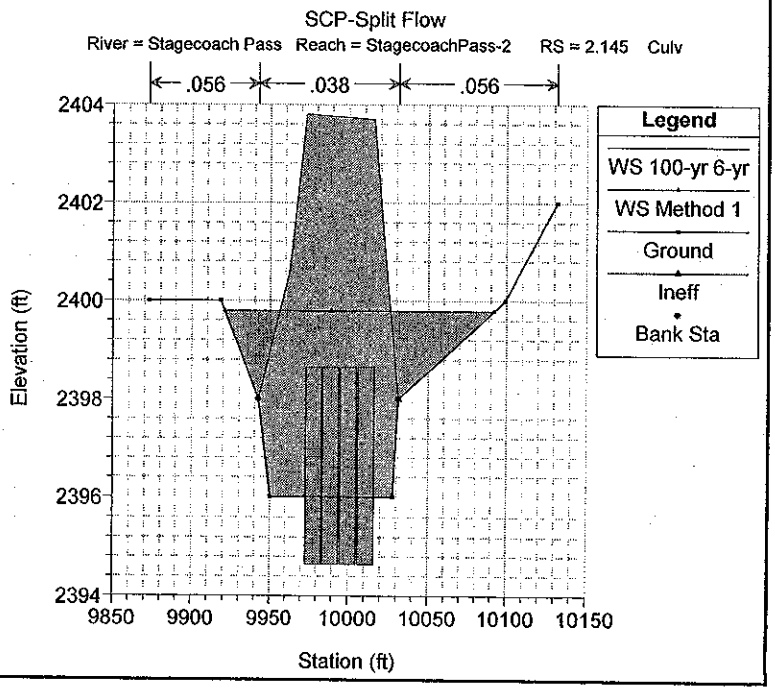

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.36
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

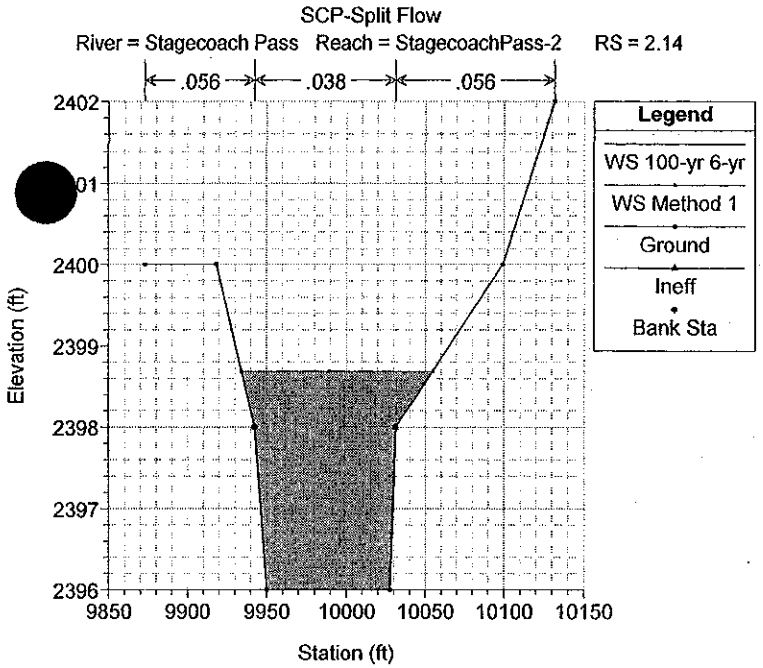

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.3
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

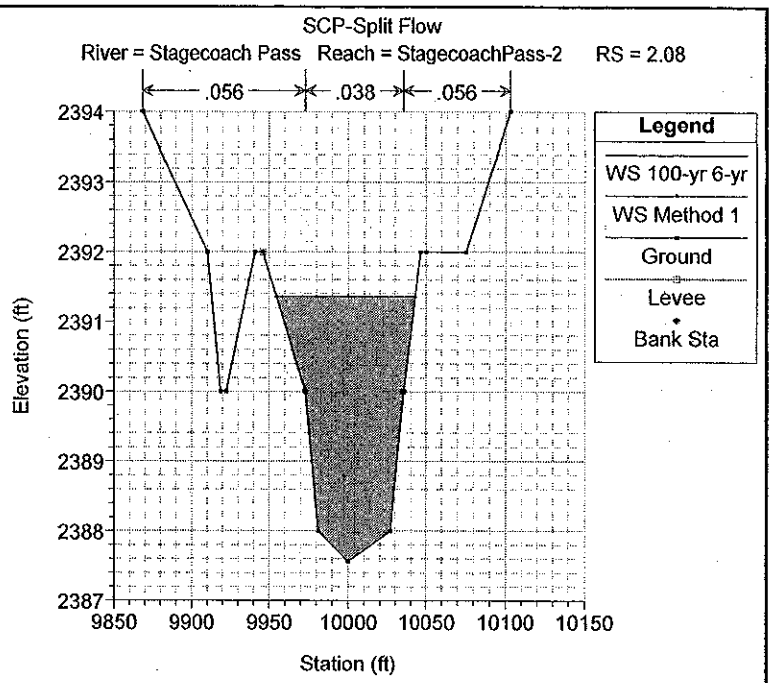

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.23
.061
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Station (ft)

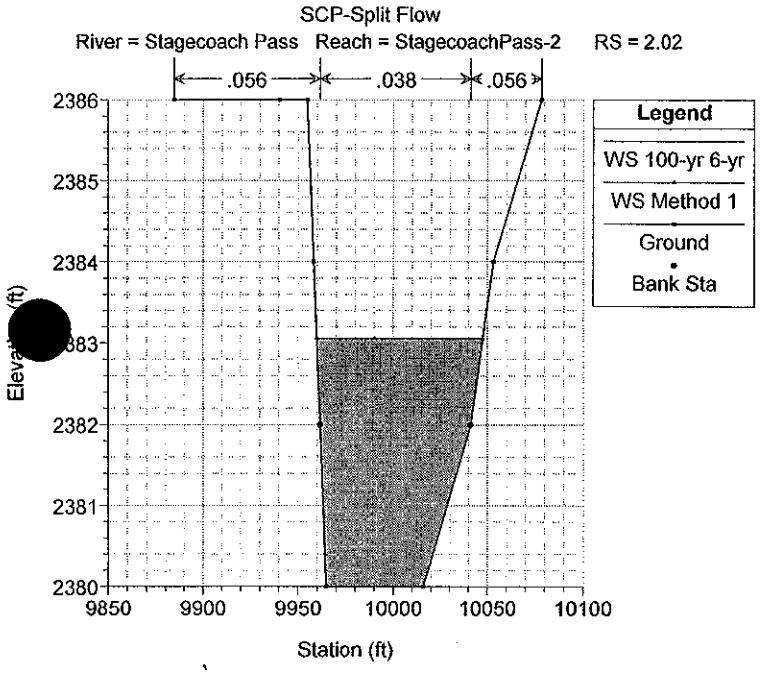

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.15
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

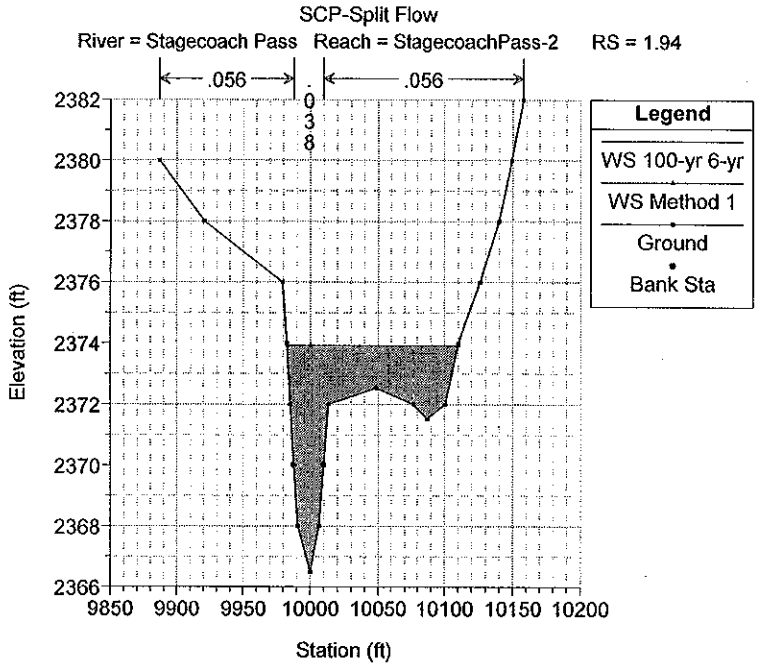

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.145 Culv
.061
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

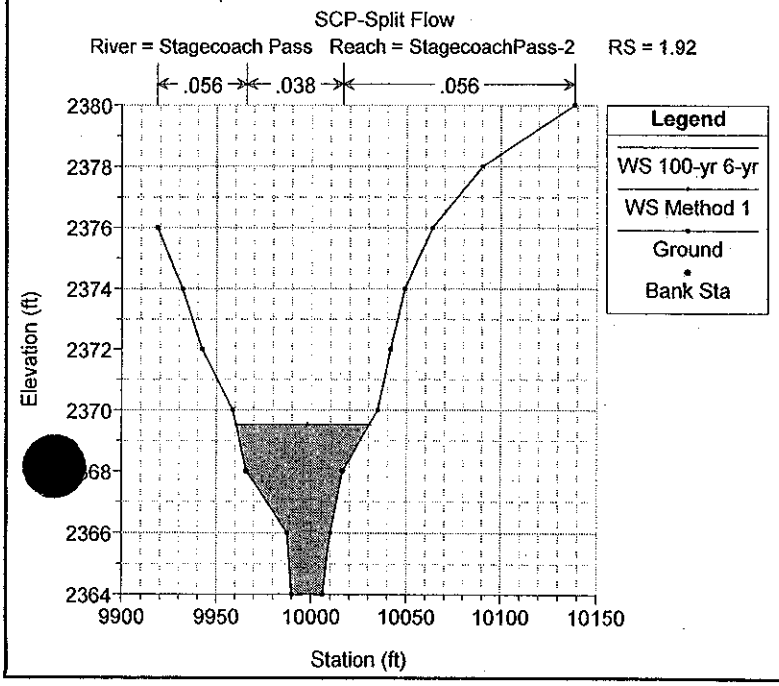

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.145 Culv
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

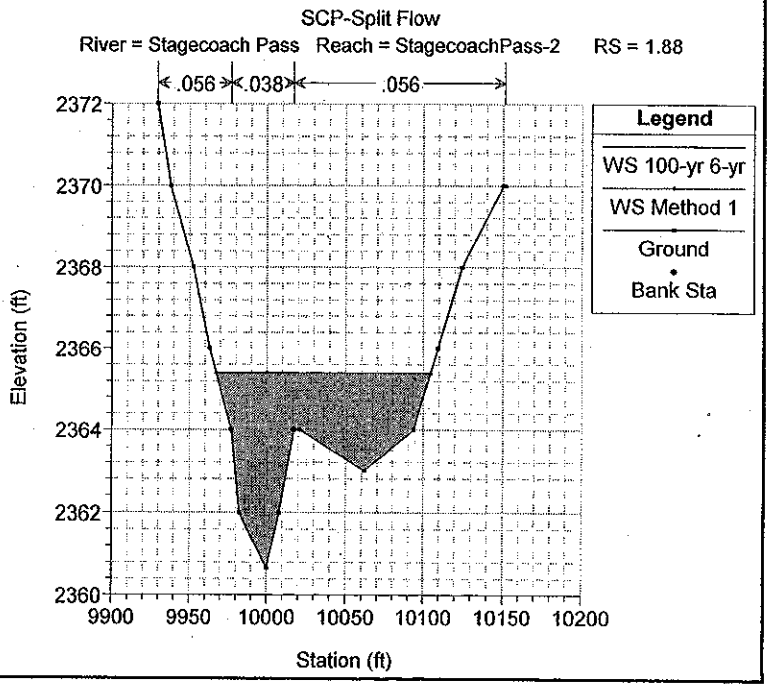

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.14
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

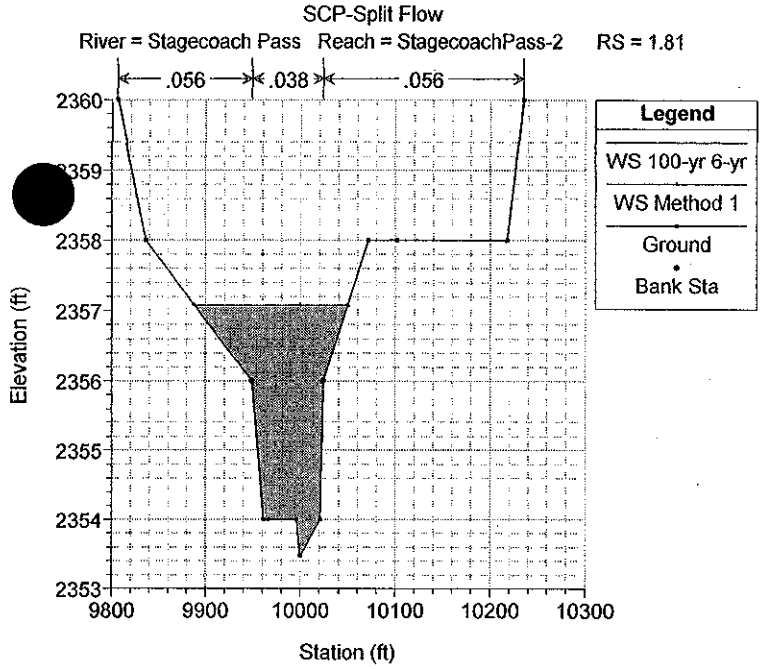

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.08
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

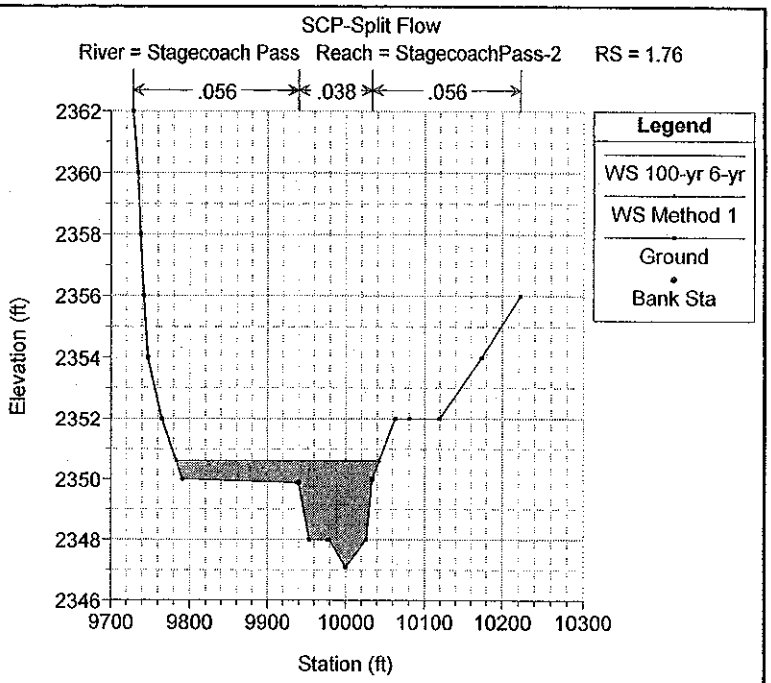

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 2.02
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Station (ft)

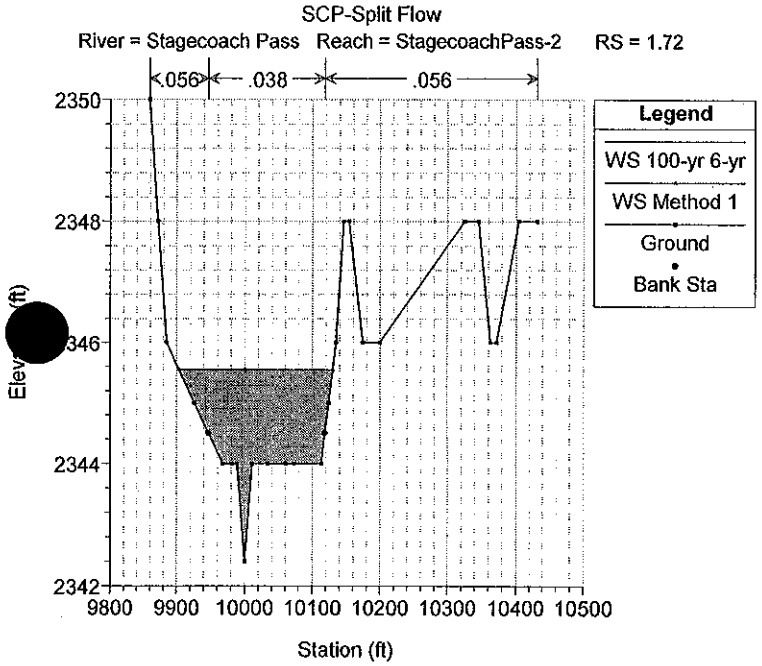

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.94
.056
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

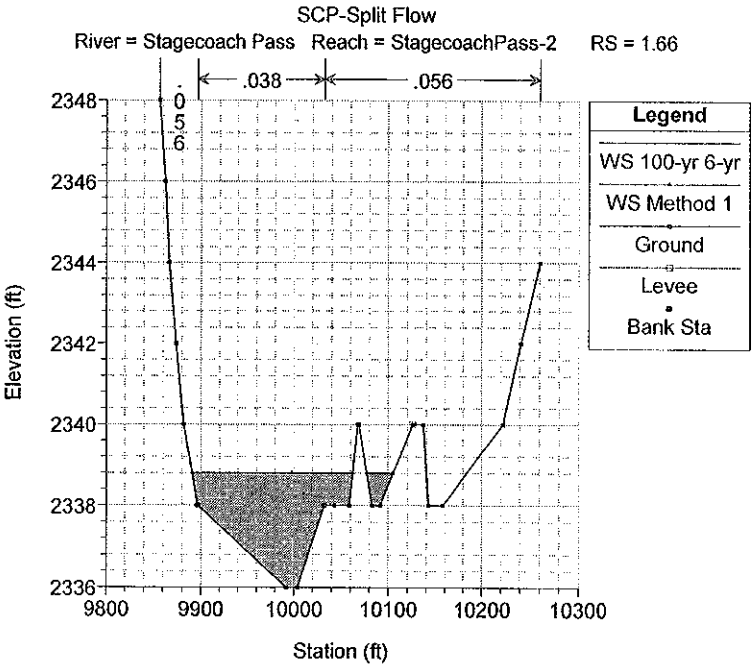

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.92
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

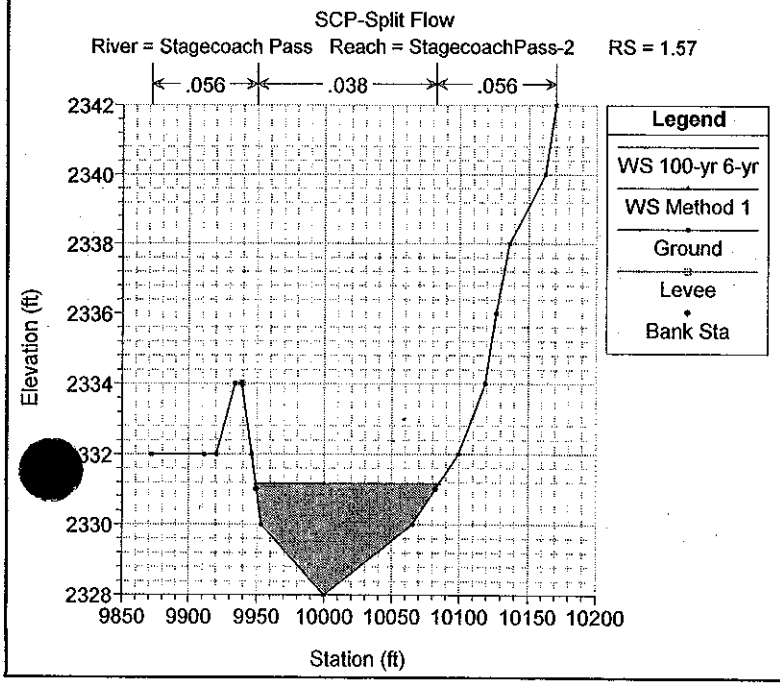

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.88
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

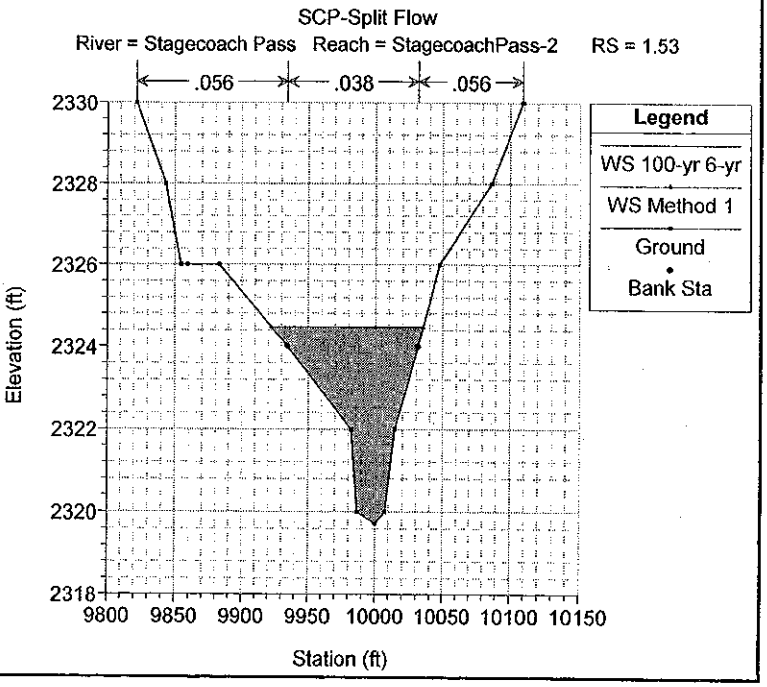

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.81
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

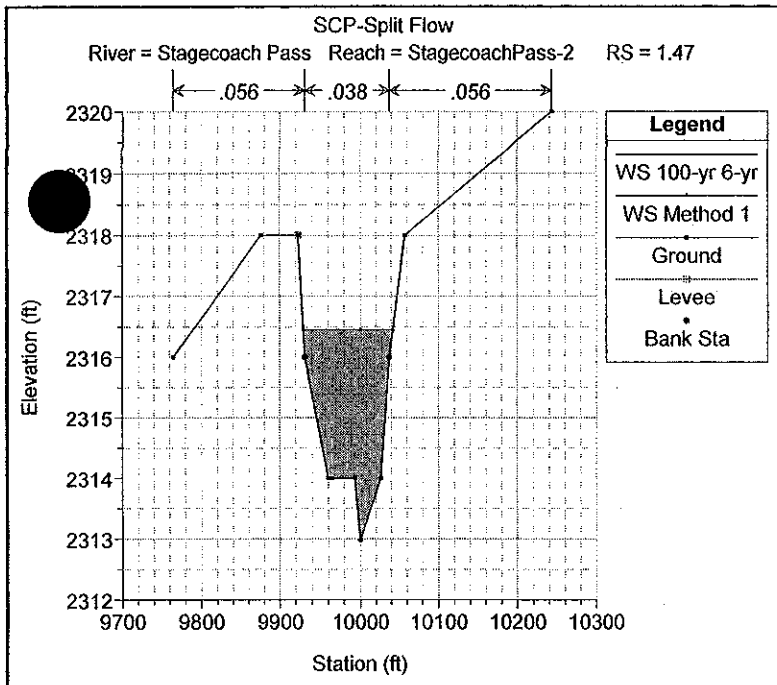

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.76
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

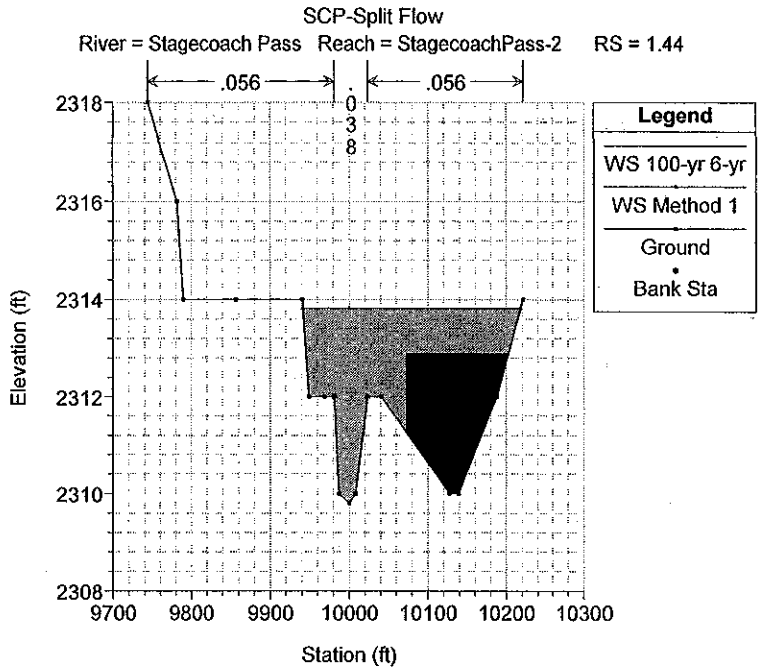

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.72
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Station (ft)

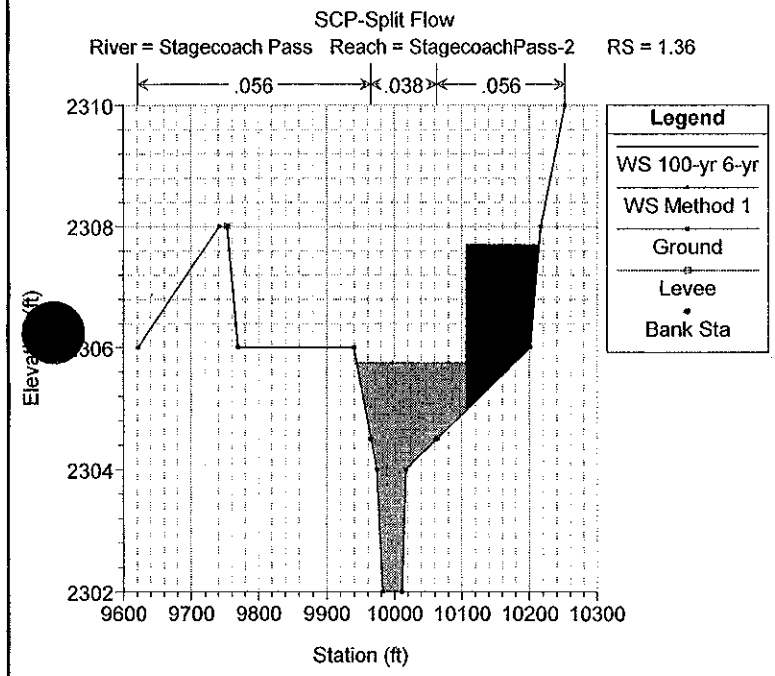

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.66
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

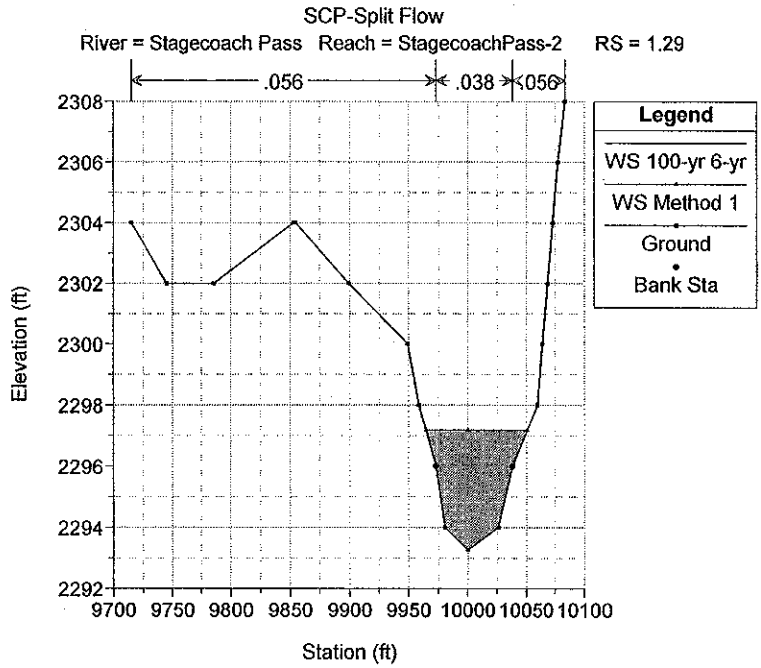

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.57
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

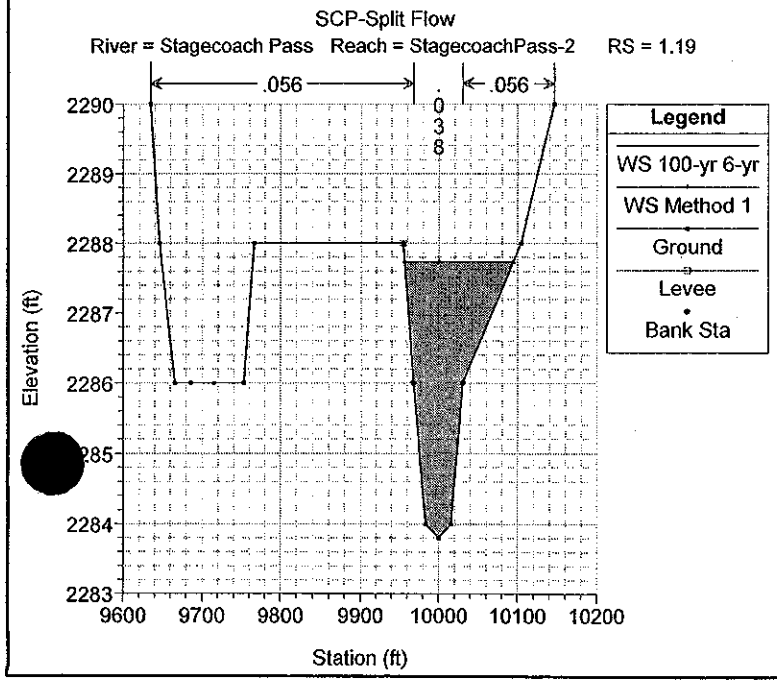

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.53
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

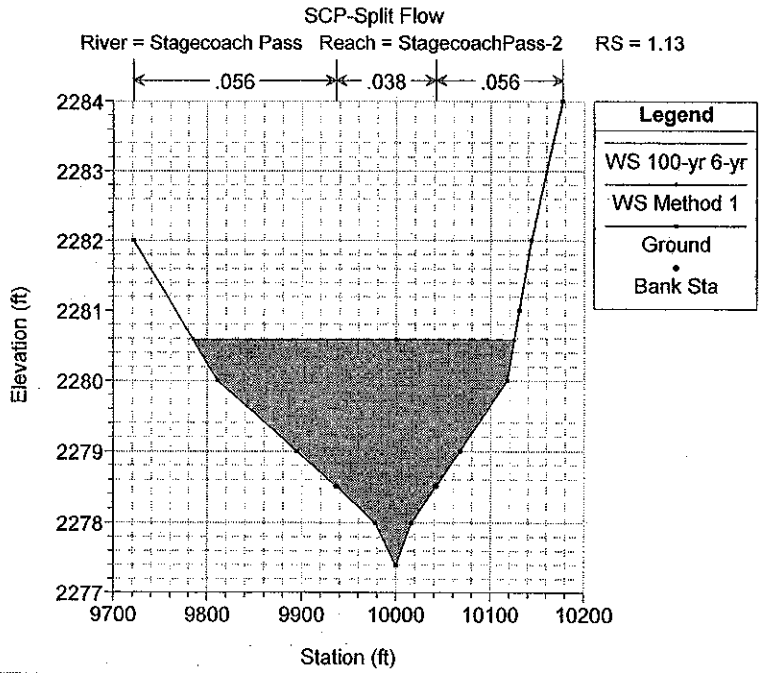

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.47
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

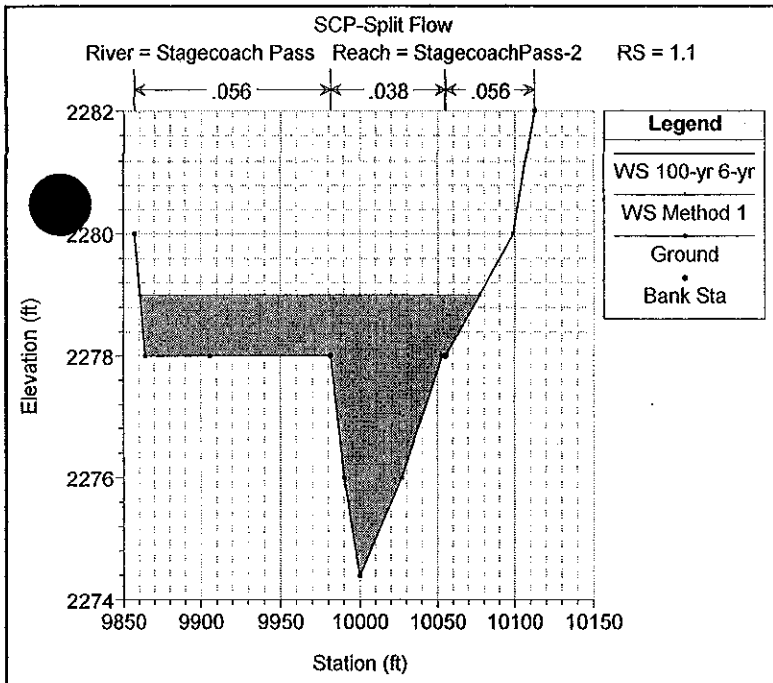

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.44
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

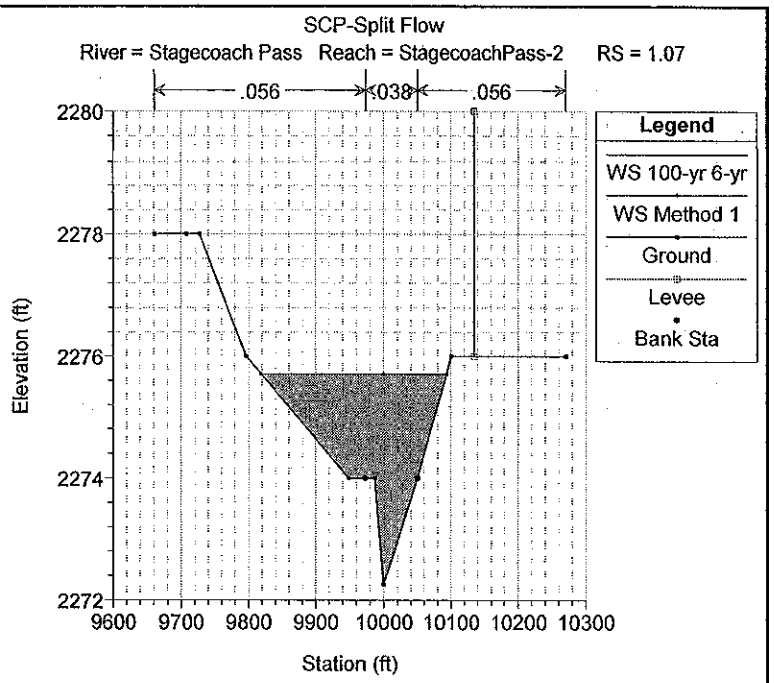

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.36
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Station (ft)

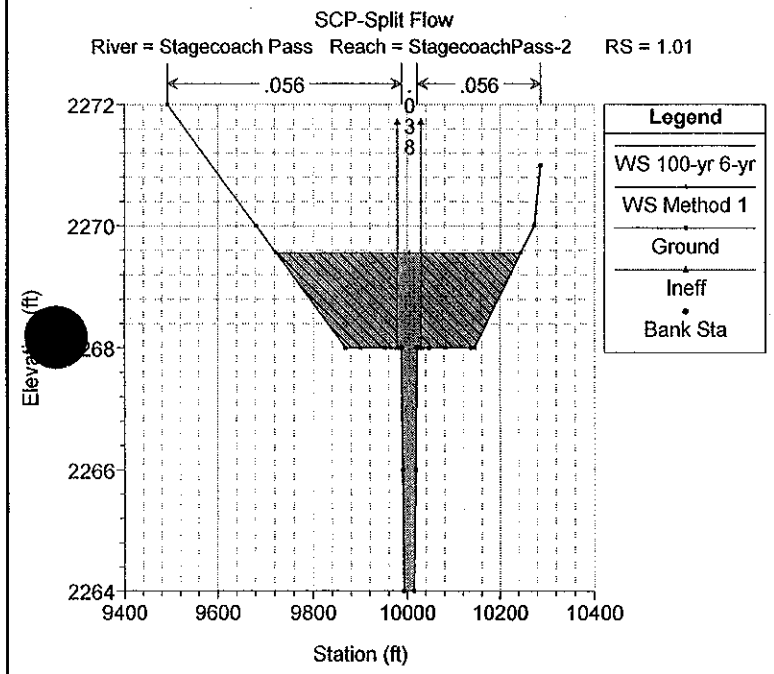

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.29
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

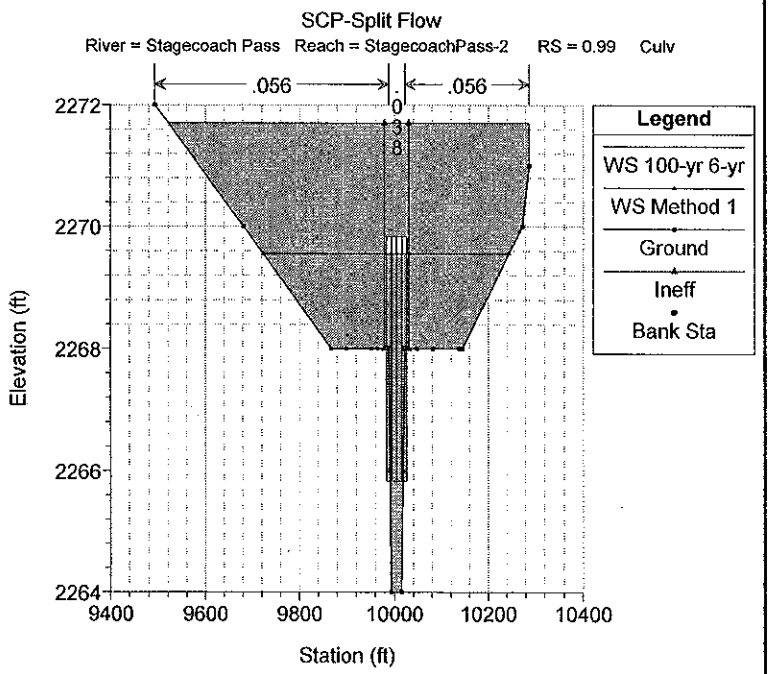

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.19
.056
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

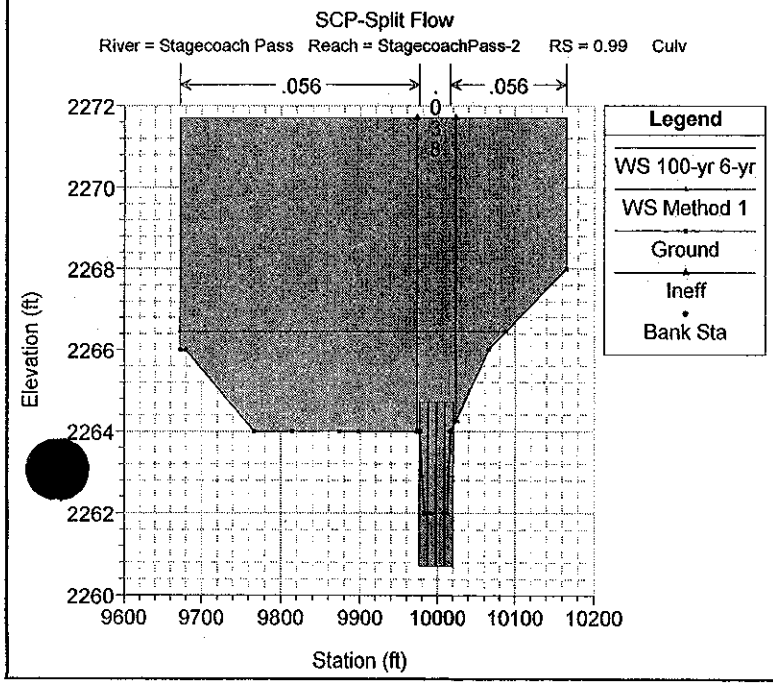

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.13
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

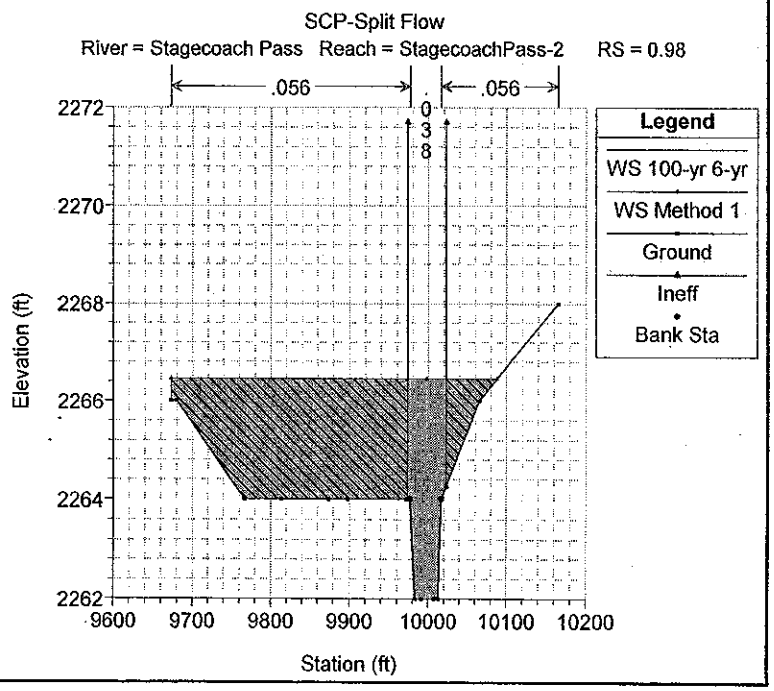

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.1
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

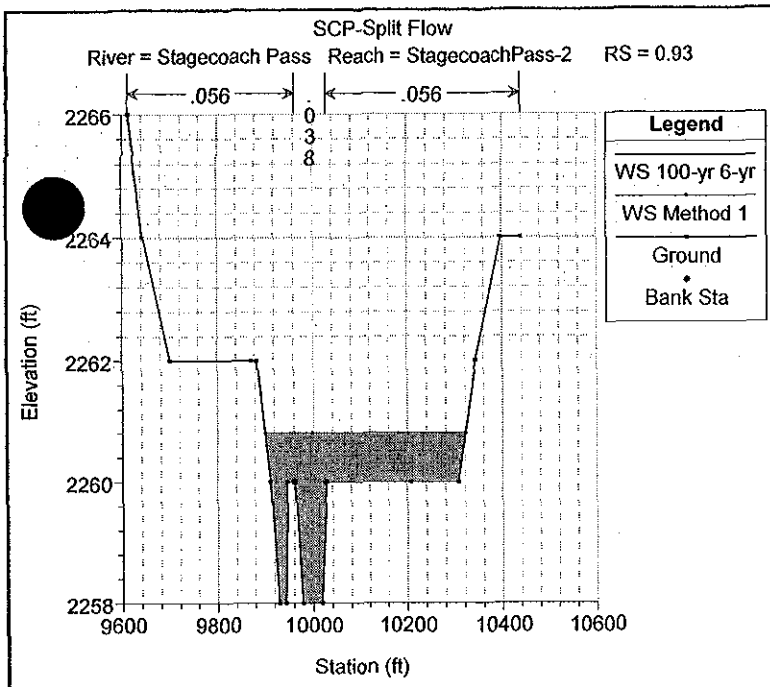

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.07
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 1.01
.056
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

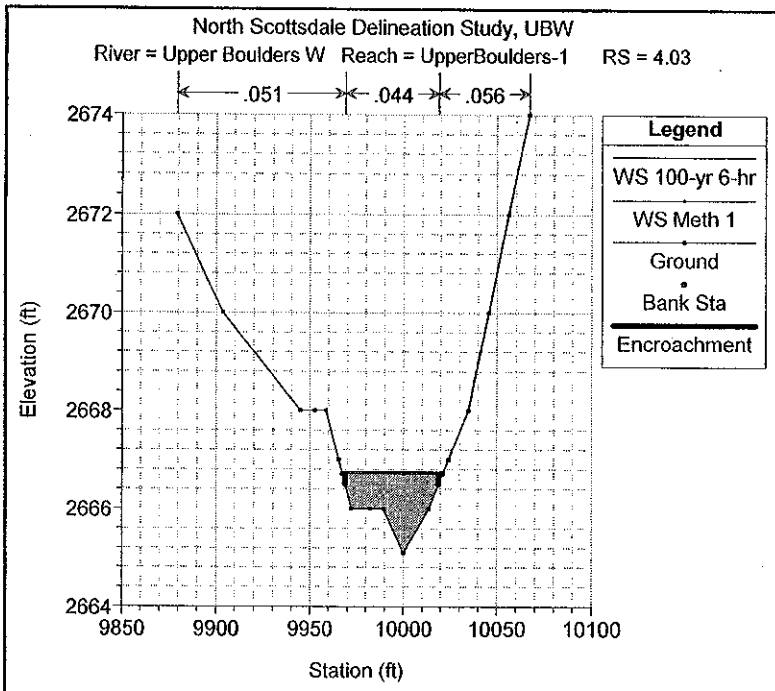

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 0.99 Culv
.056
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

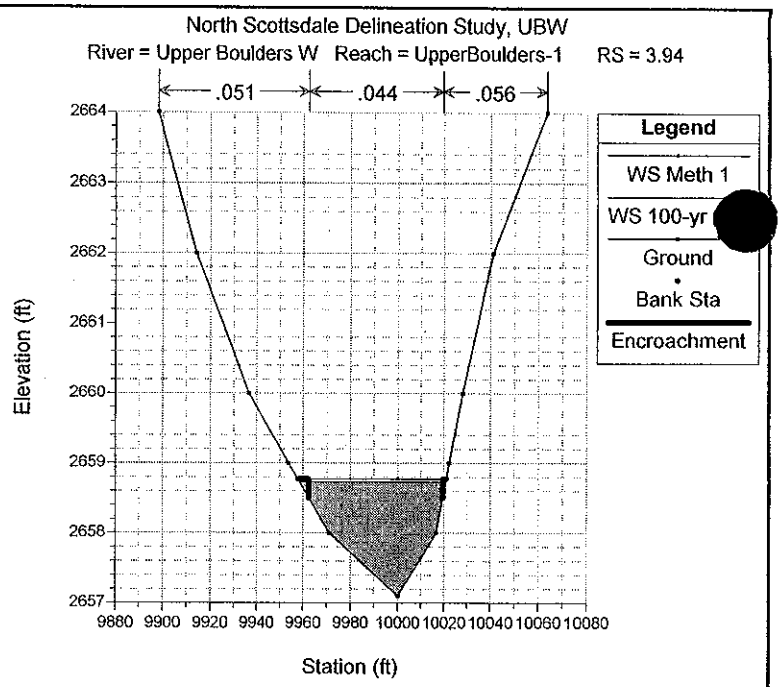

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 0.99 Culv
.056
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

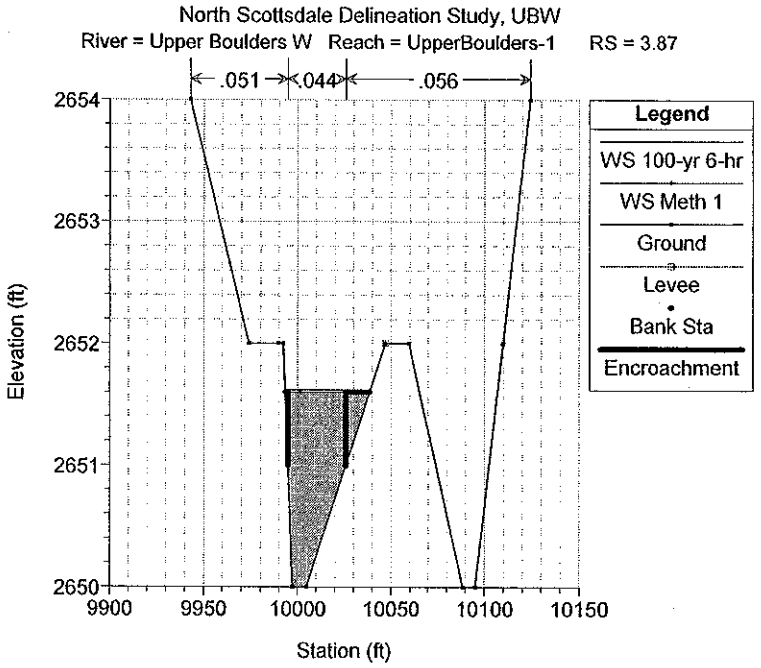

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 0.98
.056
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

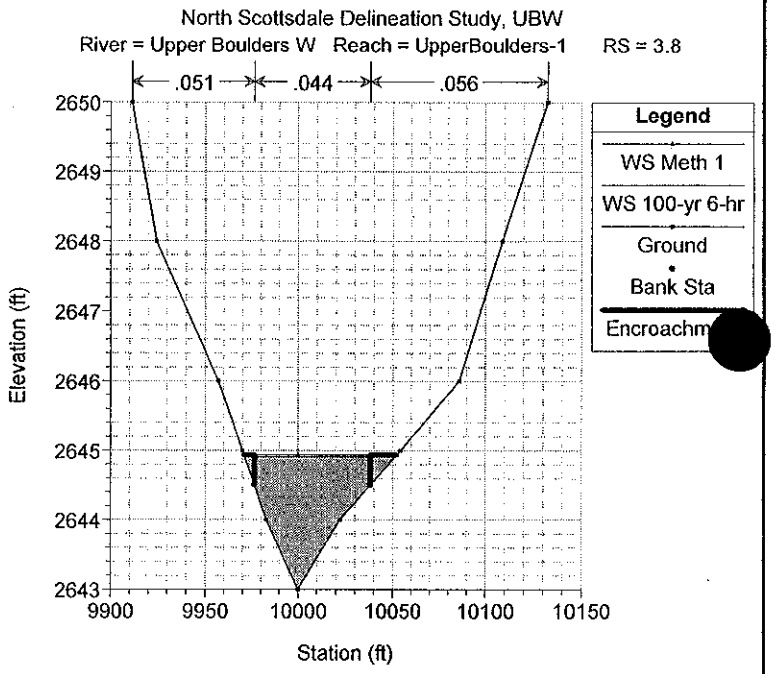

SCP-Split Flow
River = Stagecoach Pass Reach = StagecoachPass-2 RS = 0.93
.056
.038
.056
Legend
WS 100-yr 6-yr
WS Method 1
Ground
Bank Sta
Elevation (ft)
2266
2264
2262
2260
2258
9600
9800
10000
10200
10400
10600
Station (ft)

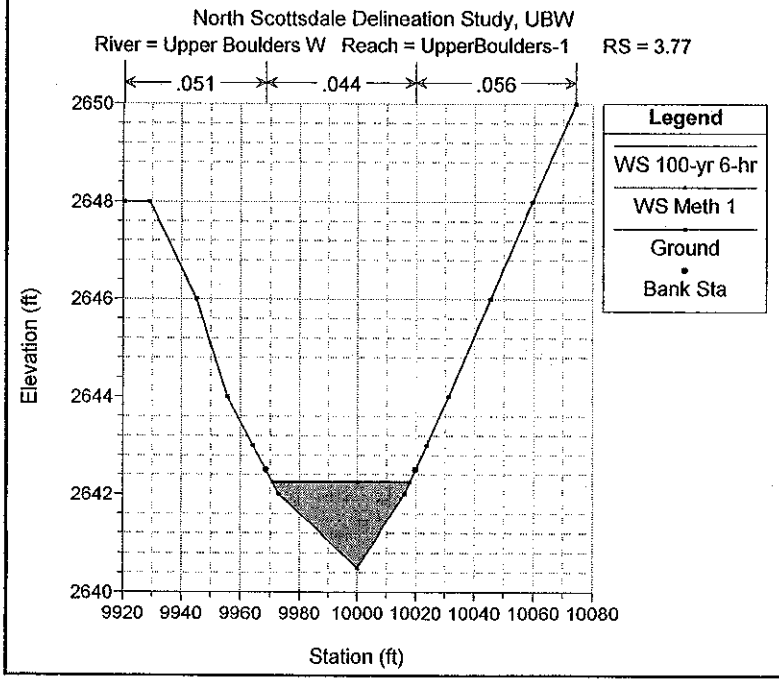
UPPER BOULDERS WASH

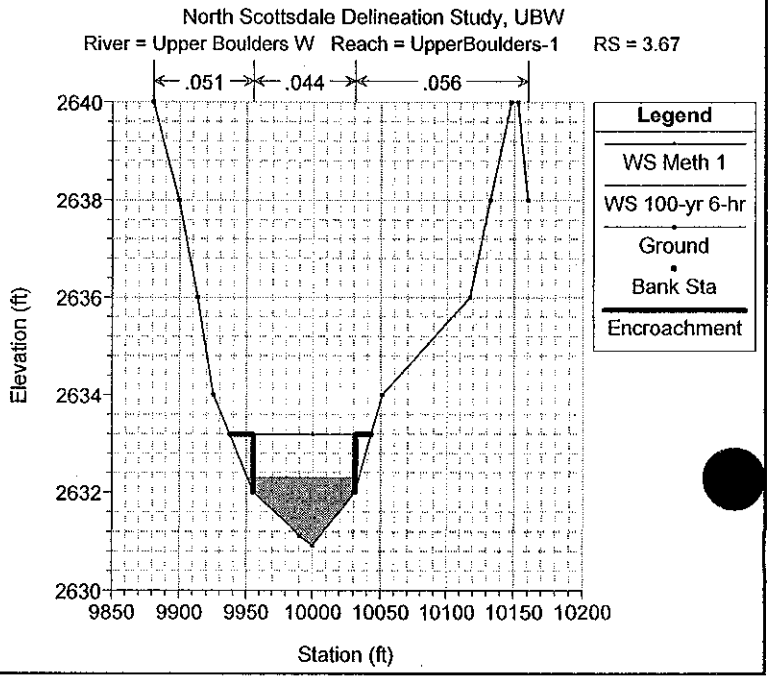

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 4.03
.051
.044
.056
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

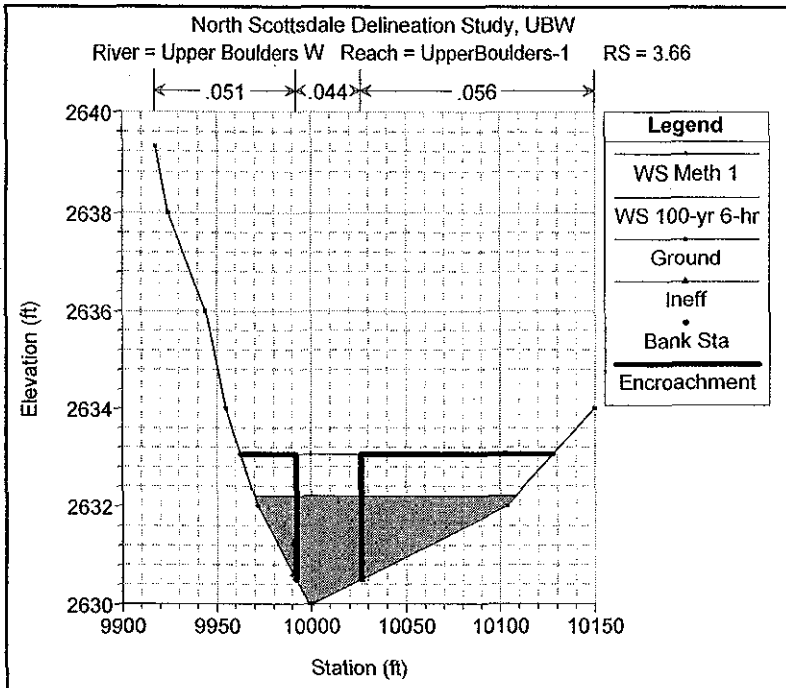

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.94
.051
.044
.056
Legend
WS Meth 1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

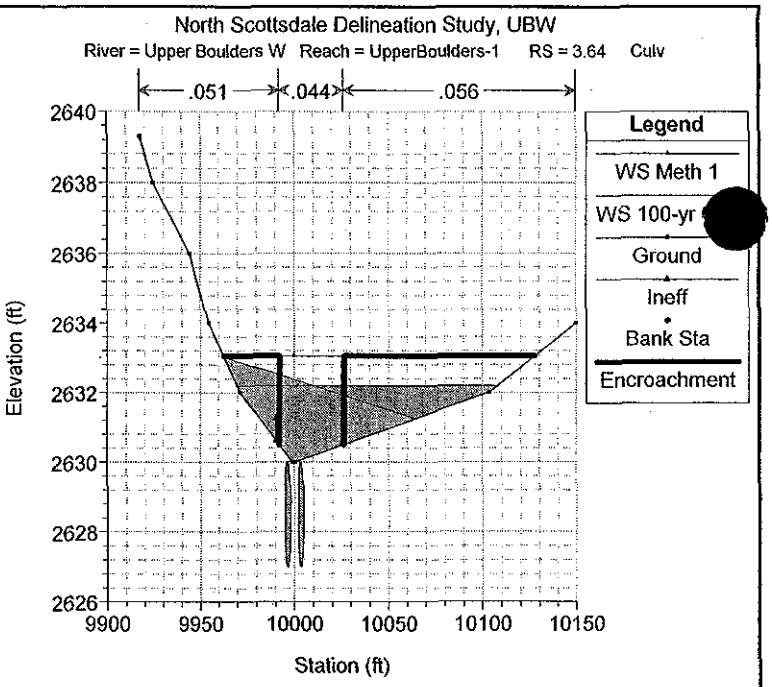

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.87
.051
.044
.056
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

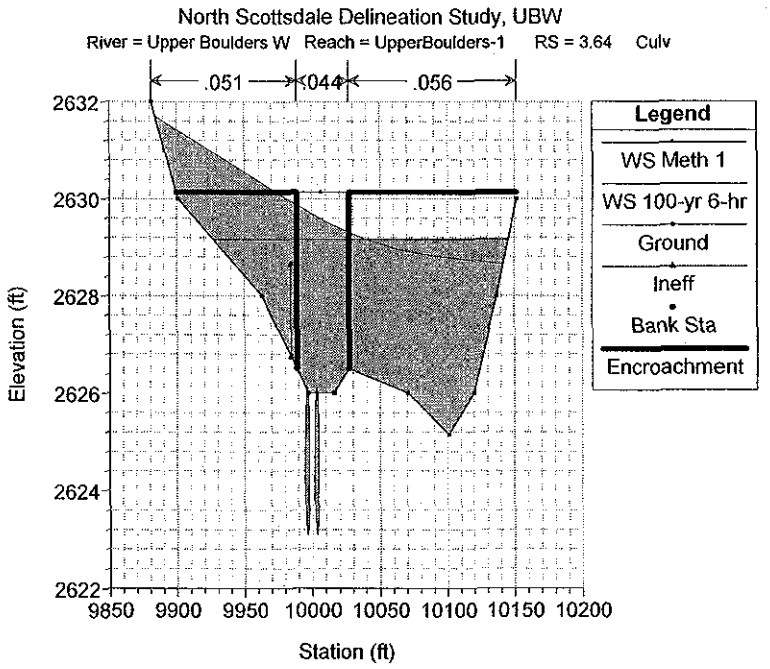

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.8
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)

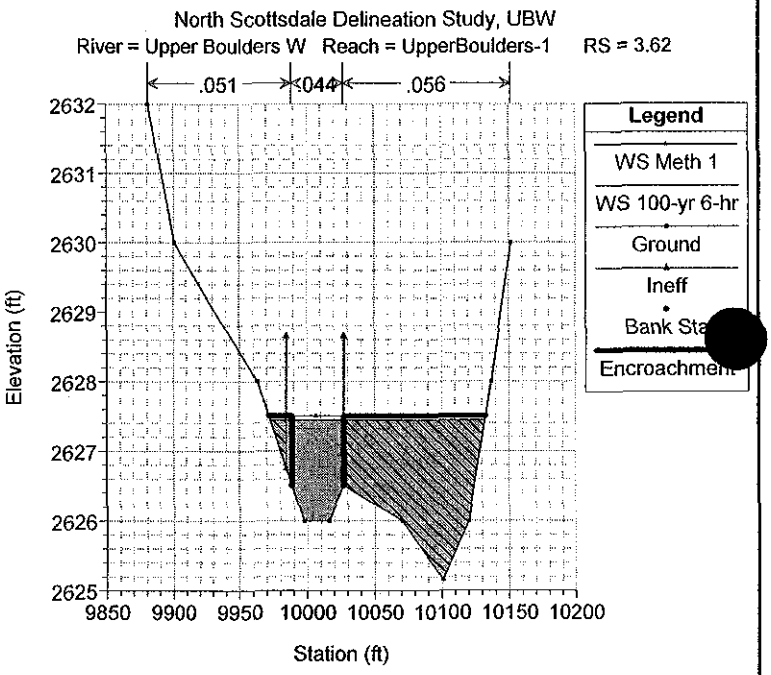

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.77
.051
.044
.056
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

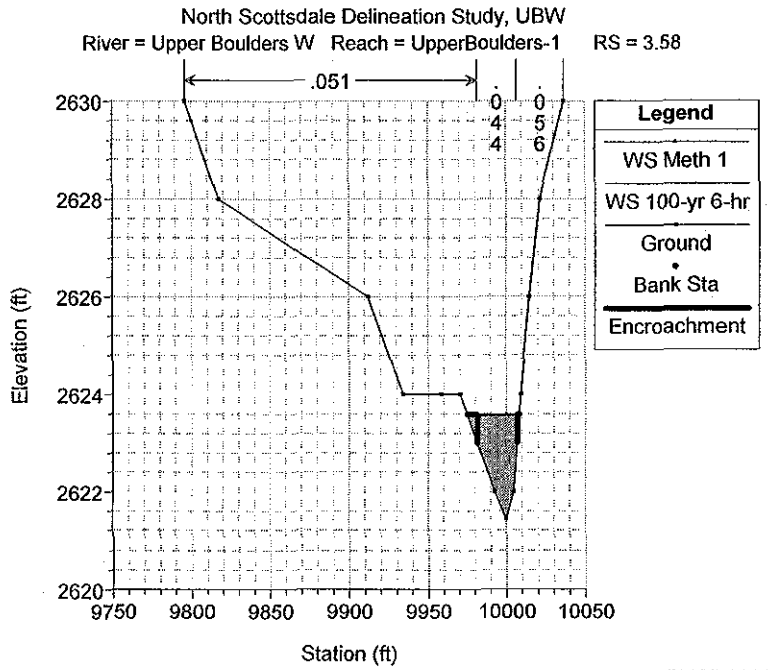

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.67
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

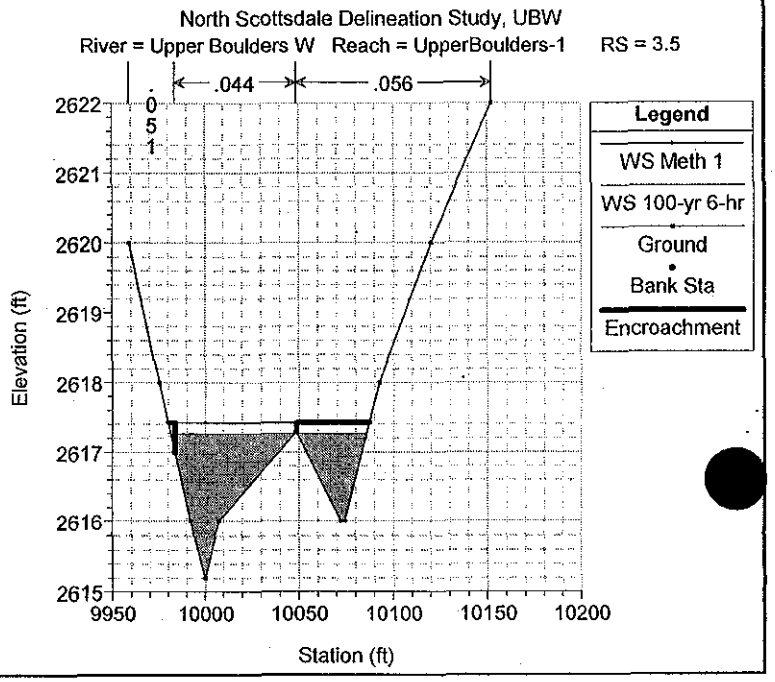

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.66
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

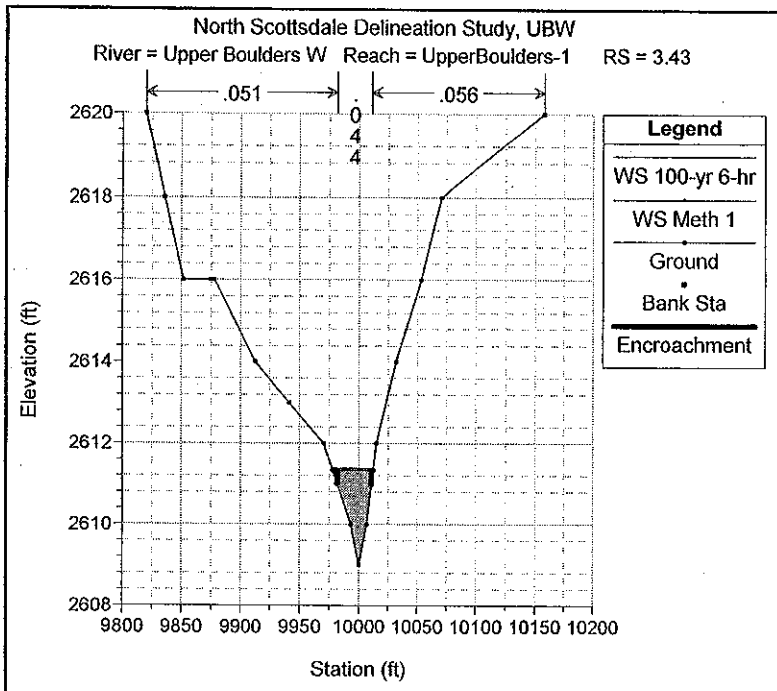

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.64 Culv
.051
.044
.056
Legend
WS Meth 1
WS 100-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

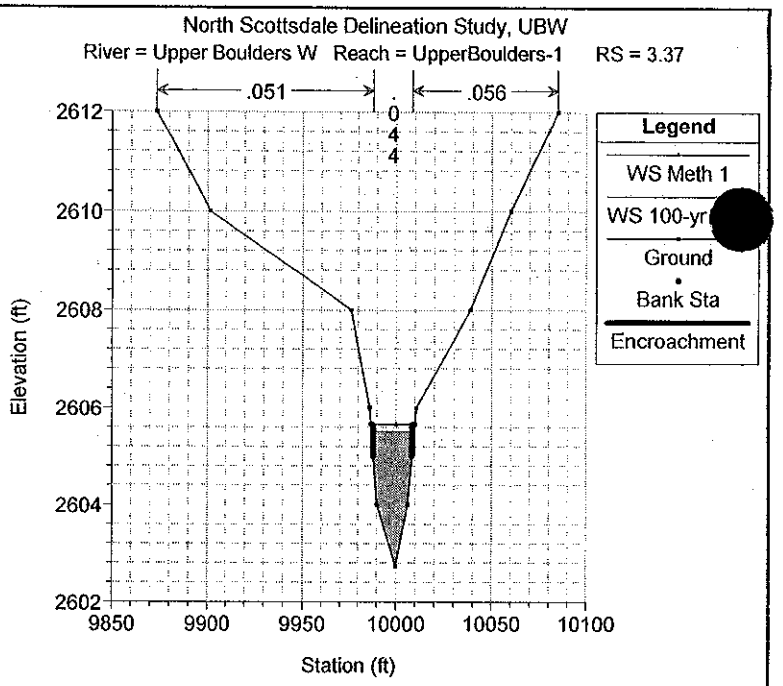

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.64 Culv
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.62
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.58
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.5
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.43
.051
.044
.056
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.37
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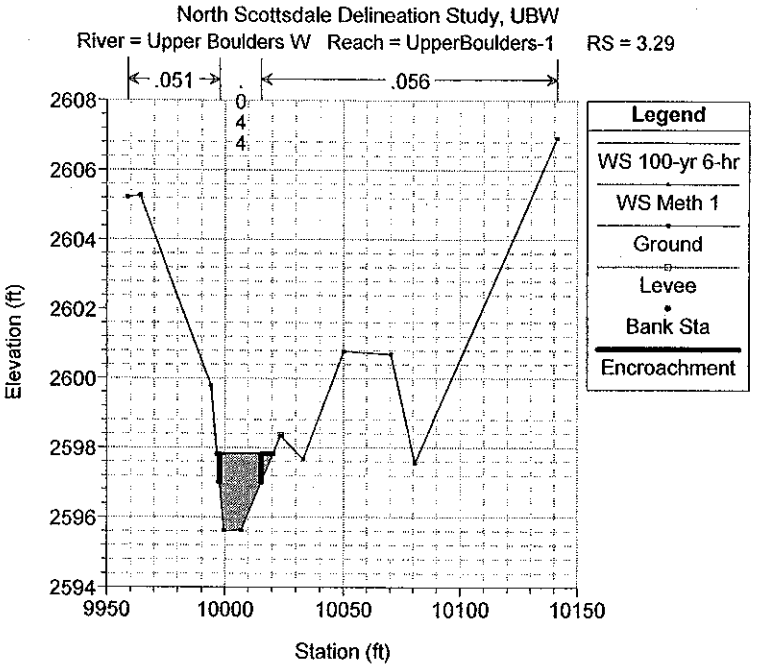
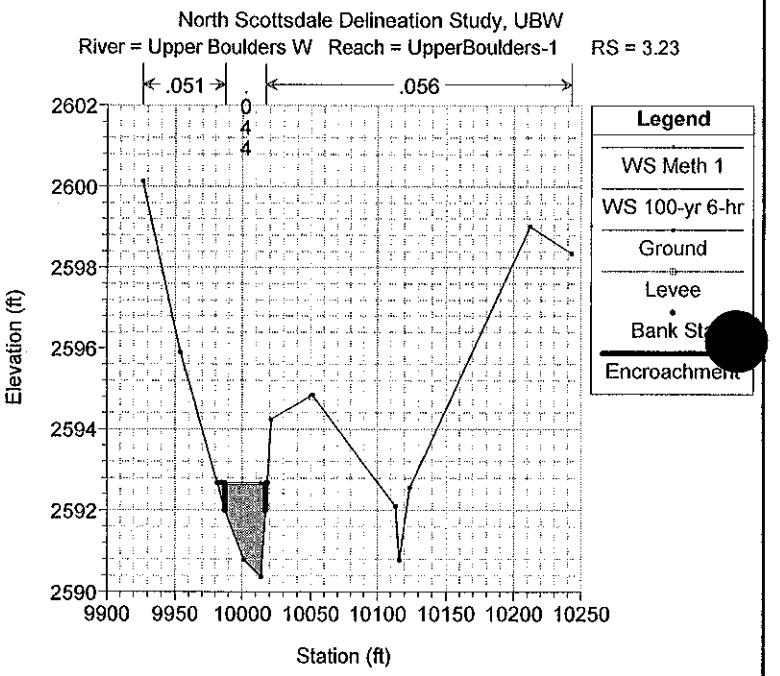
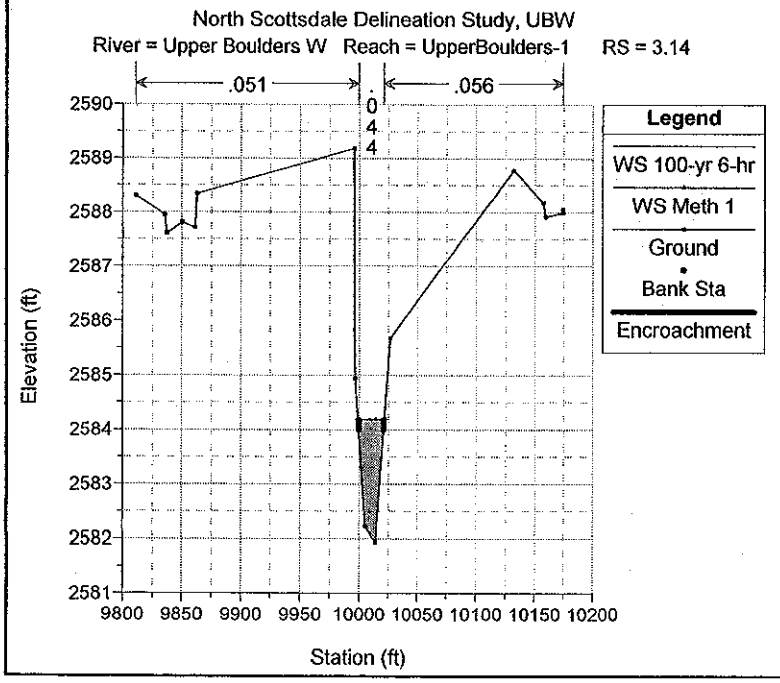
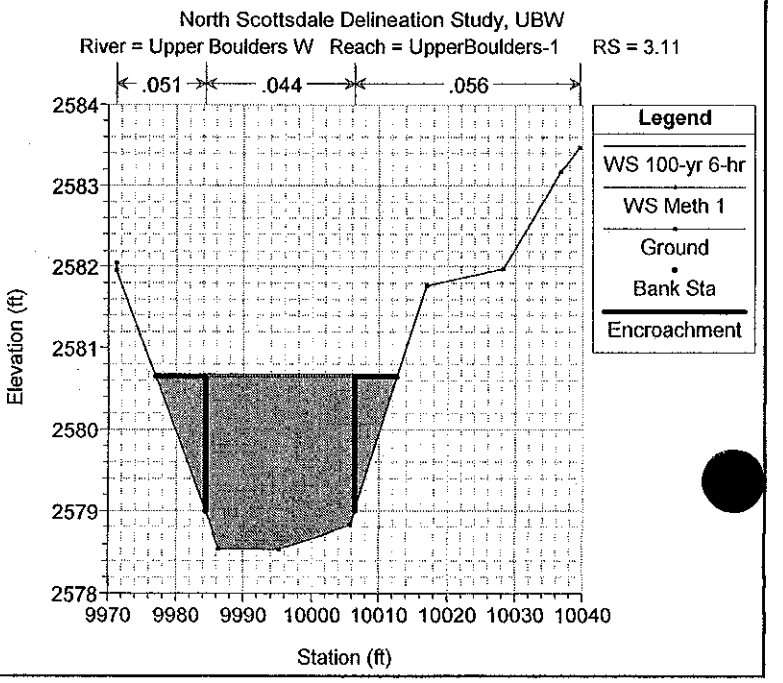
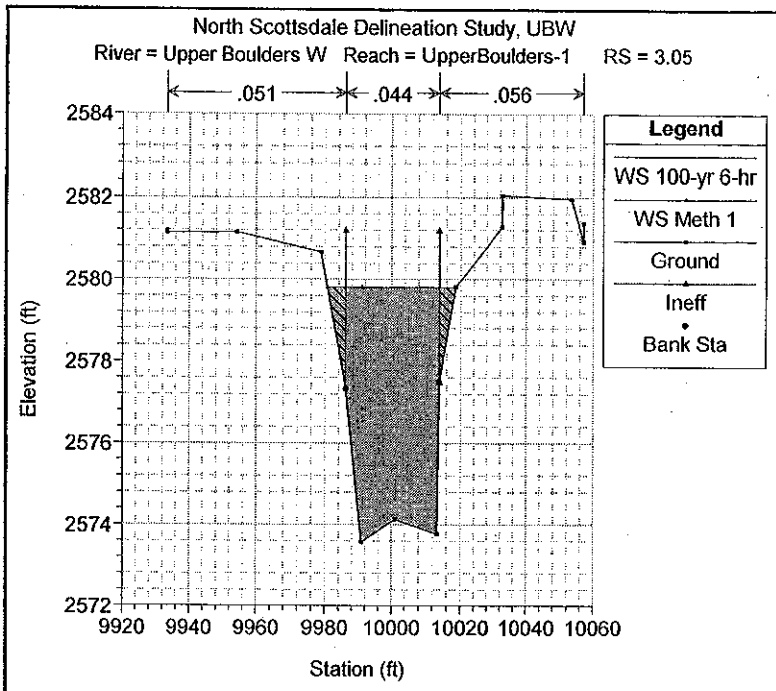
.044
.056
Legend
WS Meth 1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

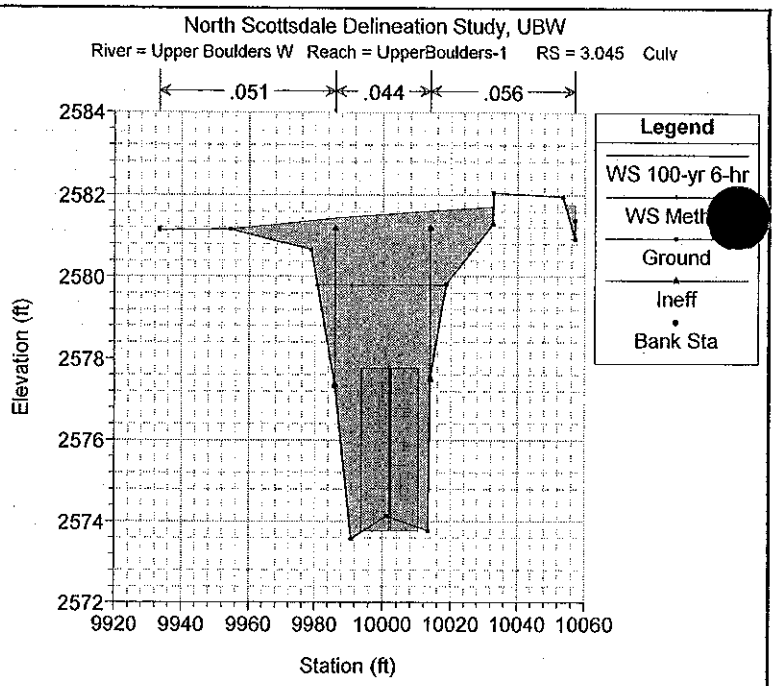

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.29
.051
.044
.056
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

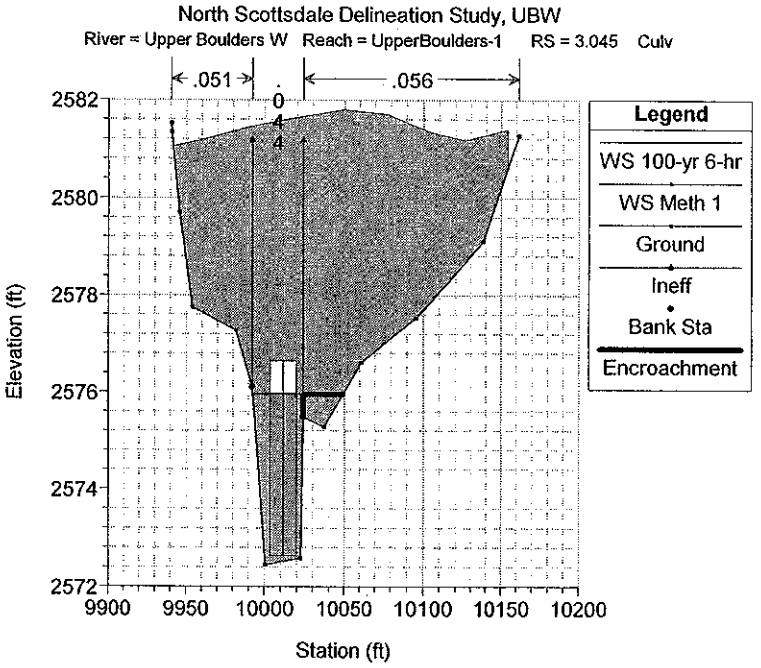

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.23
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

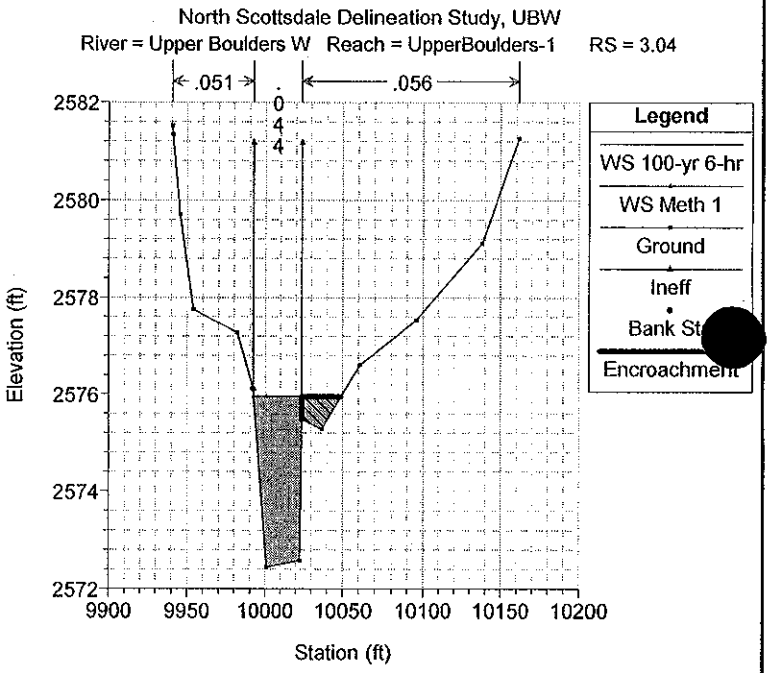

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.14
.051
.044
.056
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

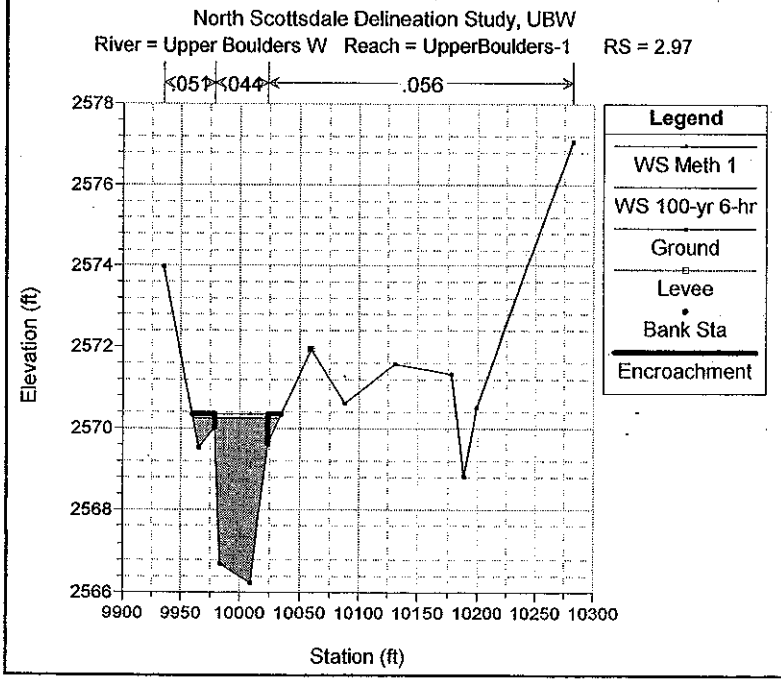

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.11
.051
.044
.056
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

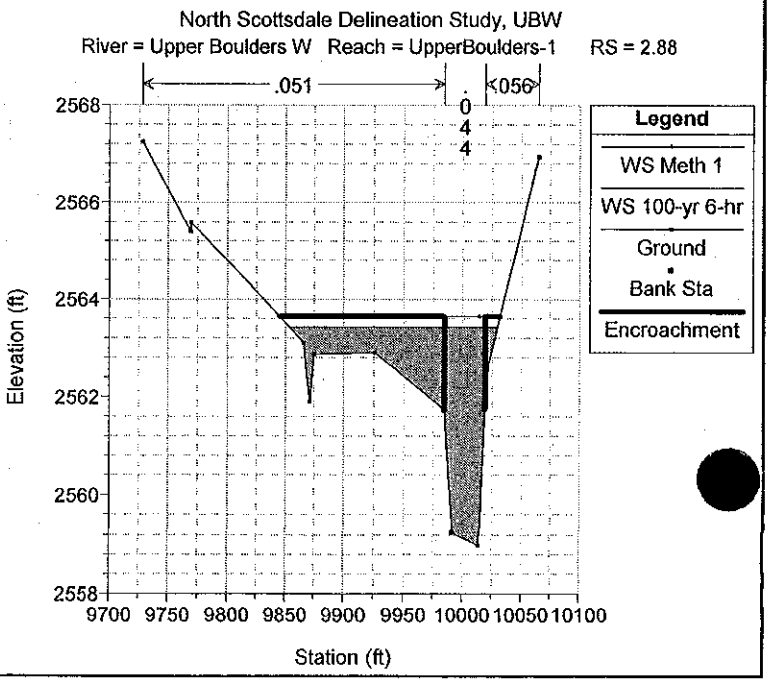

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.05
.051
.044
.056
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

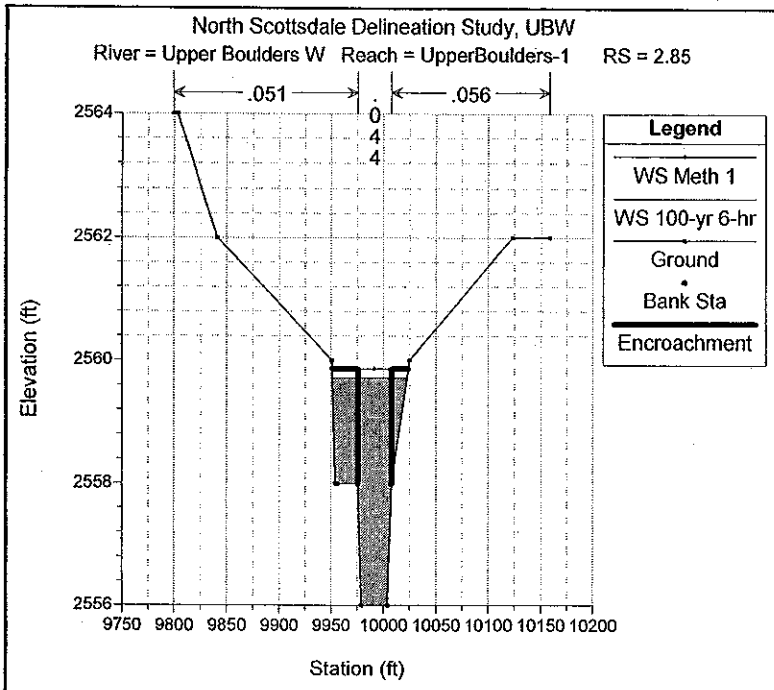

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.045 Culv
.051
.044
.056
Legend
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

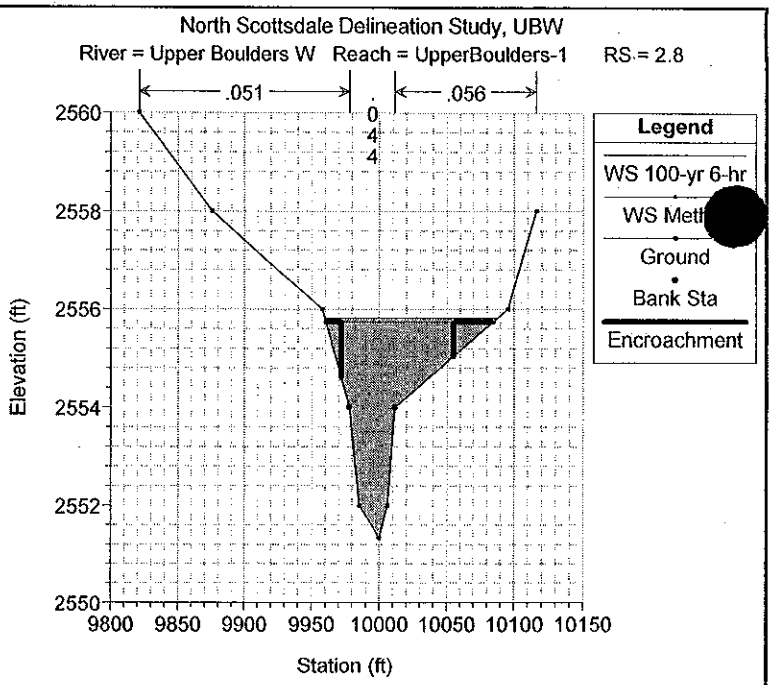

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.045 Culv
.051
.044
.056
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

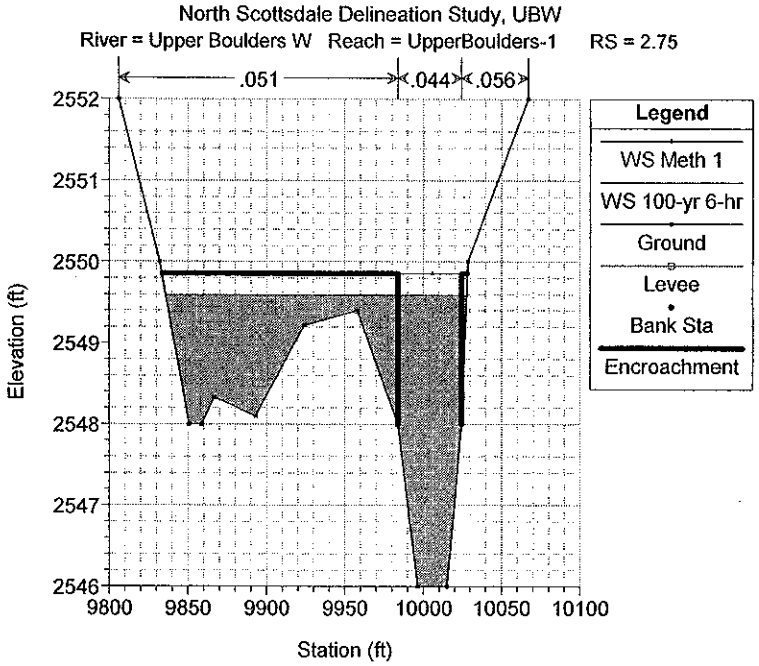

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 3.04
.051
.044
.056
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

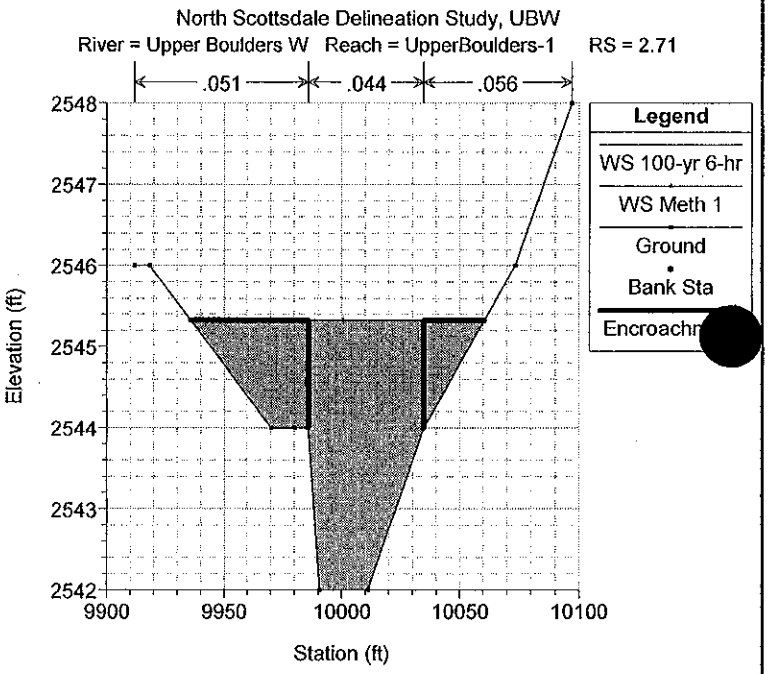

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.97
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

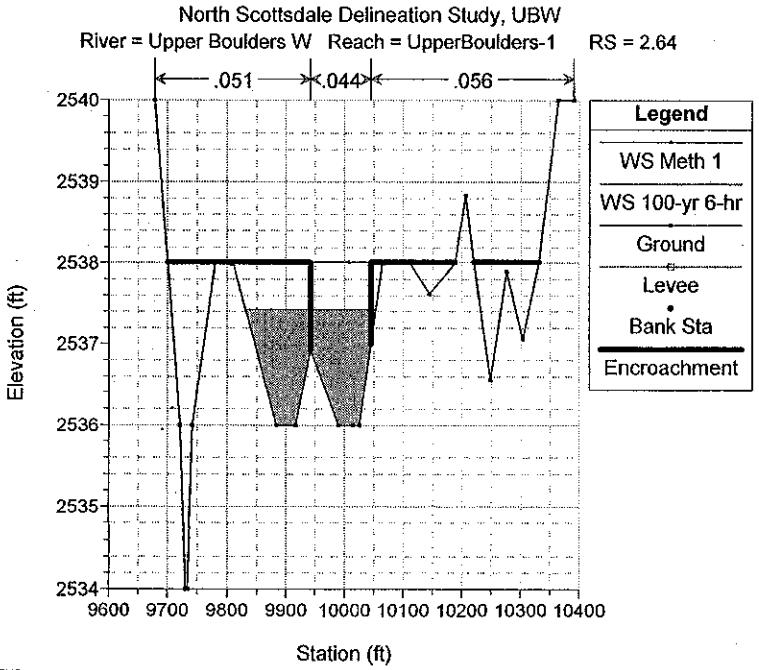

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.88
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

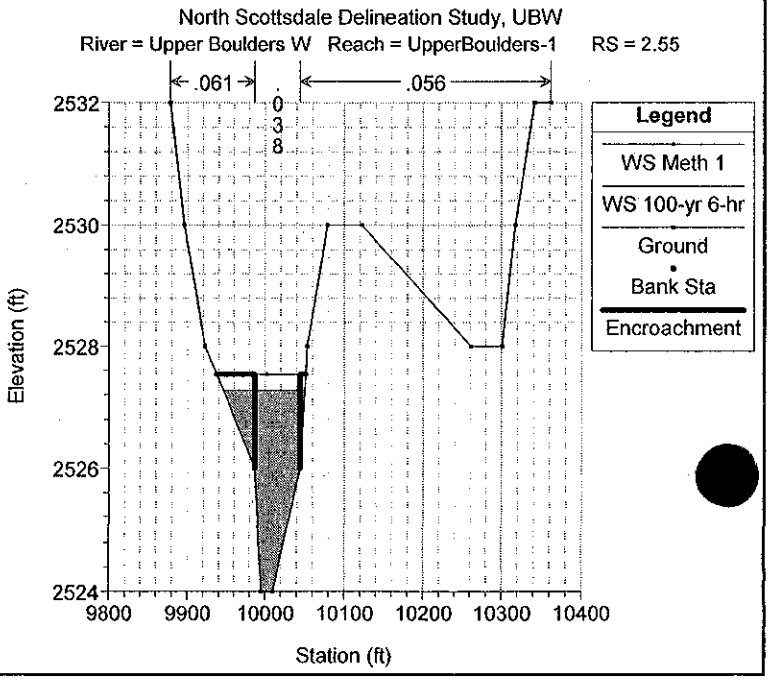

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.85
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

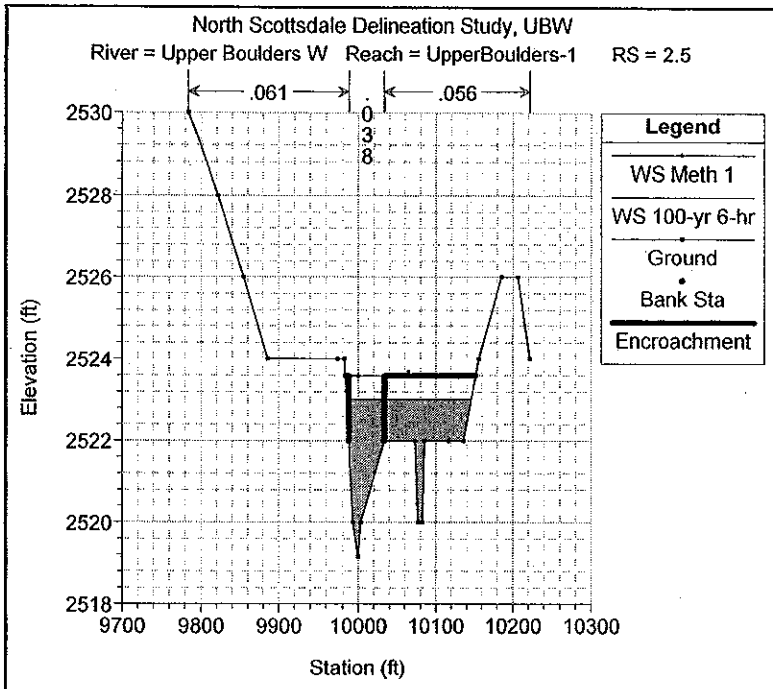

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.8
.051
.044
.056
Legend
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

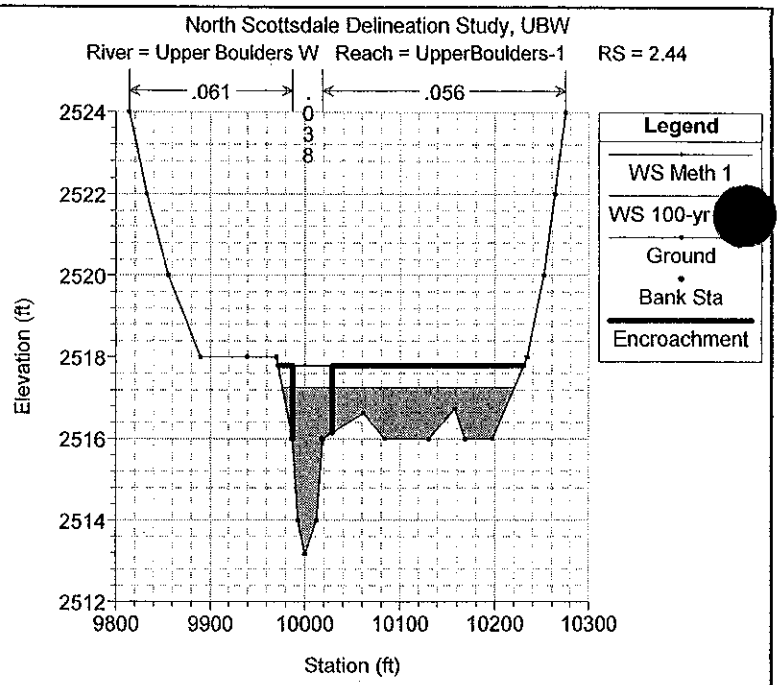

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.75
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

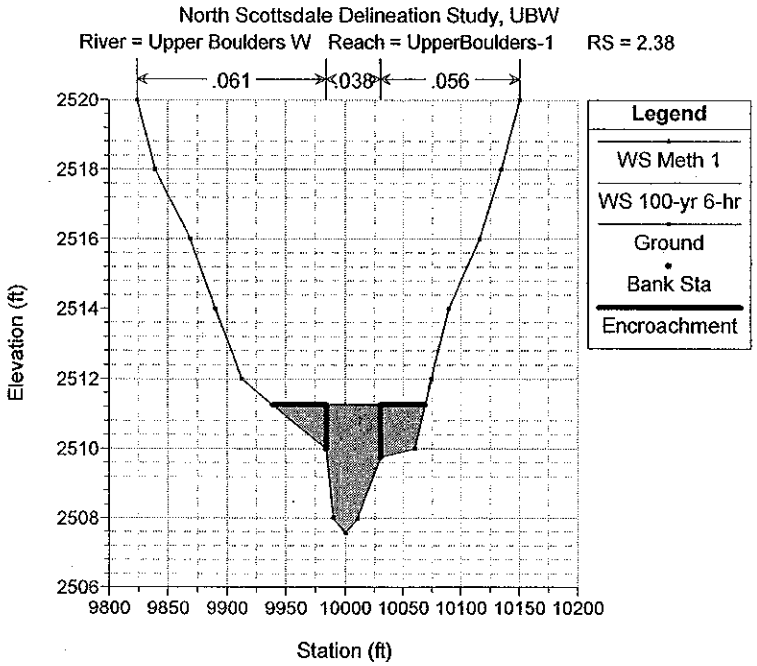

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.71
.051
.044
.056
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

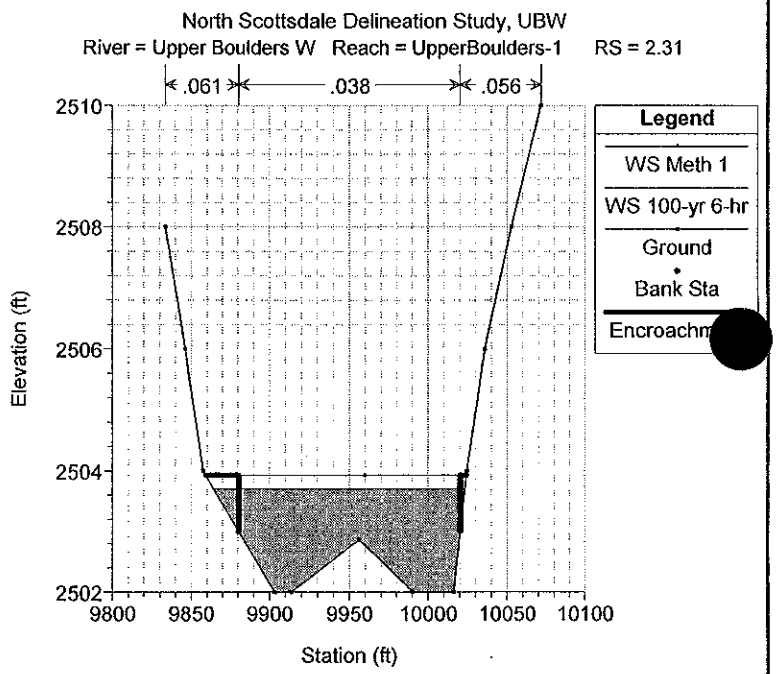

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.64
.051
.044
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

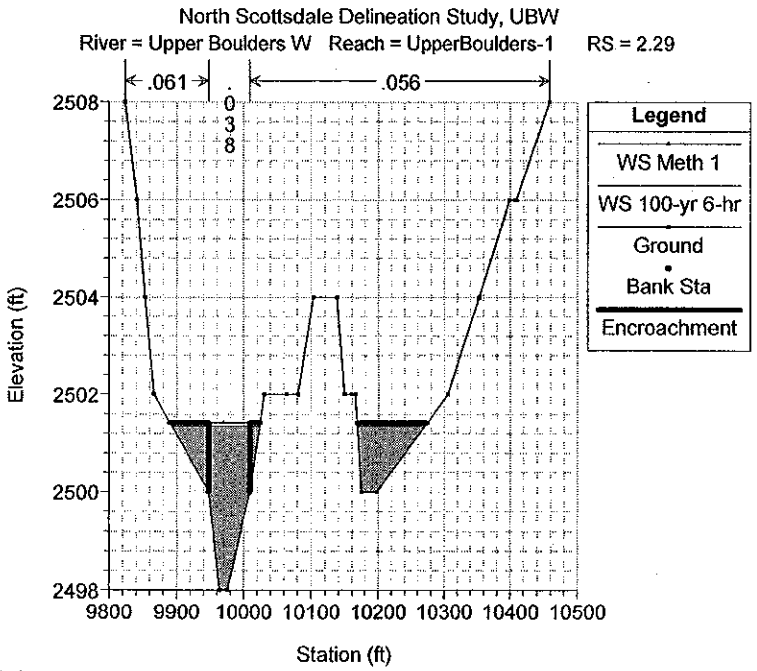

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.55
.061
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.5
.061
.038
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.44
.061
.038
.056
Legend
WS Meth 1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.38
.061
.038
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.31
.061
.038
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.29
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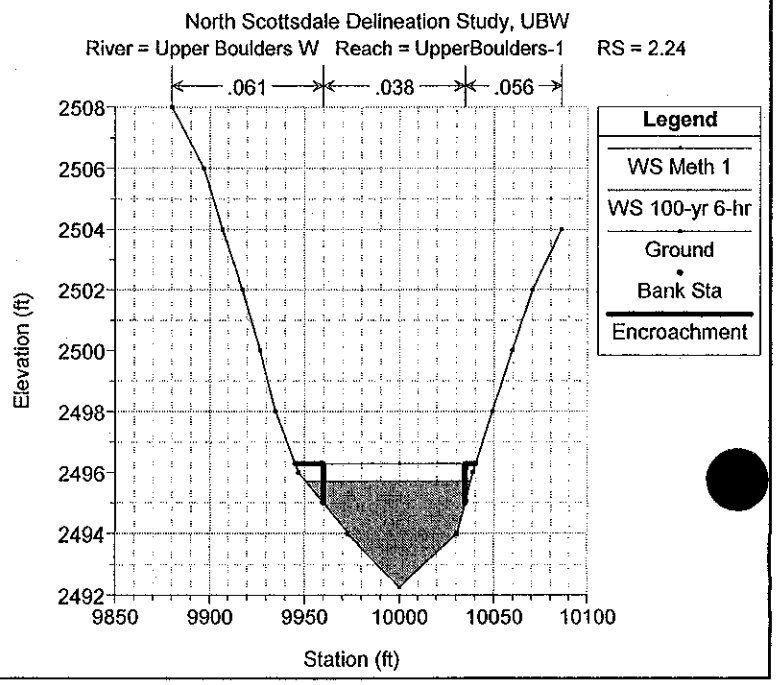
.038
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.24
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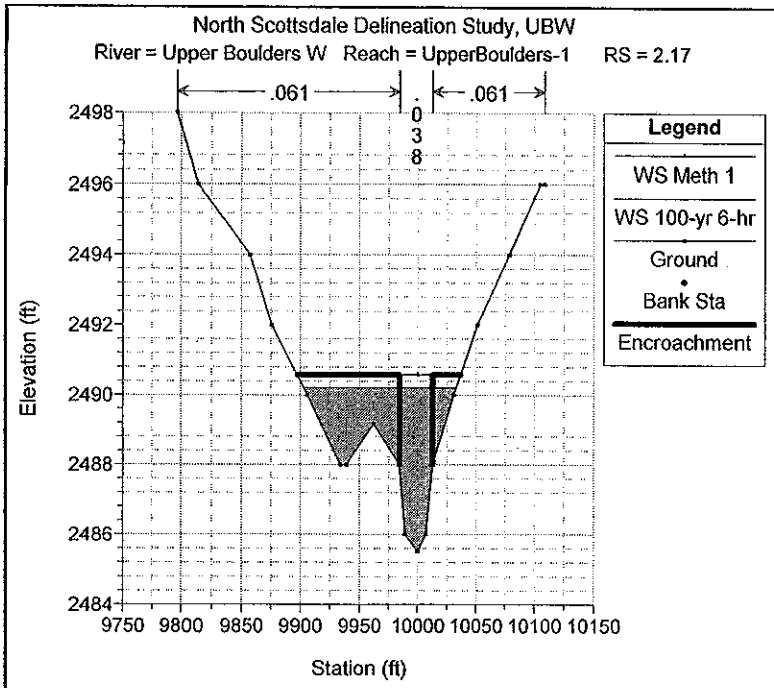
.038
.056
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.17
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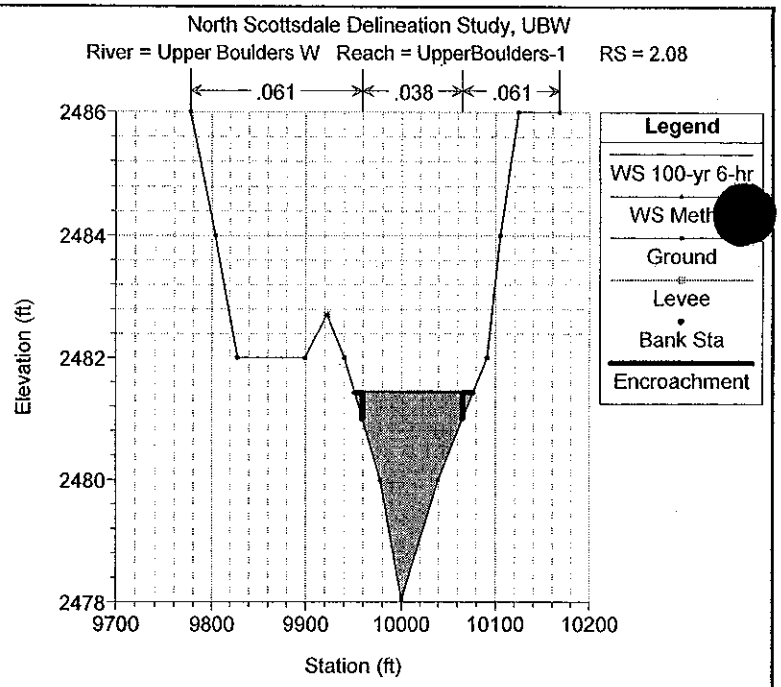
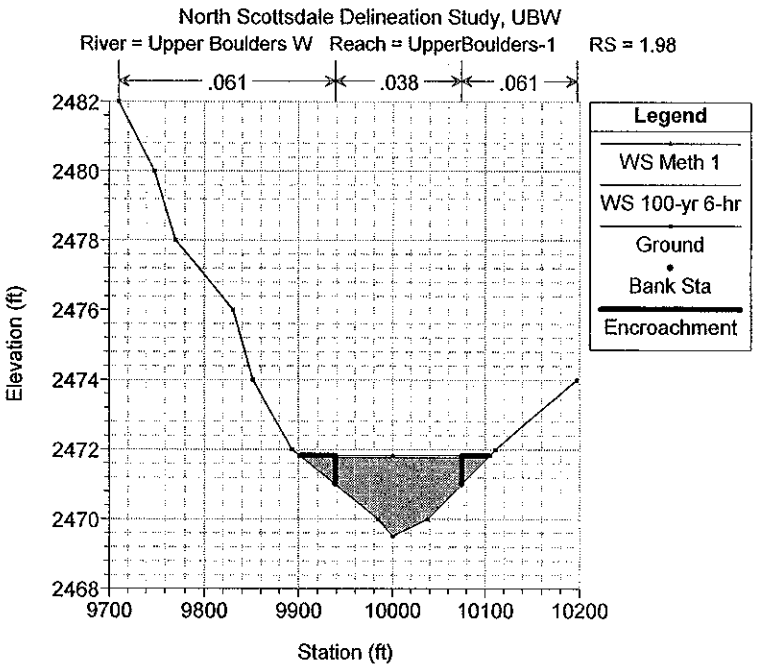
.038
.061
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 2.08
.061
.038
.061
Legend
WS 100-yr 6-hr
WS Meth
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.98
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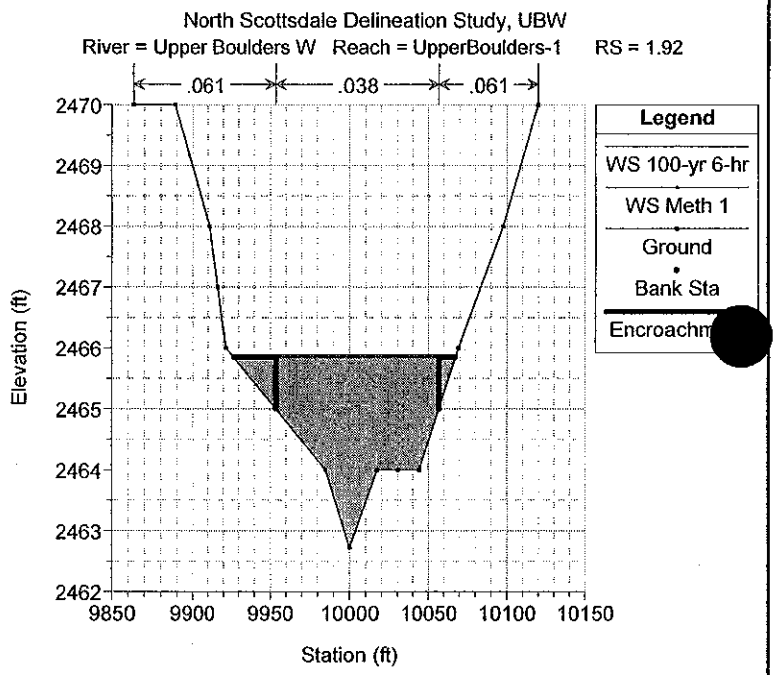
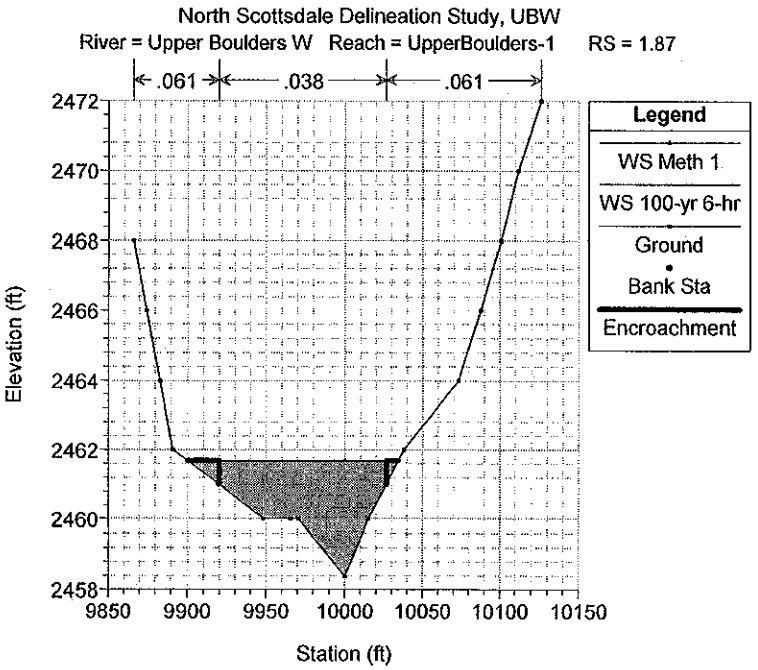
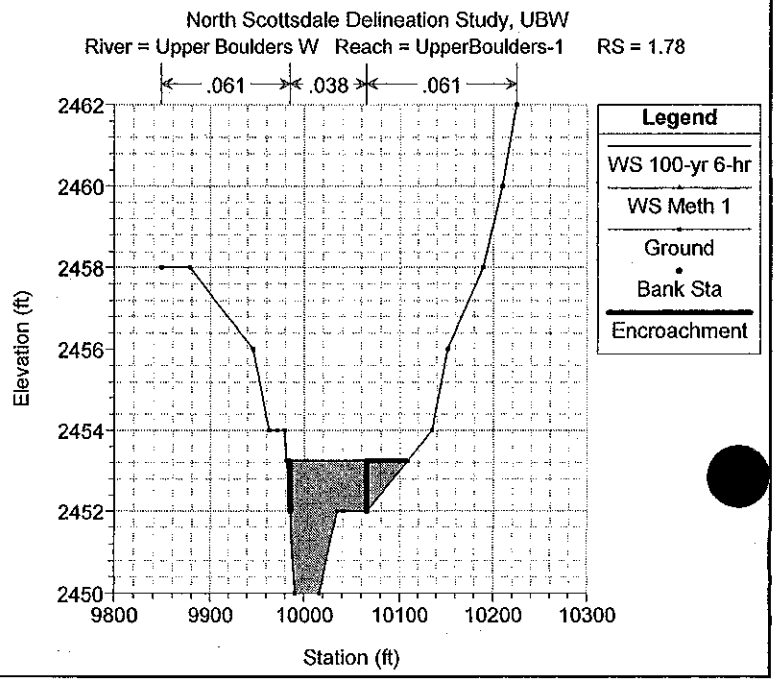
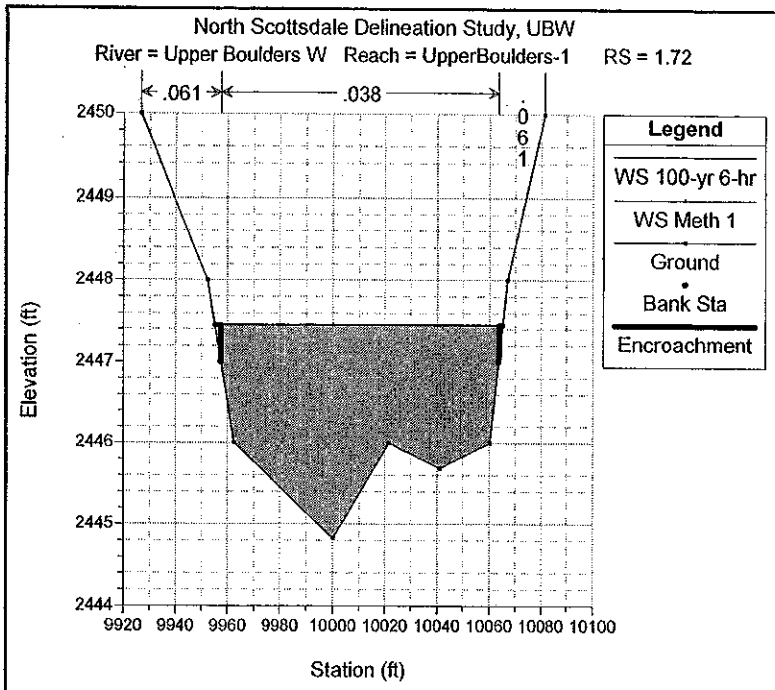
.038
.061
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.92
.061
.038
.061
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.87
.061
.038
.061
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.78
.061
.038
.061
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.72
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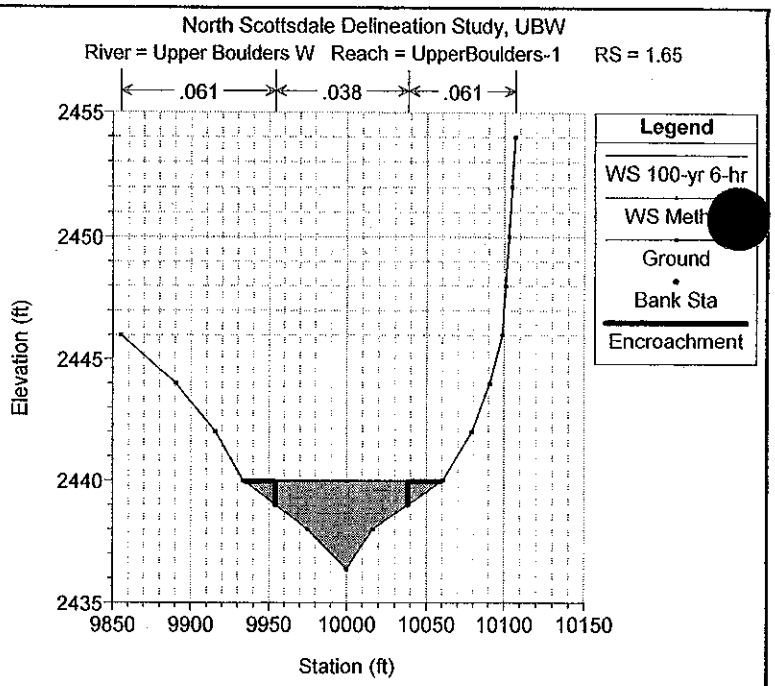
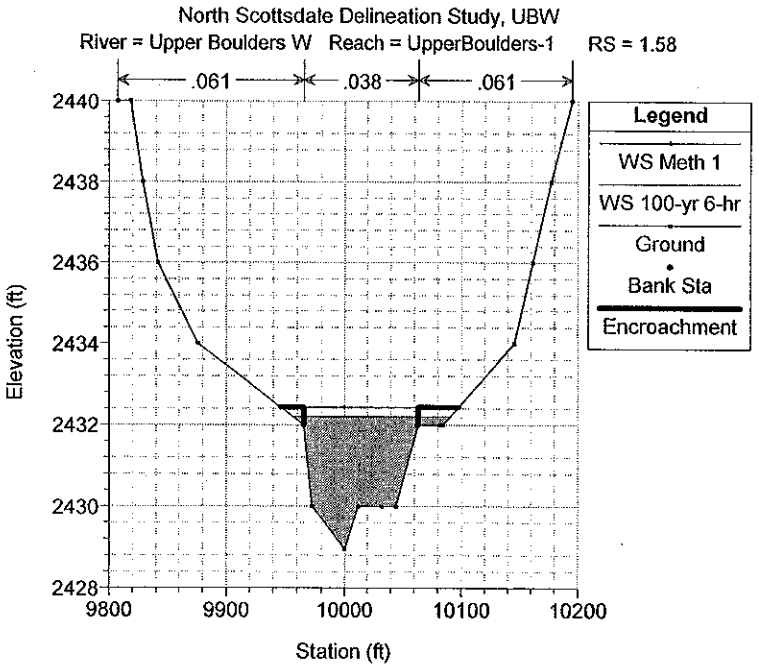
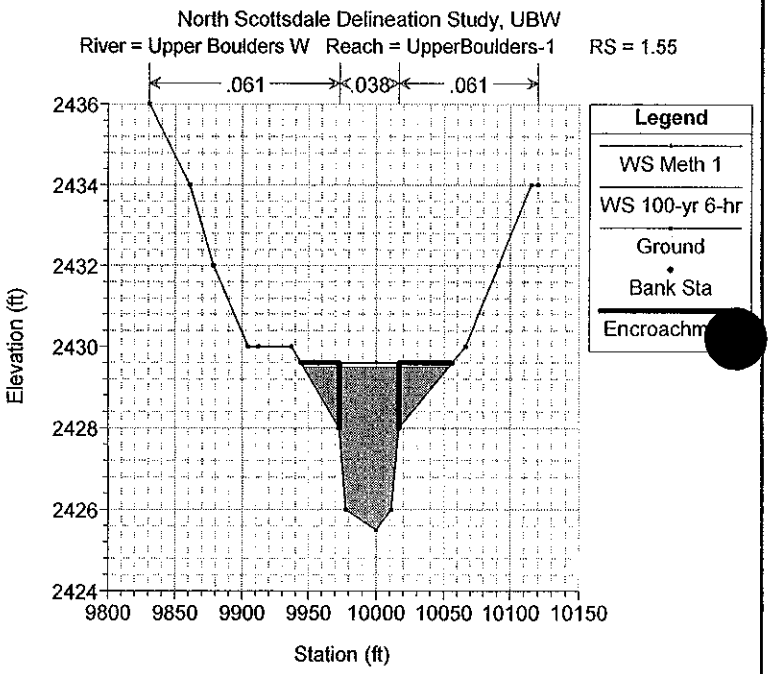
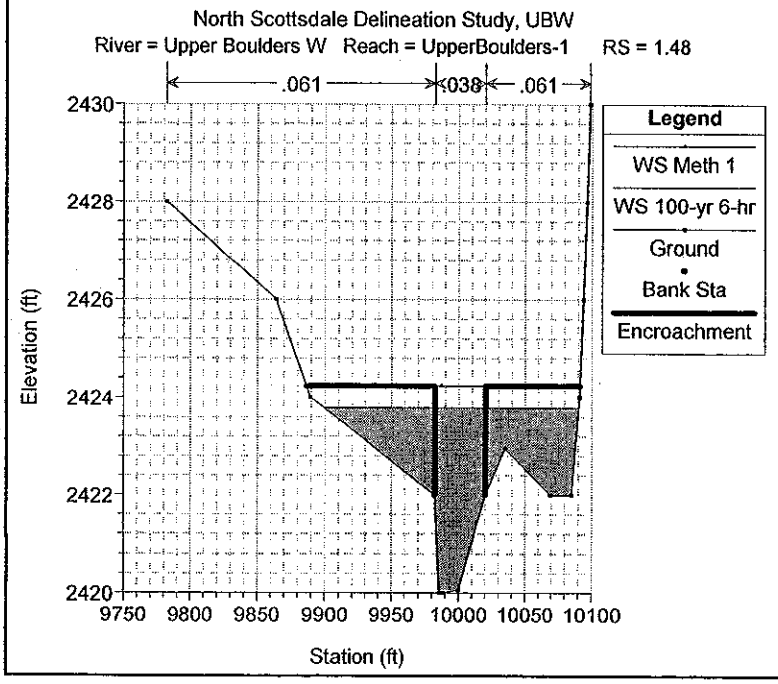
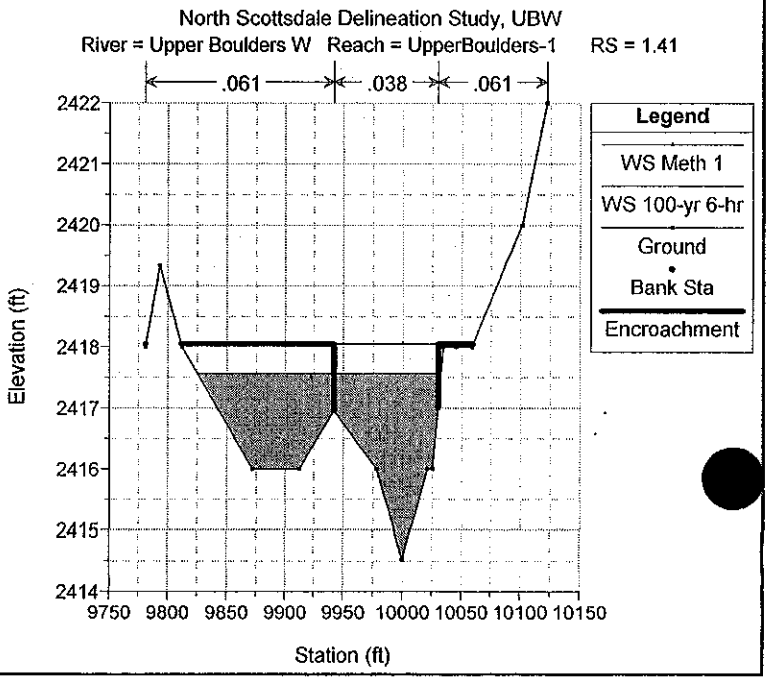
.061
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

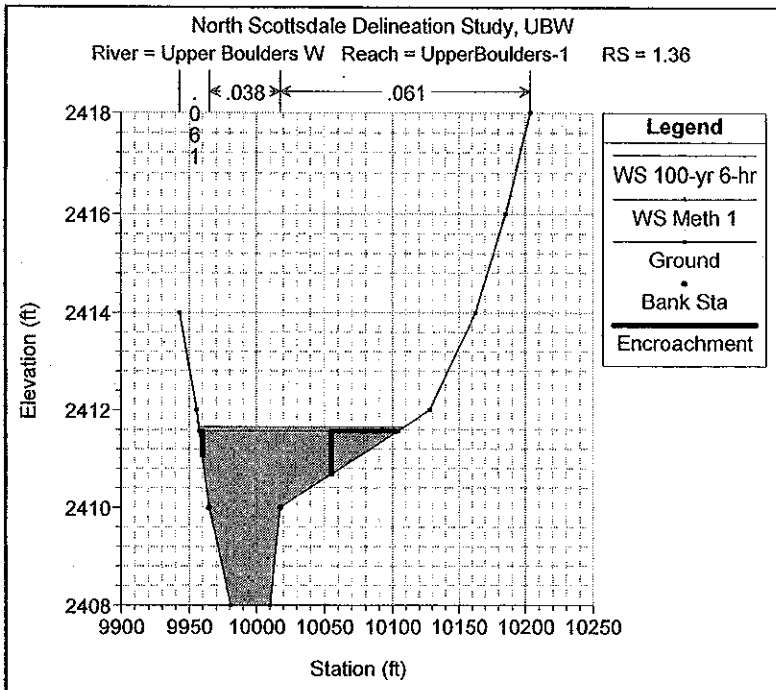

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.65
.061
.038
.061
Legend
WS 100-yr 6-hr
WS Meth
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

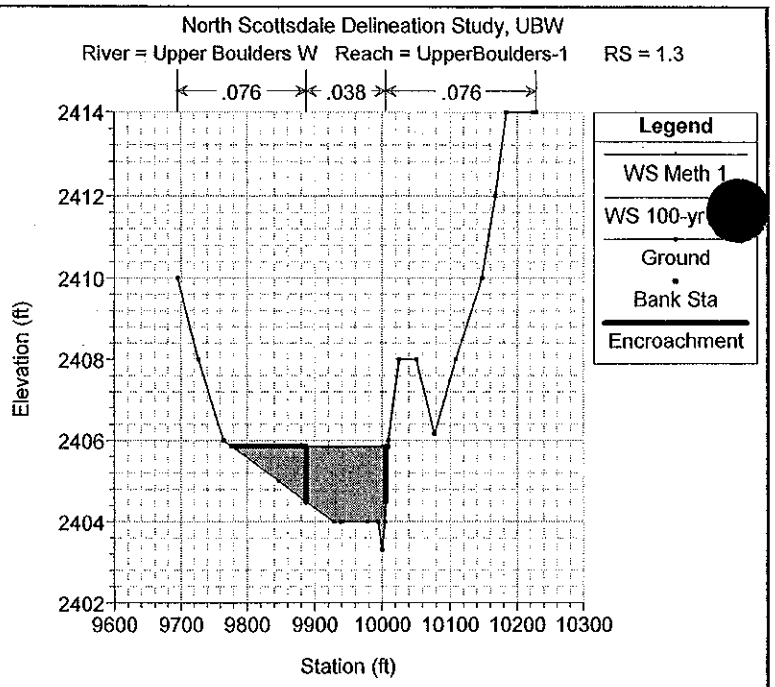

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.58
.061
.038
.061
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

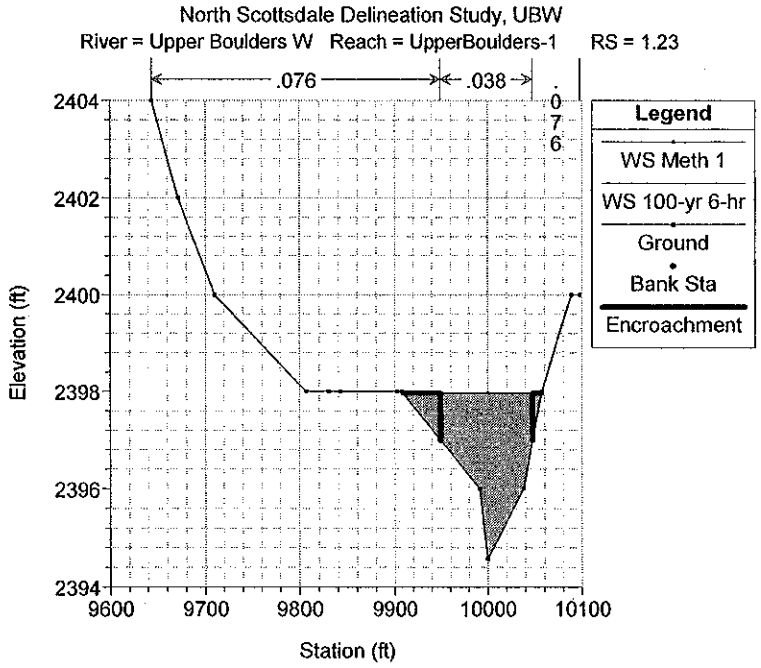

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.55
.061
.038
.061
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)

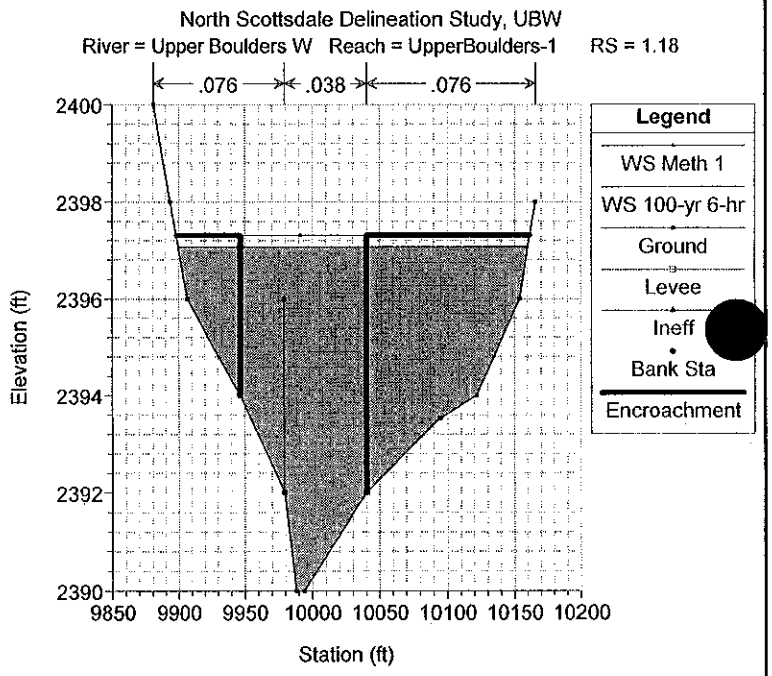

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.48
.061
.038
.061
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

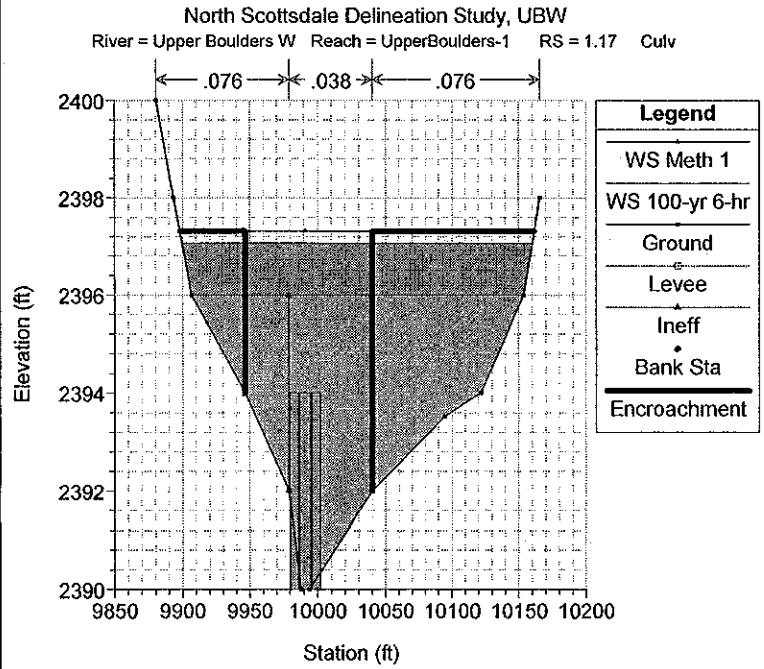

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.41
.061
.038
.061
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

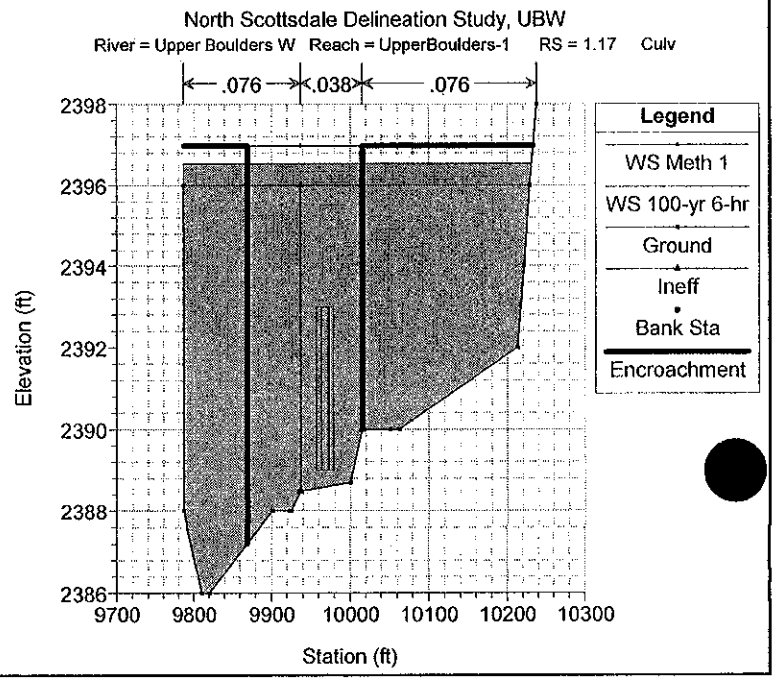

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.36
.038
.061
.061
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

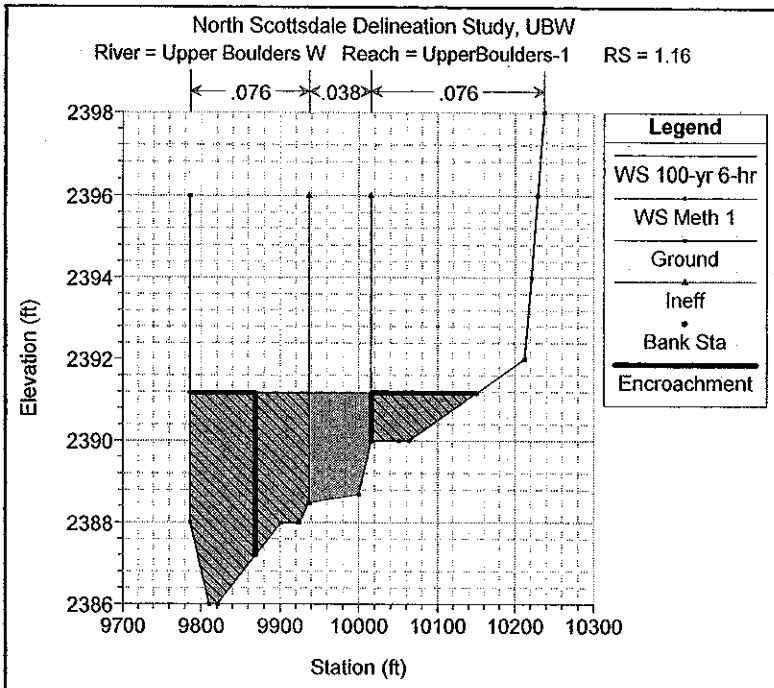

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.3
.076
.038
.076
Legend
WS Meth 1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

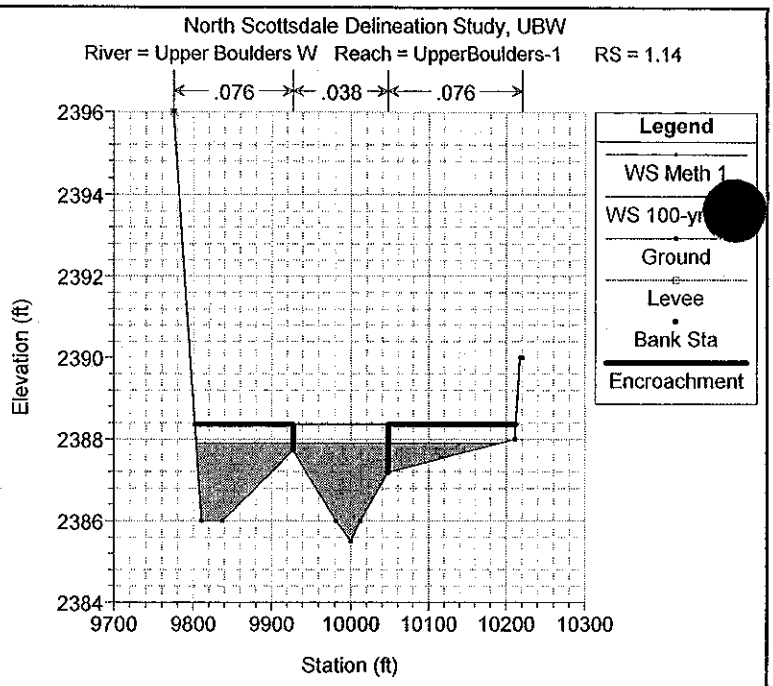

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.23
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

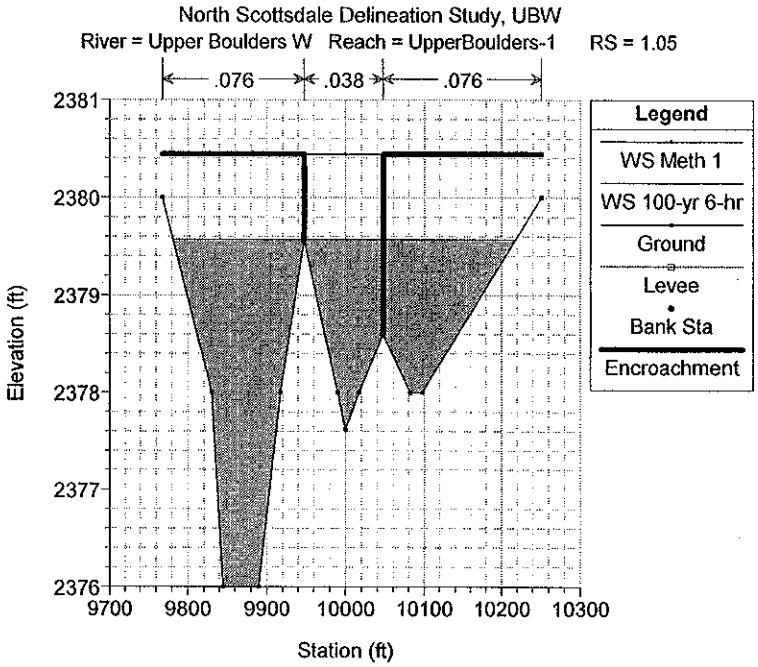

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.18
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

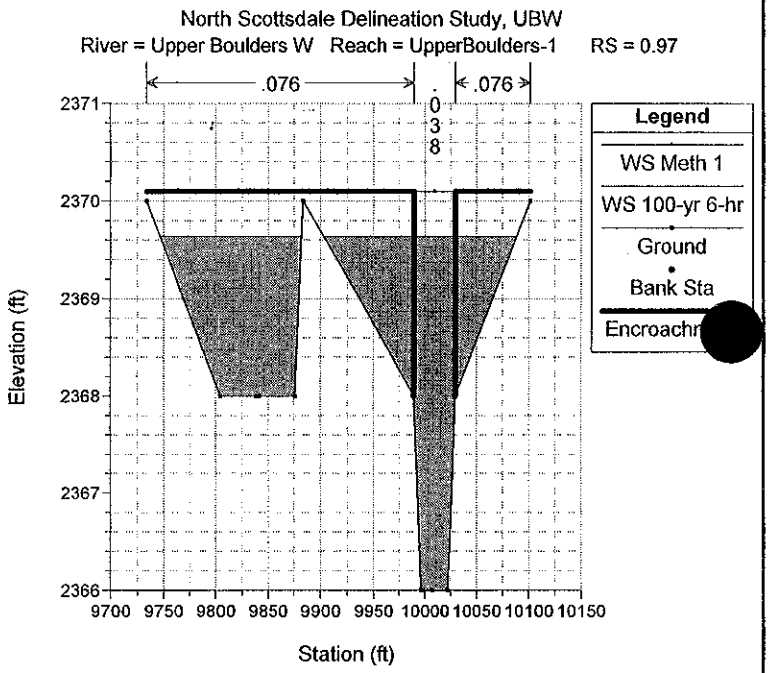

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.17 Culv
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

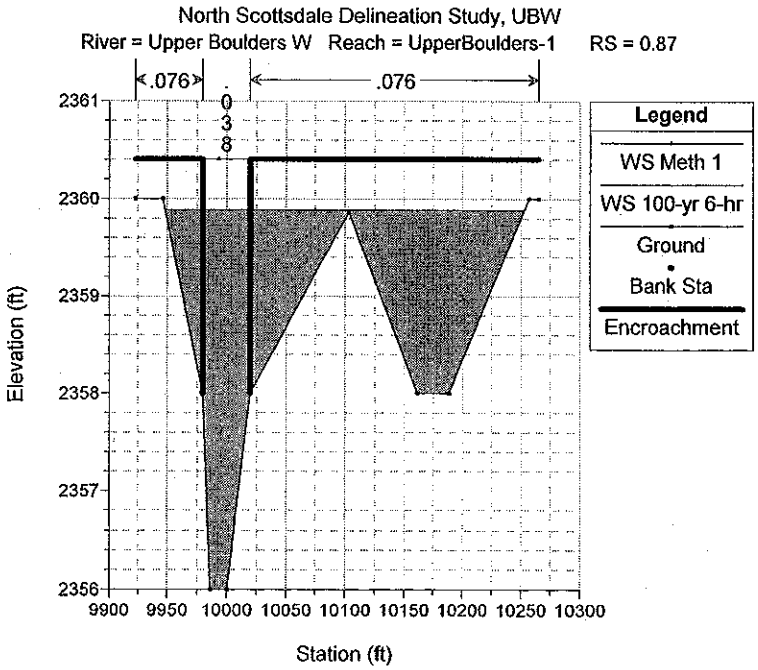

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.17 Culv
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

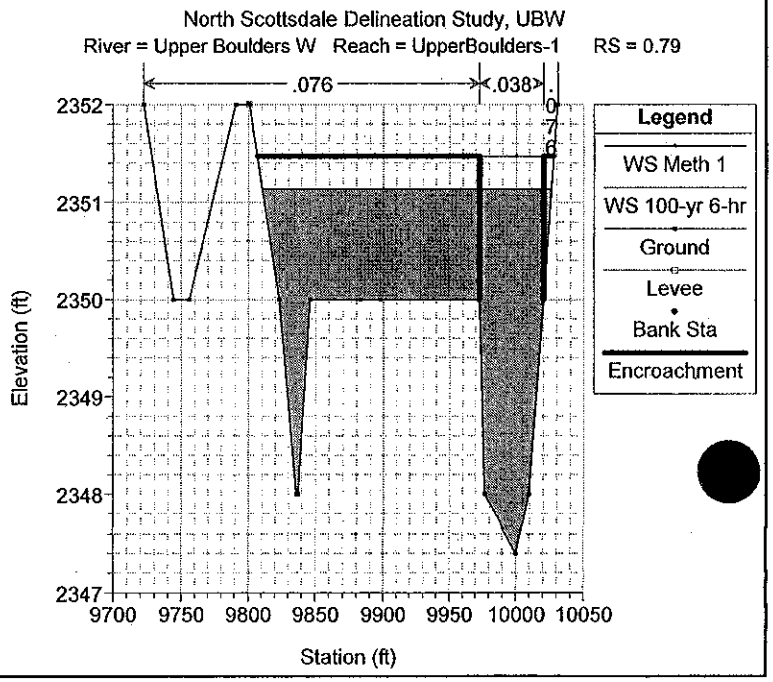

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.16
.076
.038
.076
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

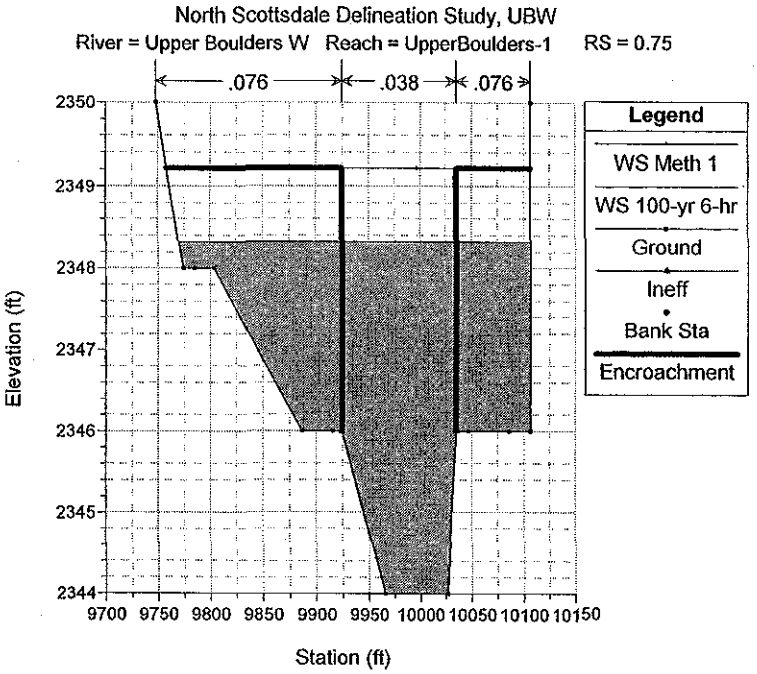

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.14
.076
.038
.076
Legend
WS Meth 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

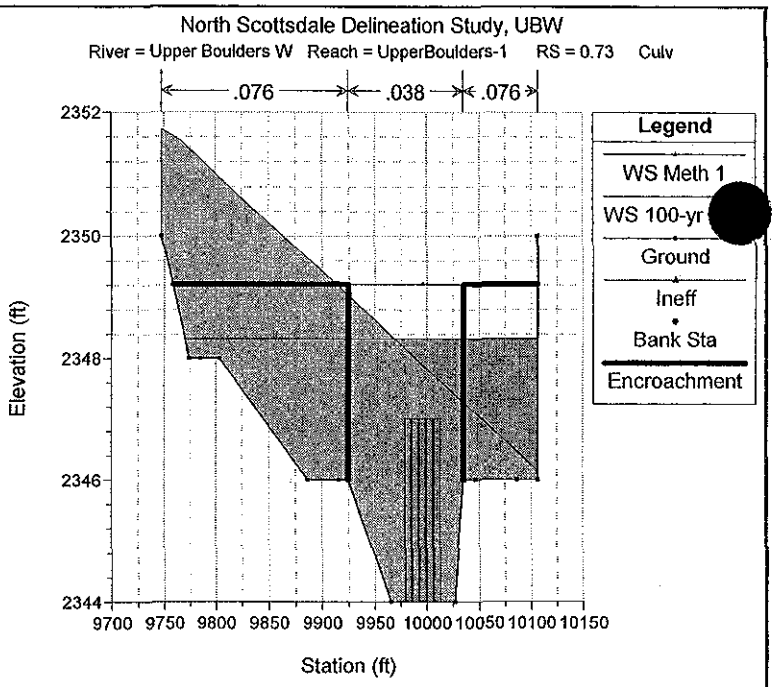

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 1.05
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

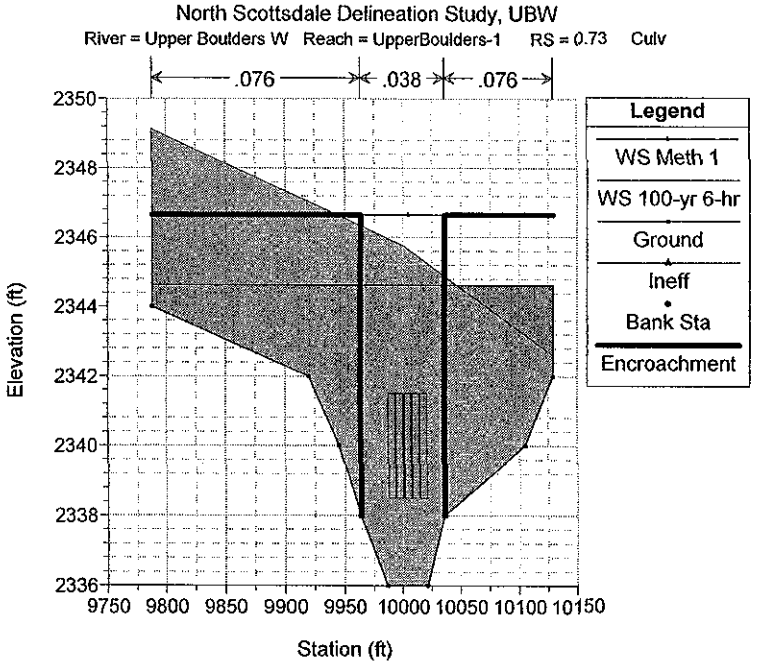

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.97
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

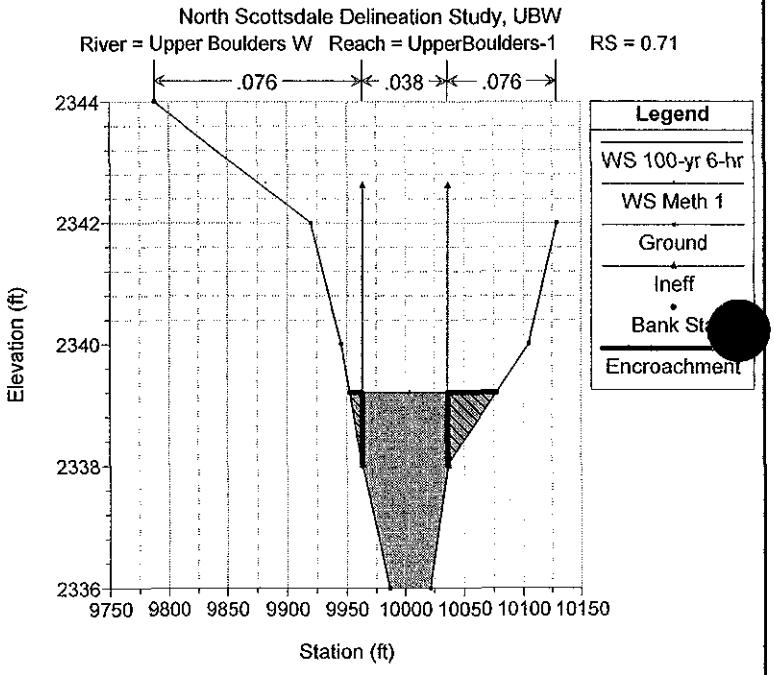

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.87
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

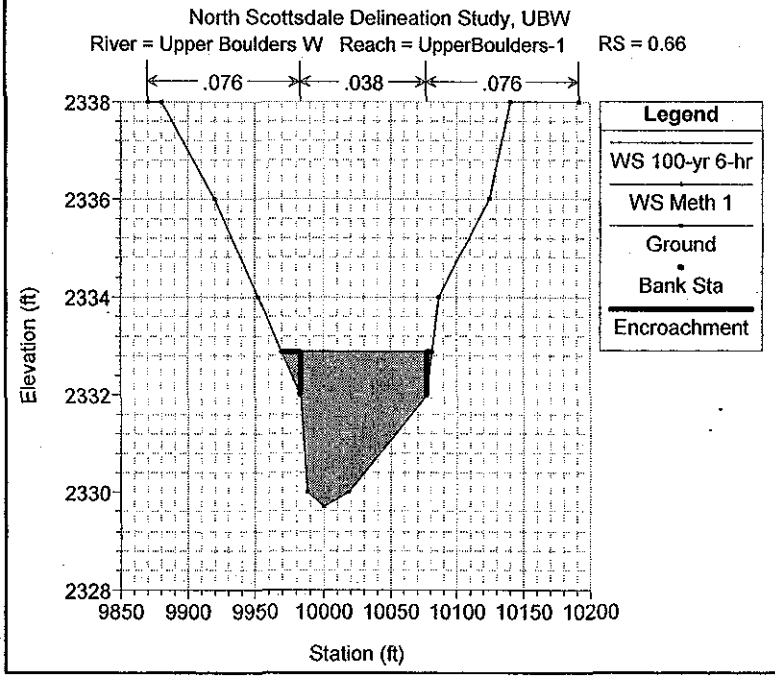

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.79
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

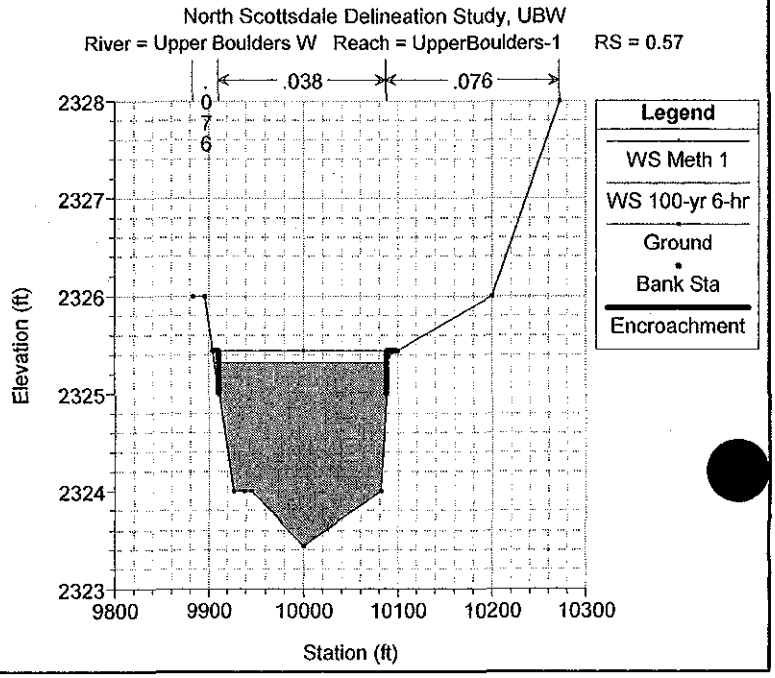

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.75
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

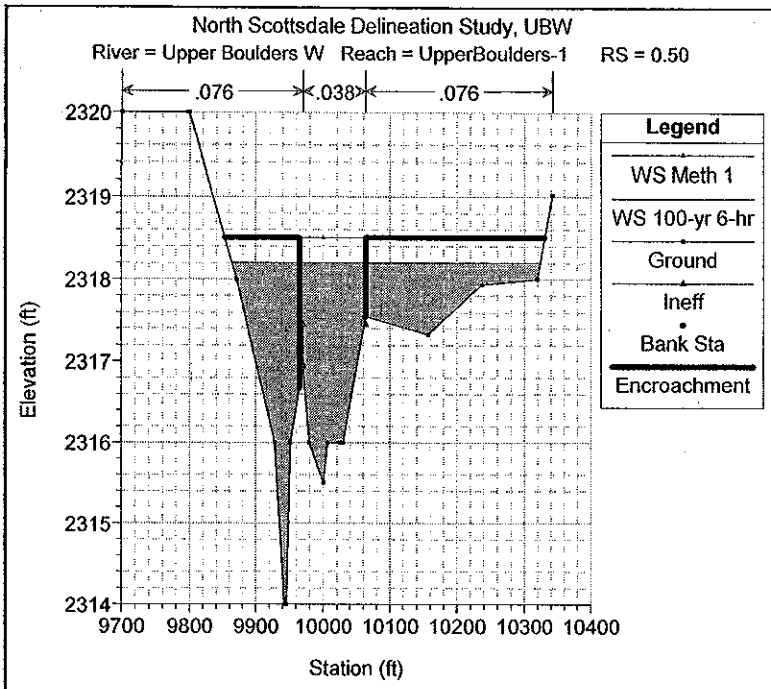

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.73 Culv
.076
.038
.076
Legend
WS Meth 1
WS 100-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

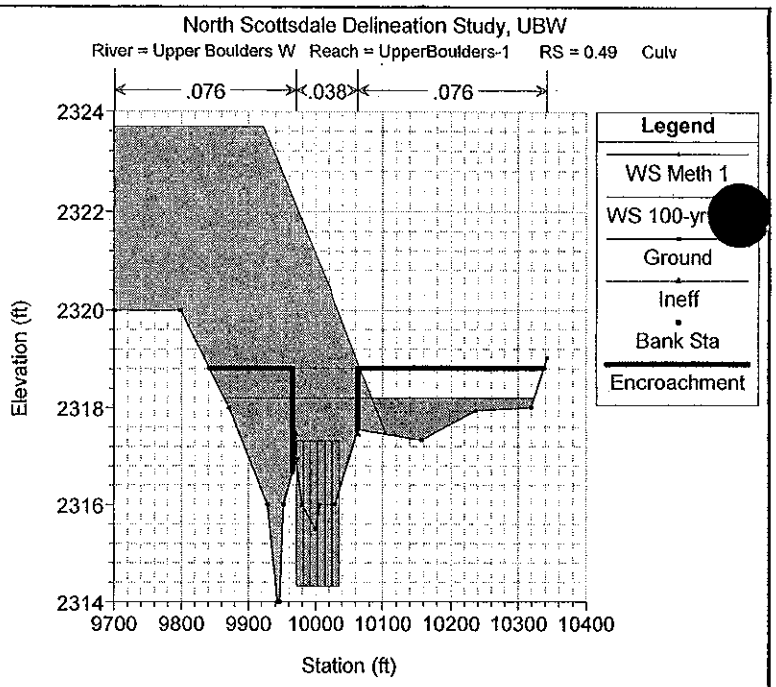

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.73 Culv
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

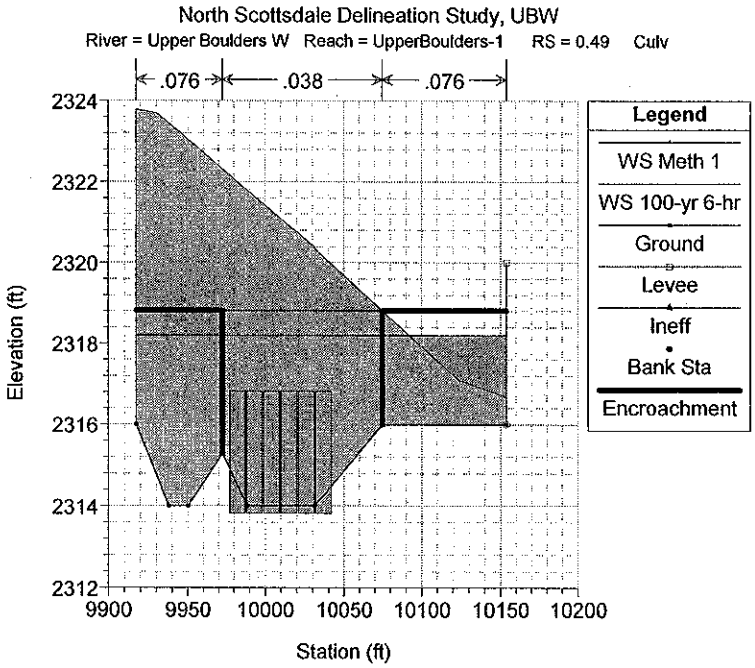

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.71
.076
.038
.076
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Ineff
Bank St
Encroachment
Elevation (ft)
Station (ft)

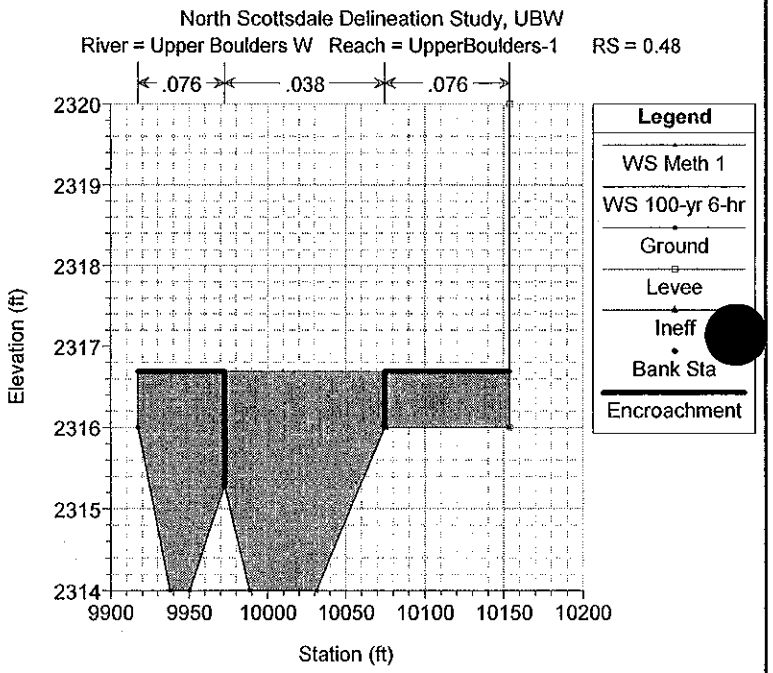

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.66
.076
.038
.076
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

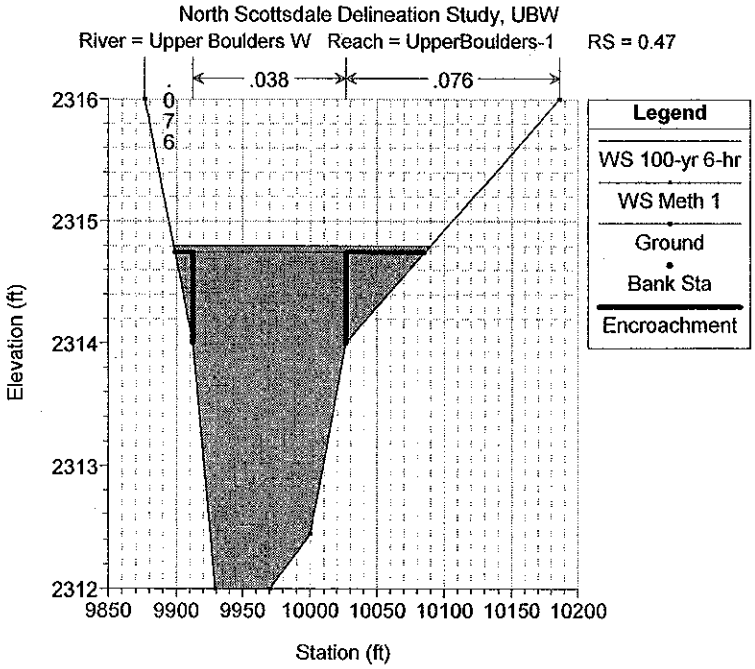

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.57
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.50
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.49 Culv
.076
.038
.076
Legend
WS Meth 1
WS 100-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

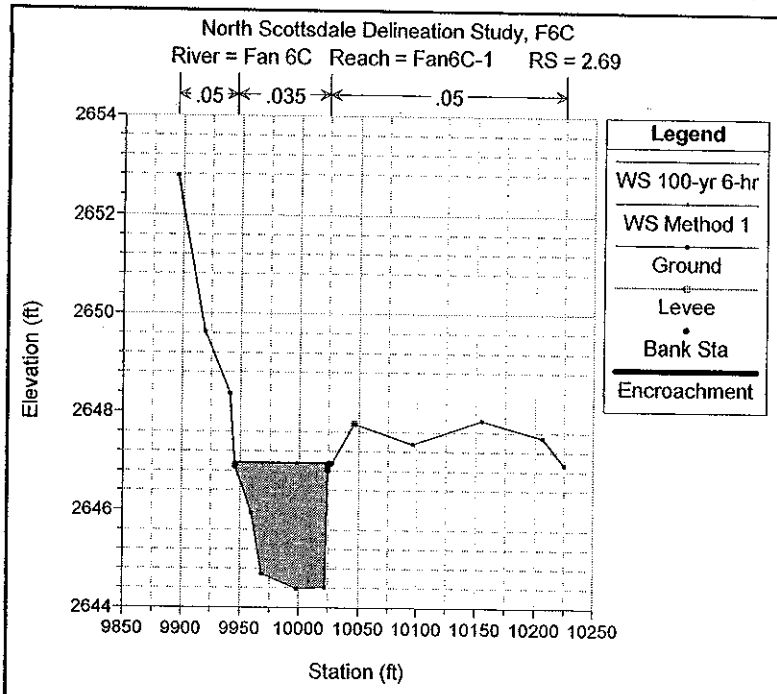

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.49 Culv
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

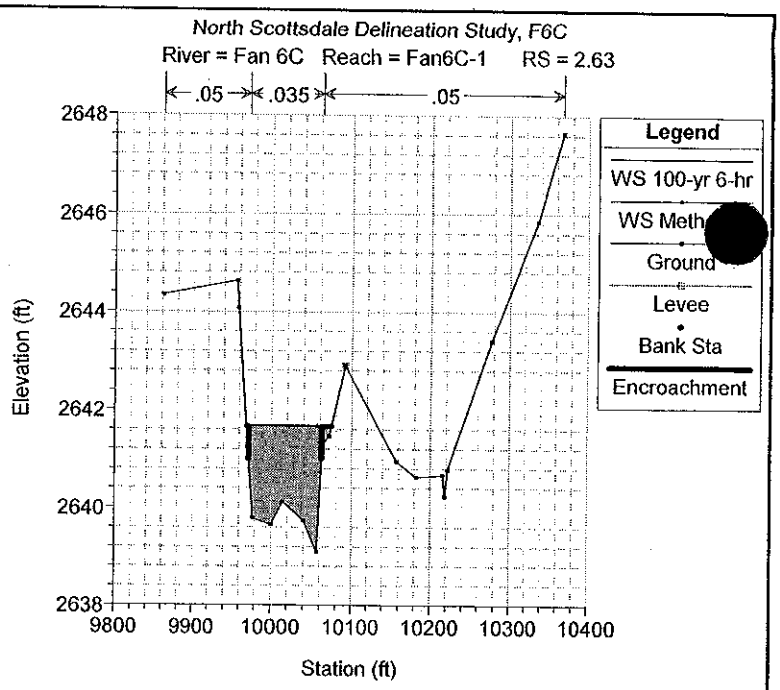

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.48
.076
.038
.076
Legend
WS Meth 1
WS 100-yr 6-hr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

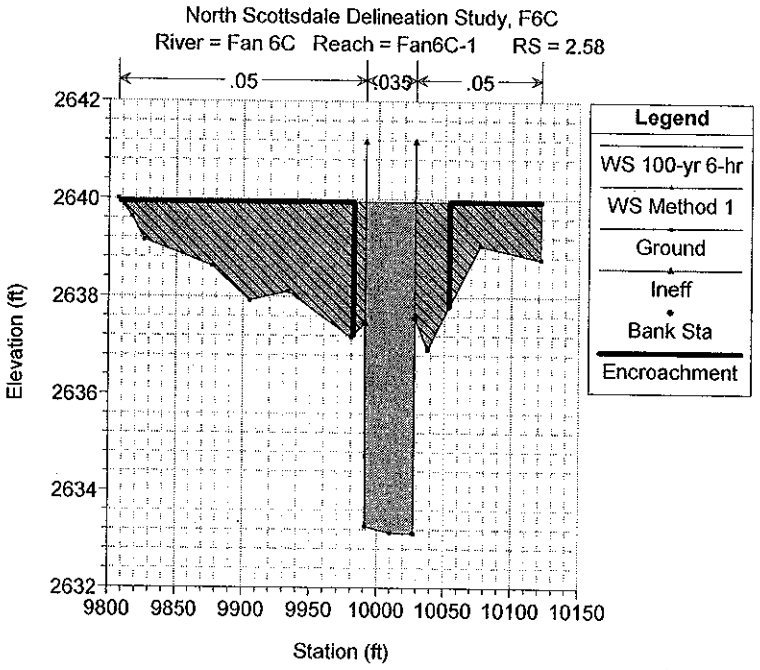

North Scottsdale Delineation Study, UBW
River = Upper Boulders W Reach = UpperBoulders-1 RS = 0.47
.038
.076
.076
Legend
WS 100-yr 6-hr
WS Meth 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

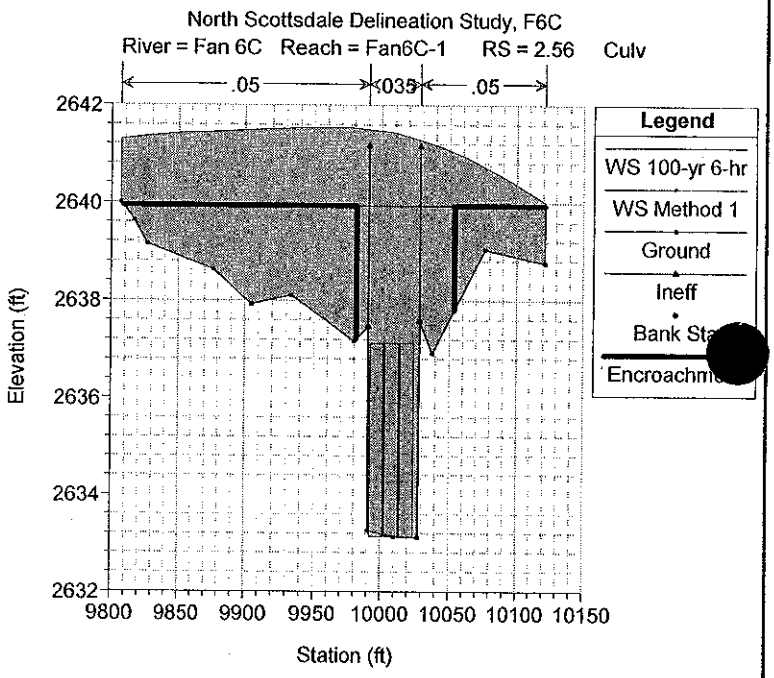
FAN 6C

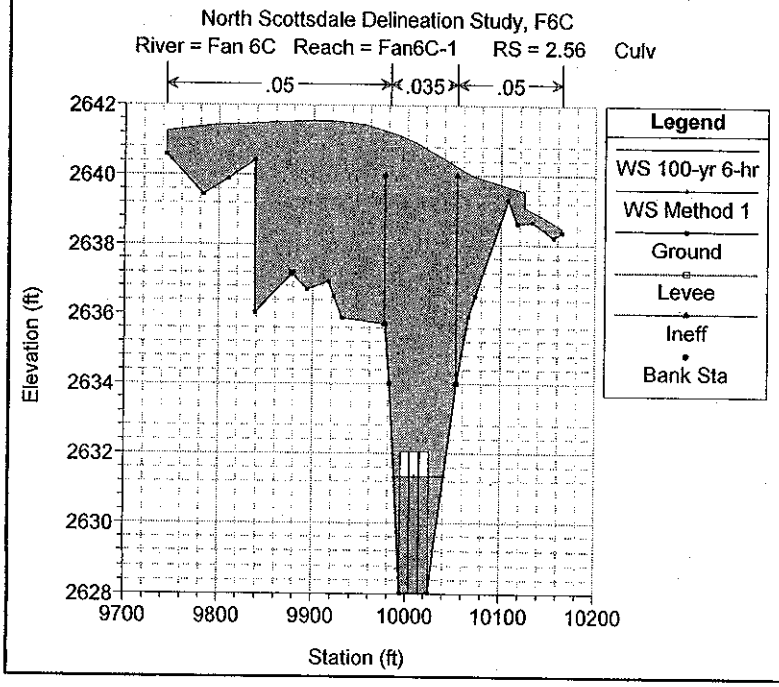
FAN 6A

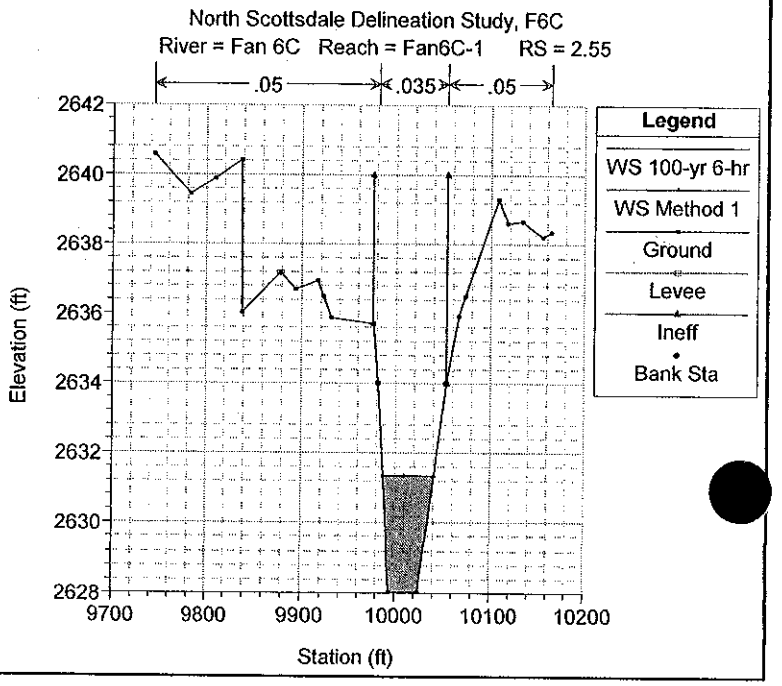

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.69
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

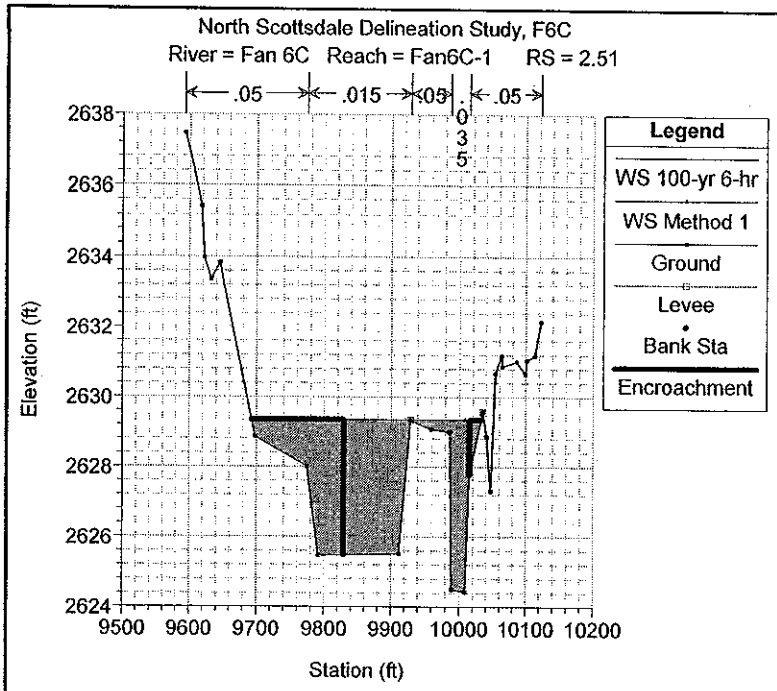

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.63
.05
.035
.05
Legend
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

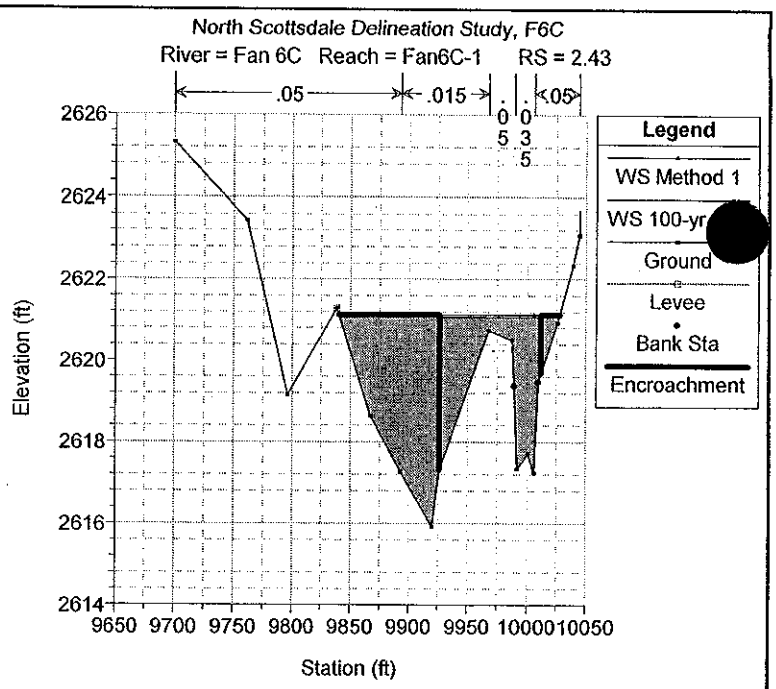

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.58
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.56 Culv
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.56 Culv
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.55
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.51
.05
.015
.05
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.43
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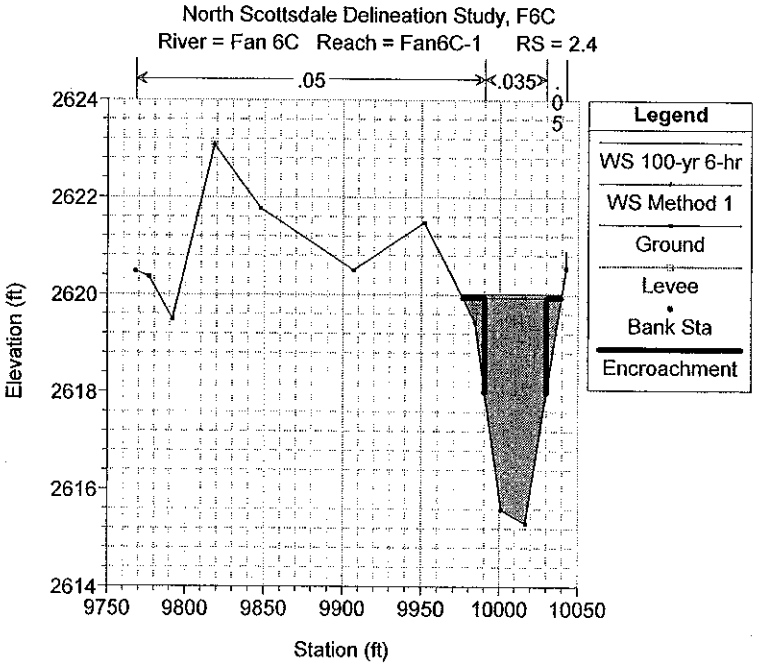
.015
.05
Legend
WS Method 1
WS 100-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.4
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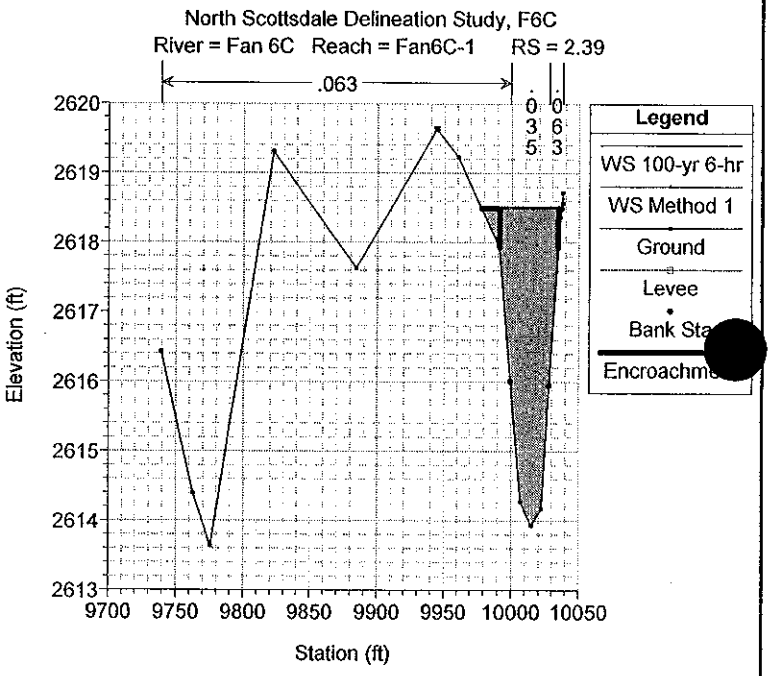
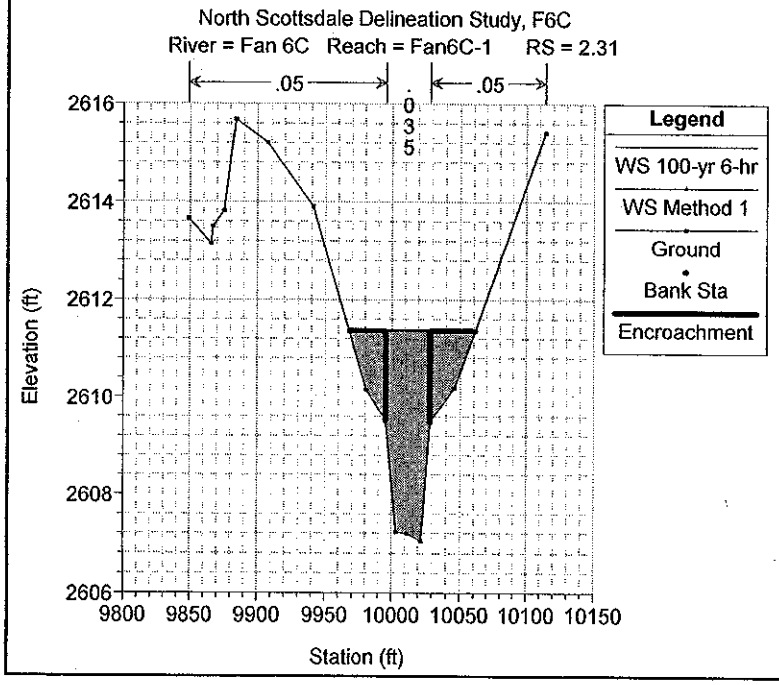
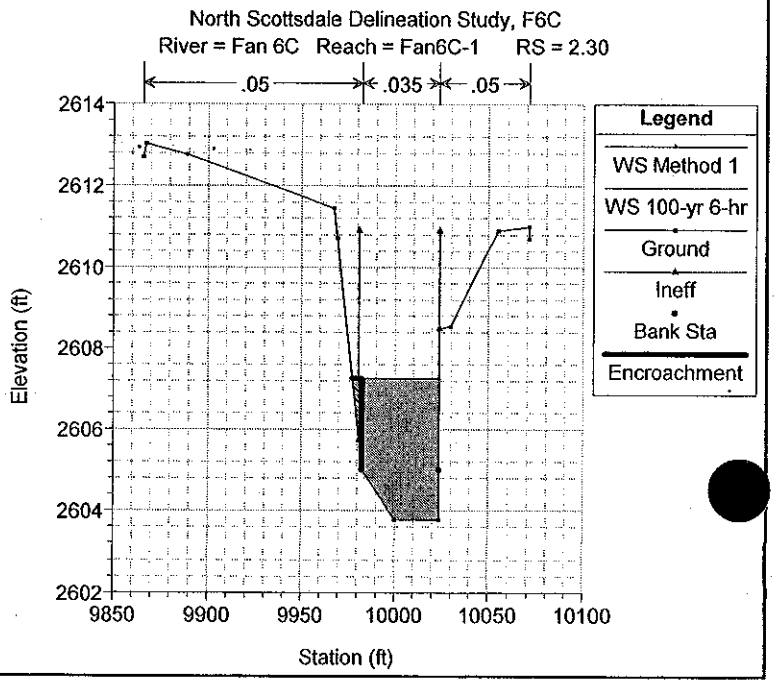
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.39
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.31
.05
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.30
.05
.035
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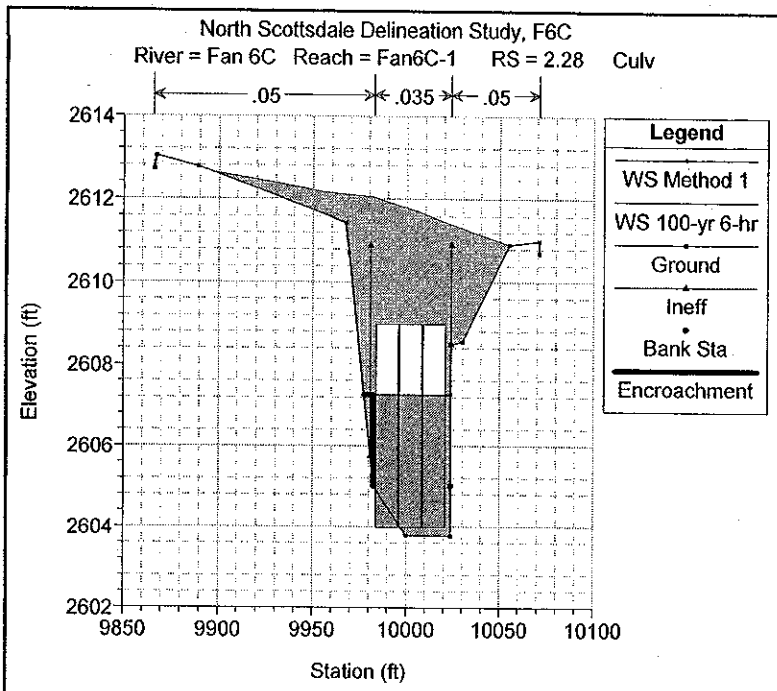
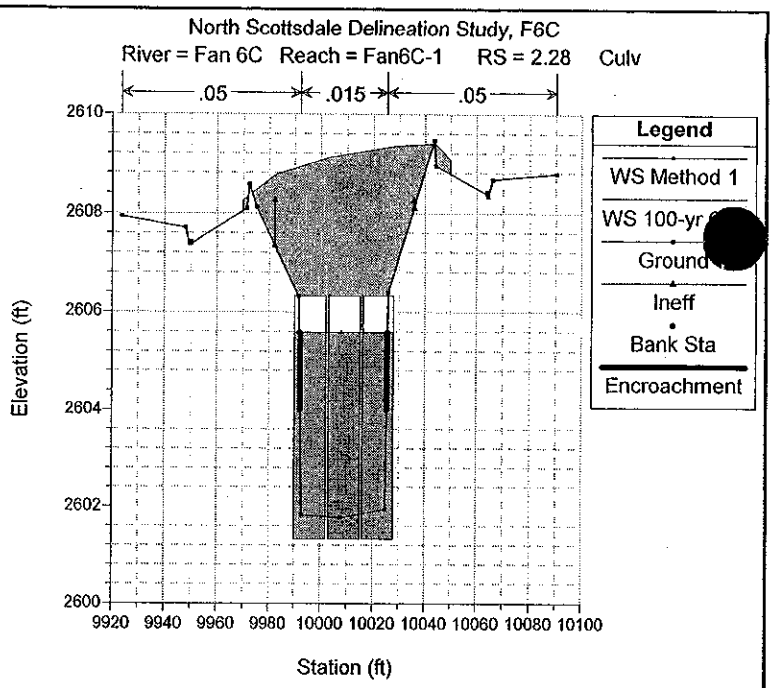
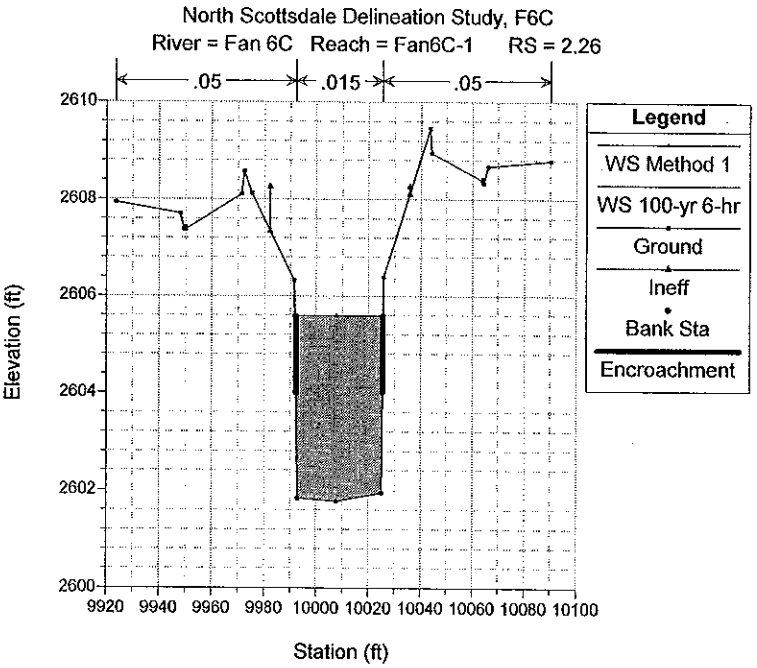
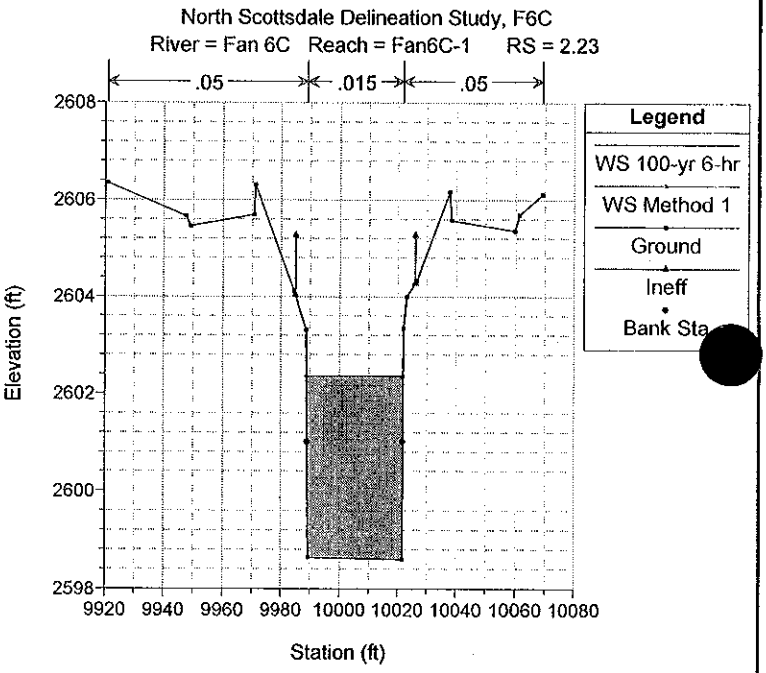
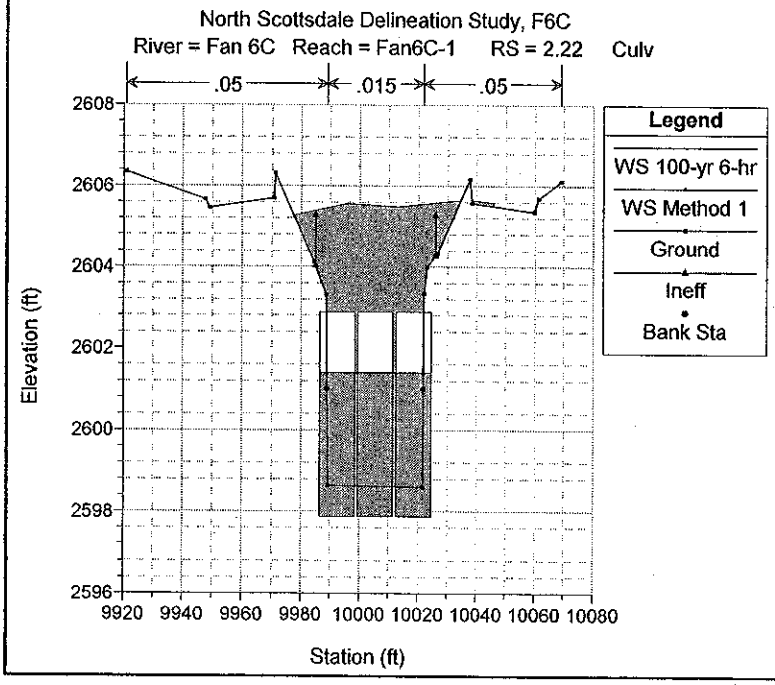
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

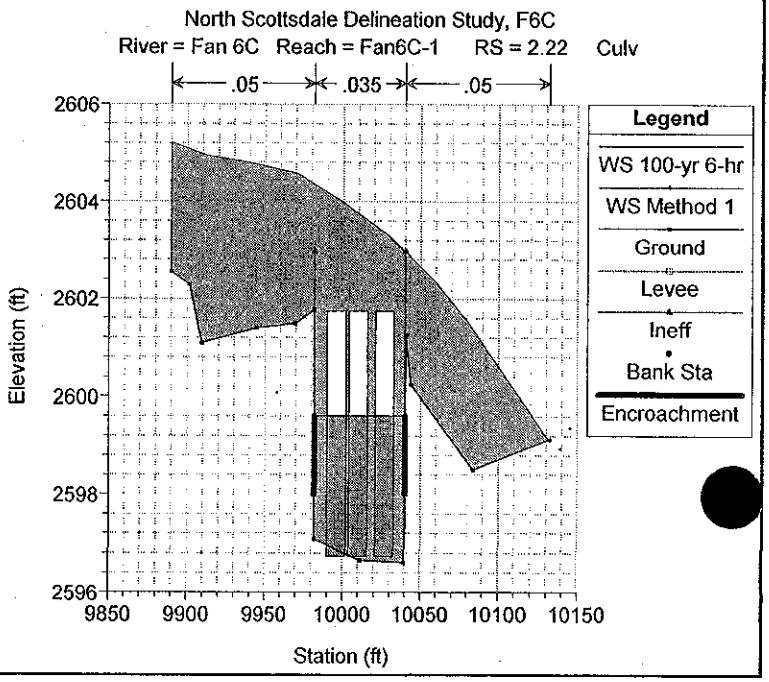

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.28 Culv
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

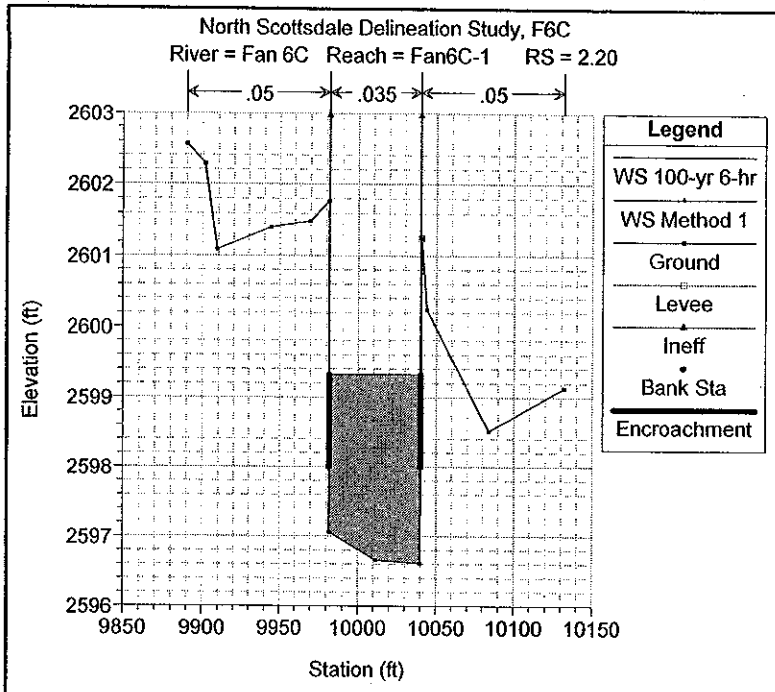

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.28 Culv
.05
.015
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

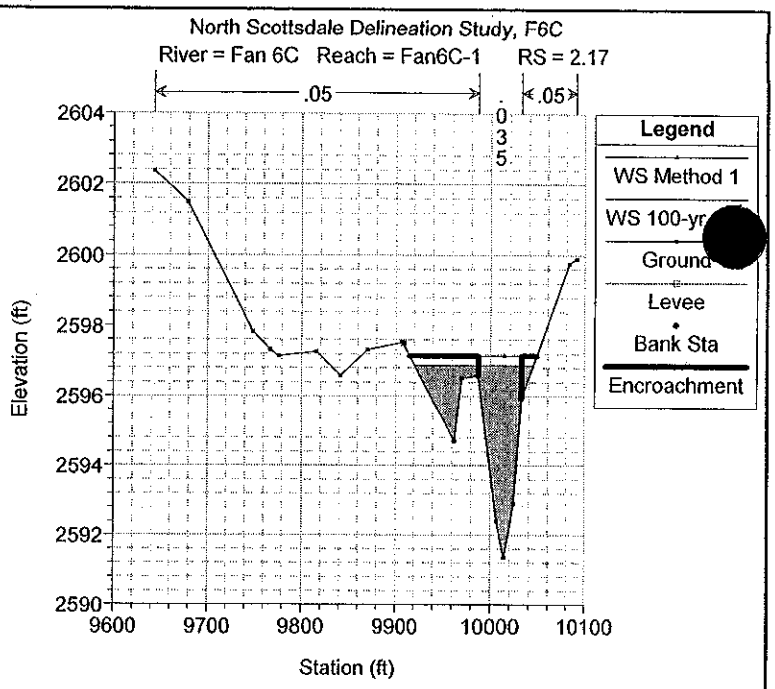

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.26
.05
.015
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

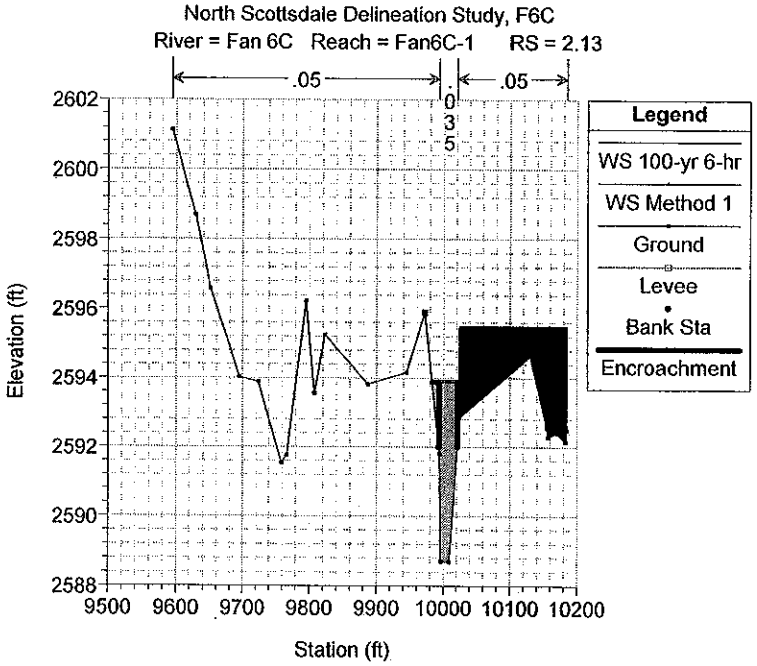

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.23
.05
.015
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

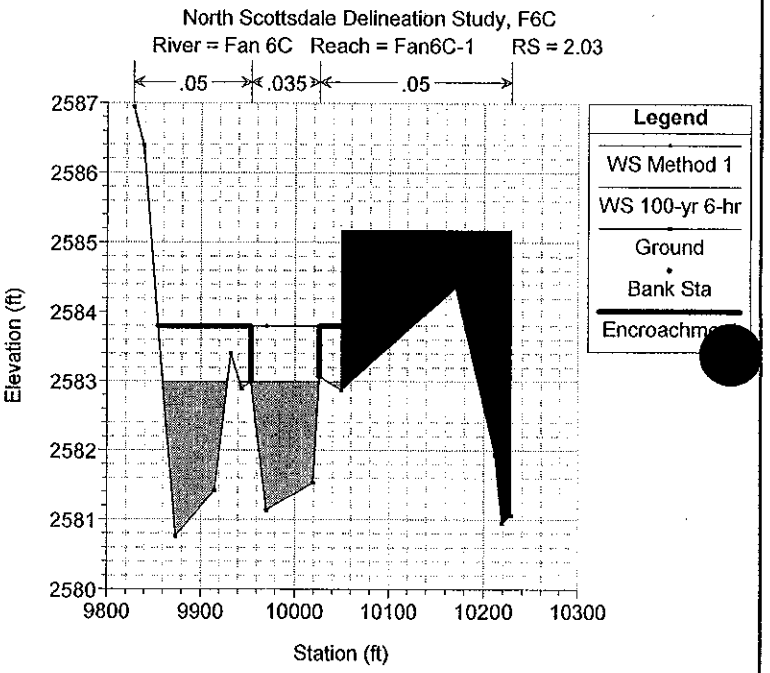

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.22 Culv
.05
.015
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

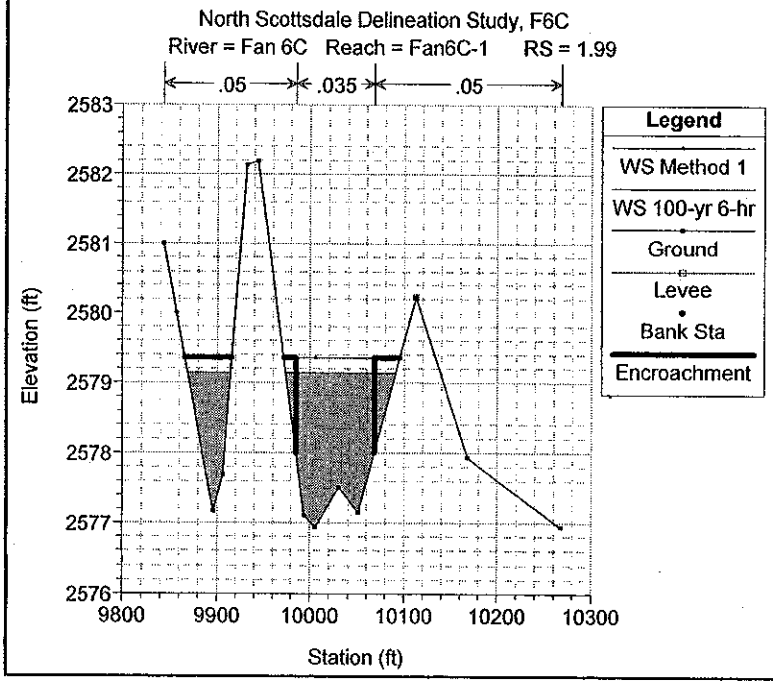

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.22 Culv
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

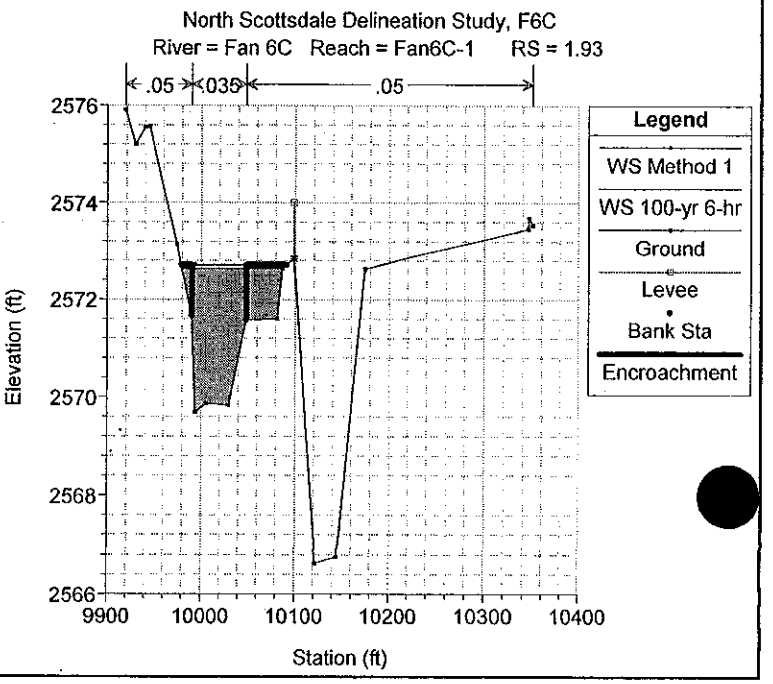

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.20
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

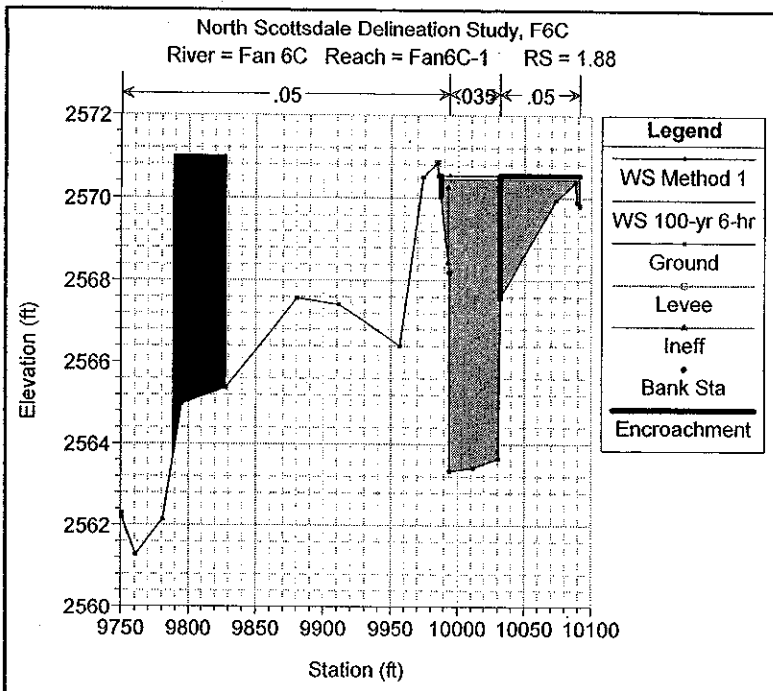

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.17
.05
.05
.035
Legend
WS Method 1
WS 100-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

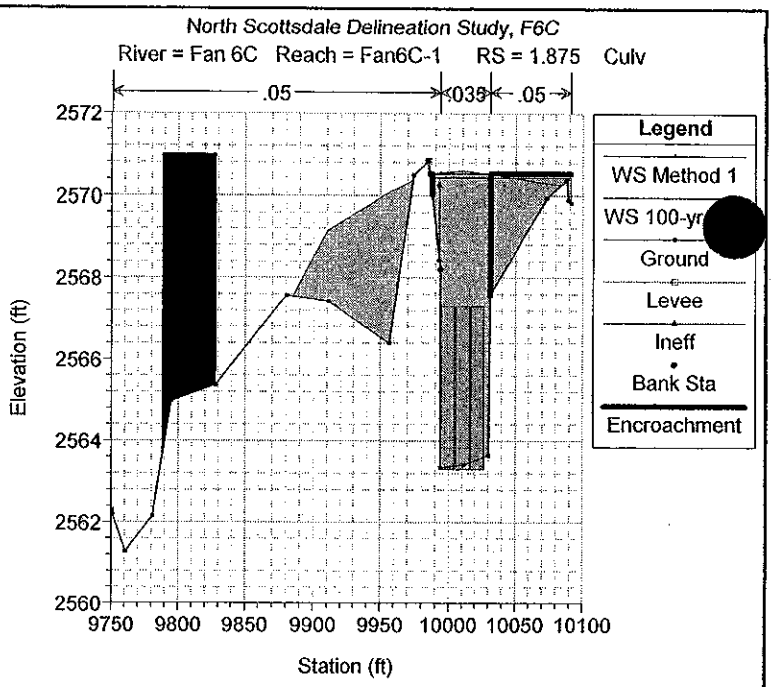

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.13
.05
.05
.035
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

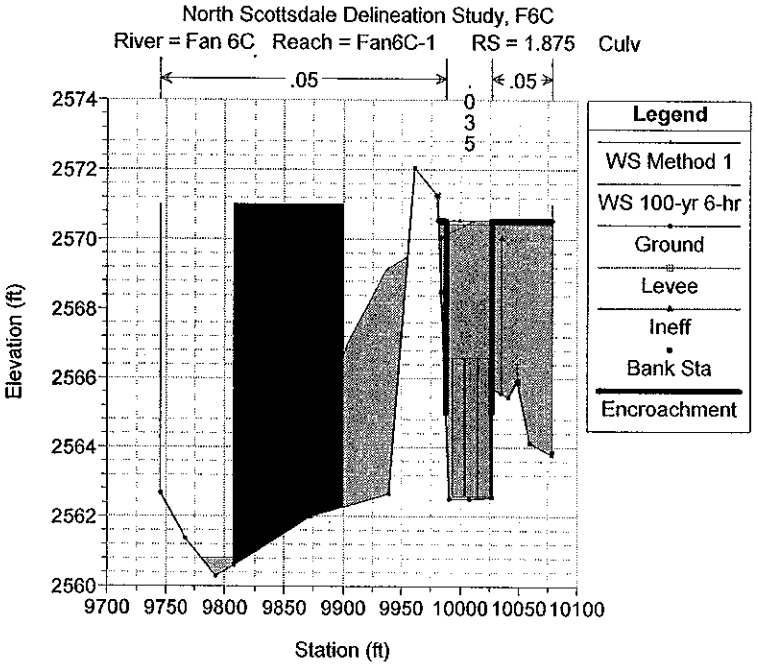

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.03
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)

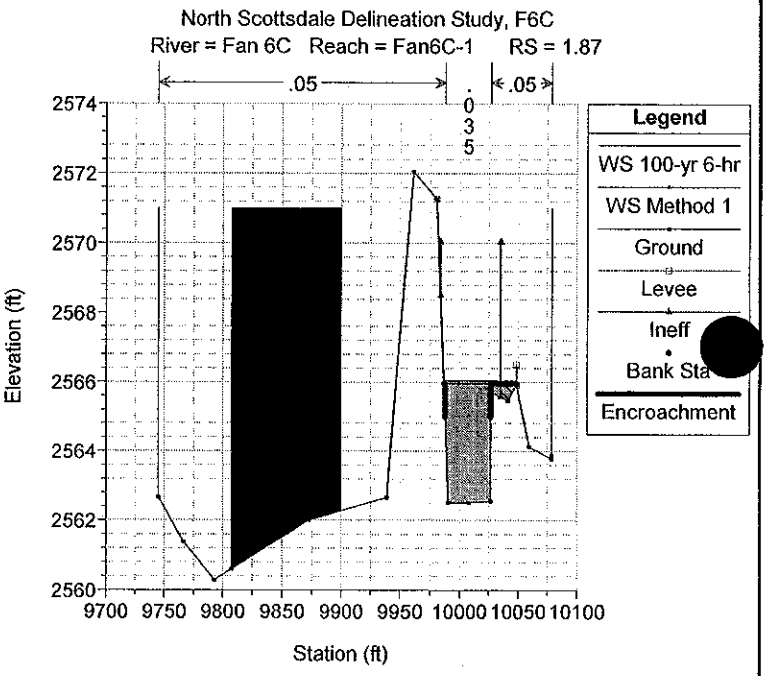

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.99
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

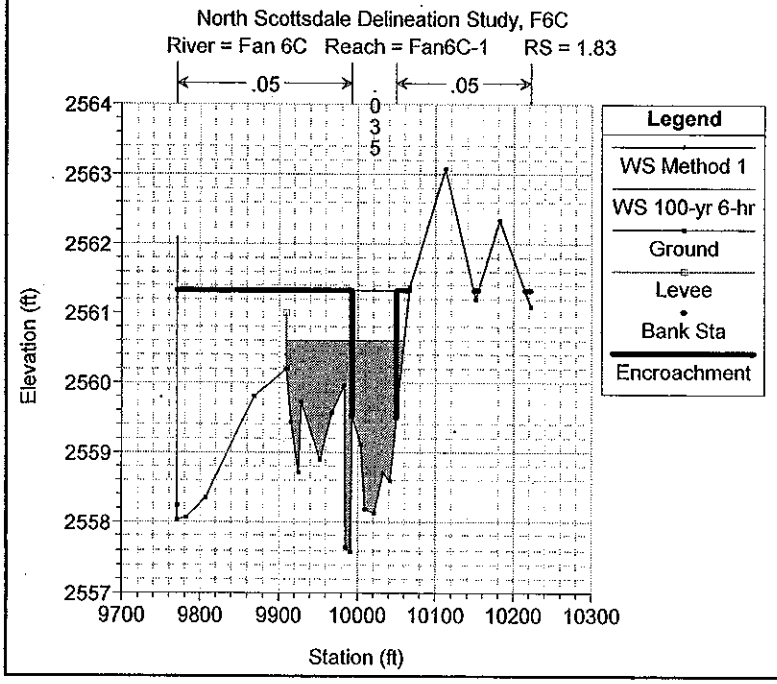

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.93
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

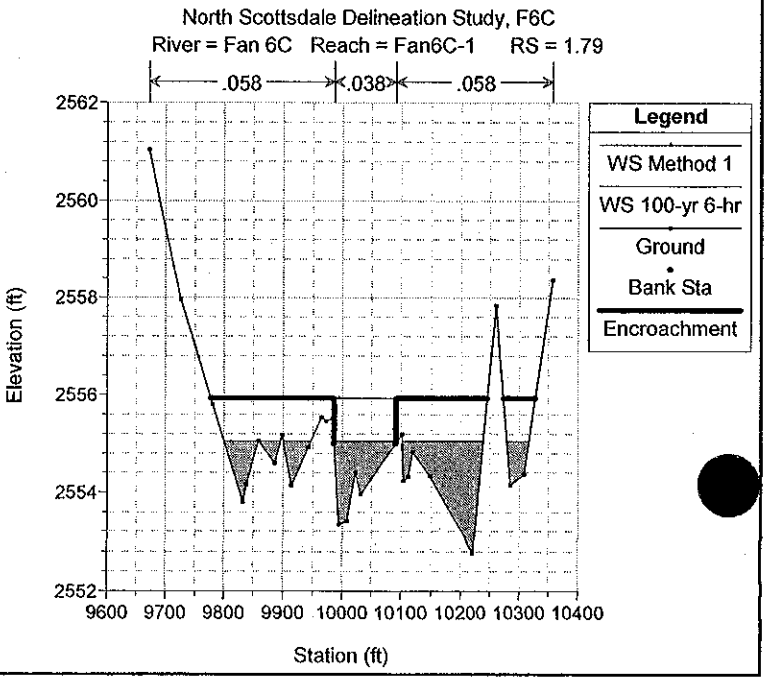

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.88
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

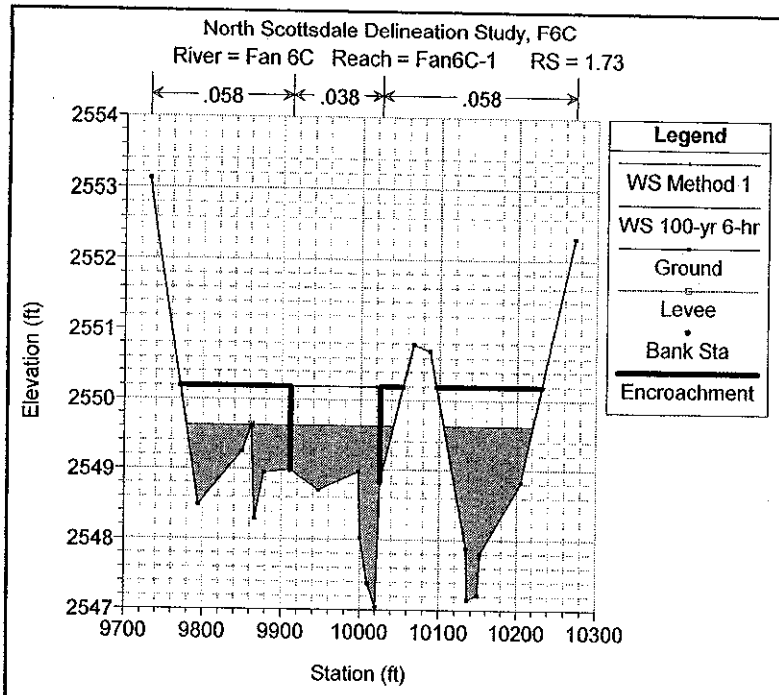

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.875 Culv
.05
.035
.05
Legend
WS Method 1
WS 100-yr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.875 Culv
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.87
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.83
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.79
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.73
.058
.038
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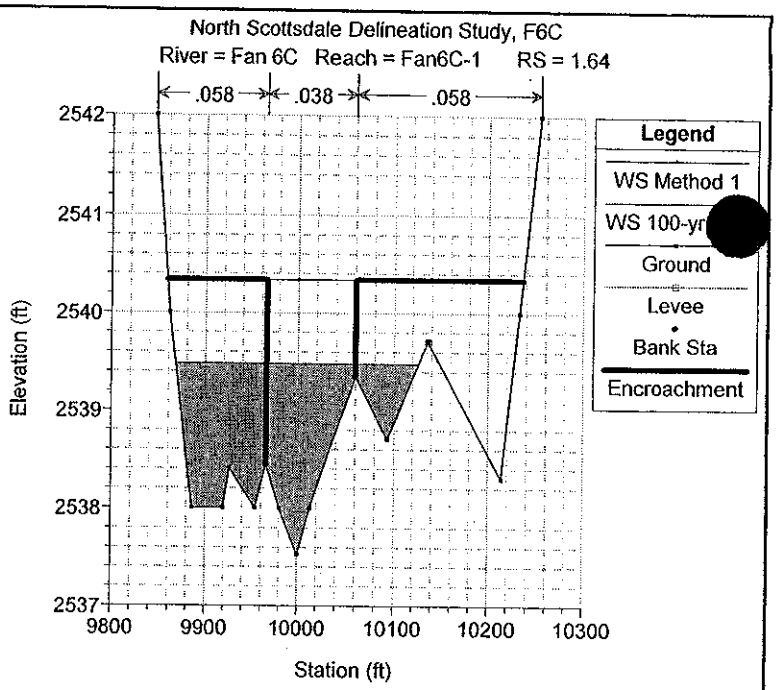
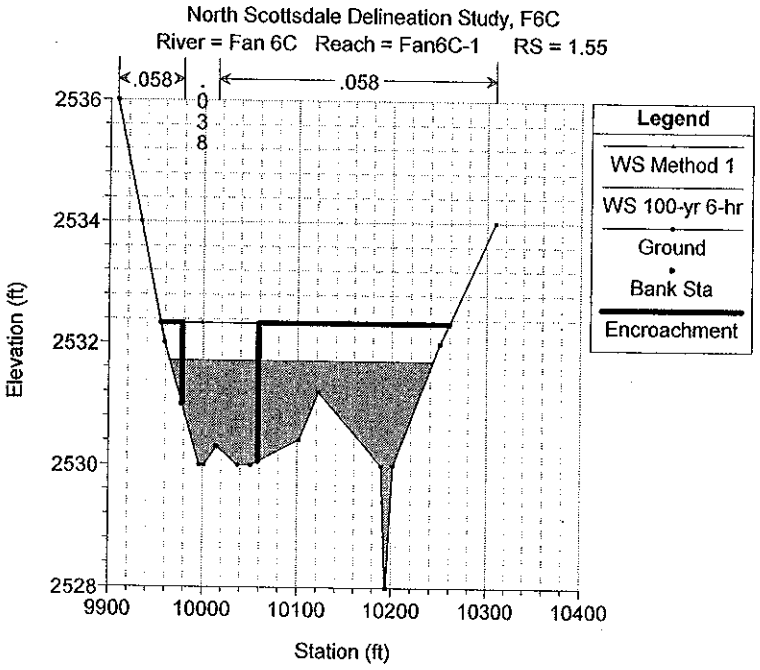
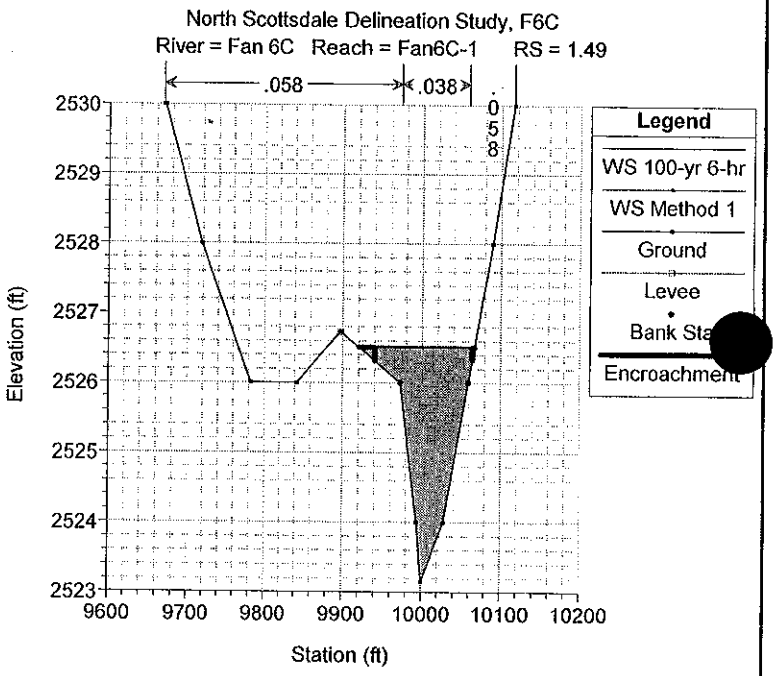
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.64
.058
.038
.058
Legend
WS Method 1
WS 100-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.55
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.49
.058
.038
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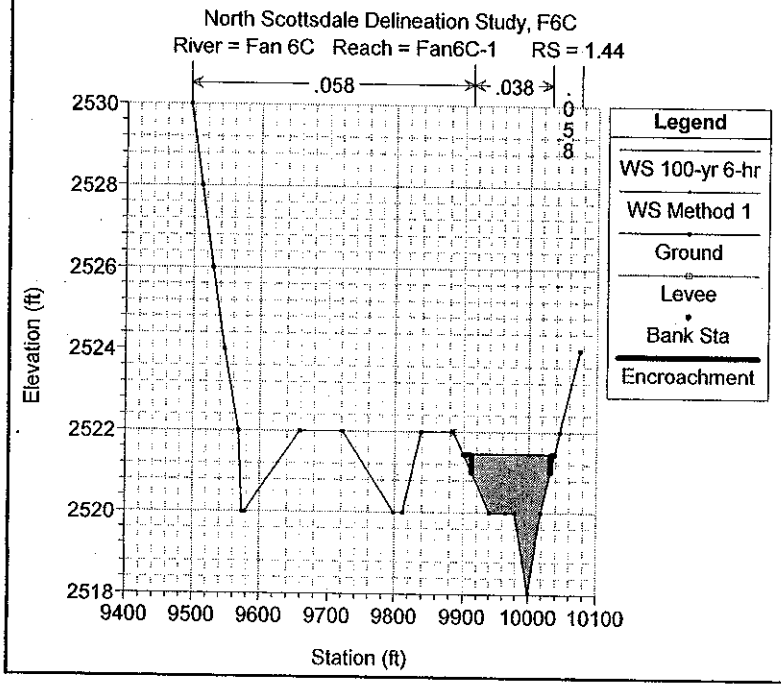
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.44
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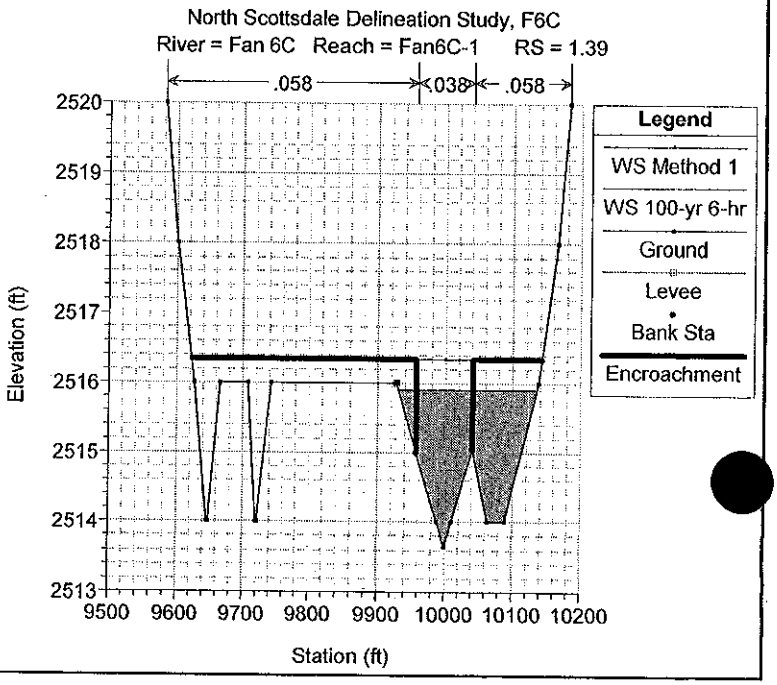
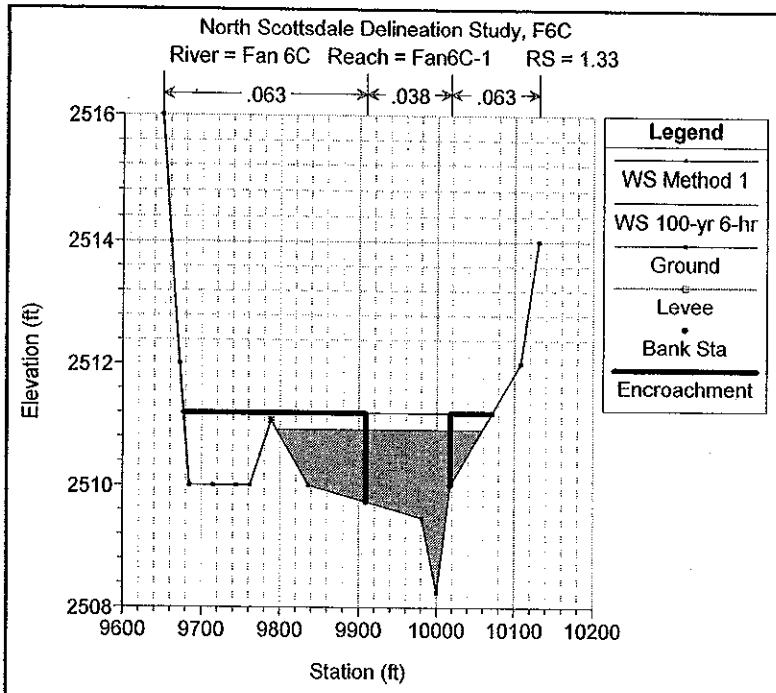
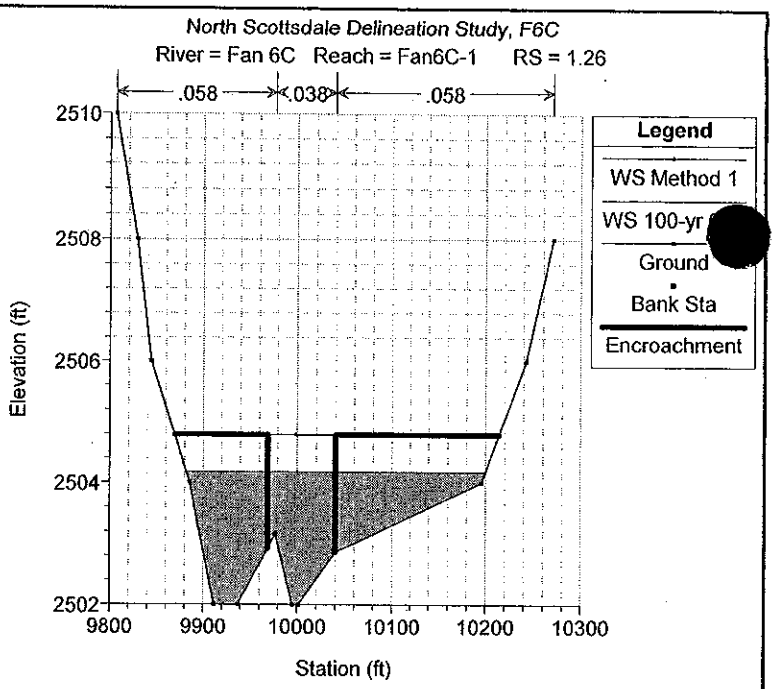
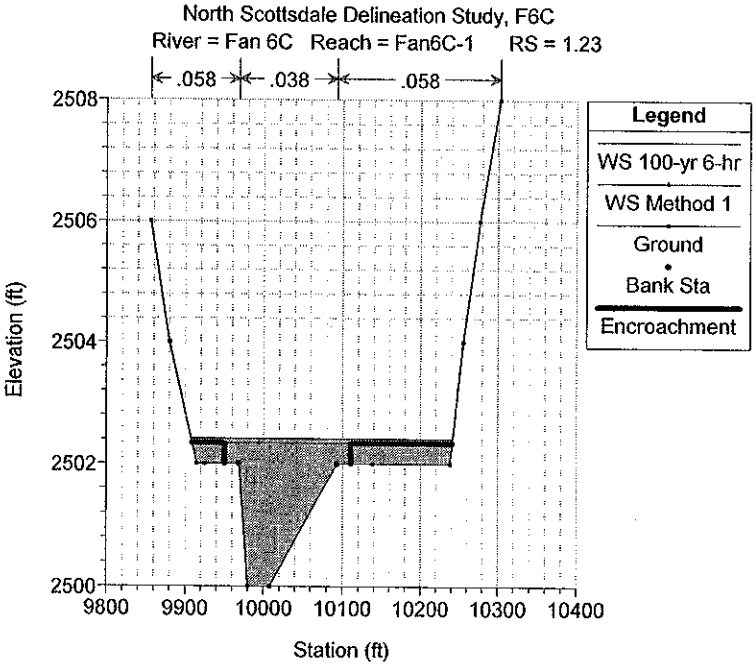
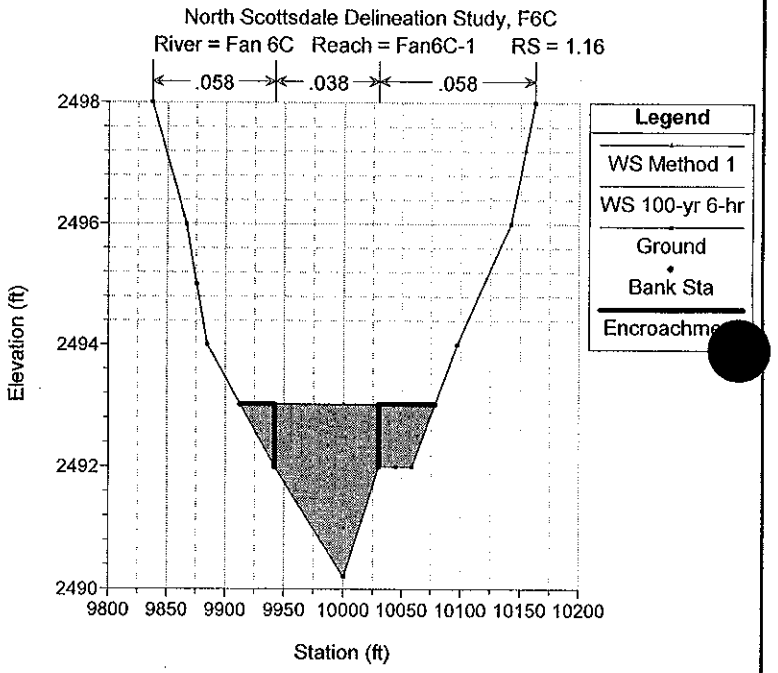
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

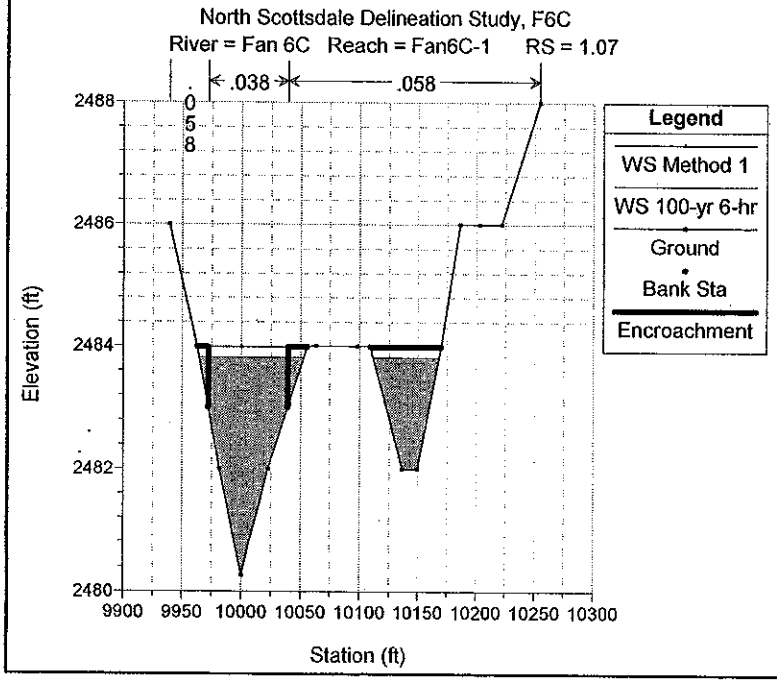

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.39
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

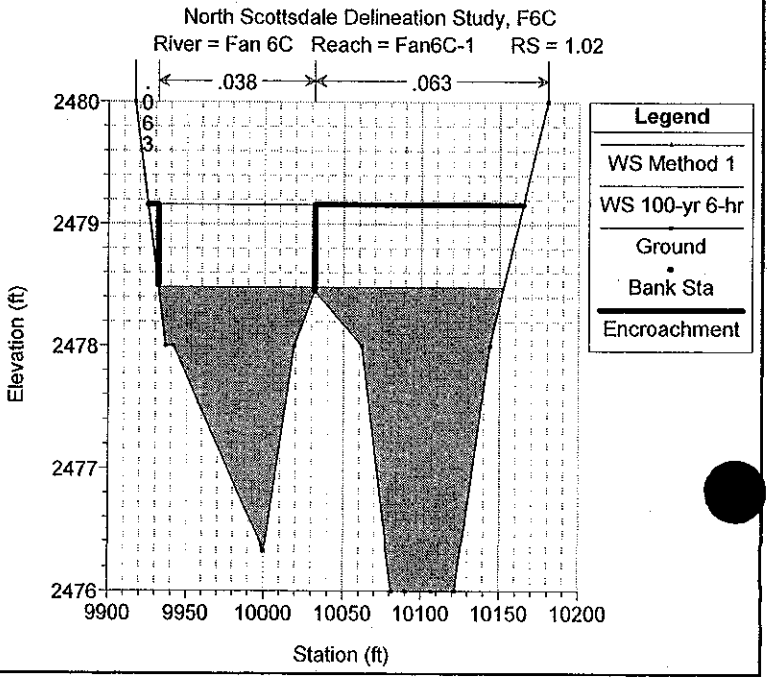

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.33
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

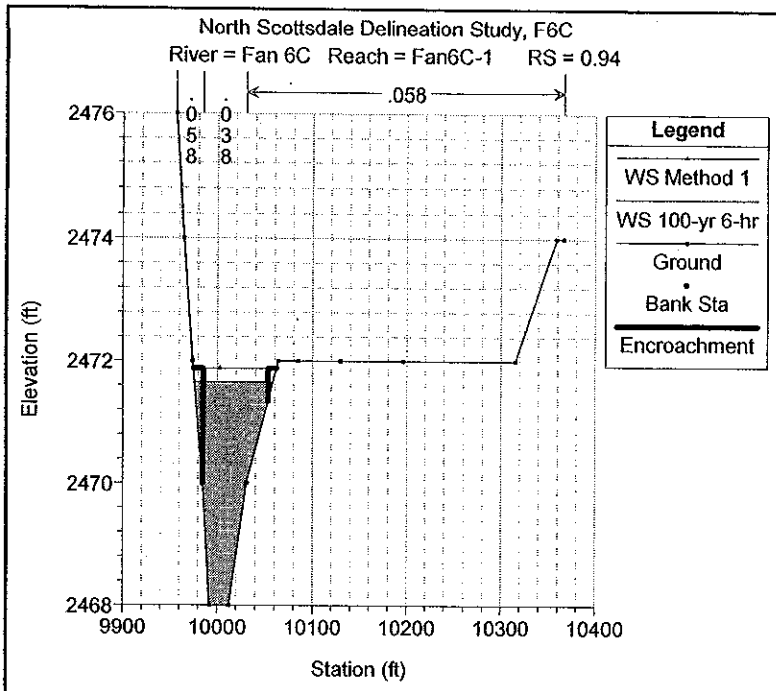

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.26
.058
.038
.058
Legend
WS Method 1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

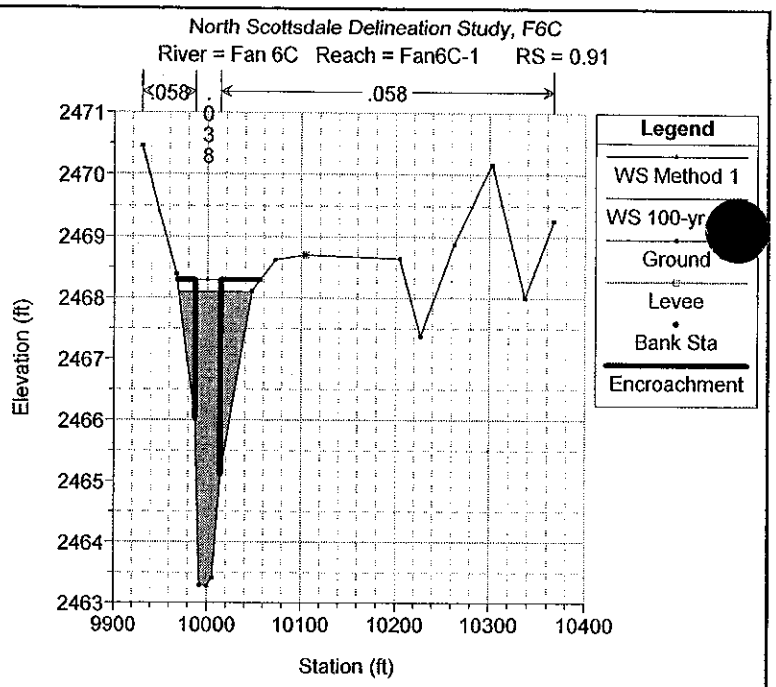

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.23
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

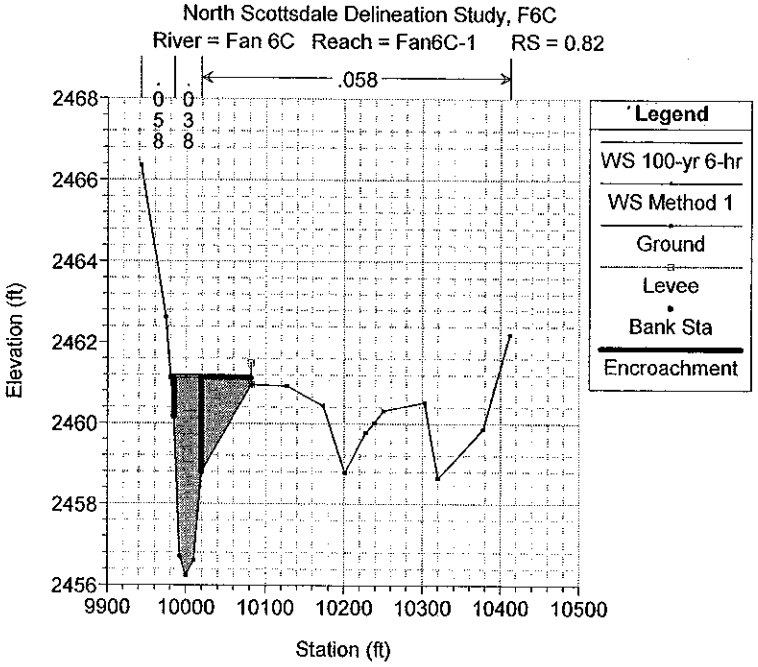

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.16
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachme
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.07
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.02
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.94
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.91
.058
.058
Legend
WS Method 1
WS 100-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.82
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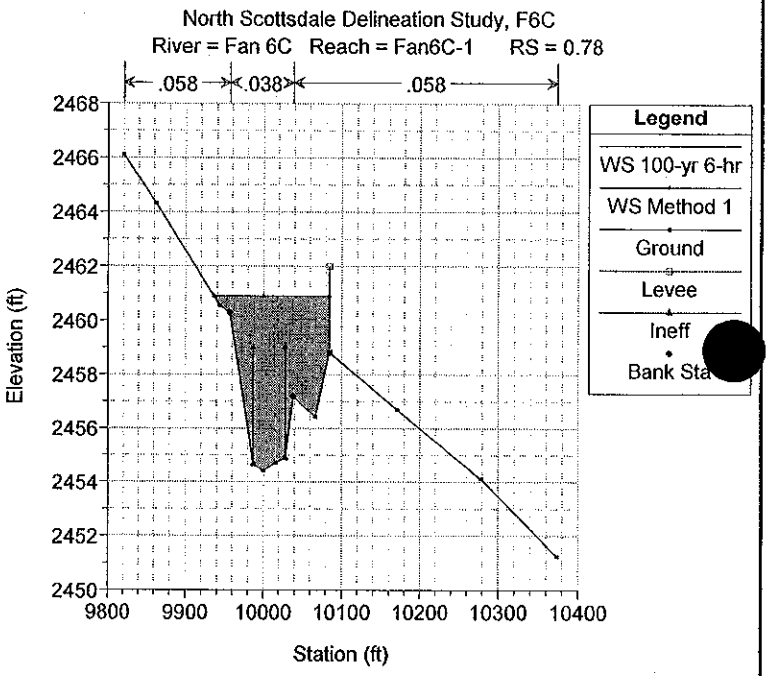
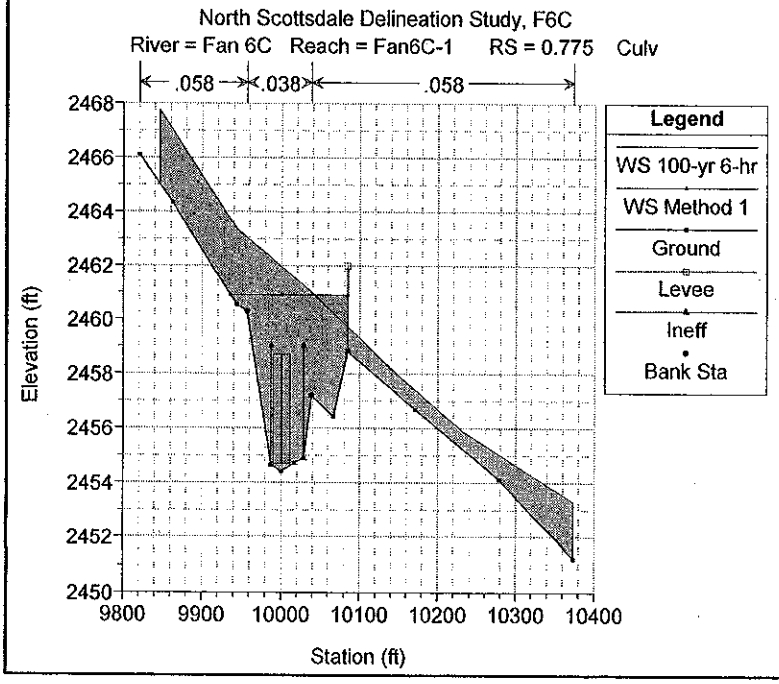
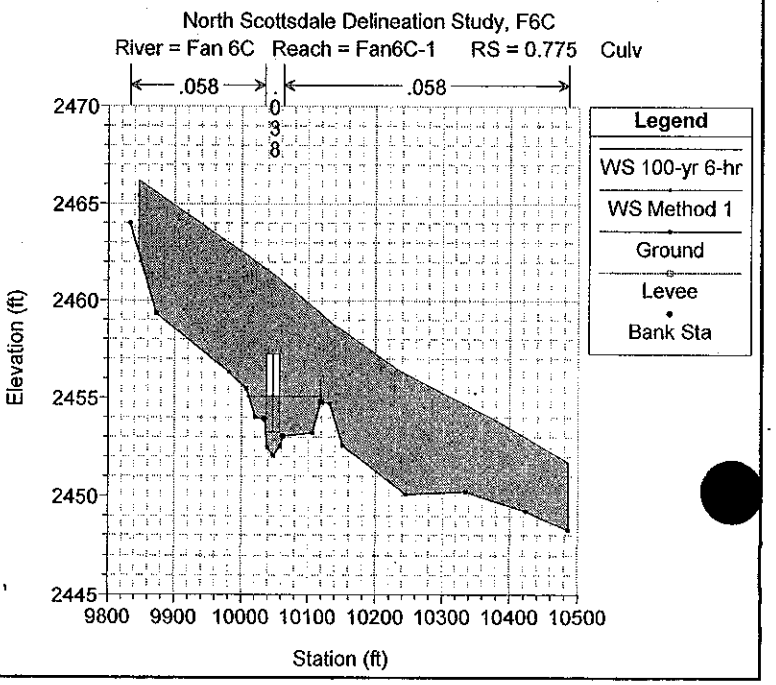
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.78
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.775 Culv
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.775 Culv
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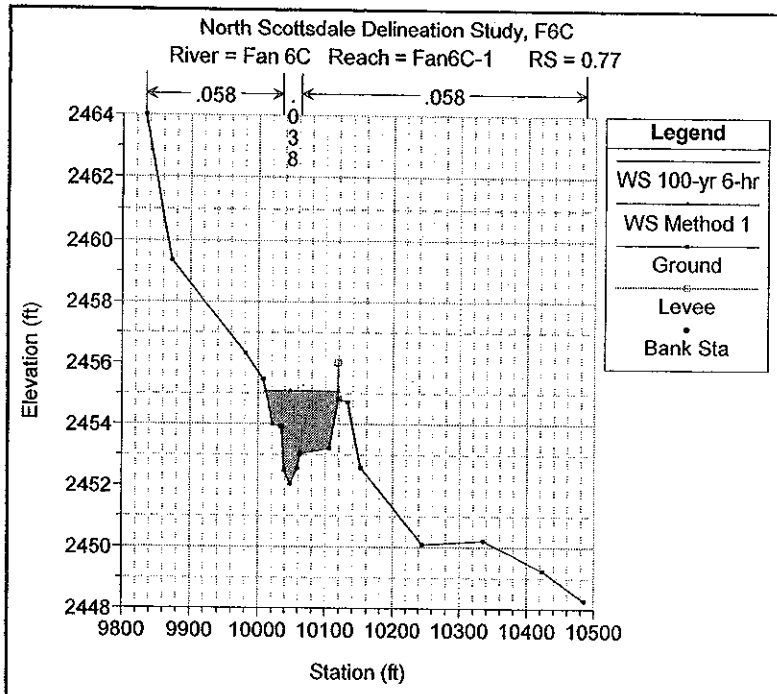
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.77
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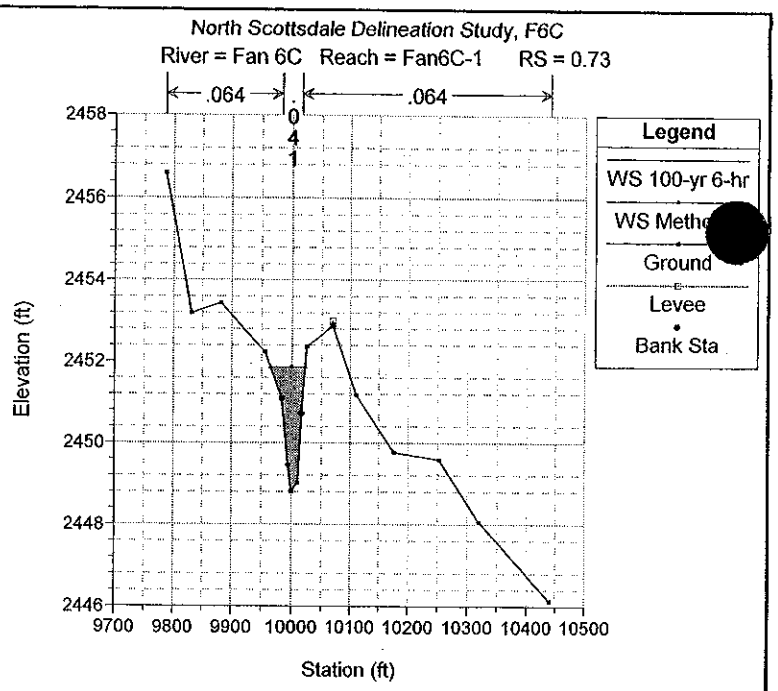
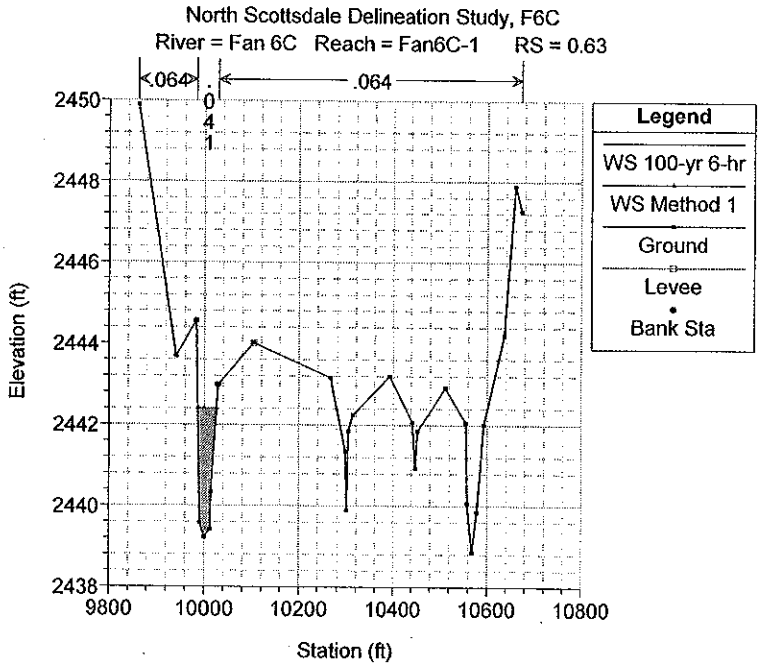
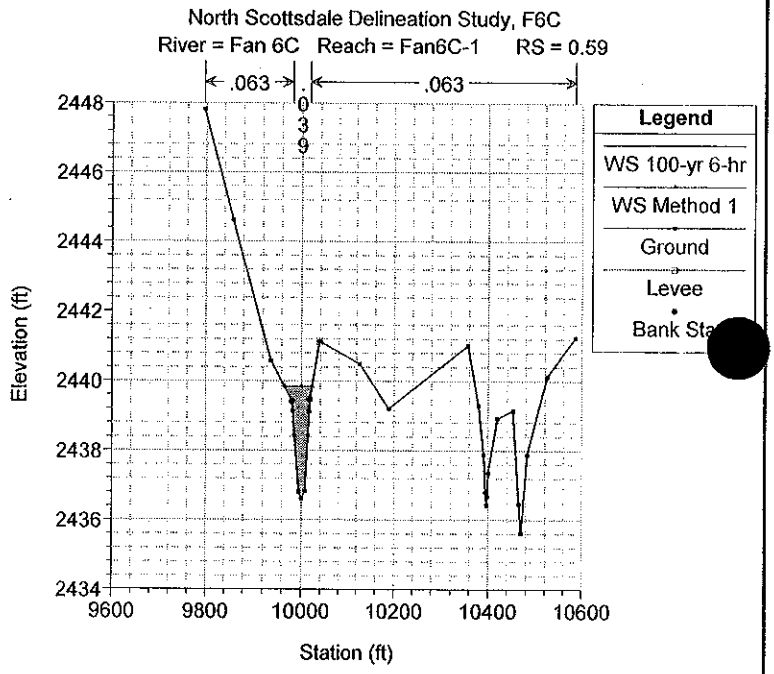
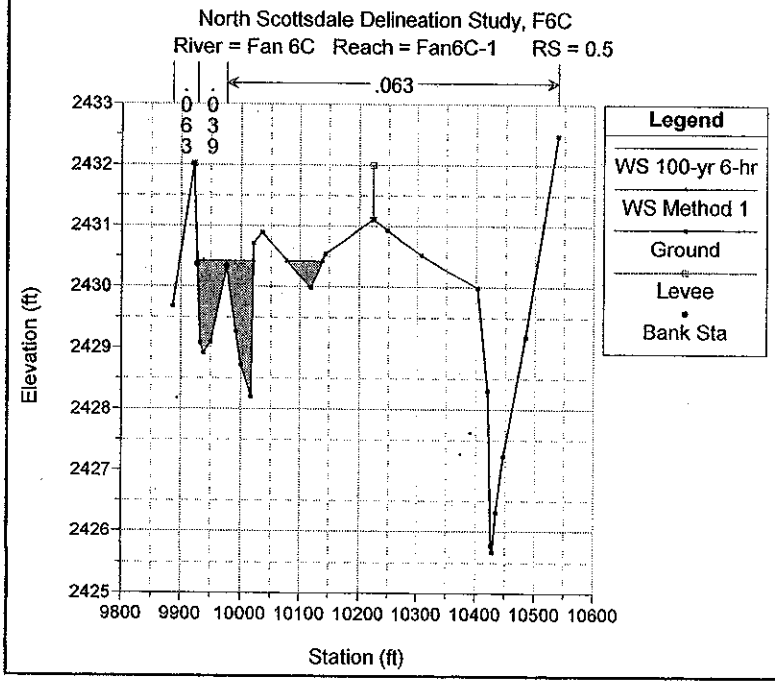
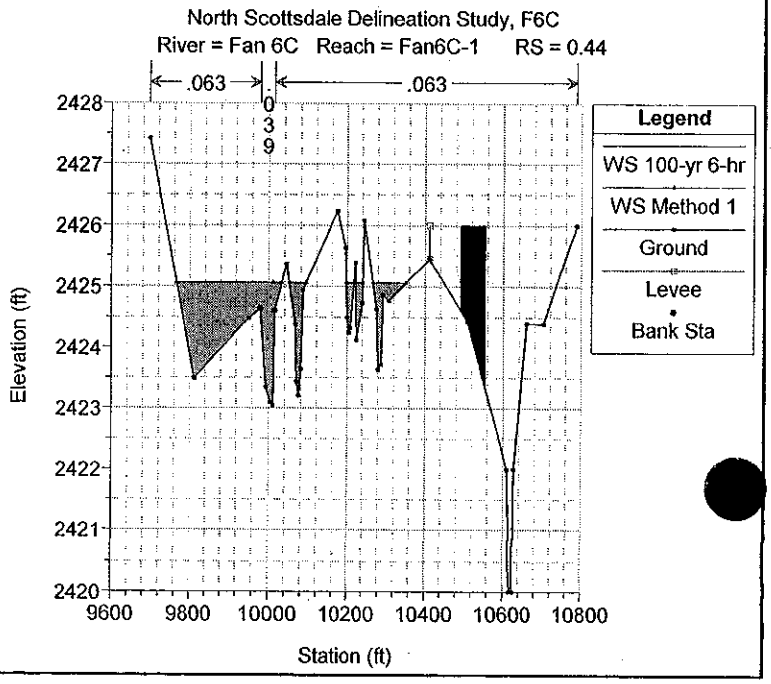
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.73
.064
.041
.064
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.63
.064
.041
.064
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.59
.063
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.5
.063
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.44
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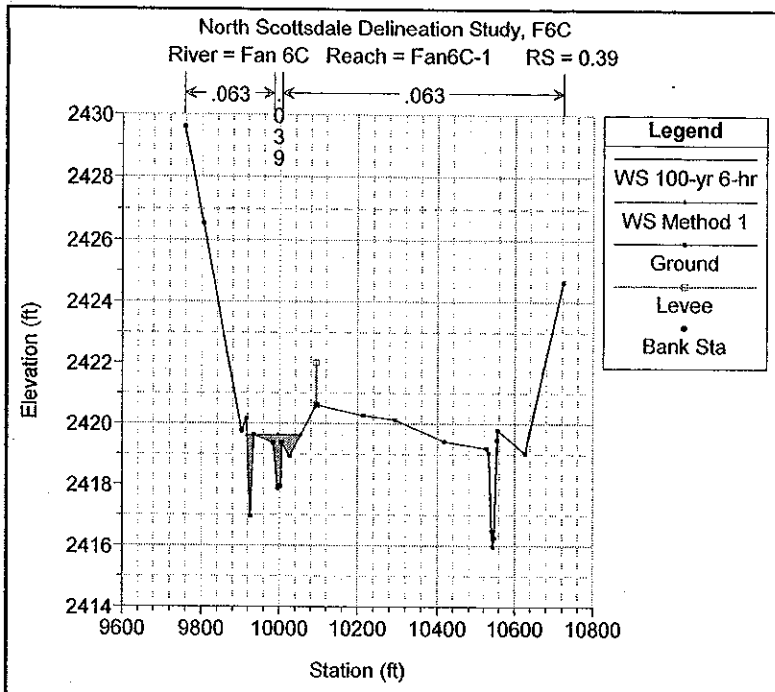
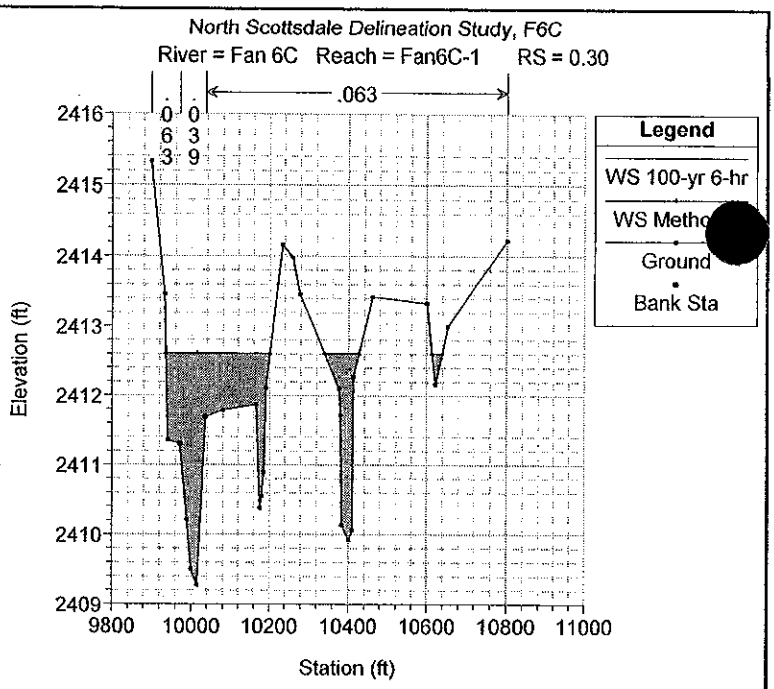
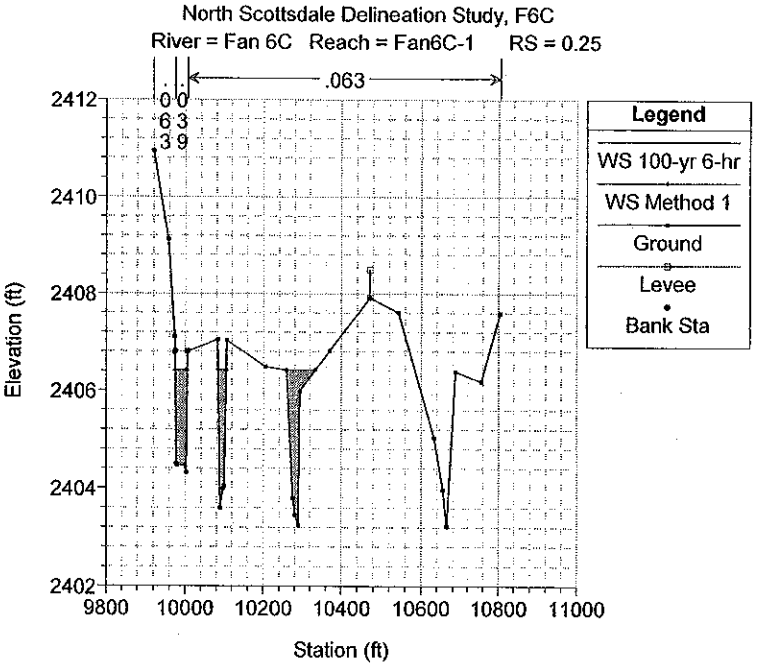
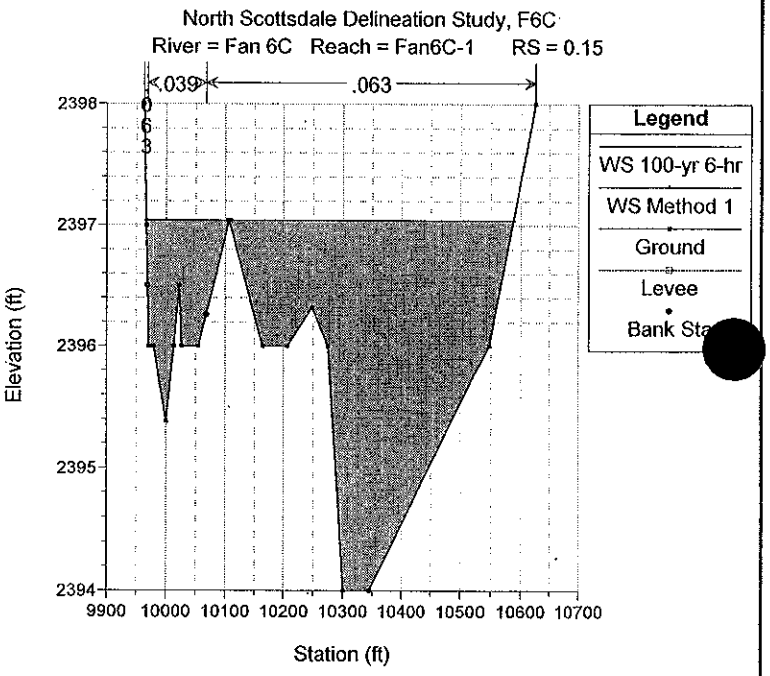
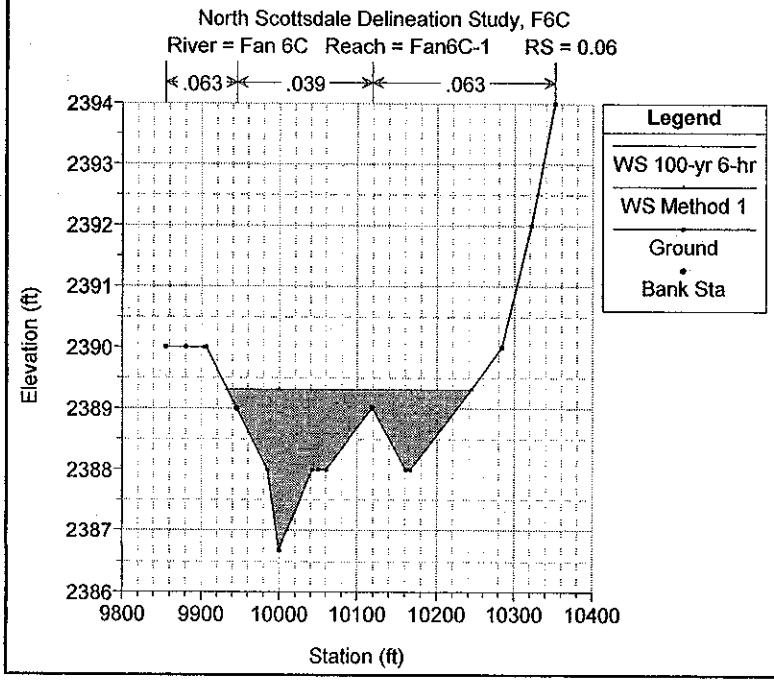
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

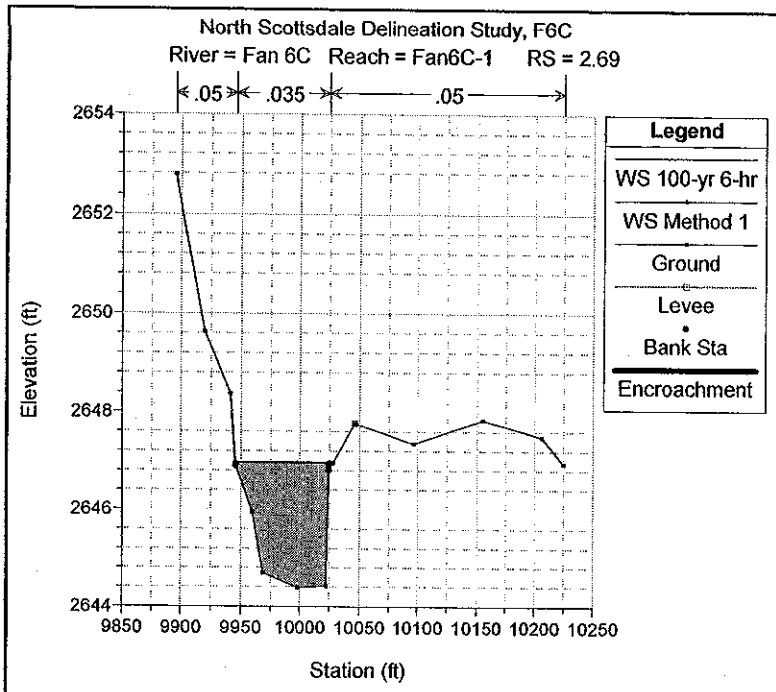

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.39
.063
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

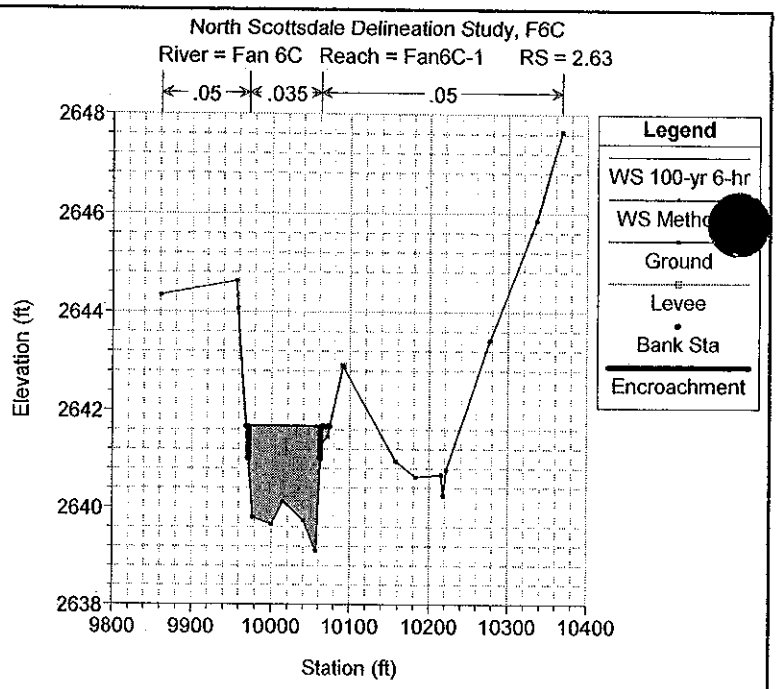

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.30
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

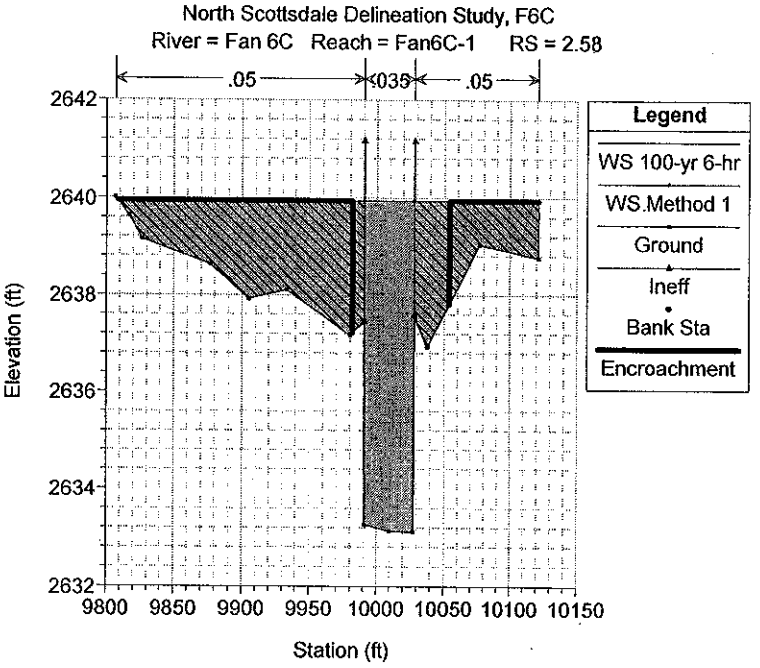

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.25
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

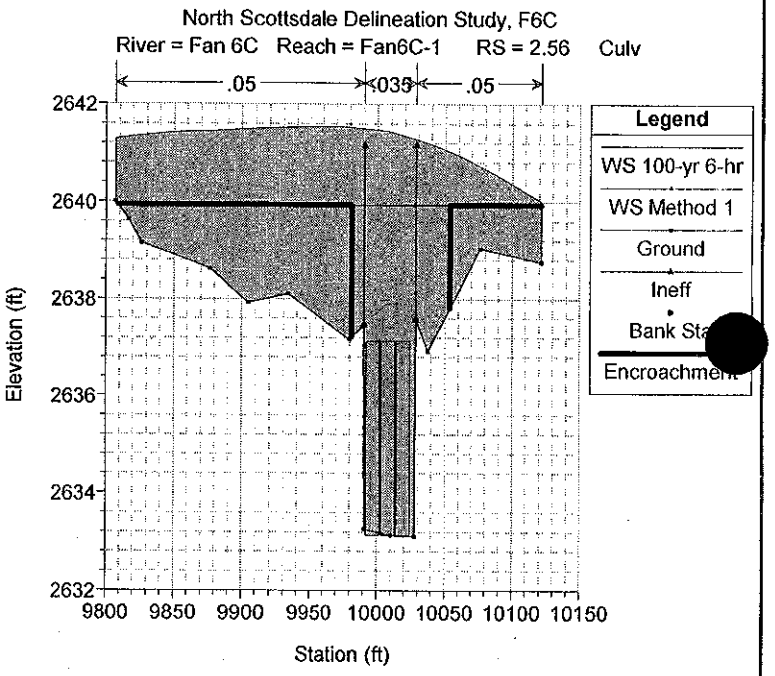

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.15
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

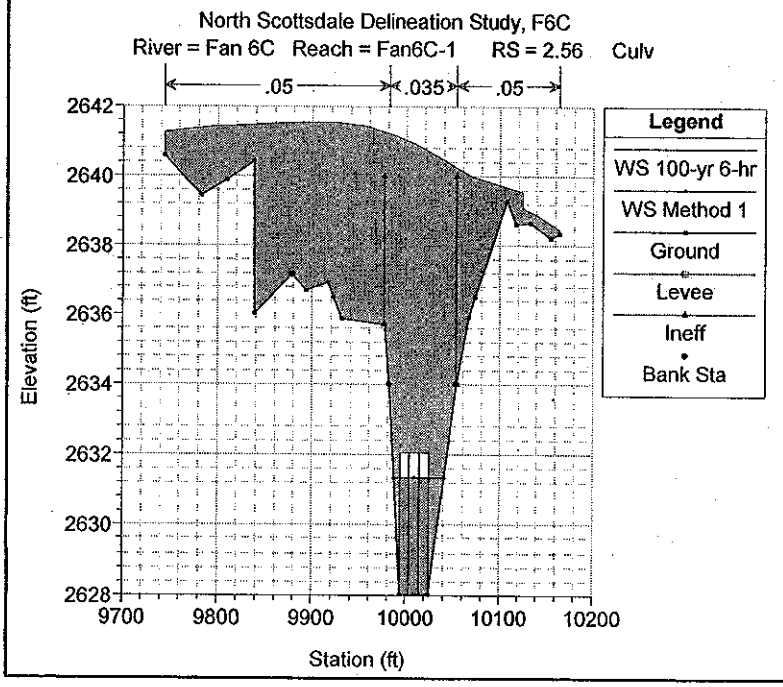

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.06
.063
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

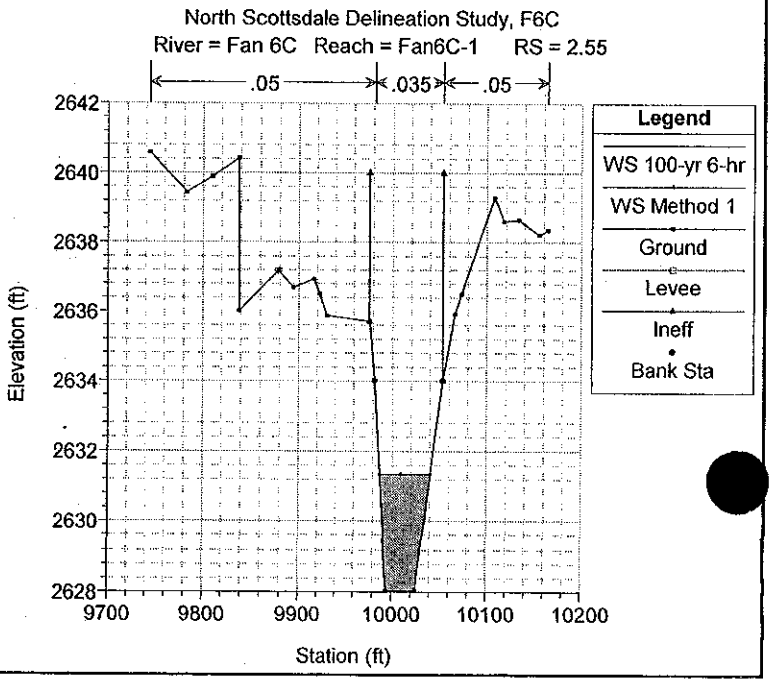

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.69
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

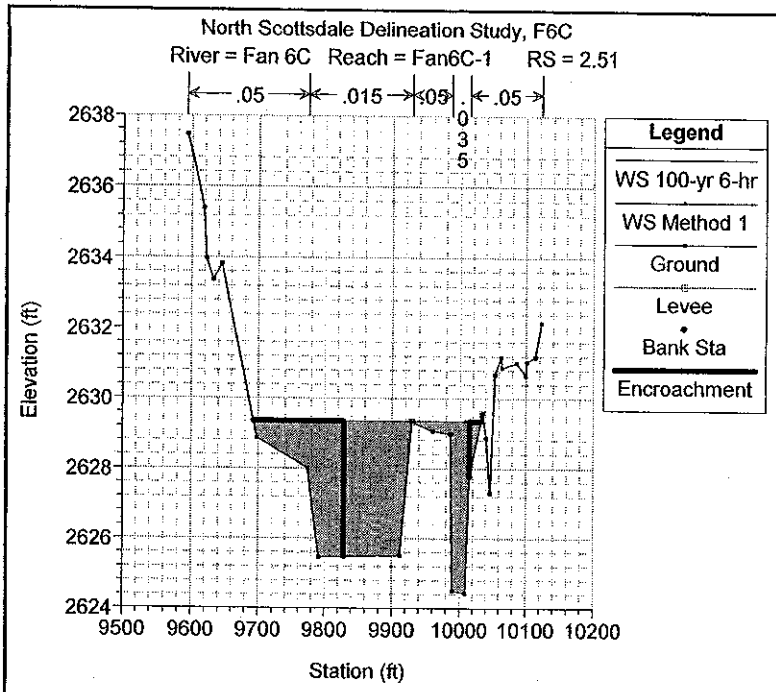

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.63
.05
.035
.05
Legend
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

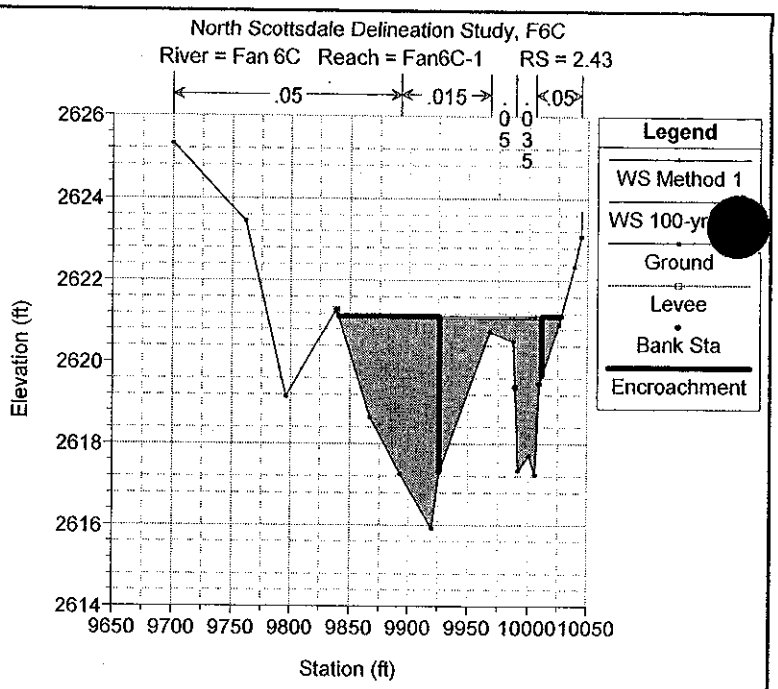

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.58
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

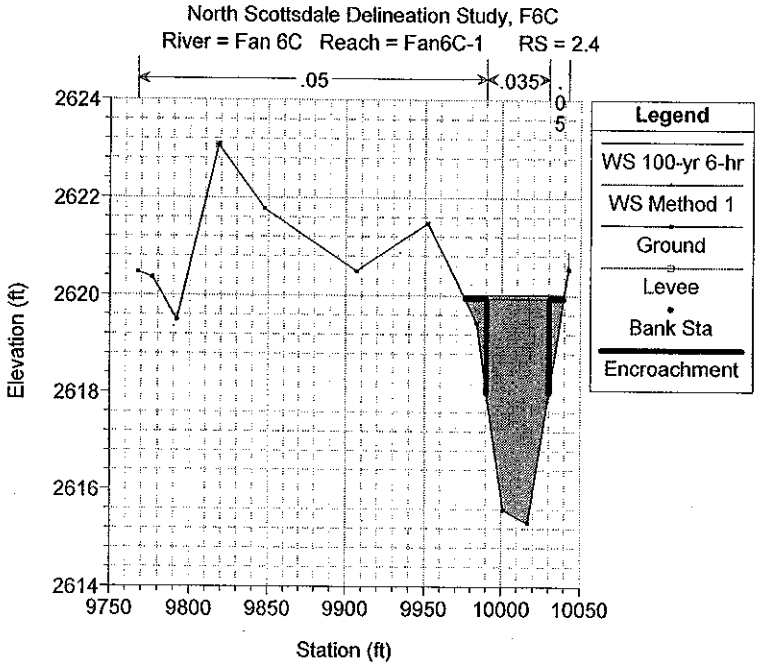

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.56 Culv
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

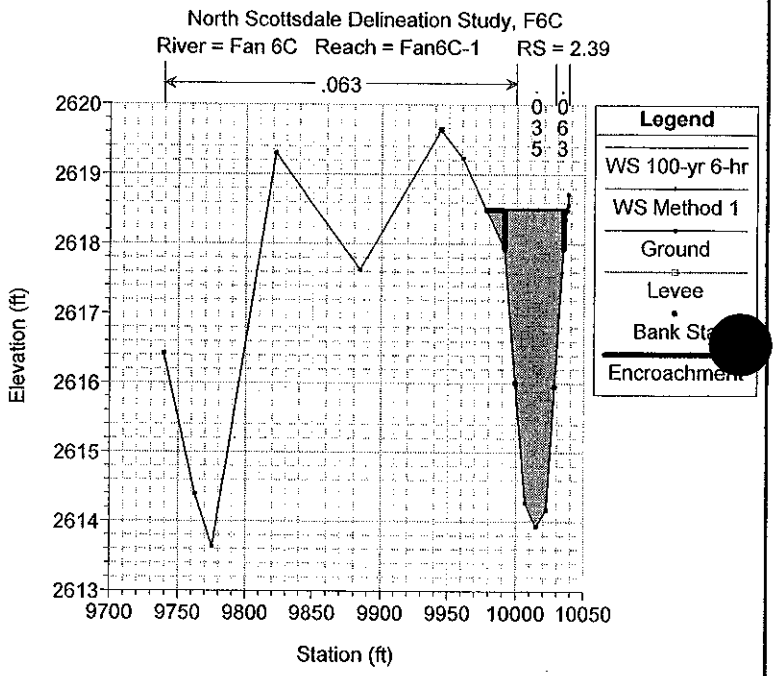

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.56 Culv
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

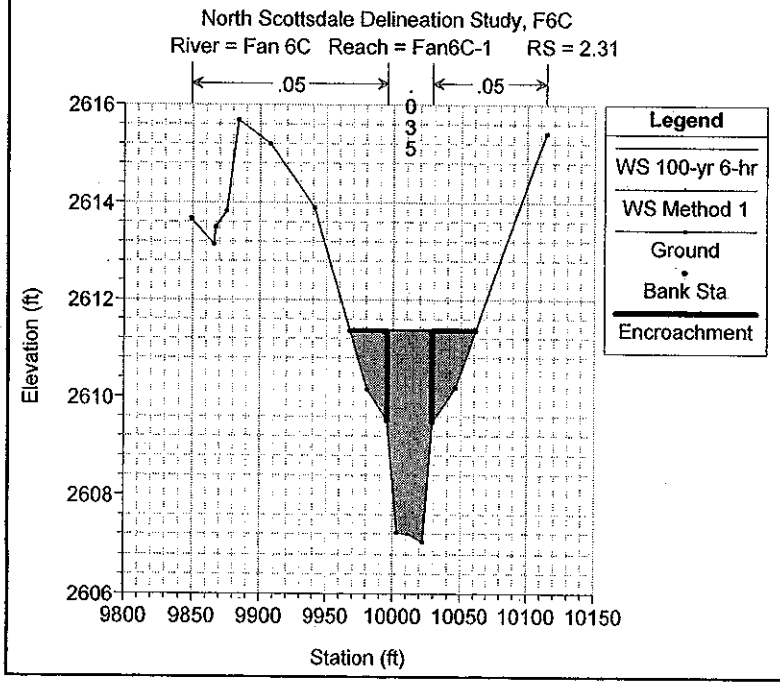

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.55
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

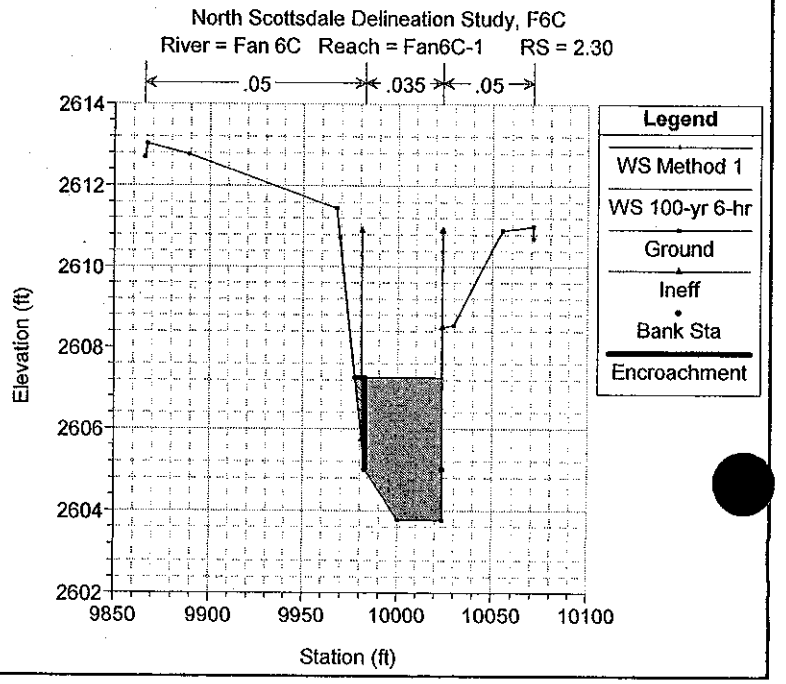

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.51
.05
.015
.05
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

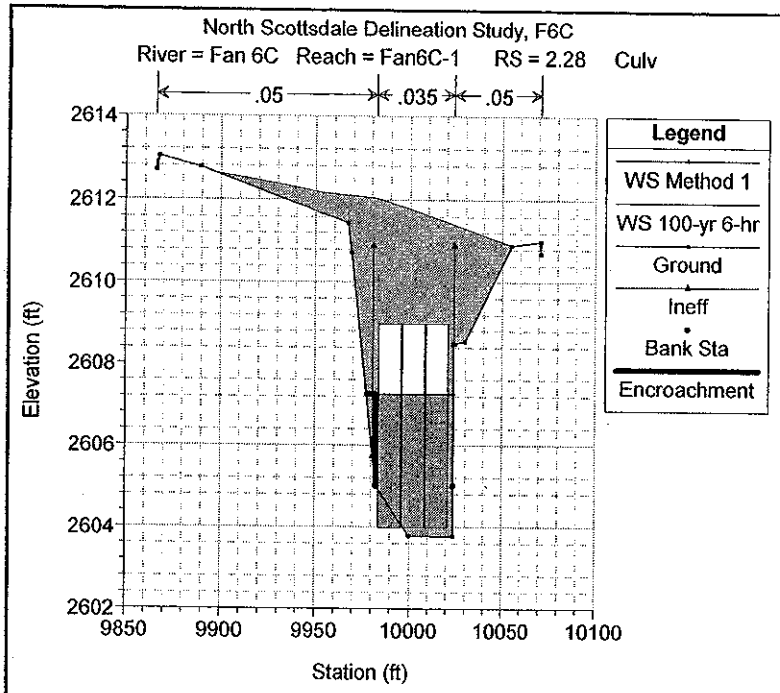

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.43
.05
.015
.05
Legend
WS Method 1
WS 100-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

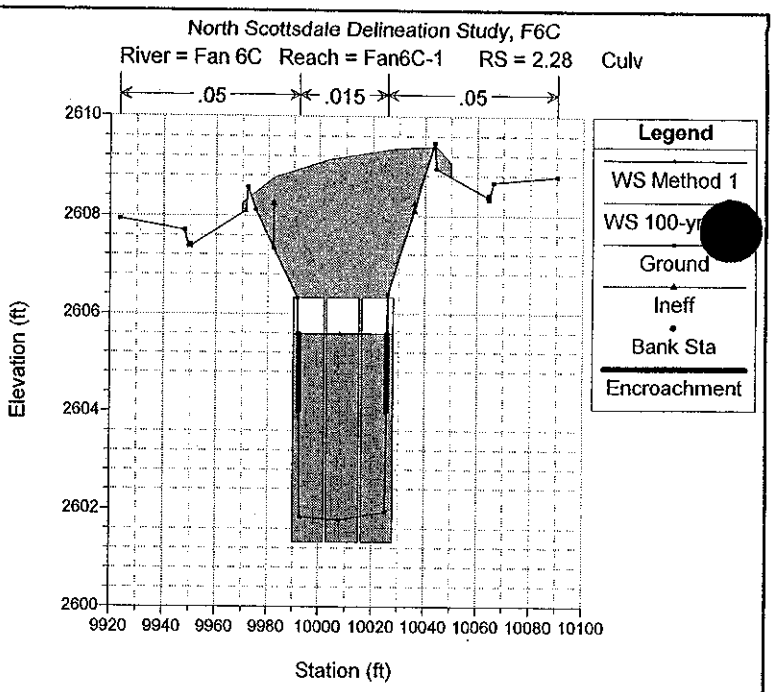

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.4
.05
.035
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

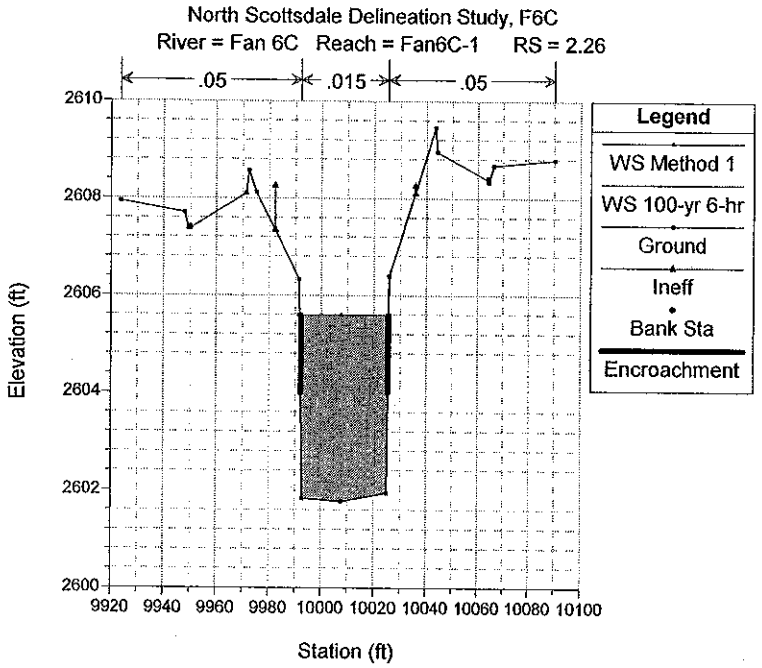

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.39
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

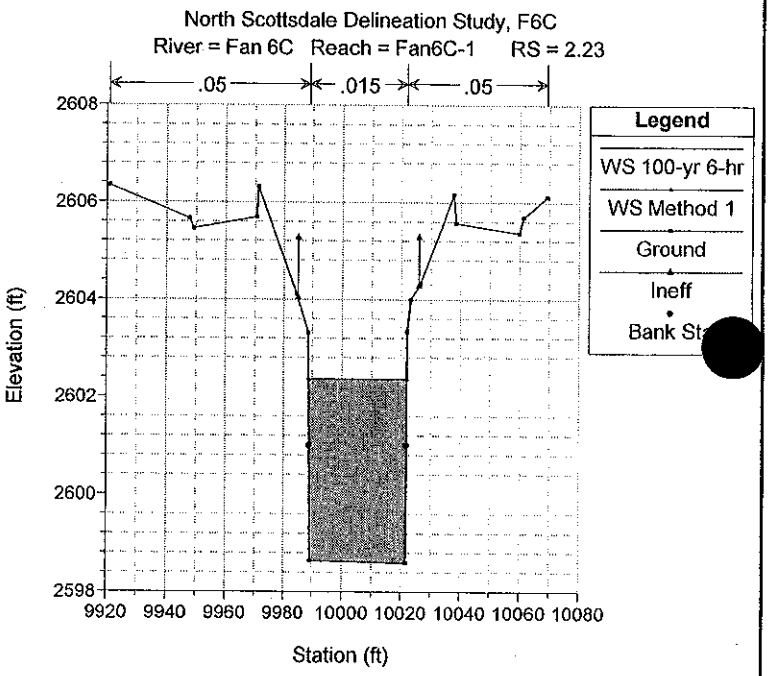

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.31
.05
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

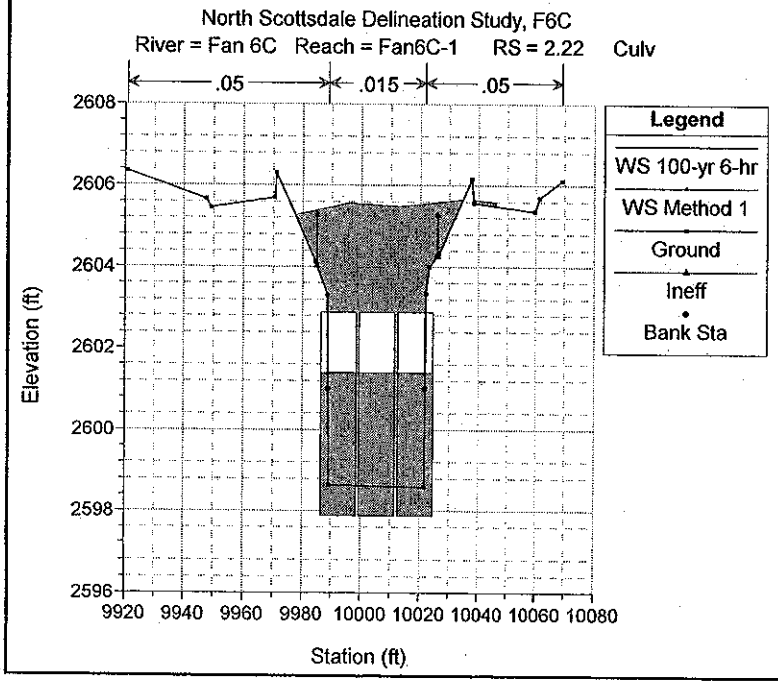

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.30
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

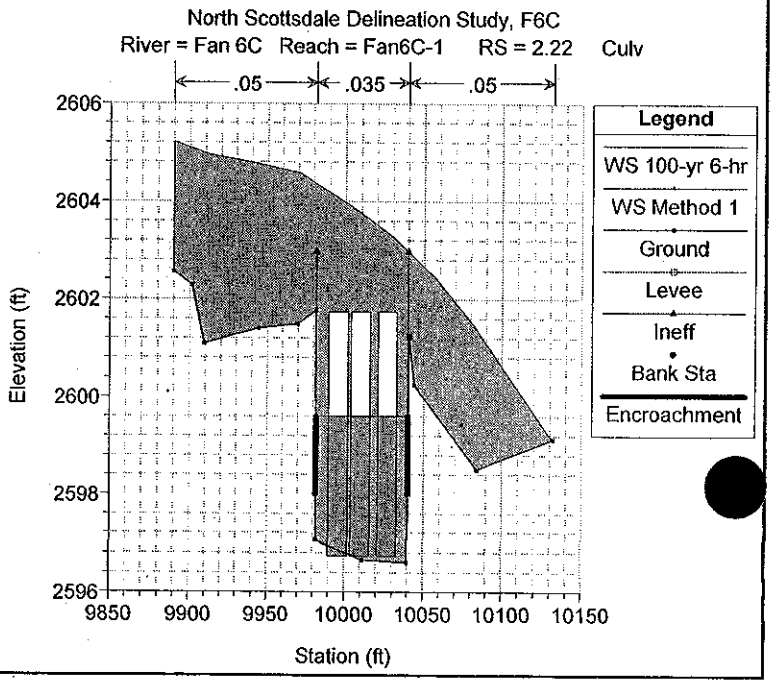

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.28 Culv
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

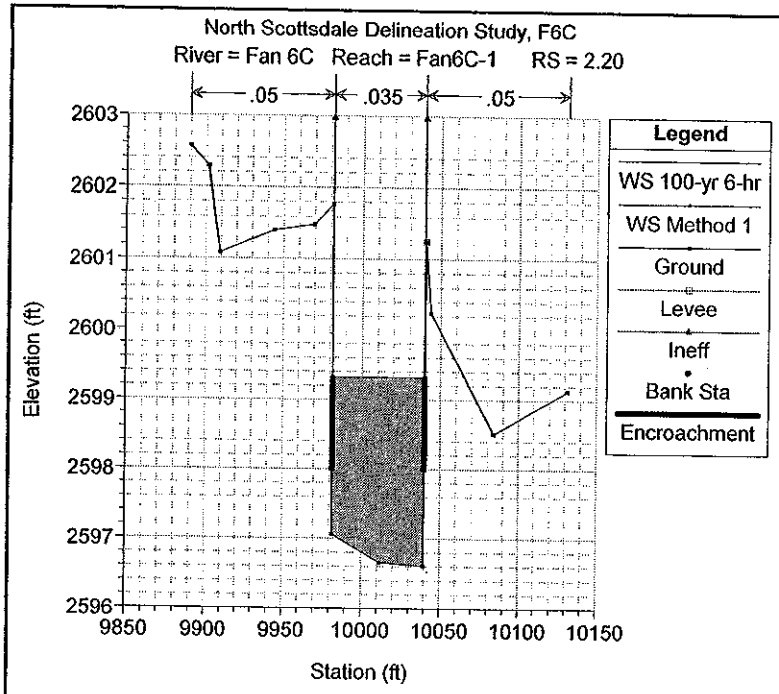

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.28 Culv
.05
.015
.05
Legend
WS Method 1
WS 100-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

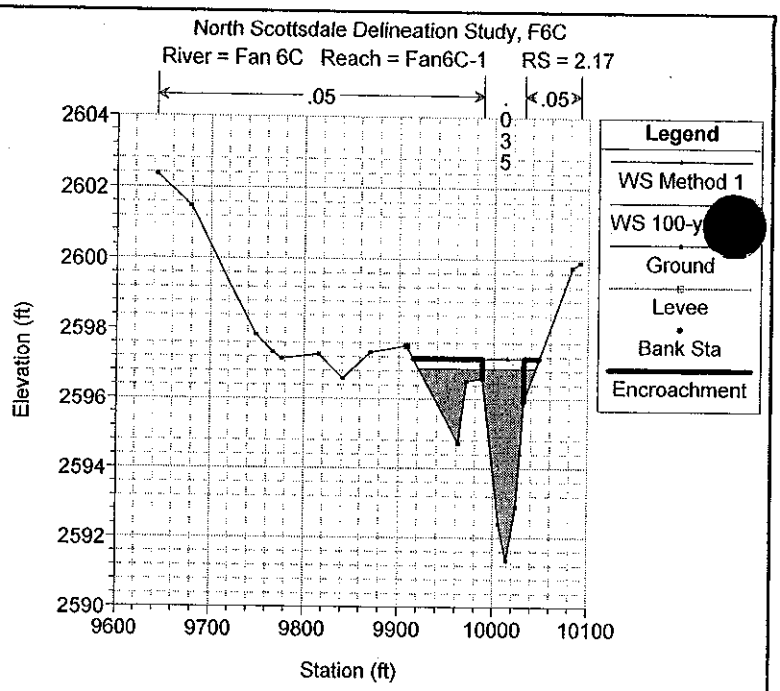

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.26
.05
.015
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

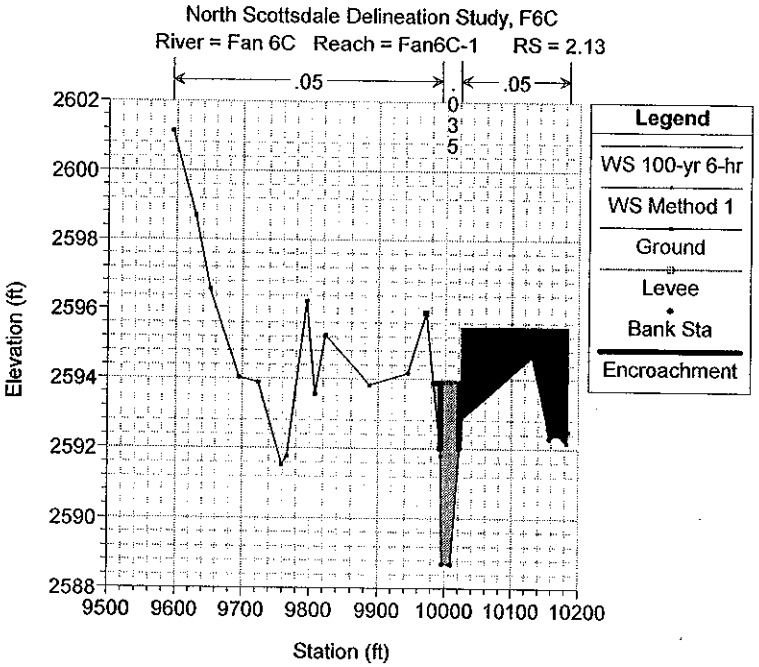

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.23
.05
.015
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

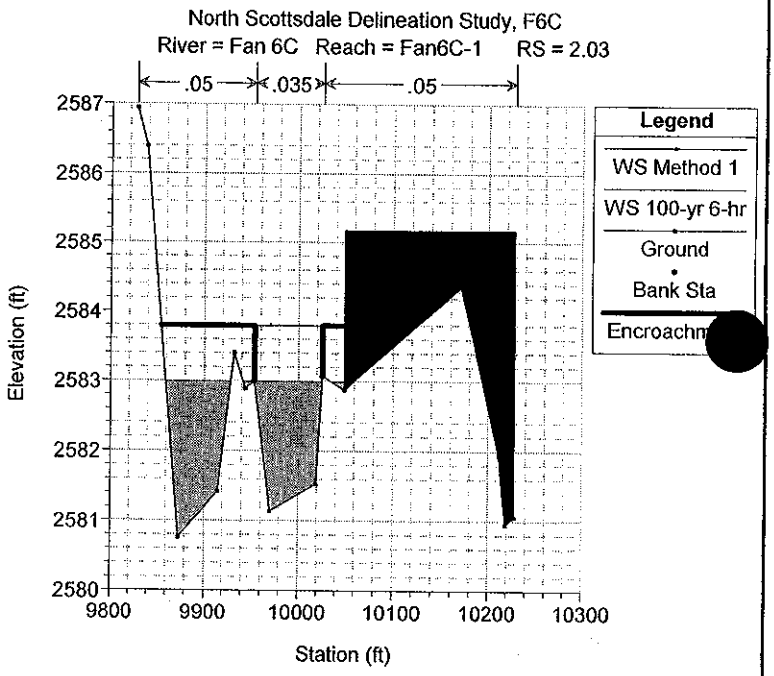

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.22 Culv
.05
.015
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

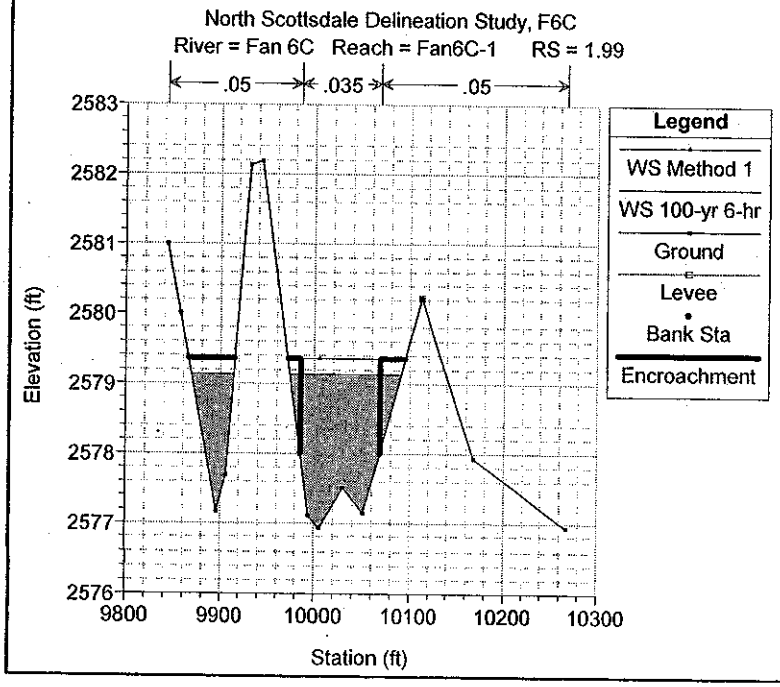

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.22 Culv
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

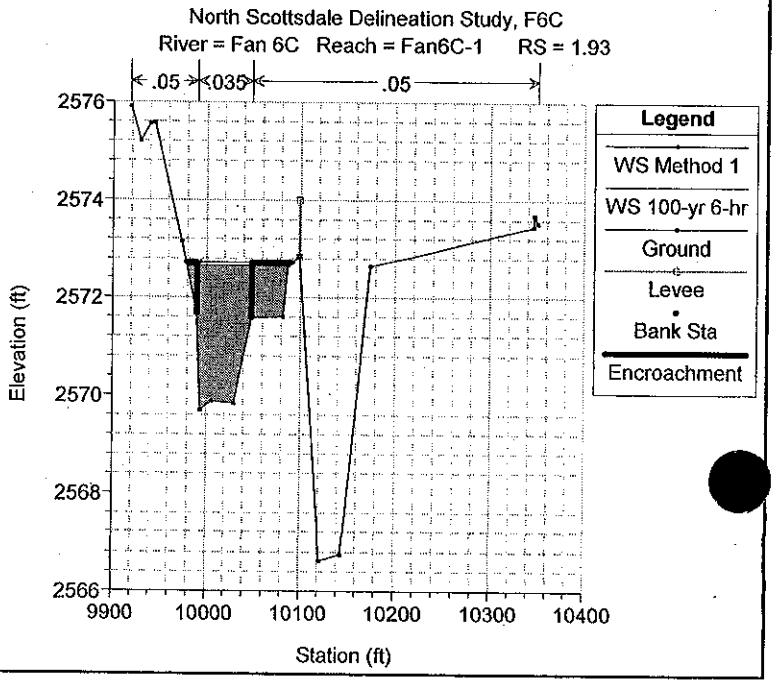

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.20
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.17
.05
.05
Legend
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

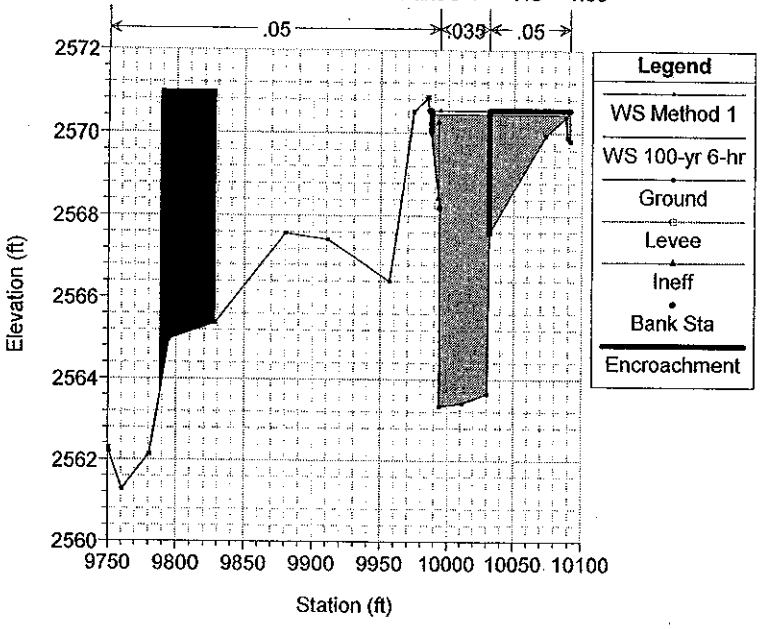

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.13
.05
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 2.03
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Elevation (ft)
Station (ft)

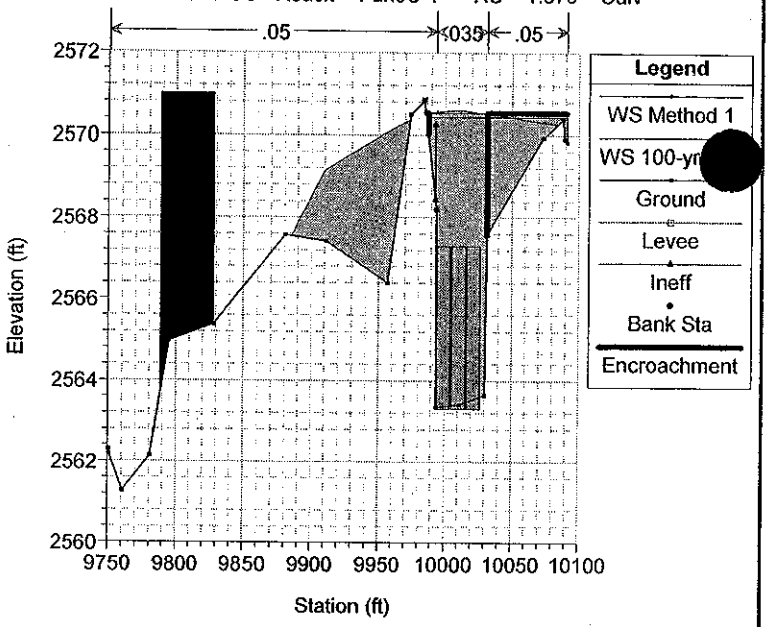

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.99
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.93
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

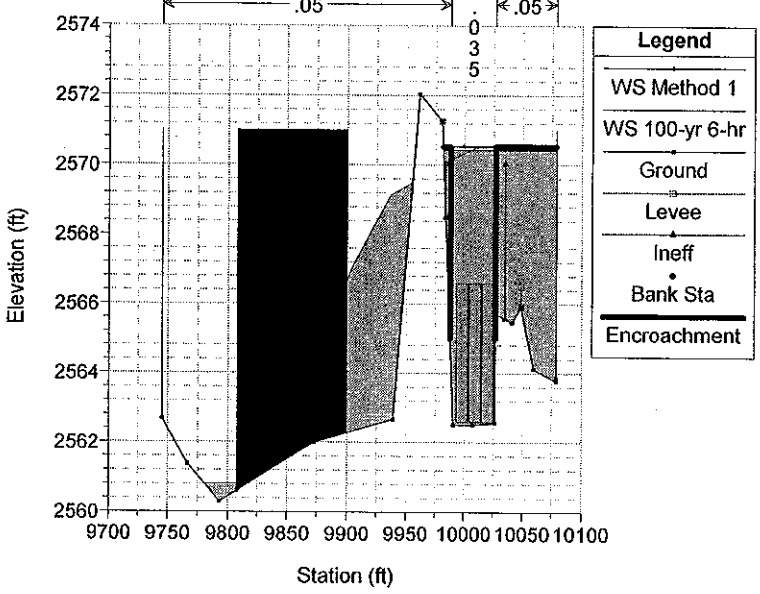
North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.88



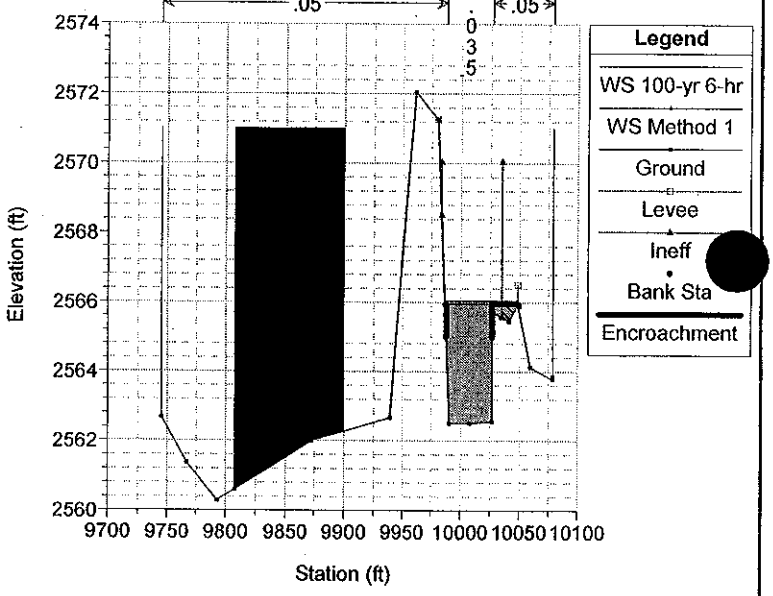
North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.875 Culv



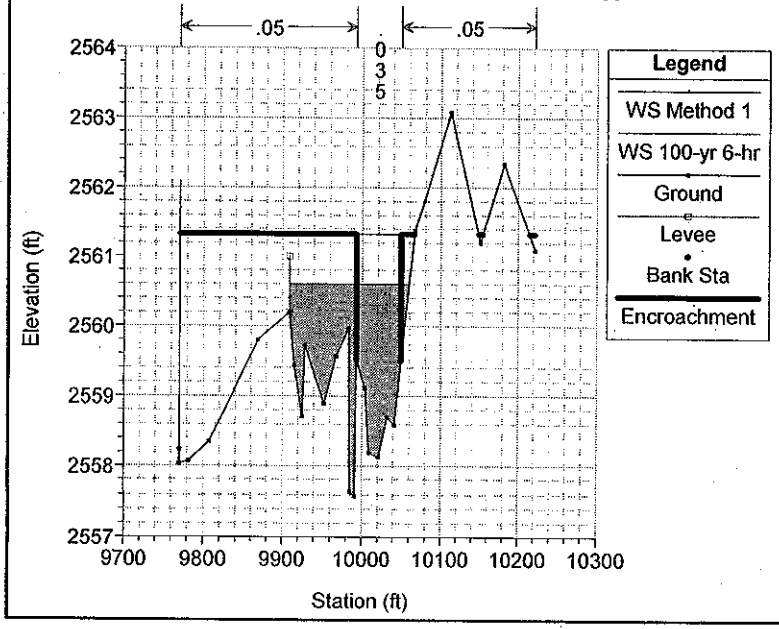
North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.875 Culv



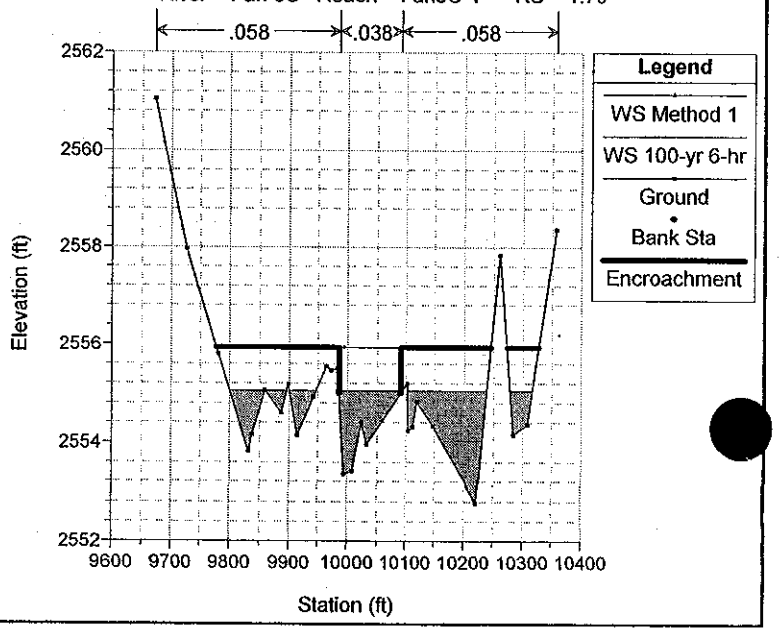
North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.87

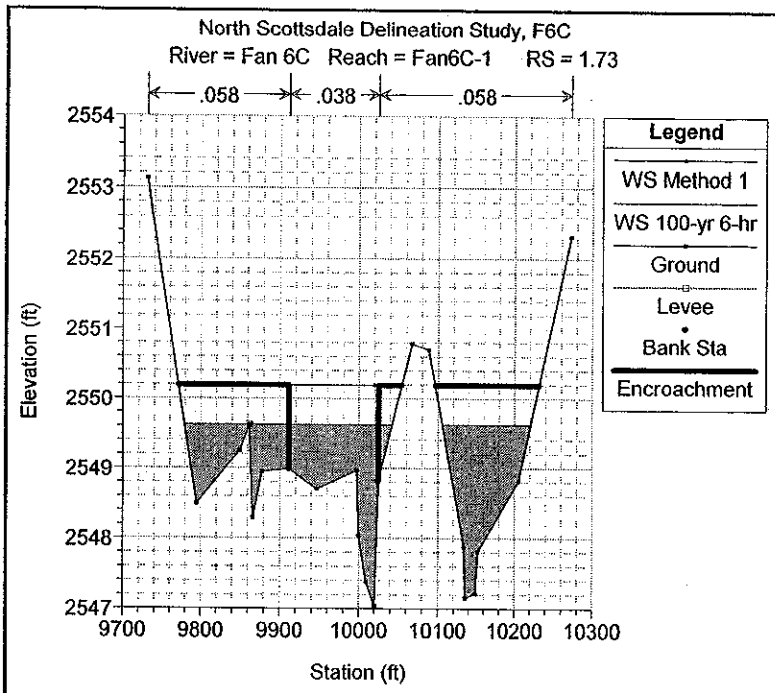


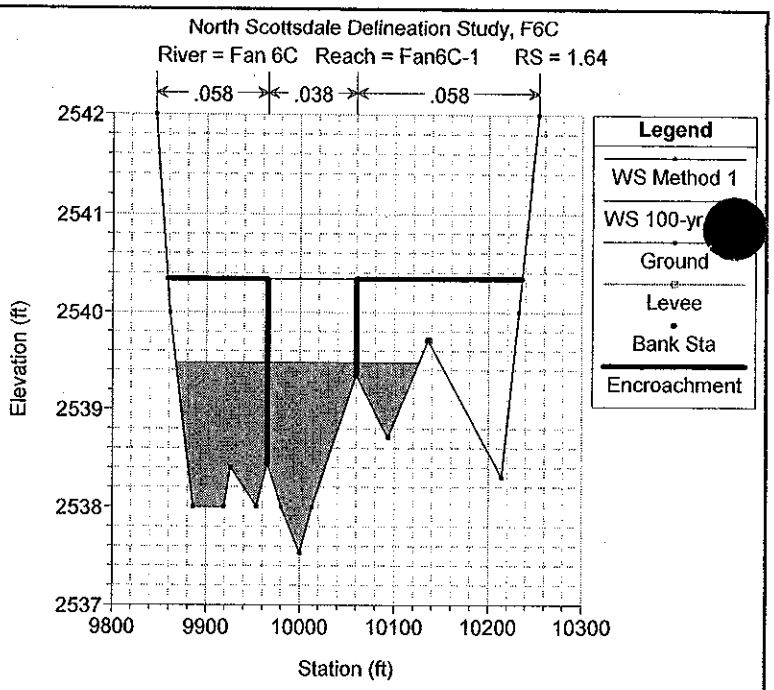
North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.83

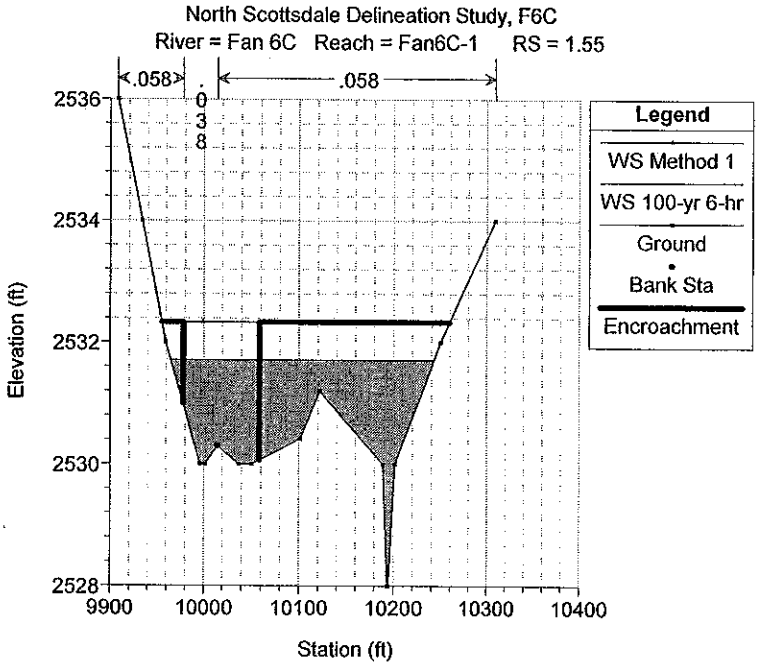


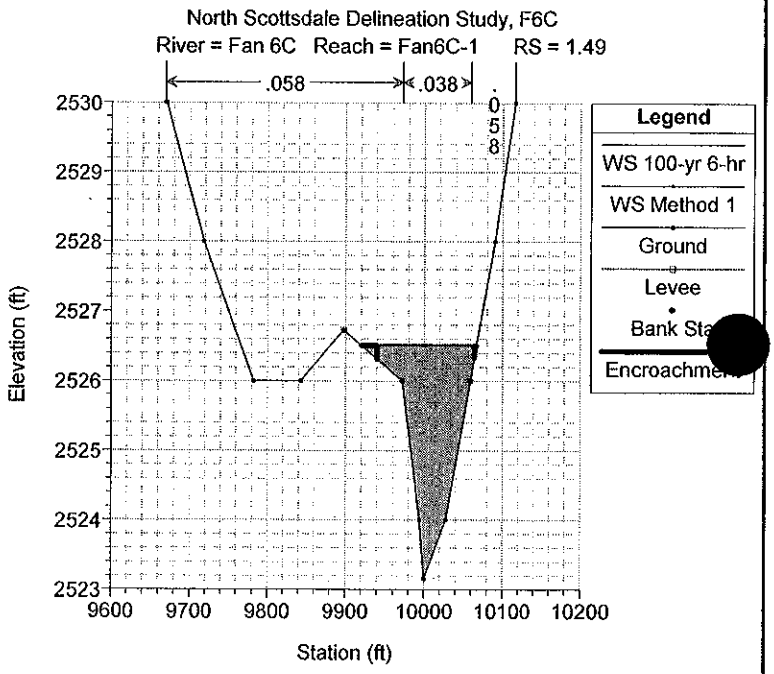
North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.79

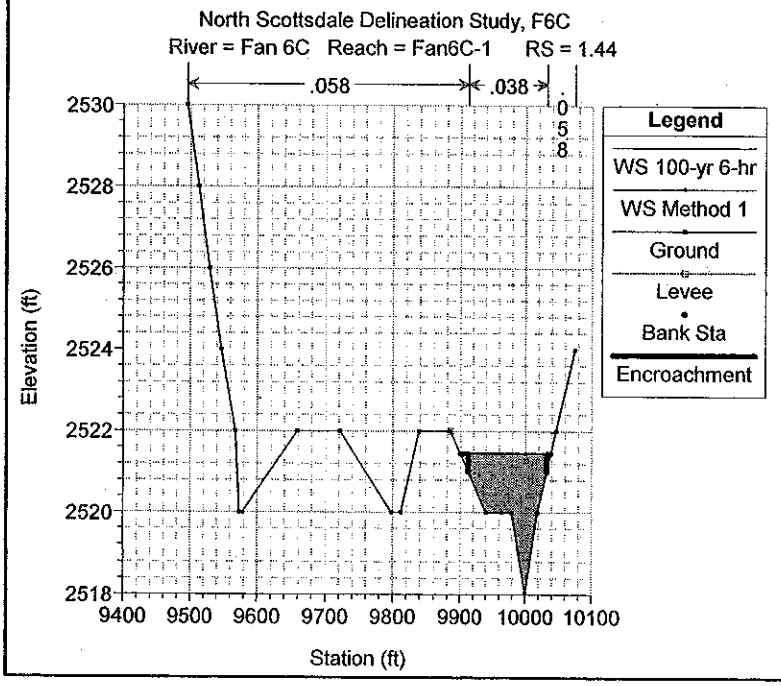


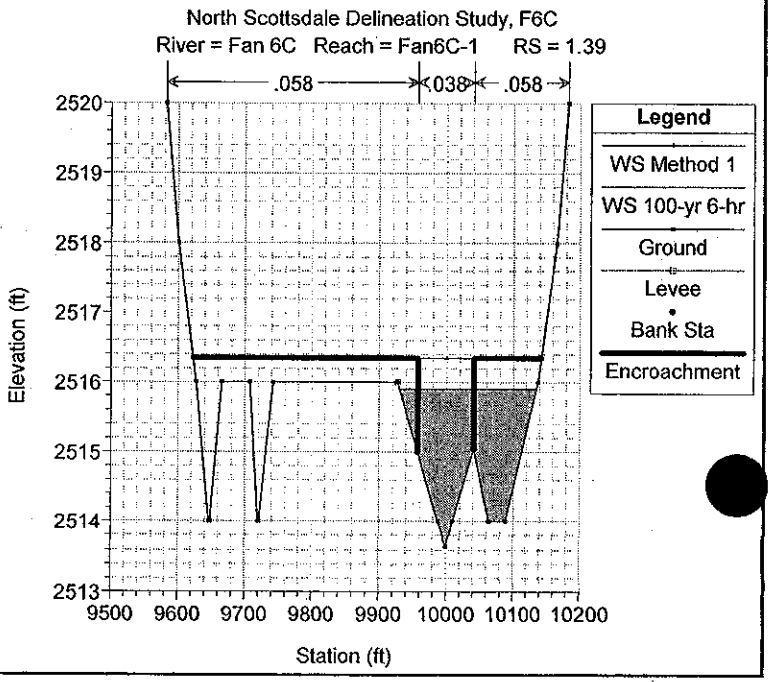

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.73
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

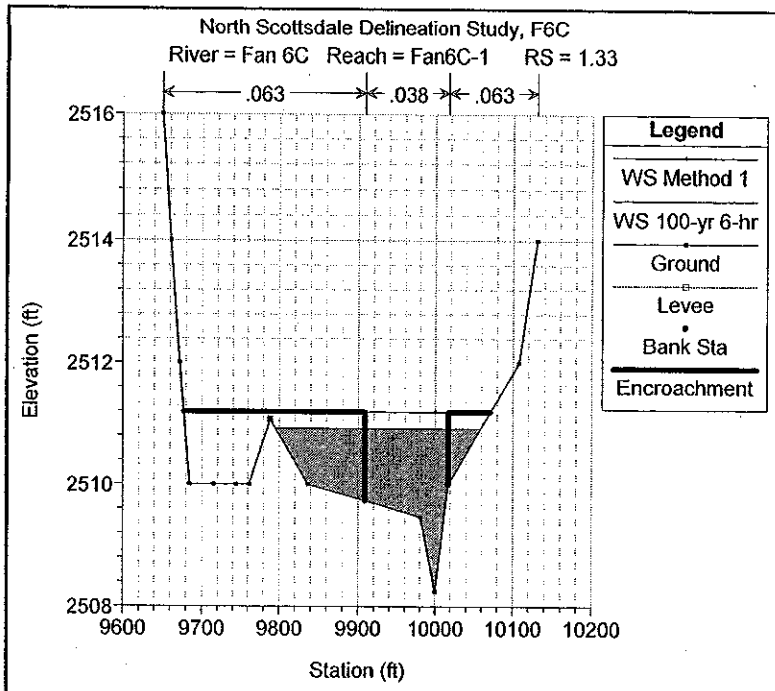

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.64
.058
.038
.058
Legend
WS Method 1
WS 100-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

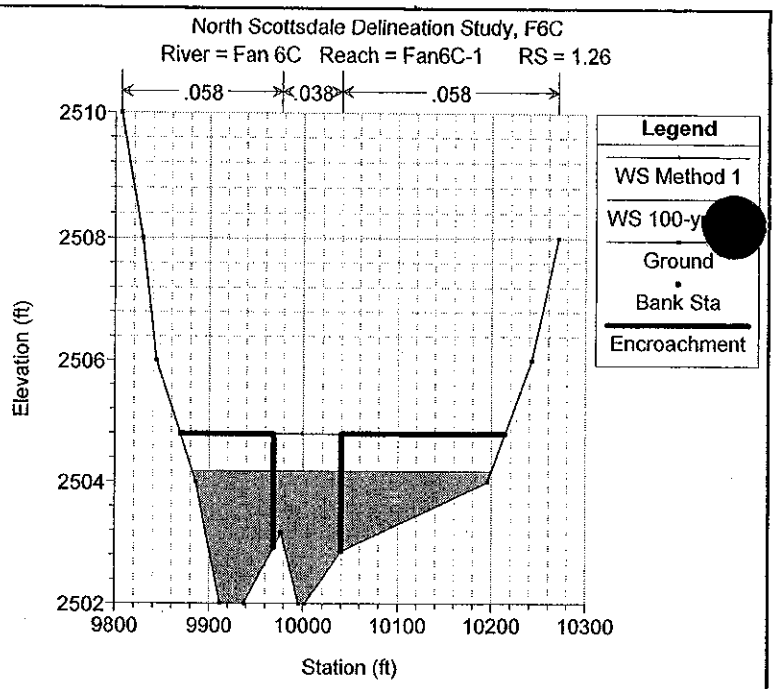

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.55
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

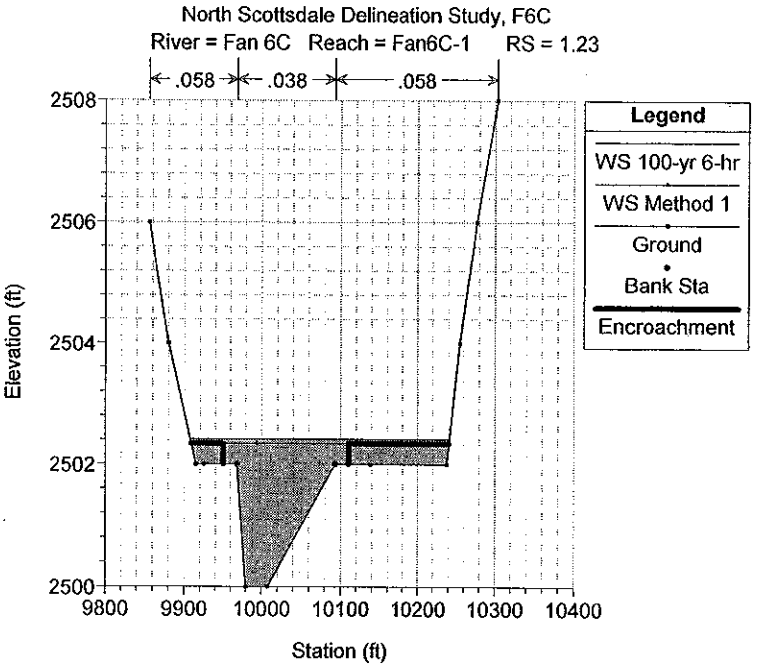

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.49
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

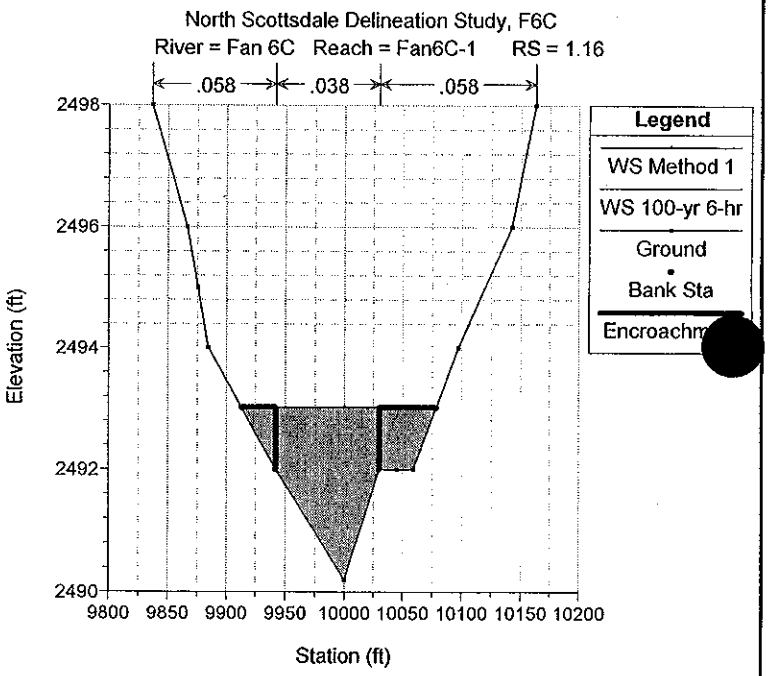

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.44
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

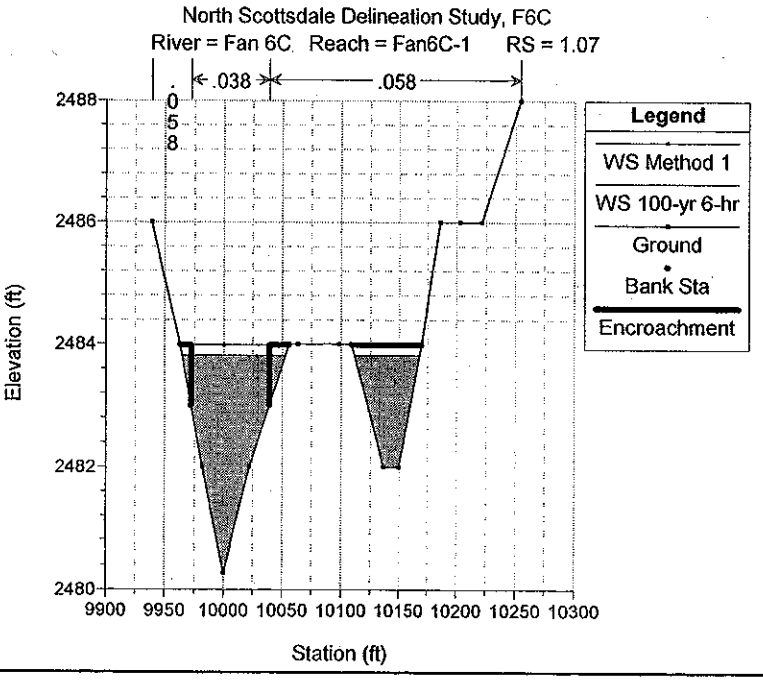

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.39
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

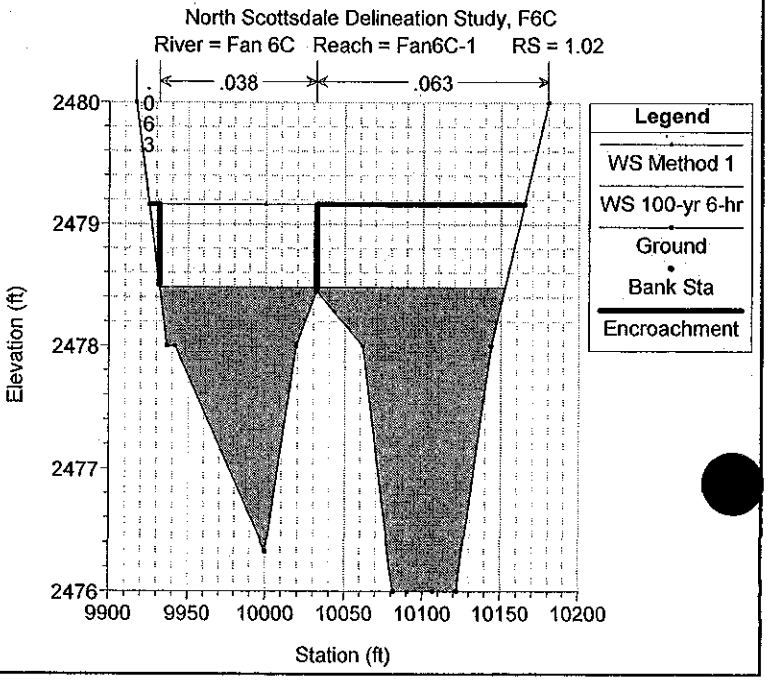

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.33
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

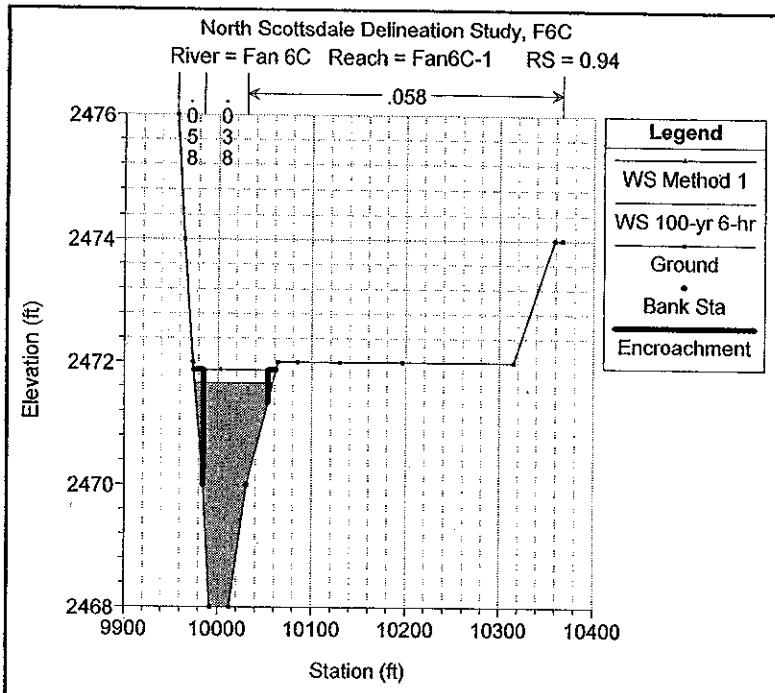

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.26
.058
.038
.058
Legend
WS Method 1
WS 100-y
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

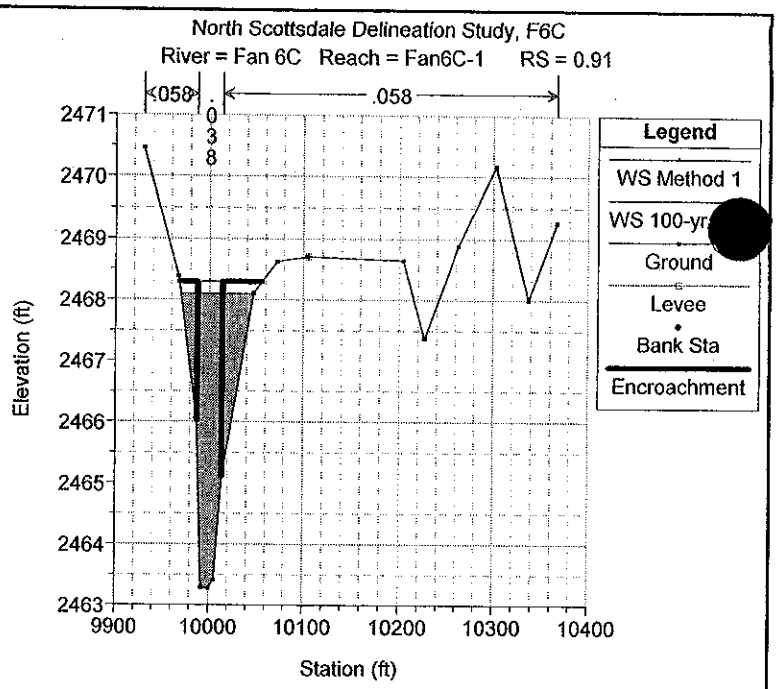

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.23
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

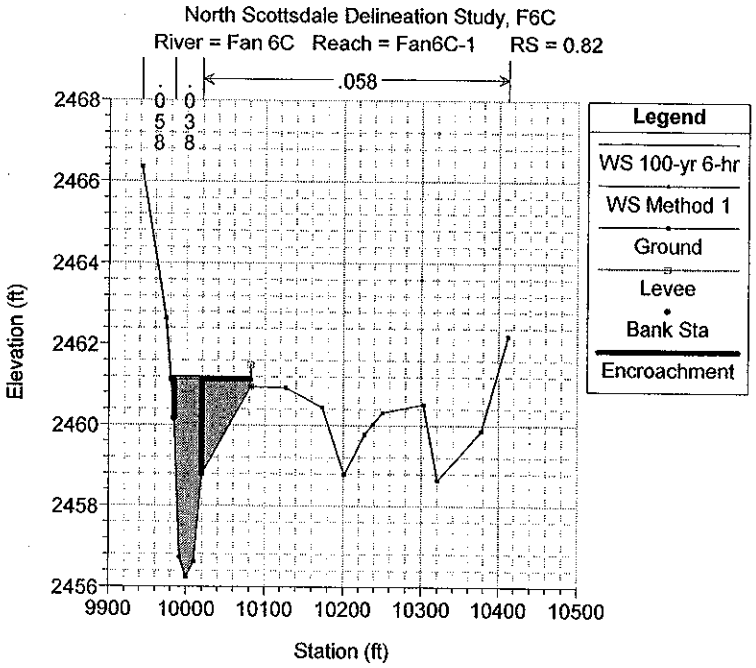

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.16
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)

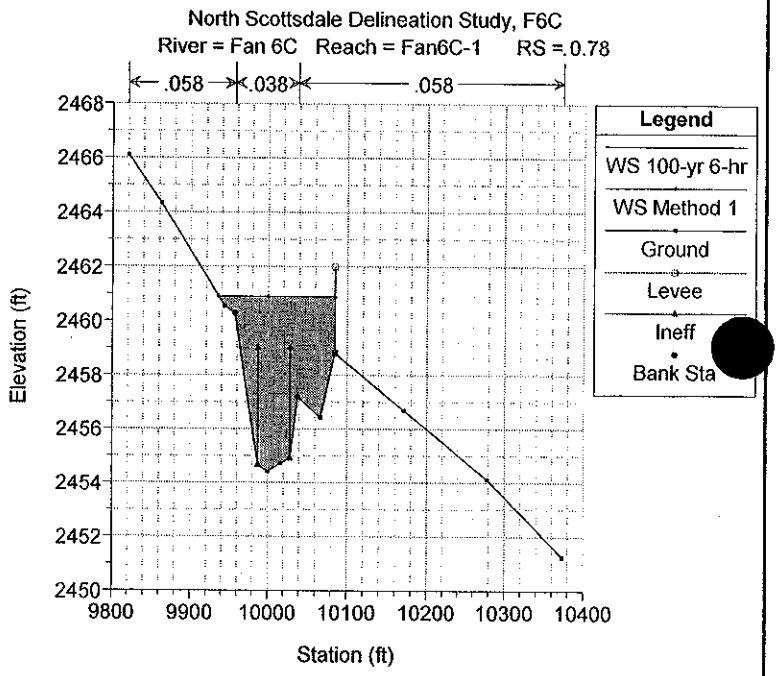

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.07
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

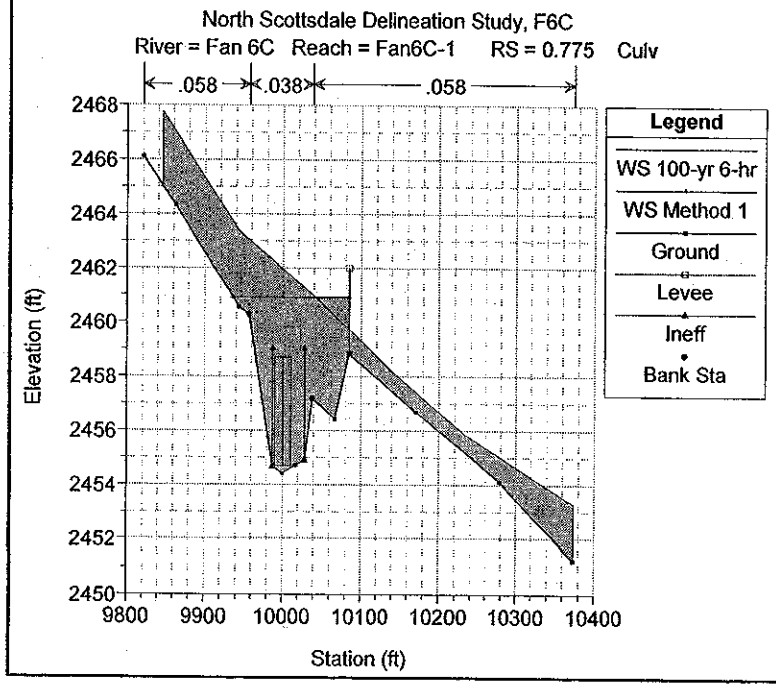

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 1.02
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

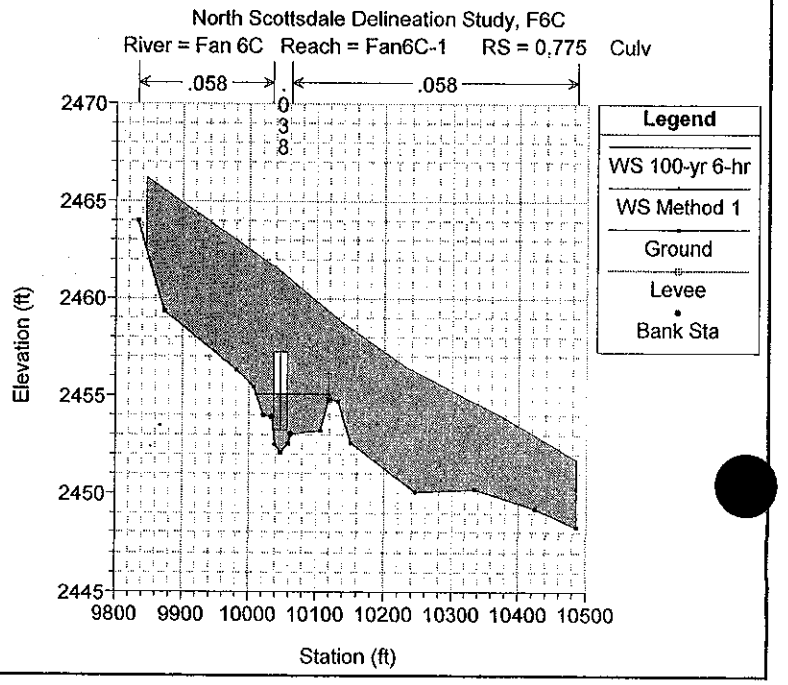

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.94
.058
.058
.038
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

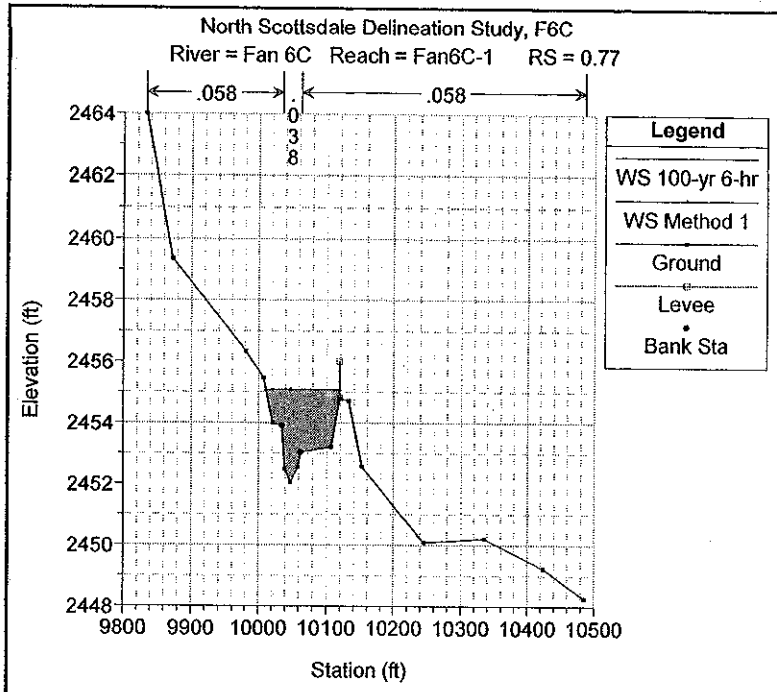

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.91
.058
.058
.038
Legend
WS Method 1
WS 100-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

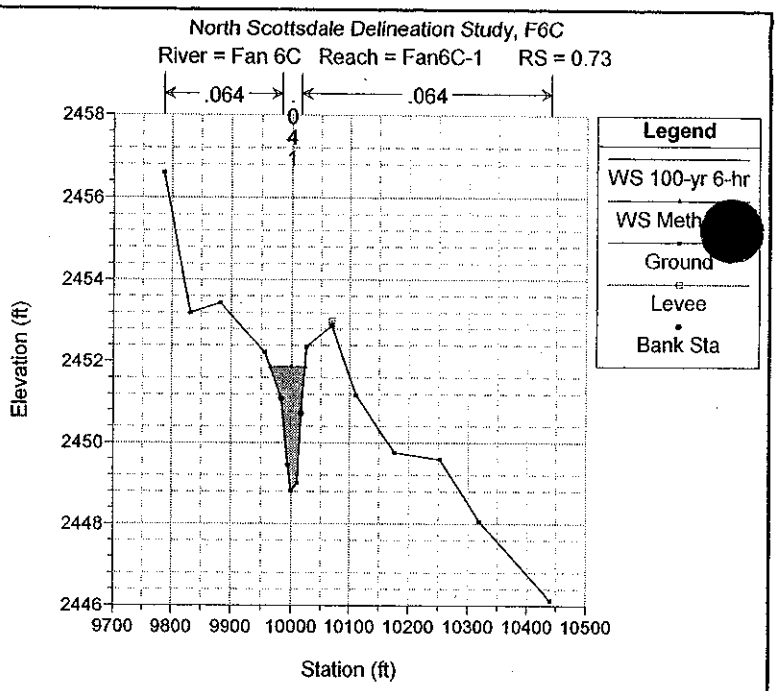

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.82
.058
.058
.038
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

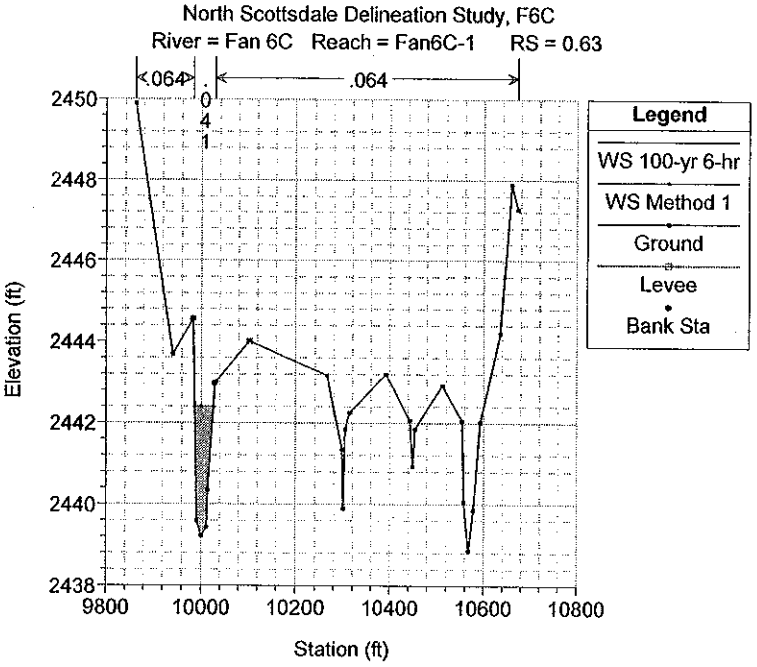

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.78
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

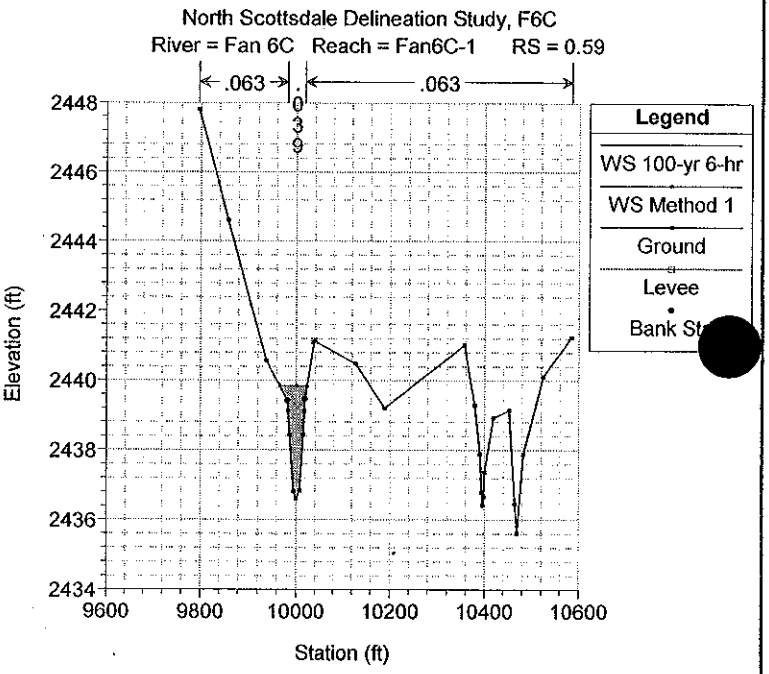

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.775 Culv
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

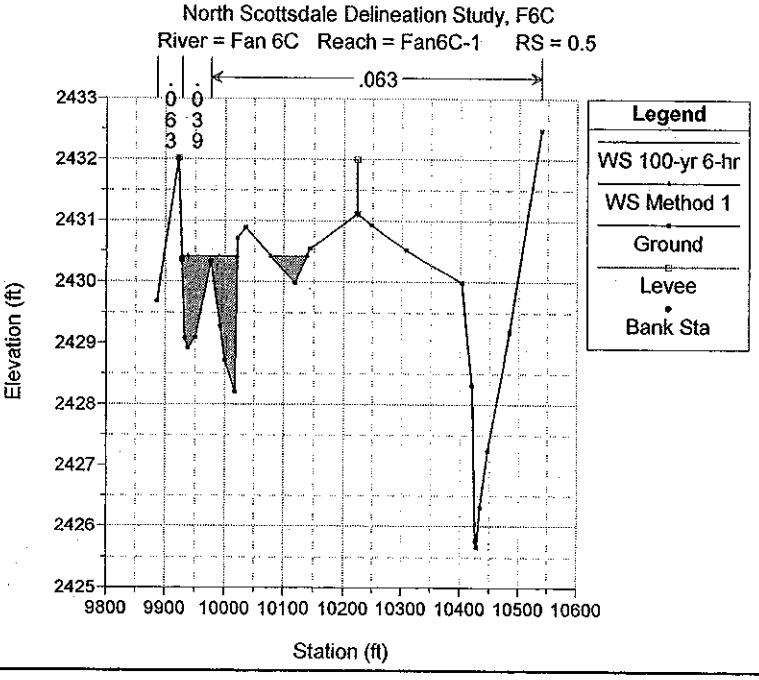

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.775 Culv
.058
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

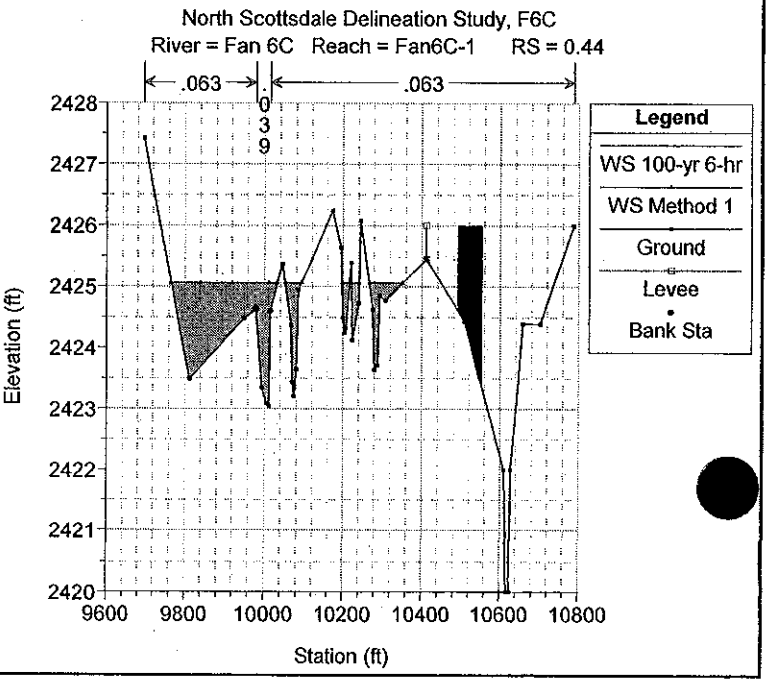

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.77
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

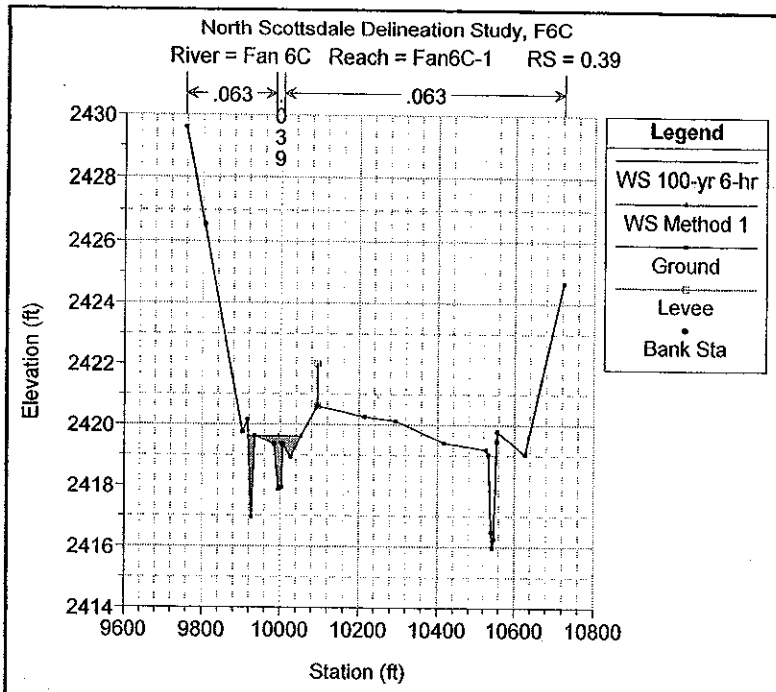

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.73
.064
.041
.064
Legend
WS 100-yr 6-hr
WS Meth
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

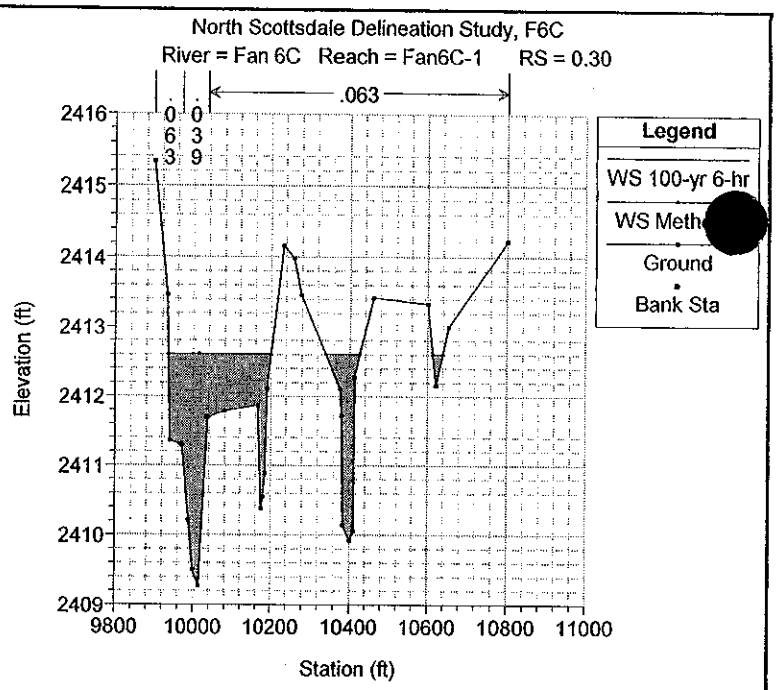

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.63
.064
.041
.064
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

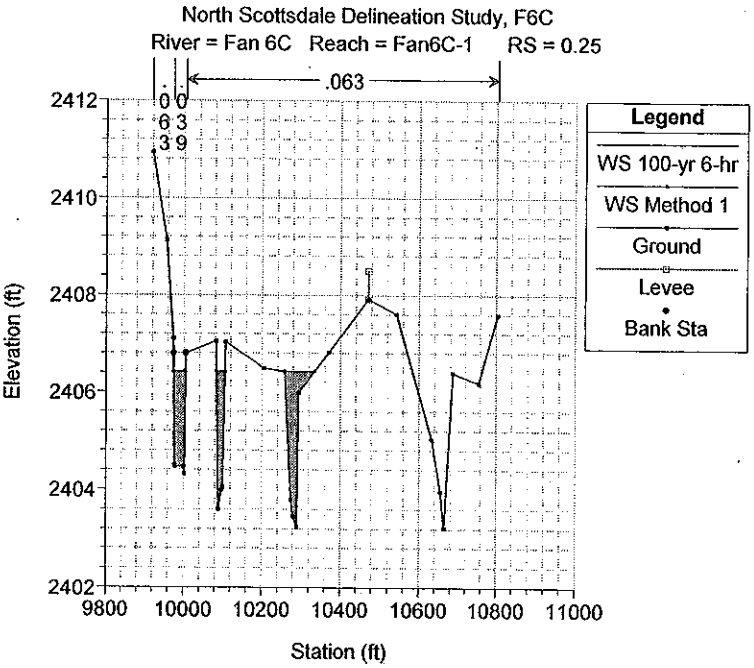

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.59
.063
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank St
Elevation (ft)
Station (ft)

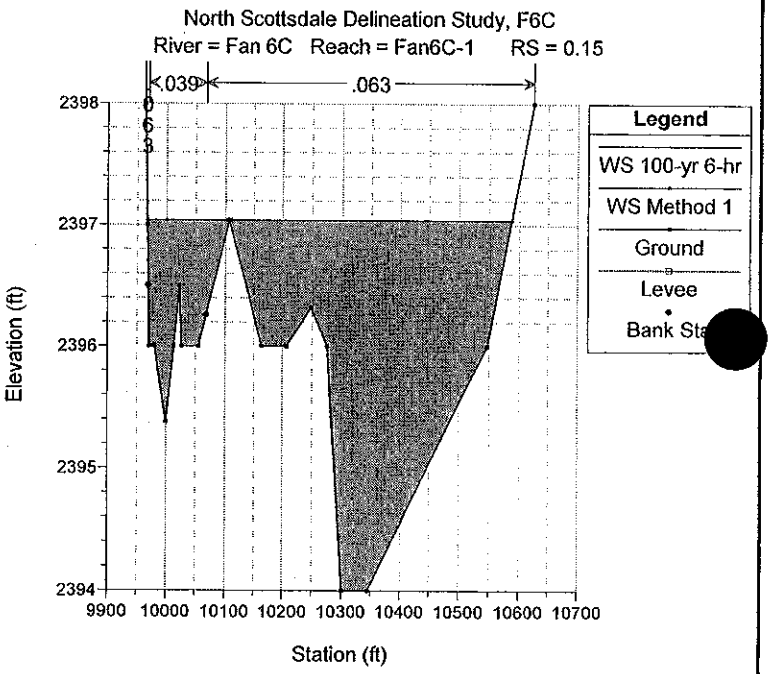

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.5
.063
.063
.039
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

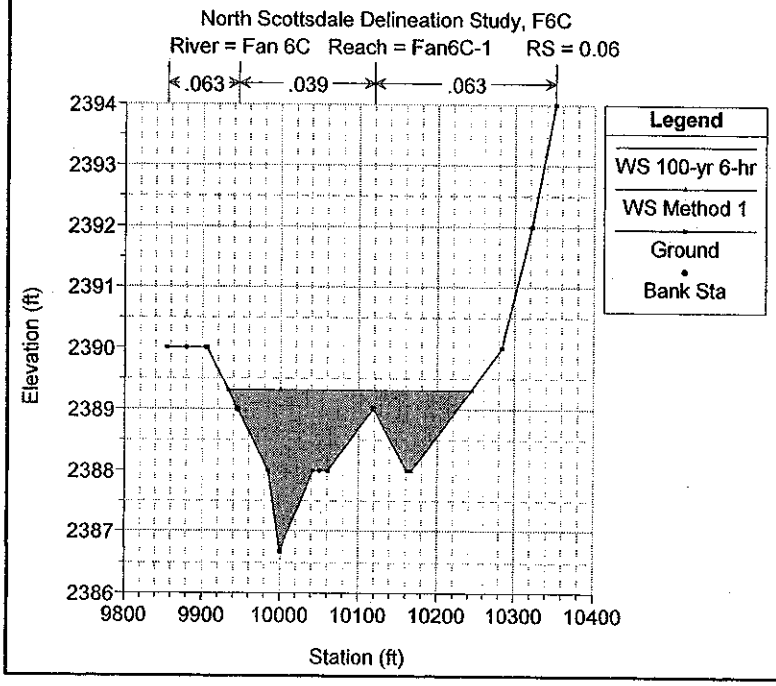

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.44
.063
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

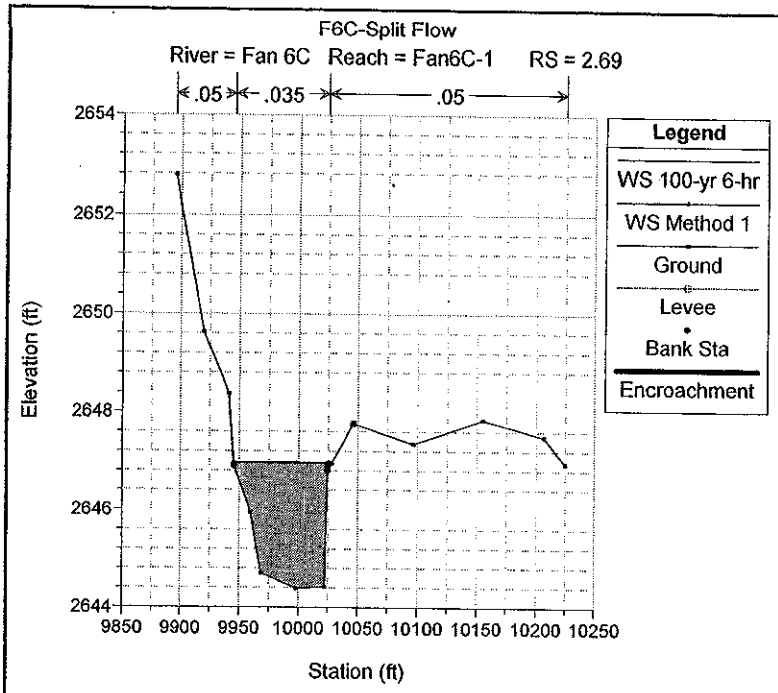

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.39
.063
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

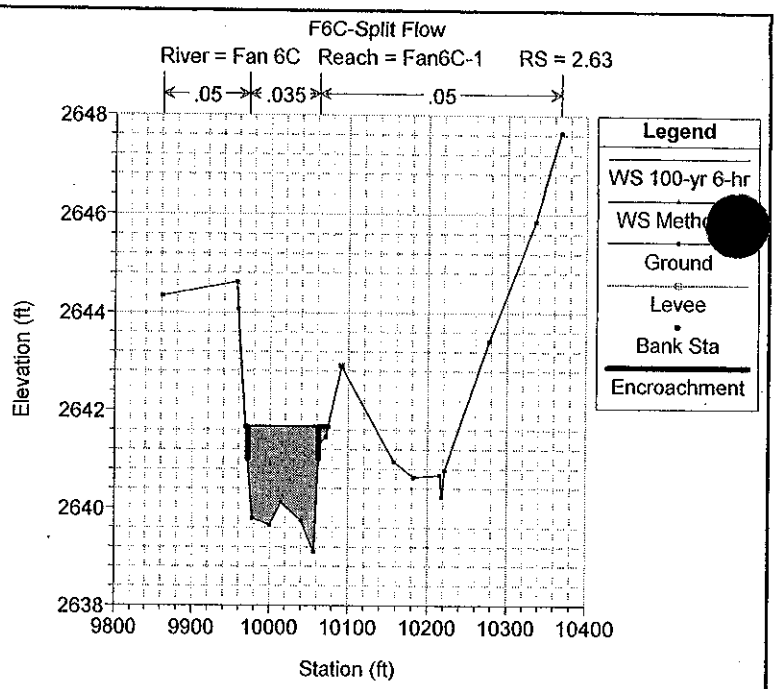

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.30
.063
Legend
WS 100-yr 6-hr
Ground
Bank Sta
Elevation (ft)
Station (ft)

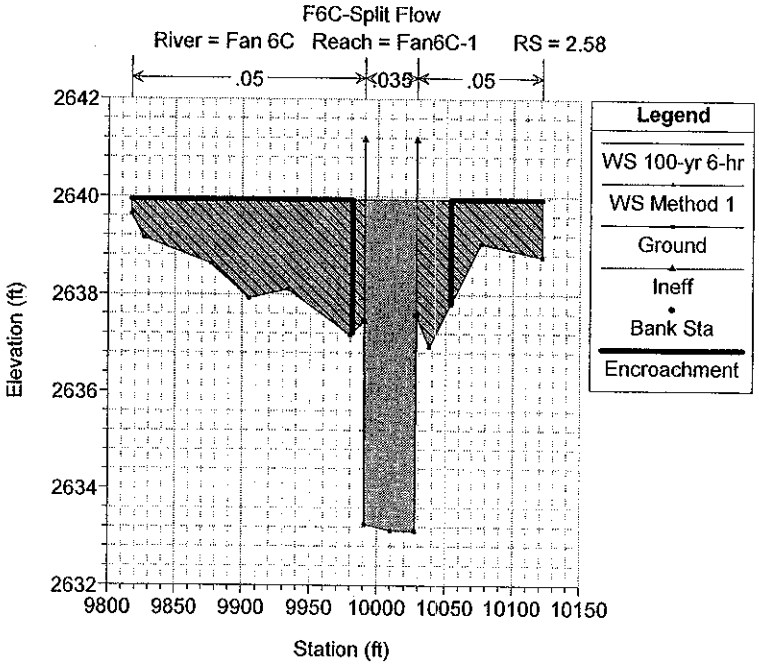

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.25
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

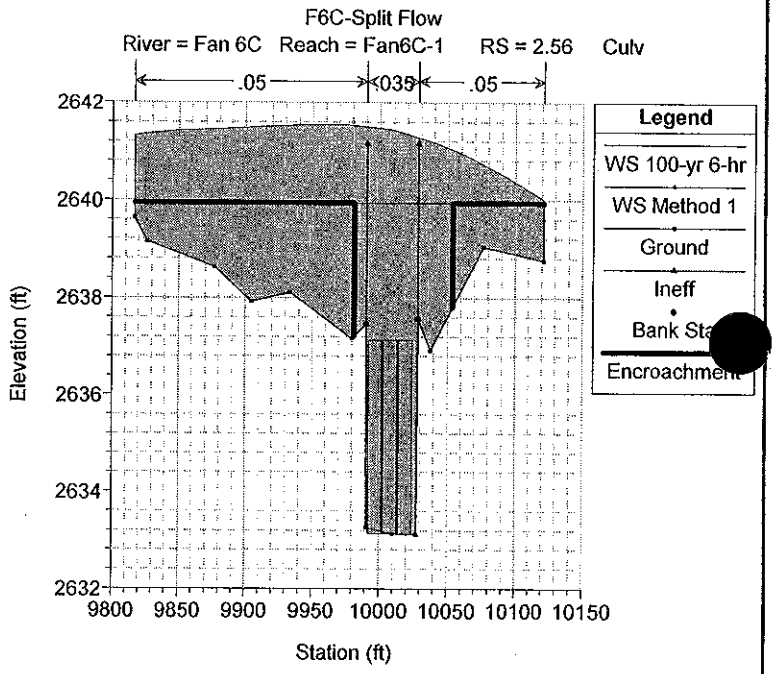

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.15
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Elevation (ft)
Station (ft)

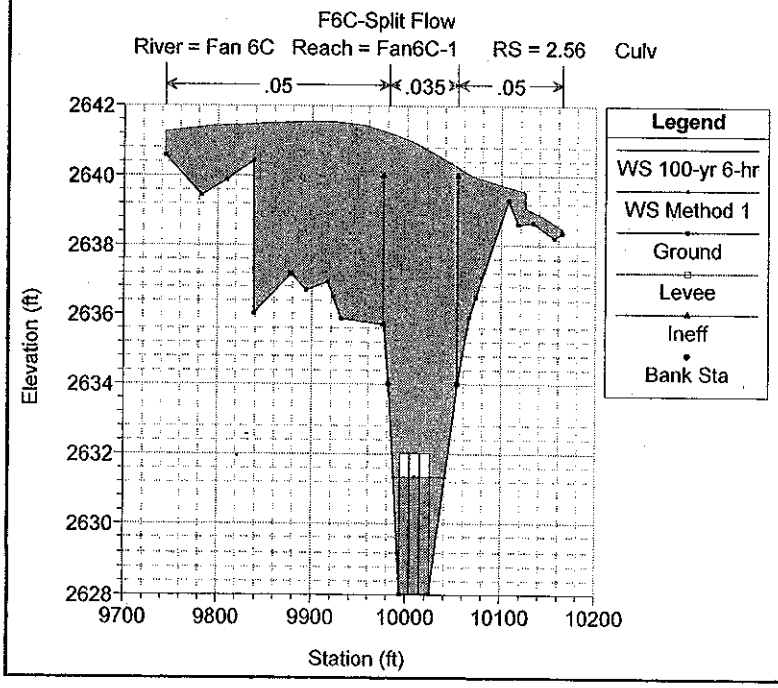

North Scottsdale Delineation Study, F6C
River = Fan 6C Reach = Fan6C-1 RS = 0.06
.063
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

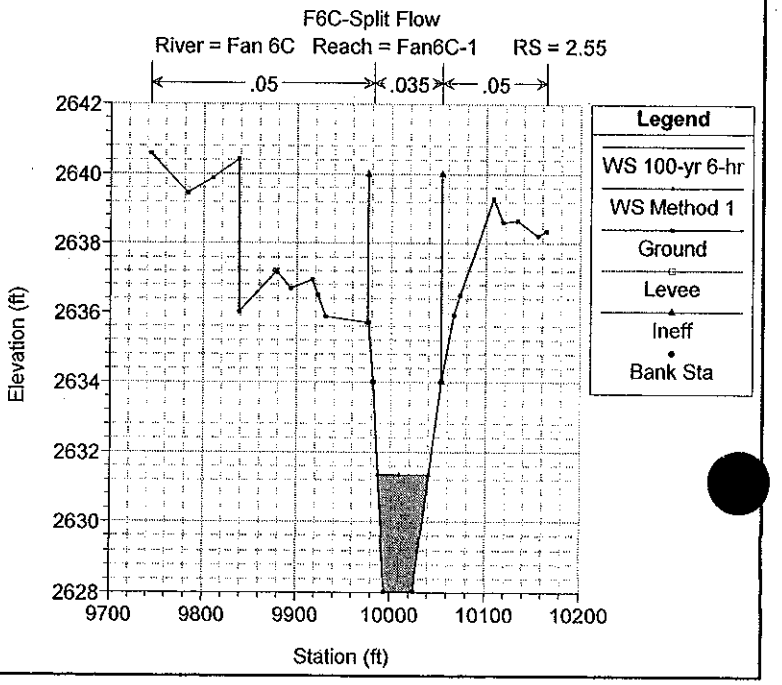

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.69
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

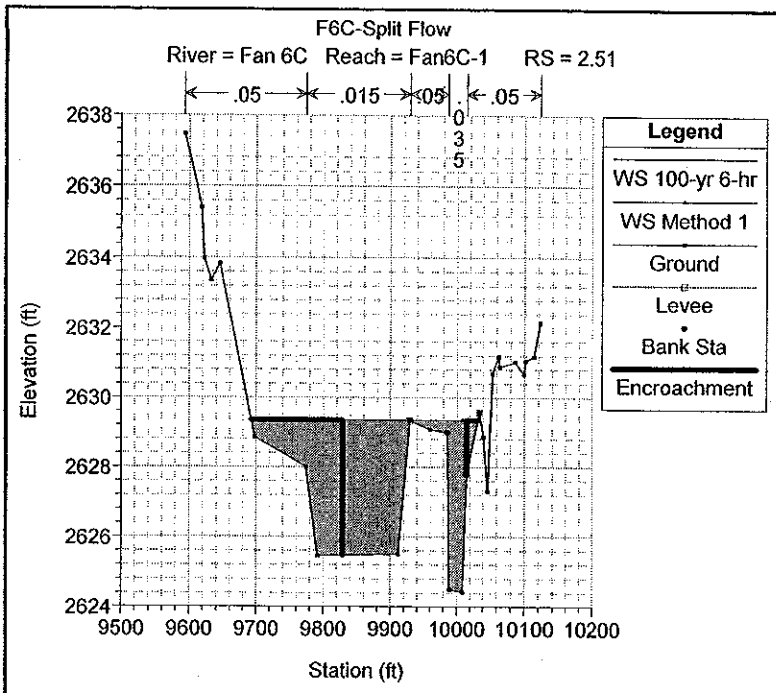

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.63
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Meth
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

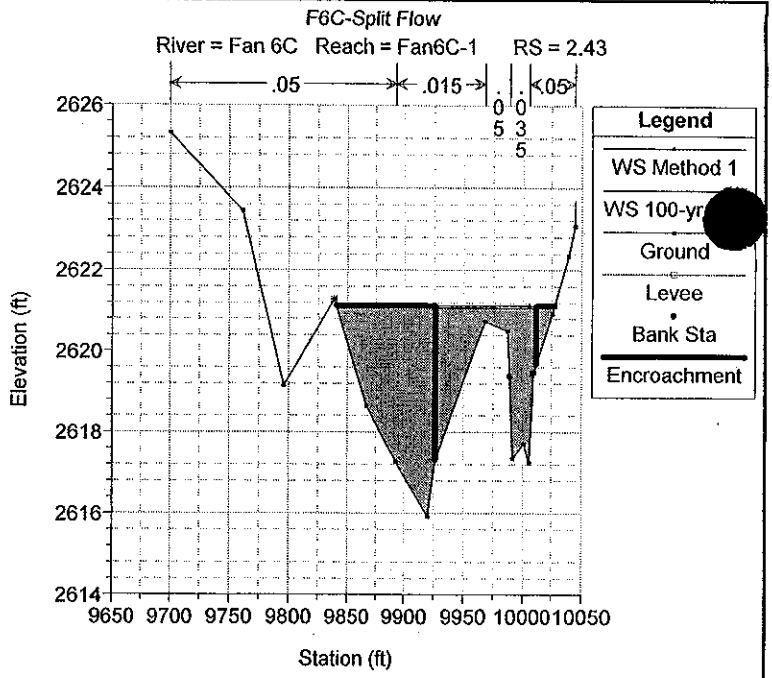

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.58
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

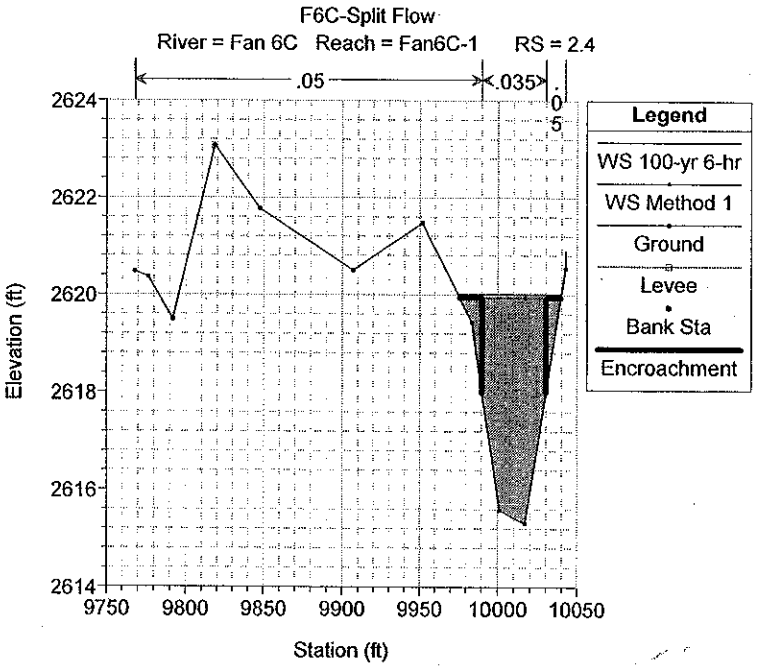

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.56 Culv
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

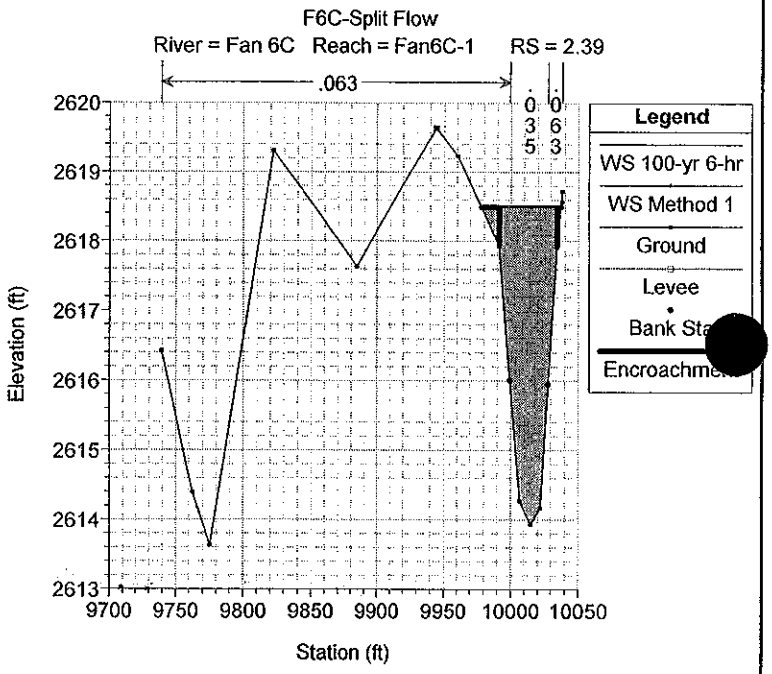

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.56 Culv
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

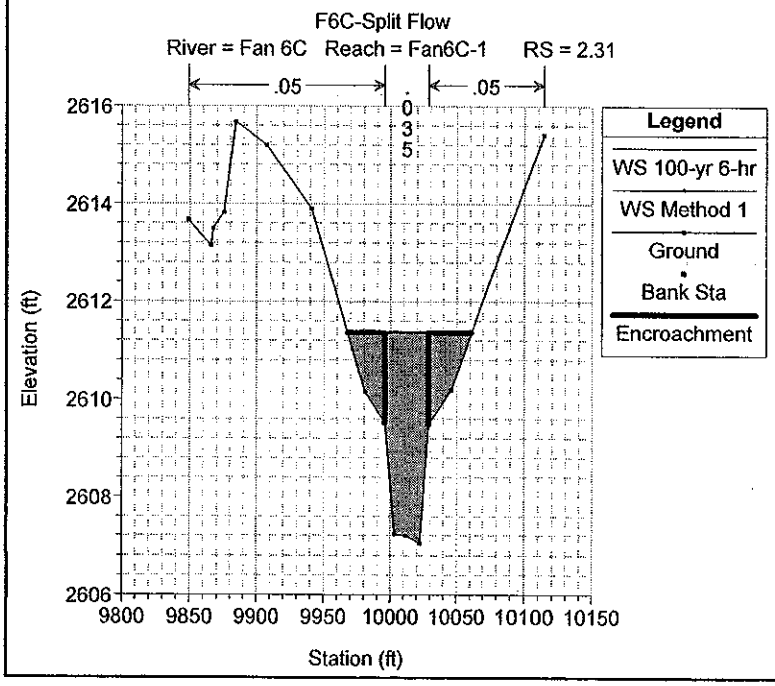

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.55
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

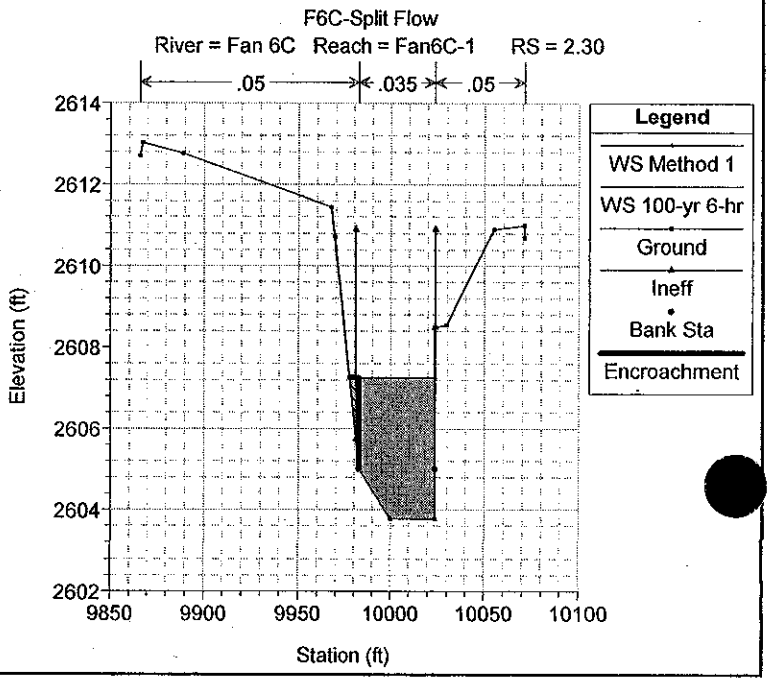

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.51
.05
.015
.05
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

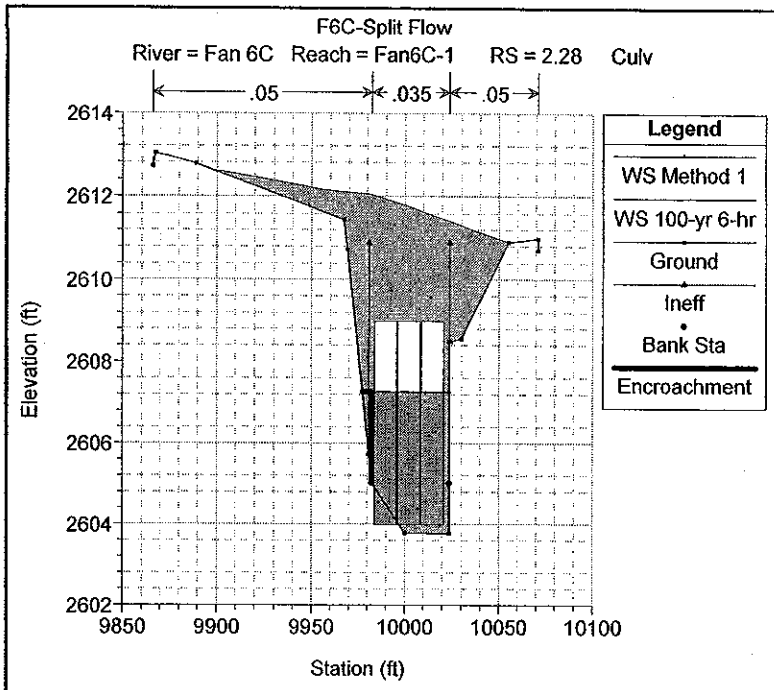

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.43
.05
.015
.05
Legend
WS Method 1
WS 100-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

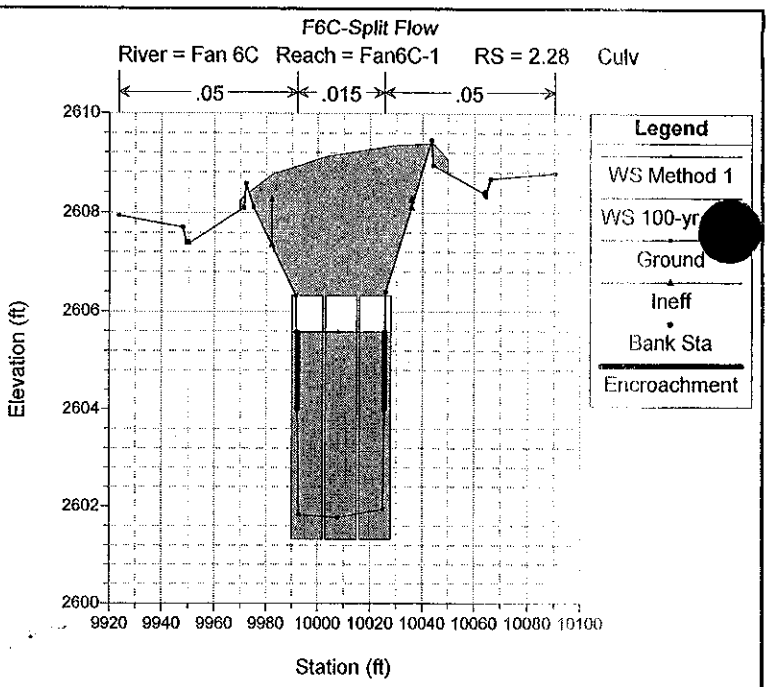

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.4
.05
.035
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

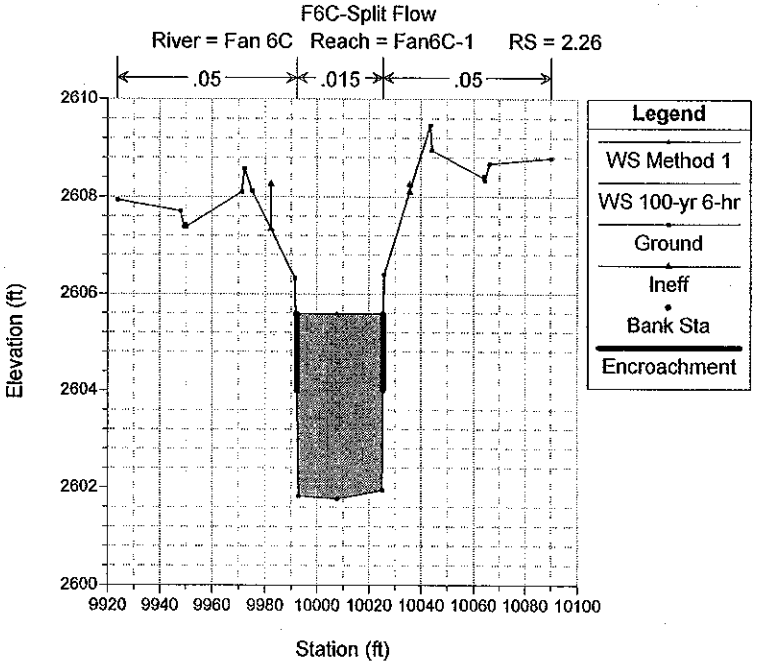

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.39
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

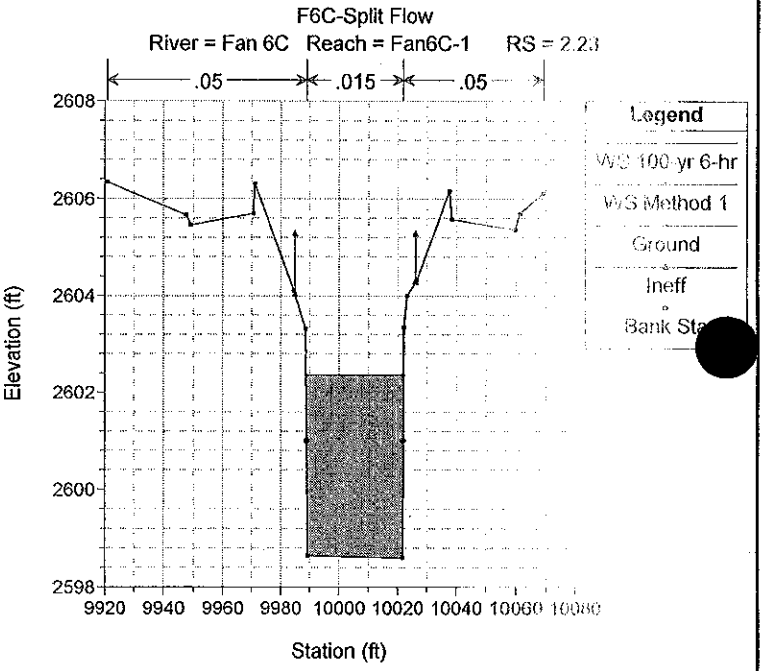

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.31
.05
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

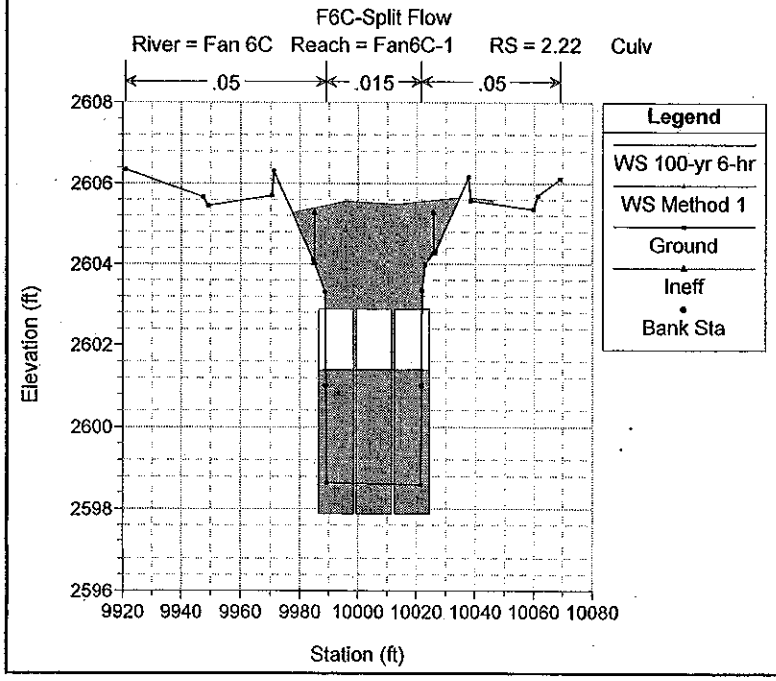

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.30
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

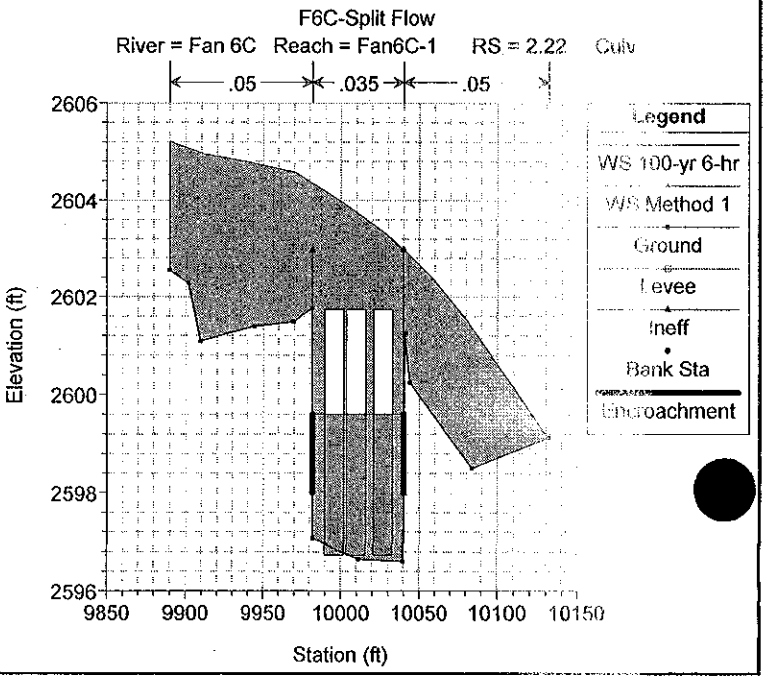

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.28 Culv
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

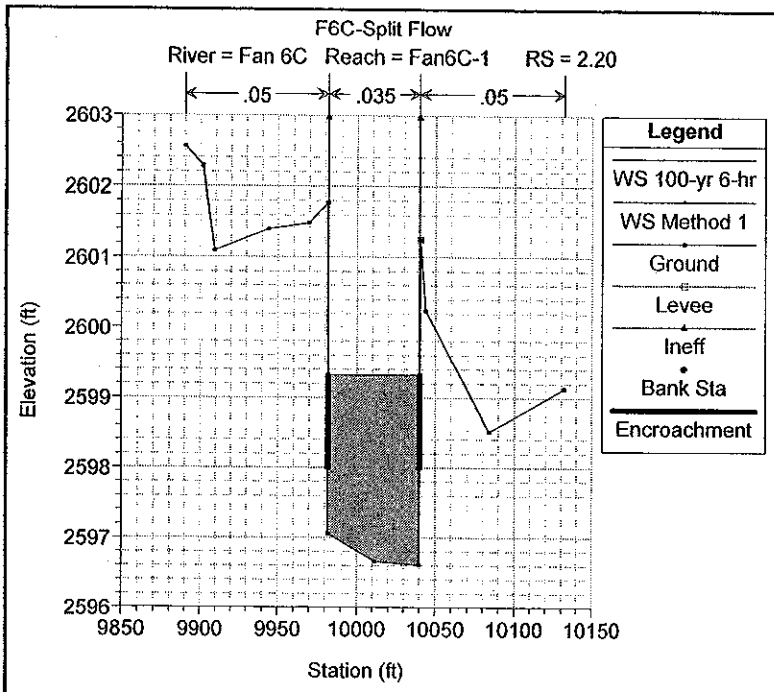

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.28 Culv
.05
.015
.05
Legend
WS Method 1
WS 100-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

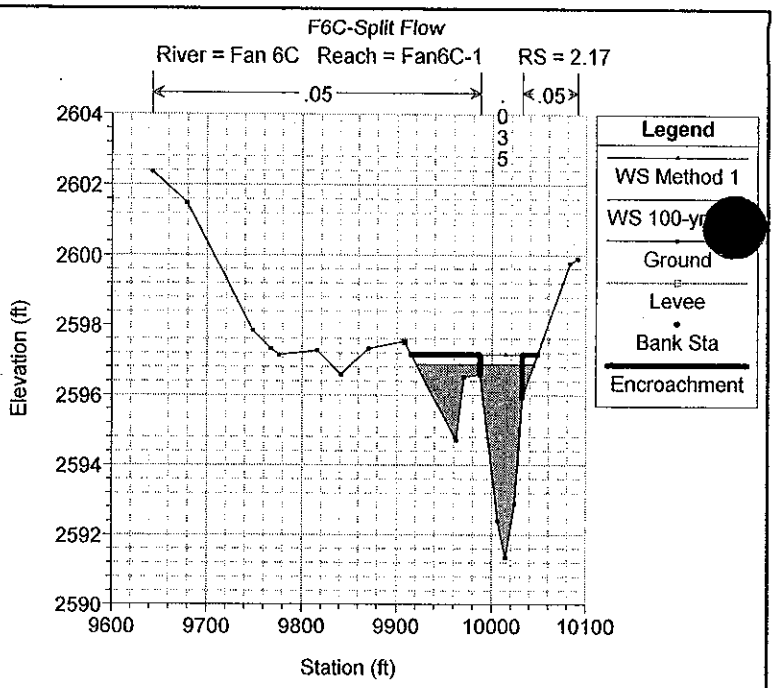

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.26
.05
.015
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

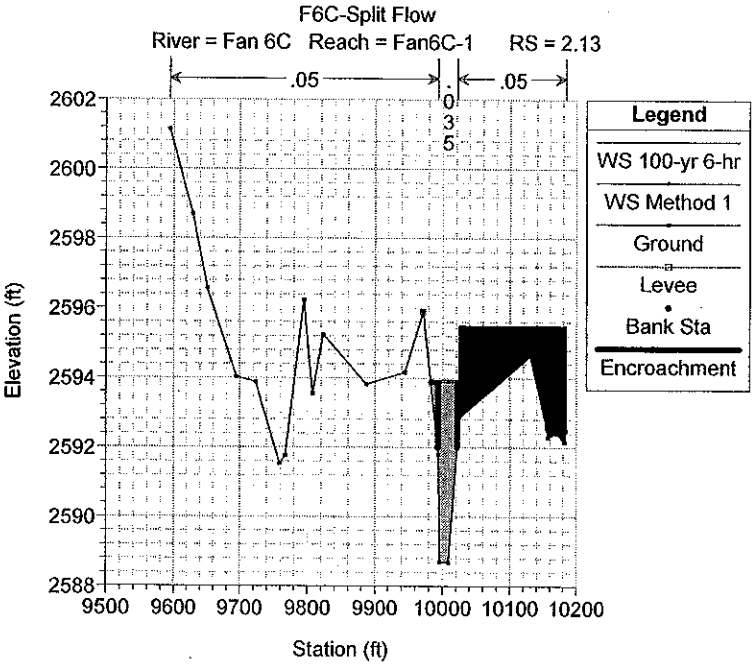

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.23
.05
.015
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

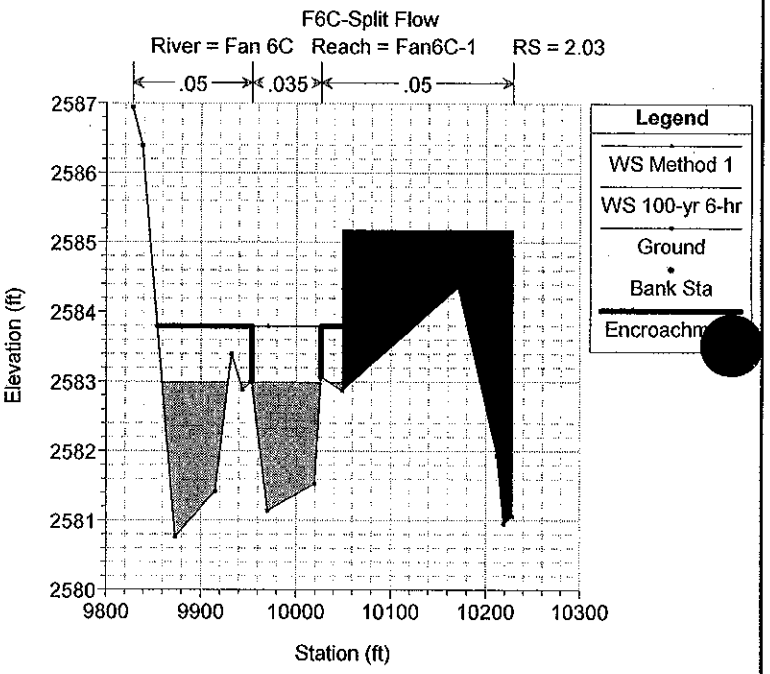

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.22 Culv
.05
.015
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

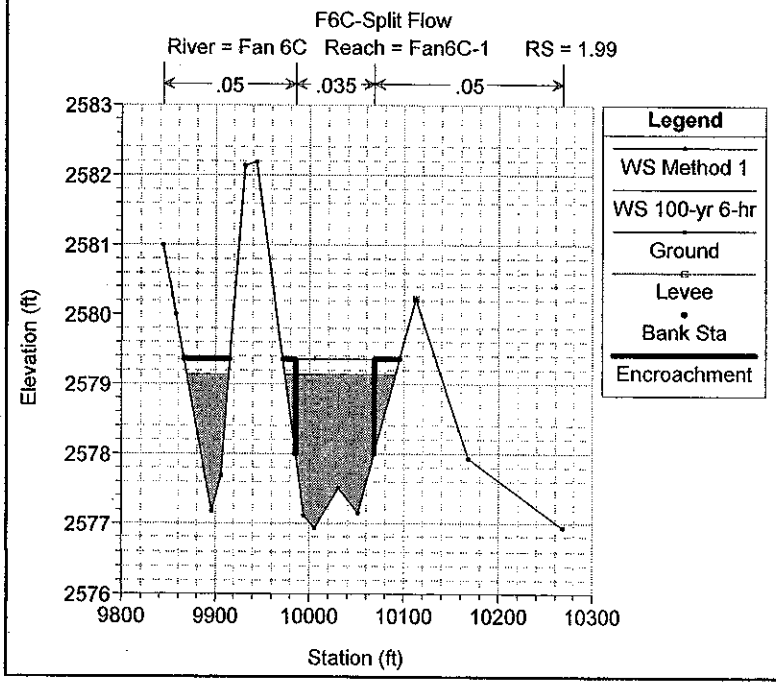

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.22 Culv
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

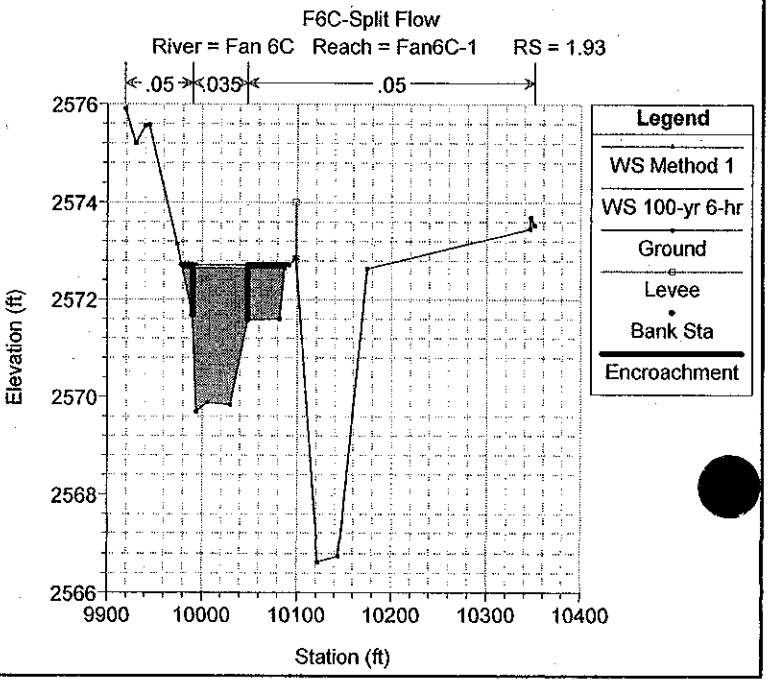

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.20
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

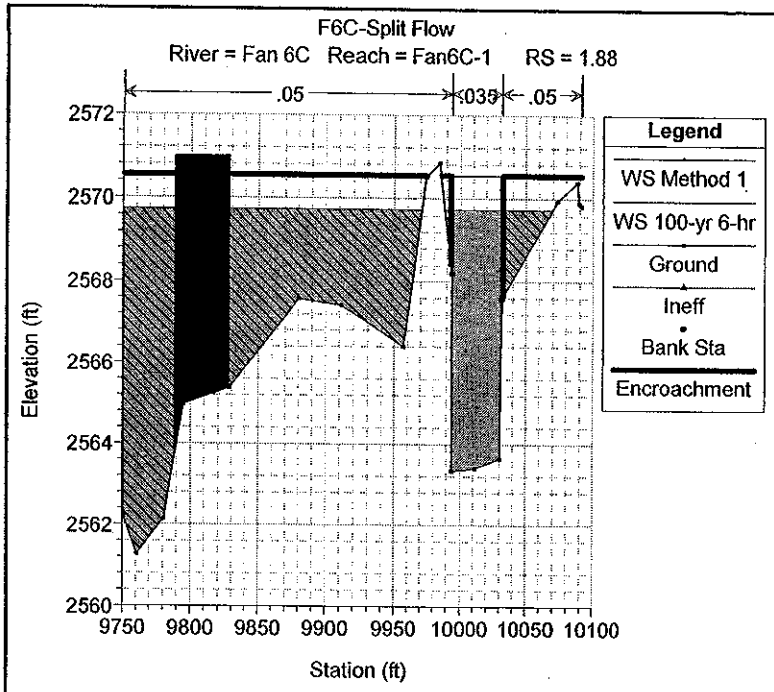

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.17
.05
.035
.05
Legend
WS Method 1
WS 100-yr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

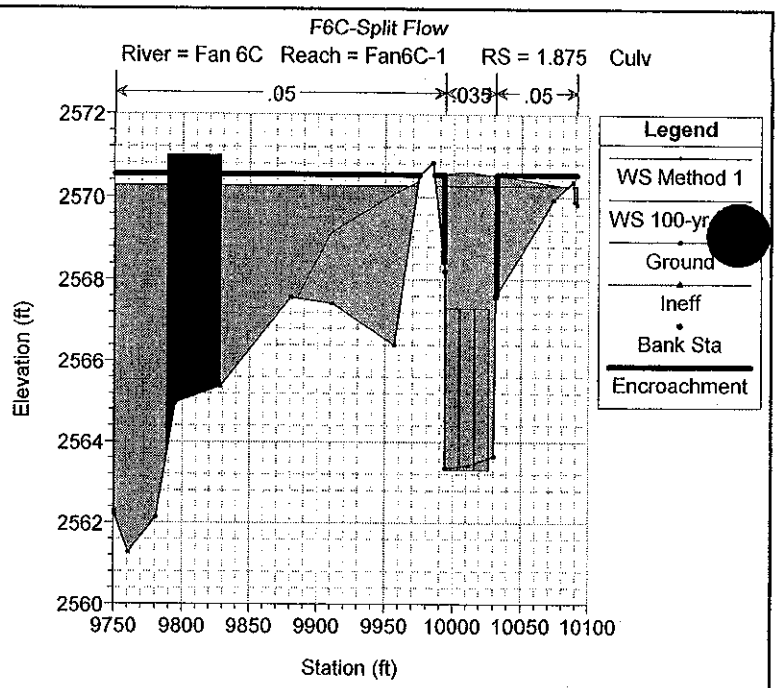

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.13
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

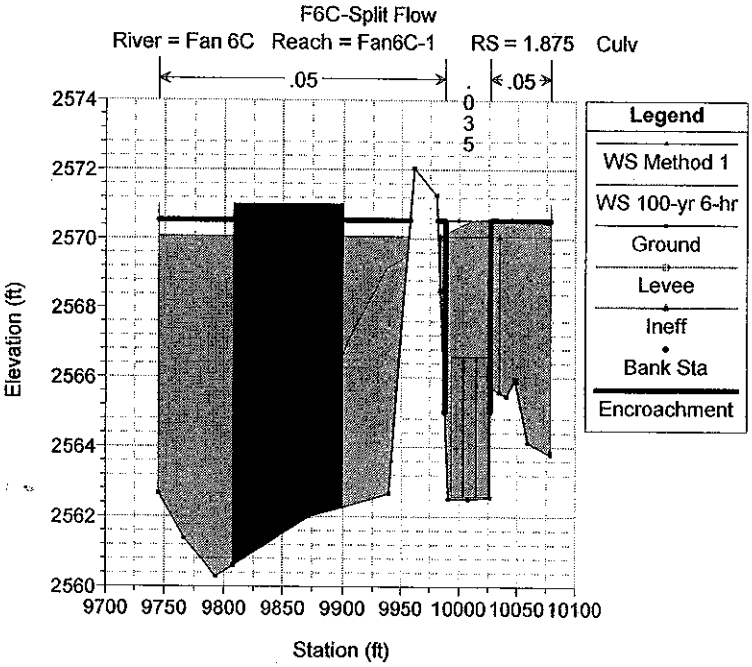

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 2.03
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)

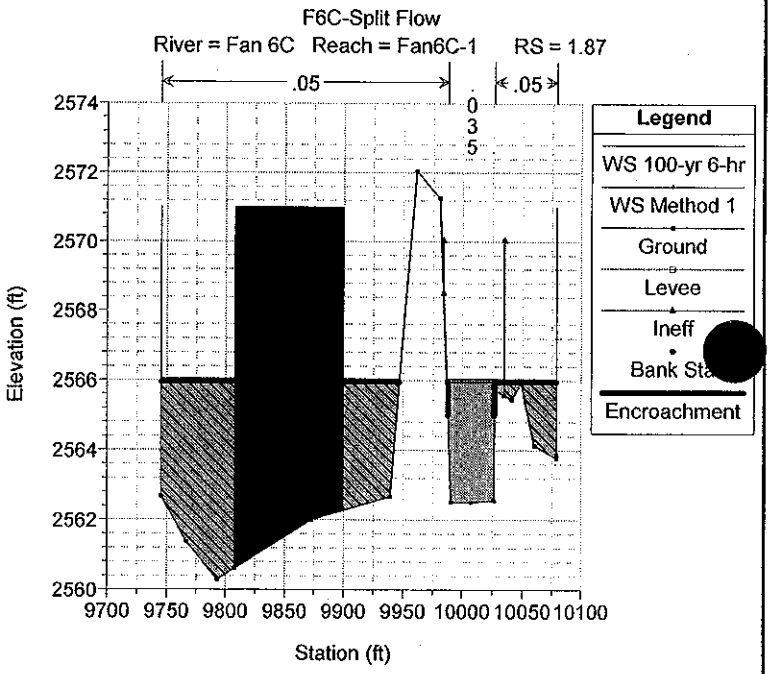

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.99
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

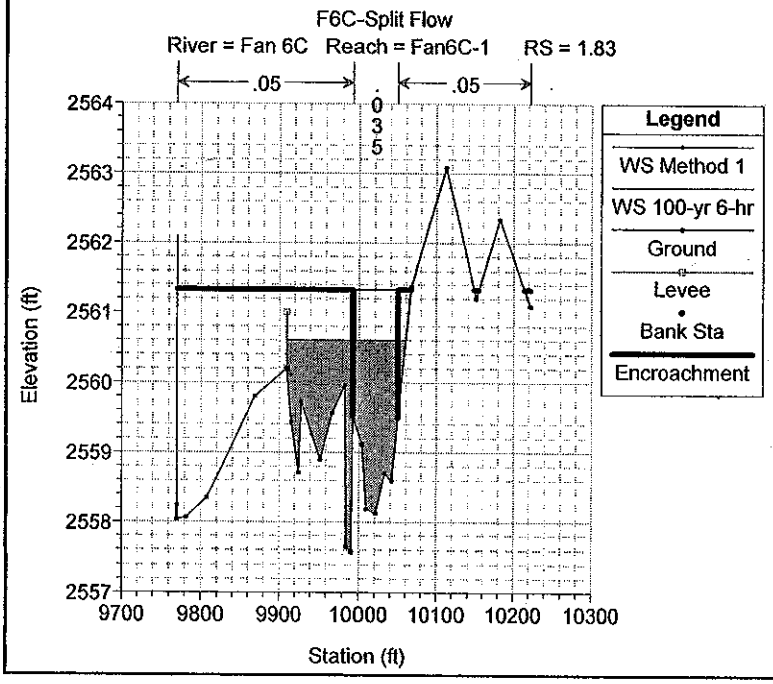

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.93
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

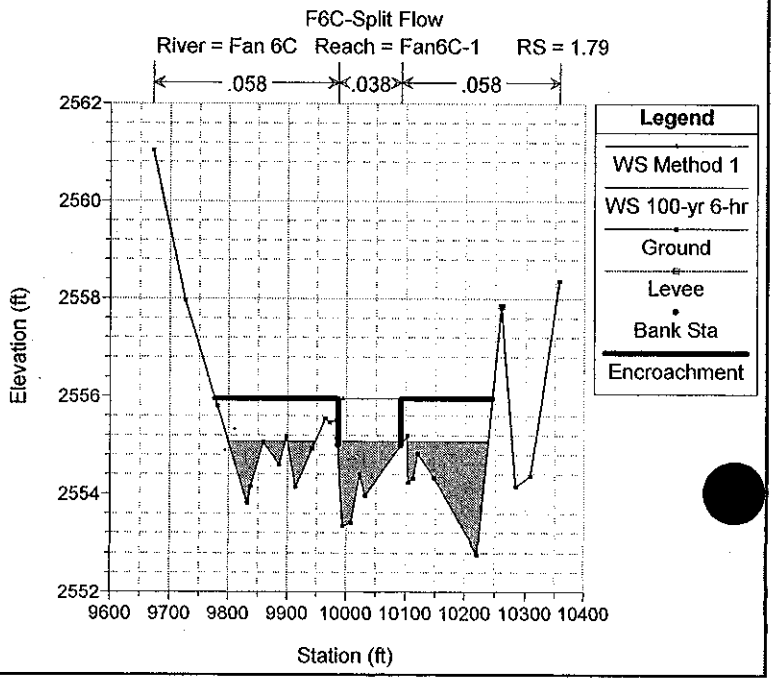

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.88
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

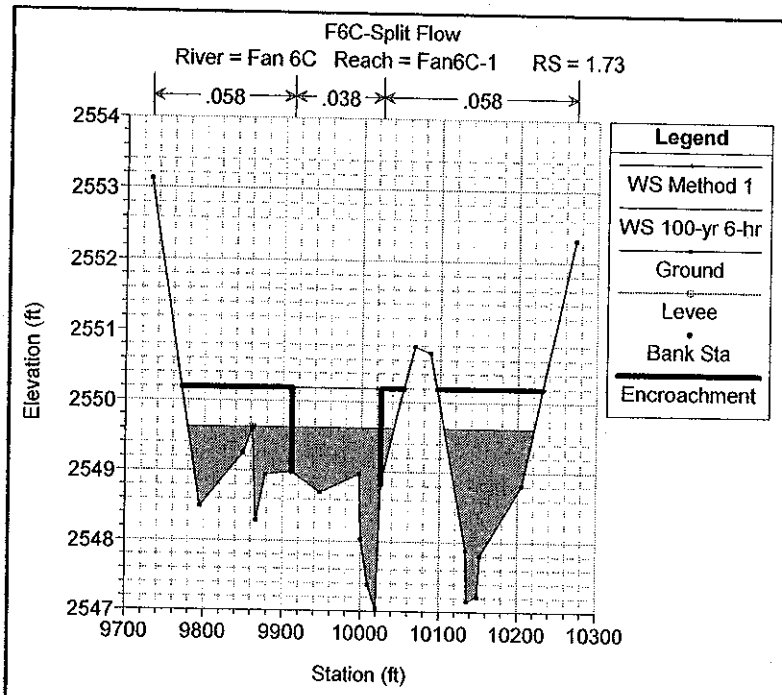

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.875 Culv
.05
.035
.05
Legend
WS Method 1
WS 100-yr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

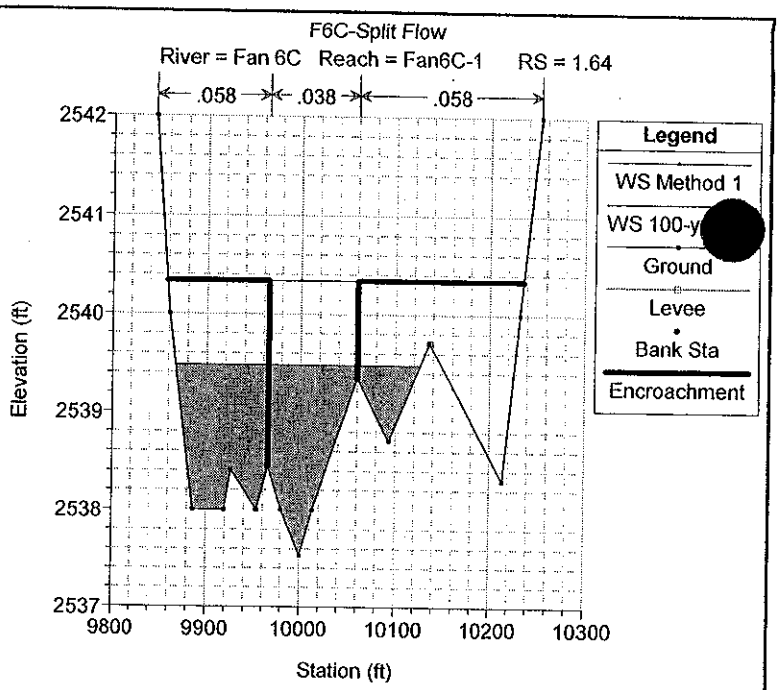

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.875 Culv
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

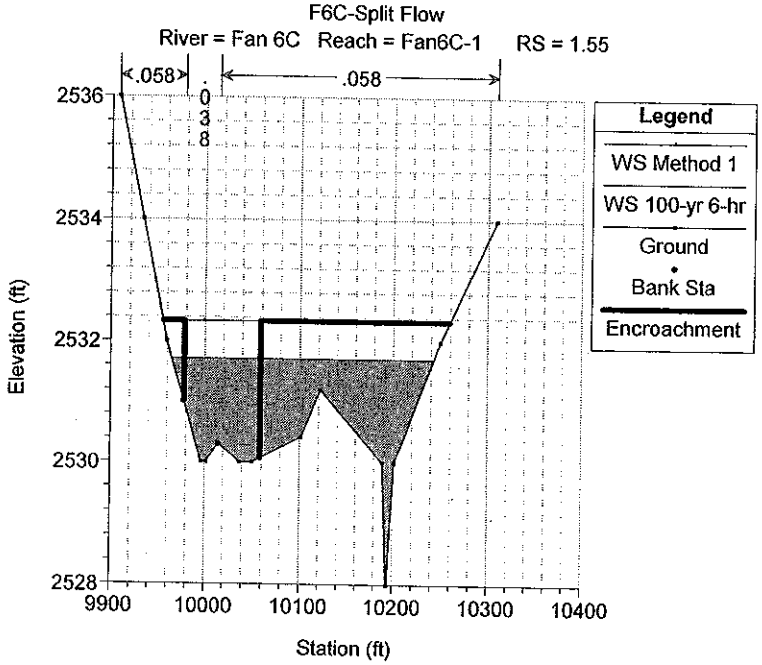

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.87
.05
.035
.05
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

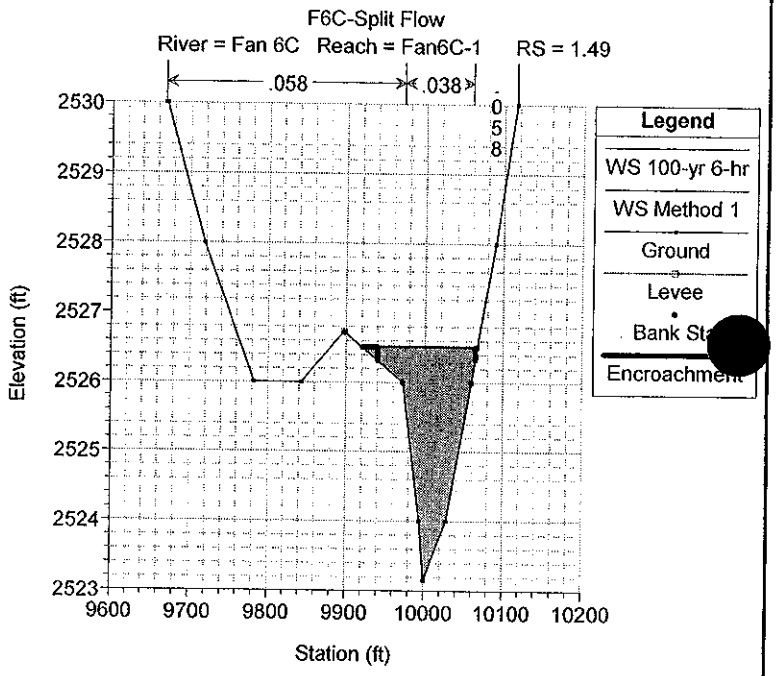

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.83
.05
.035
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

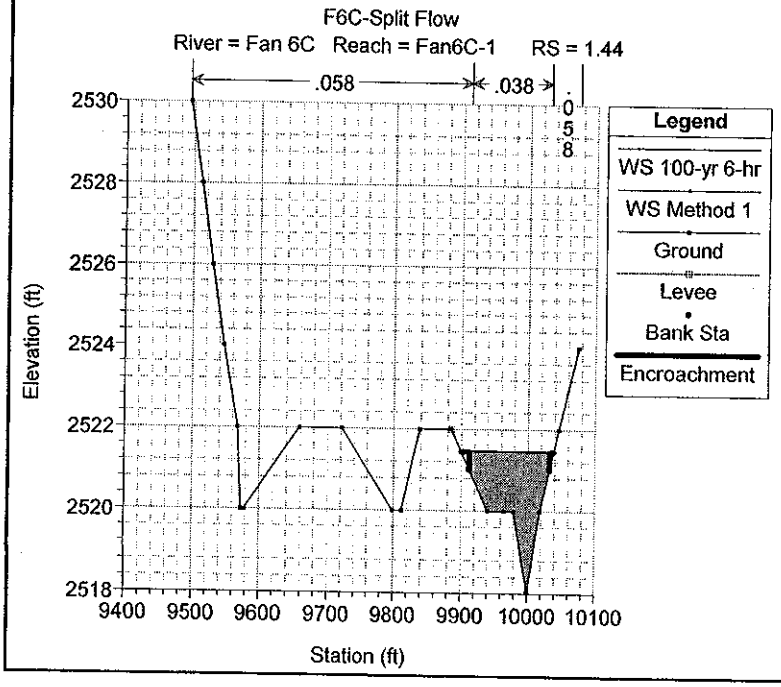

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.79
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

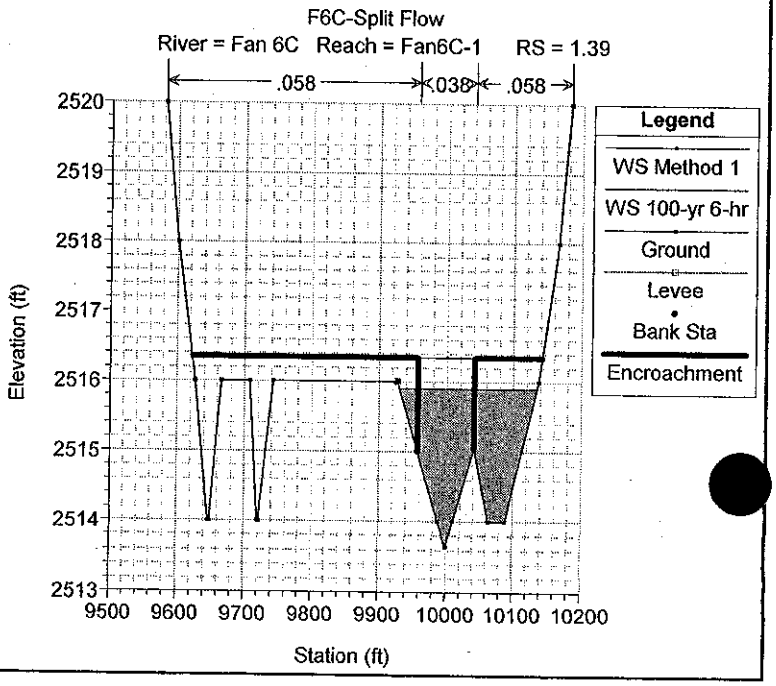

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.73
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

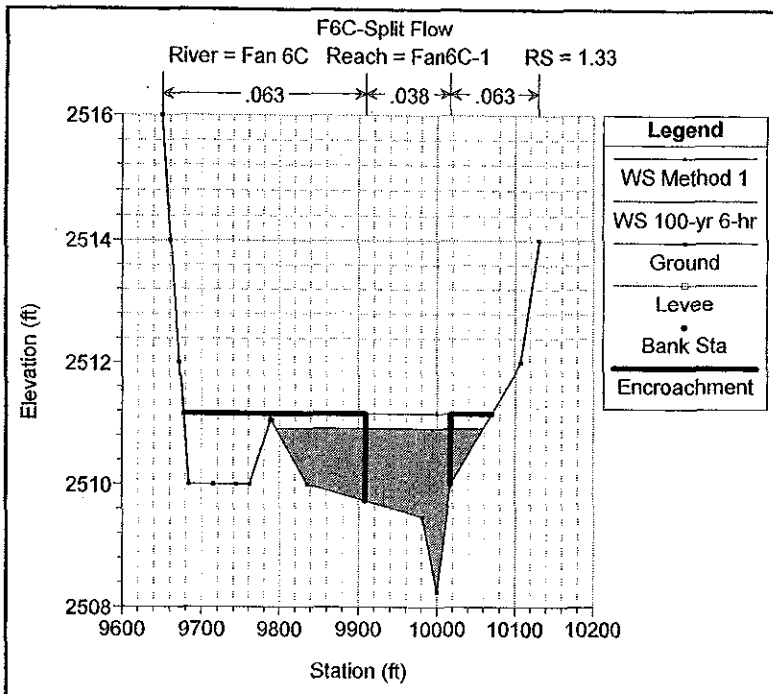

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.64
.058
.038
.058
Legend
WS Method 1
WS 100-y
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

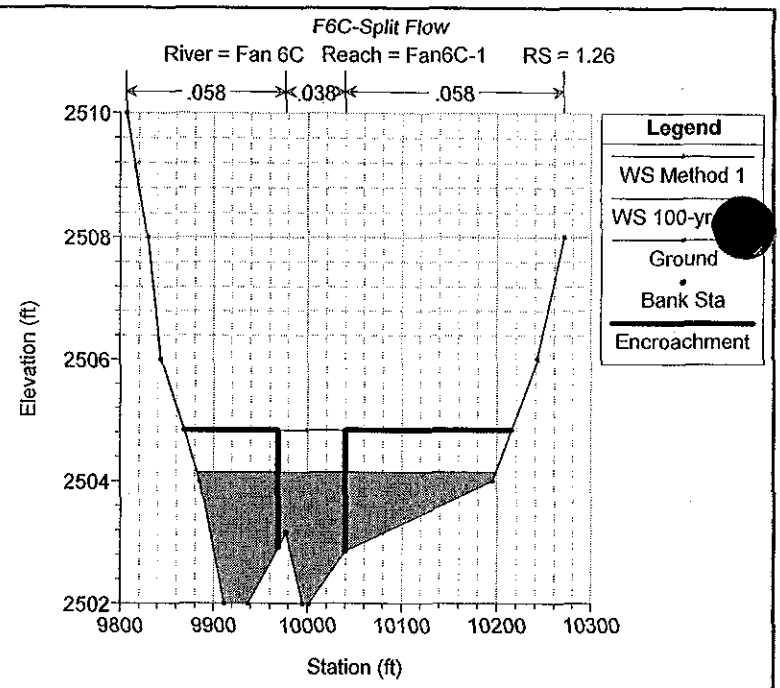

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.55
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.49
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.44
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.39
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.33
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.26
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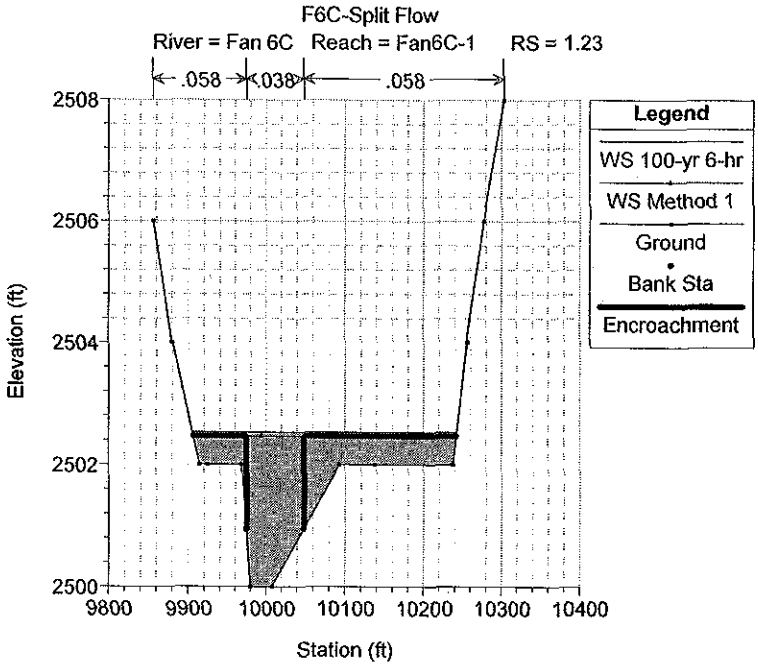
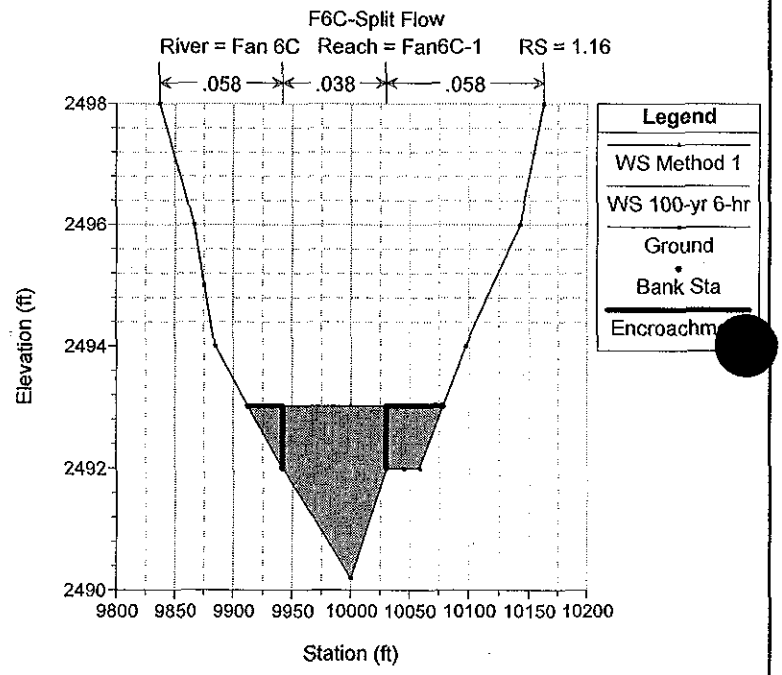
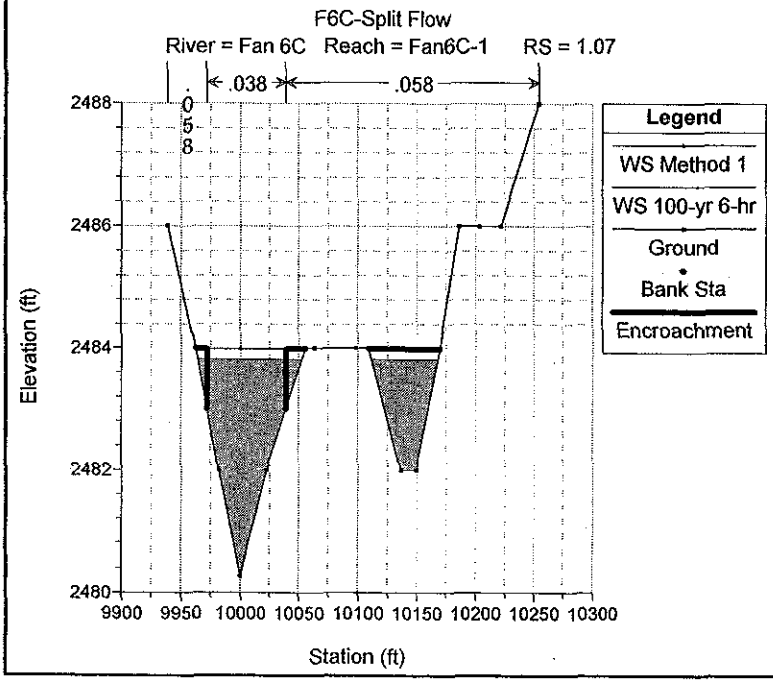
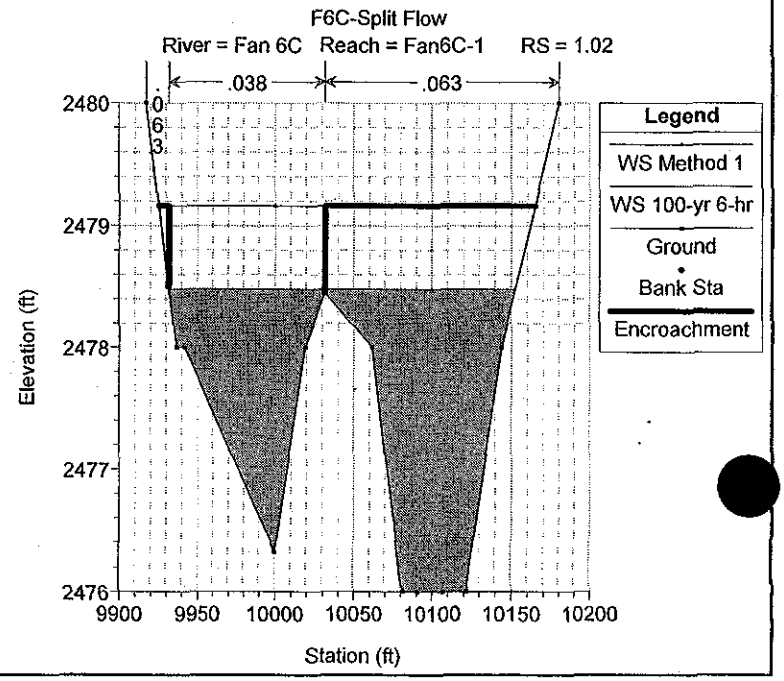
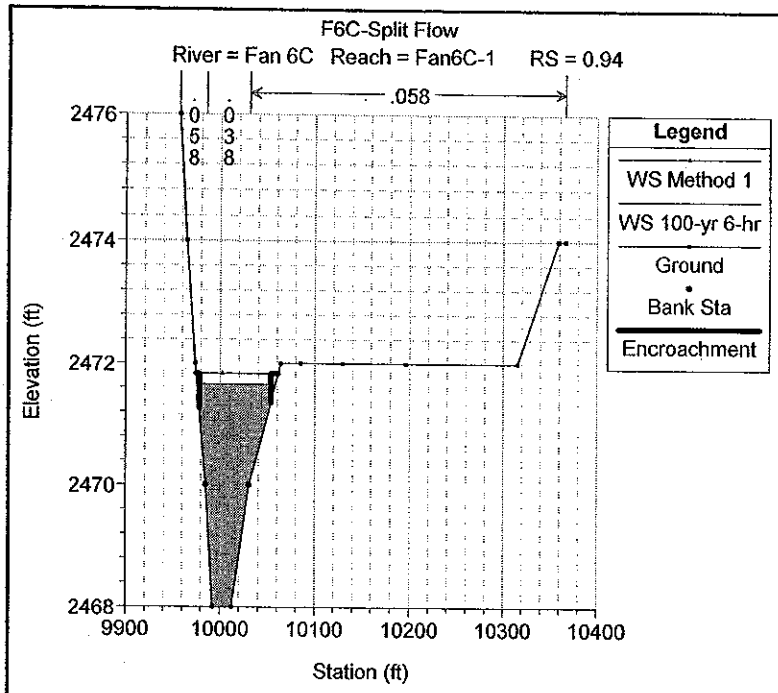
.038
.058
Legend
WS Method 1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

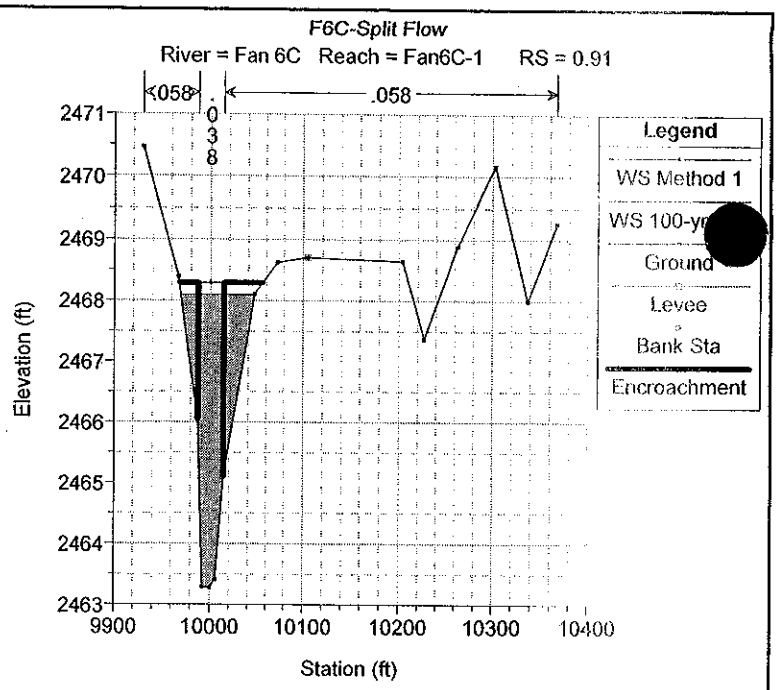

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.23
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

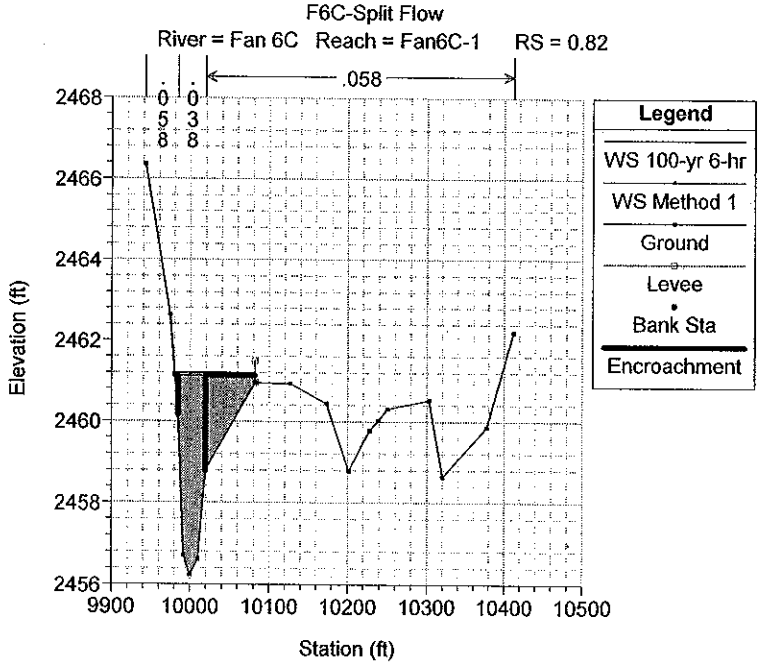

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.16
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)

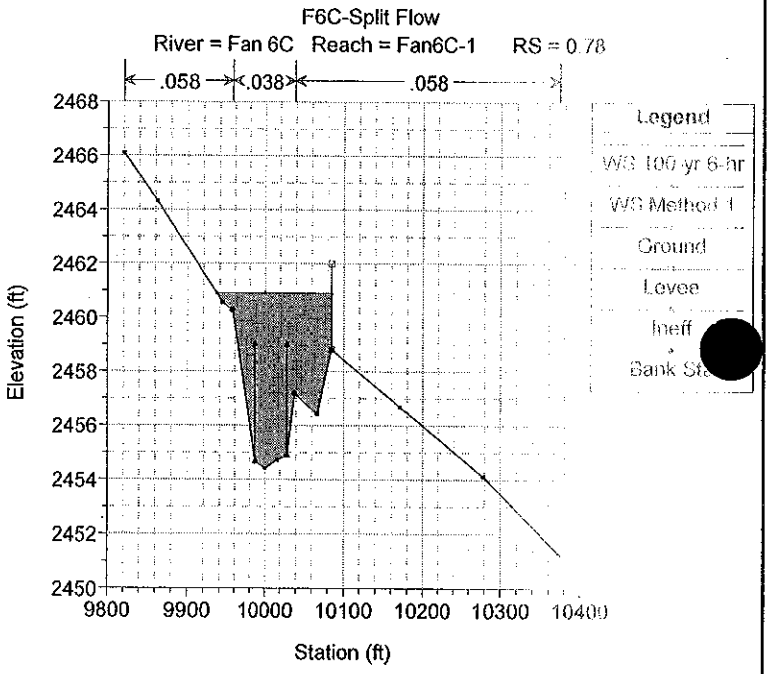

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.07
.058
.038
.058
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

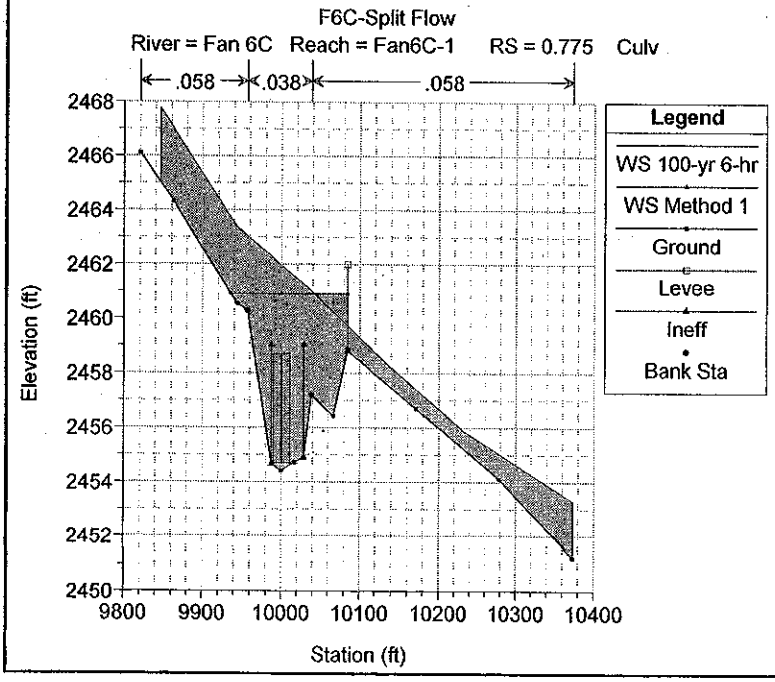

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 1.02
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

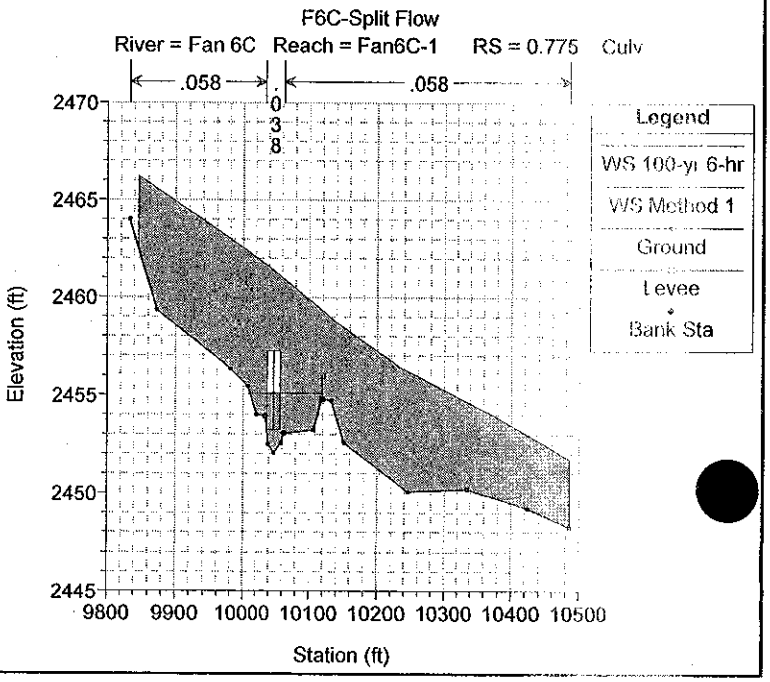

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.94
.058
.058
.038
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

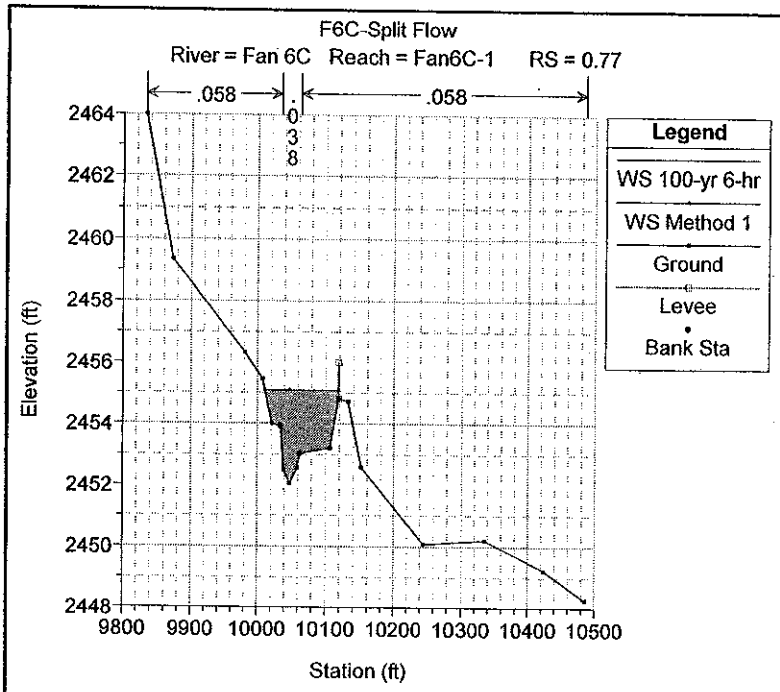

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.91
.058
.058
.038
Legend
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

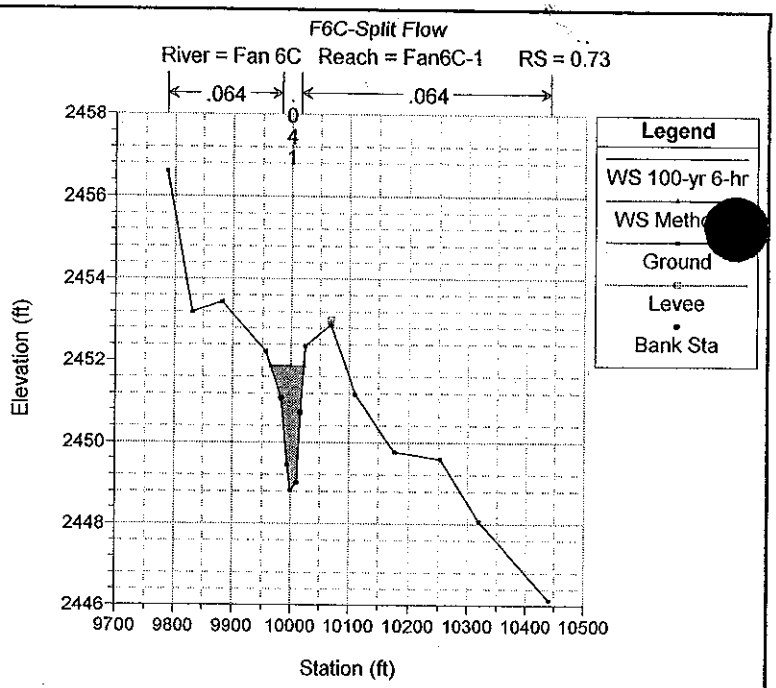

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.82
.058
.058
.038
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

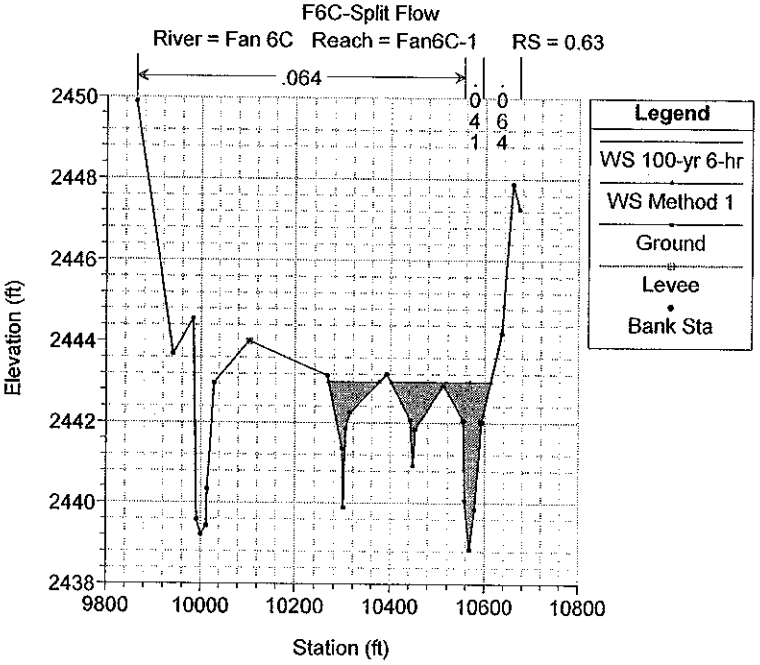

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.78
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

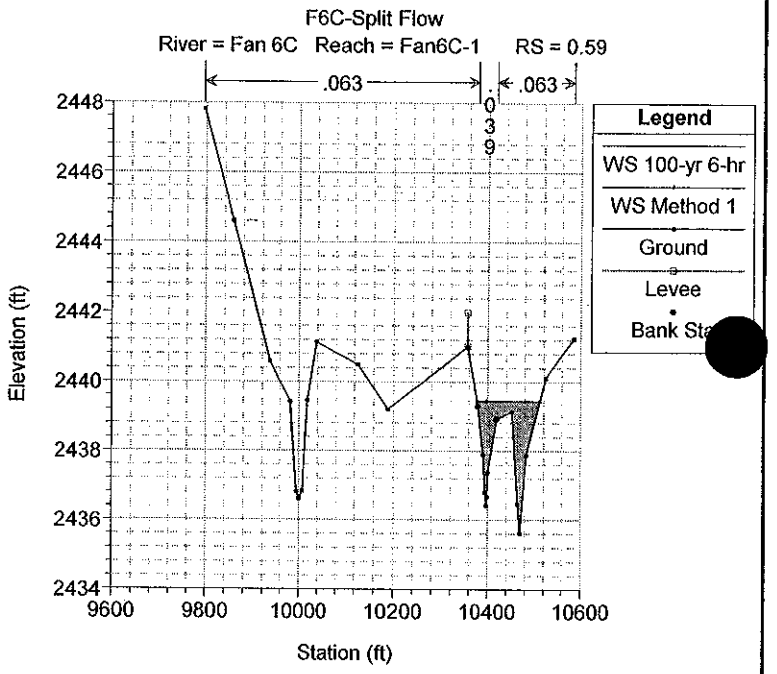

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.775 Culv
.058
.038
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

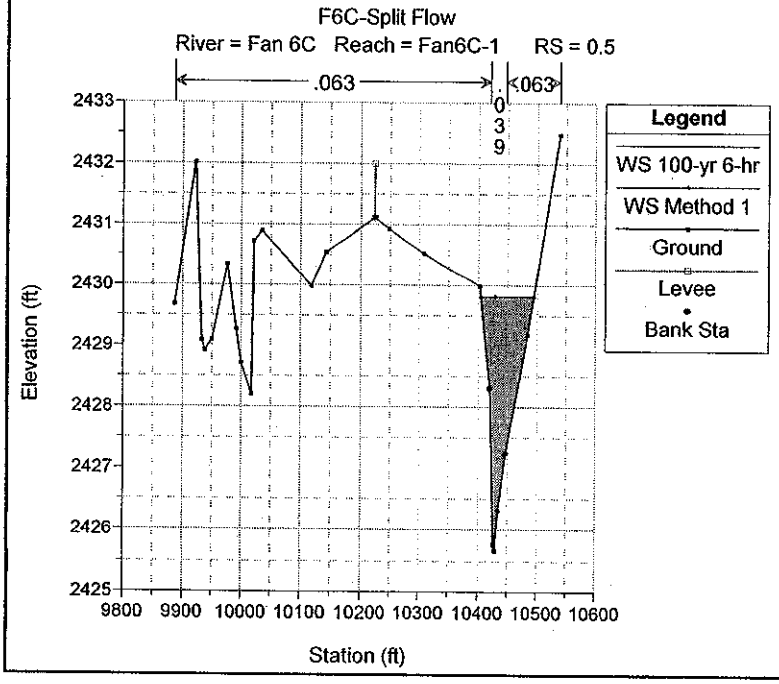

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.775 Culv
.058
.058
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

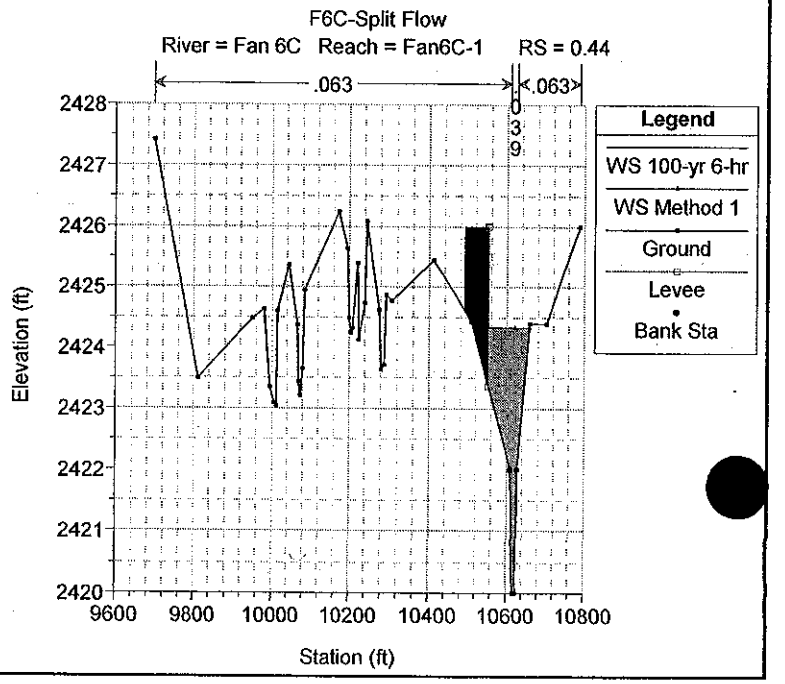

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.77
.058
.058
.038
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

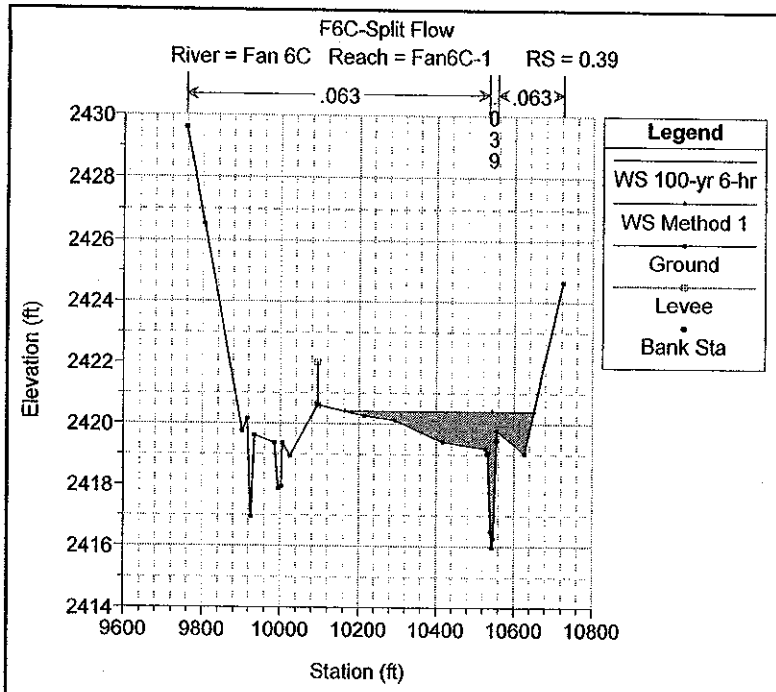

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.73
.064
.064
.041
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

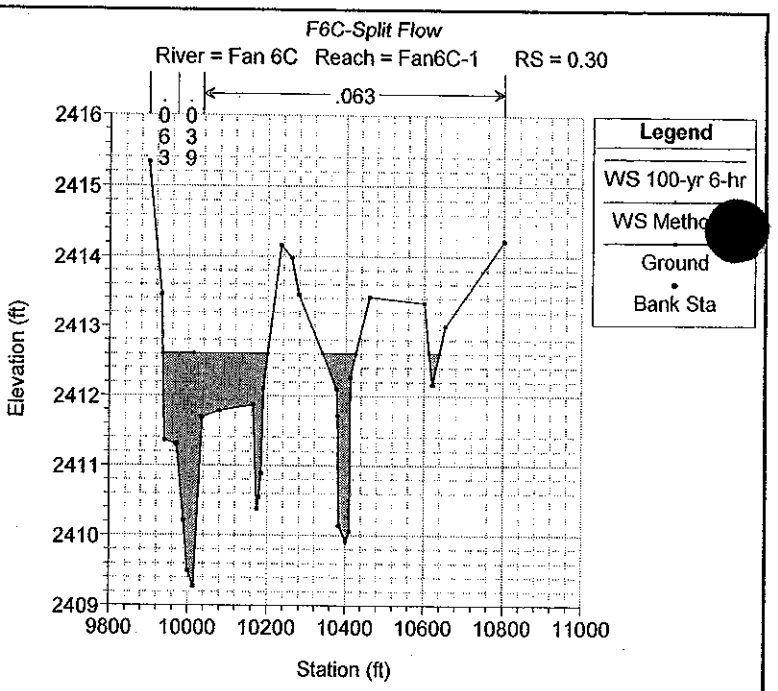

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.63
.064
.041
.064
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

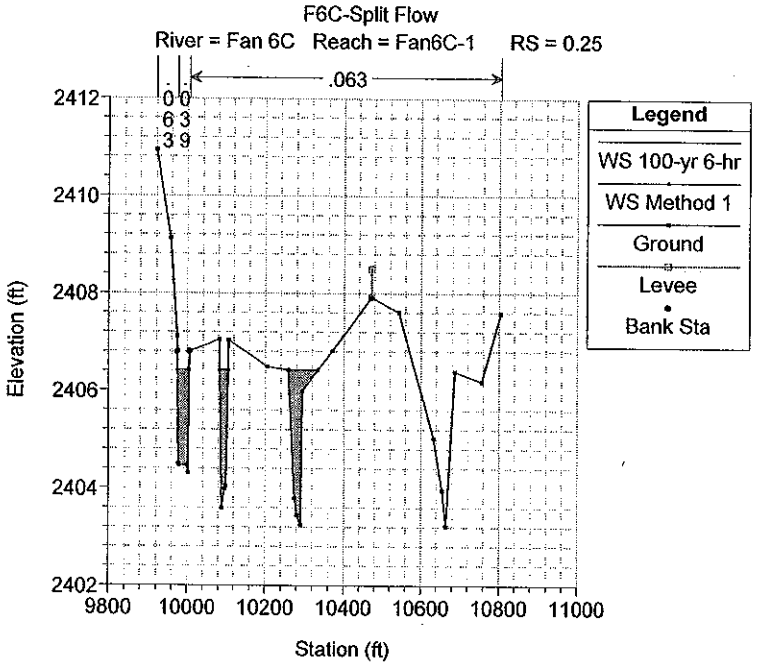

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.59
.063
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

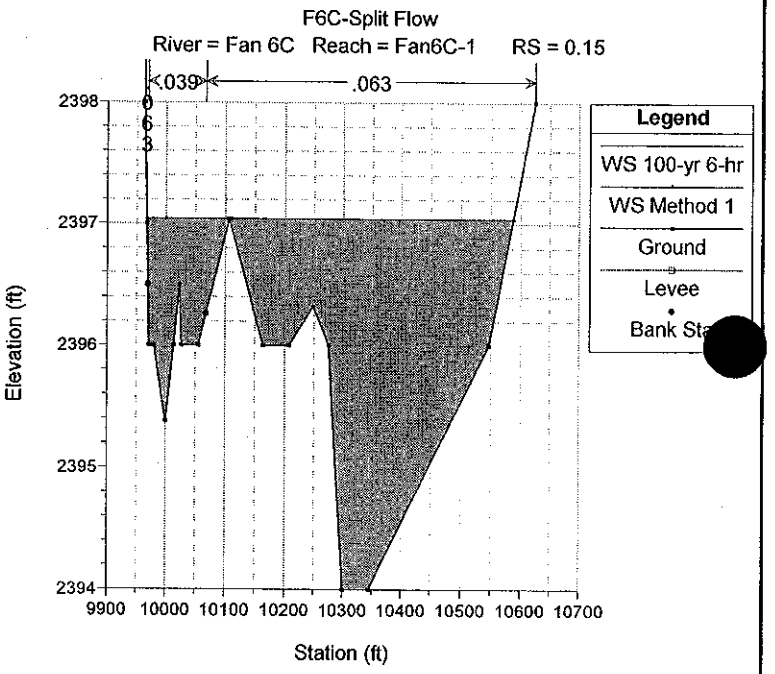

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.5
.063
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

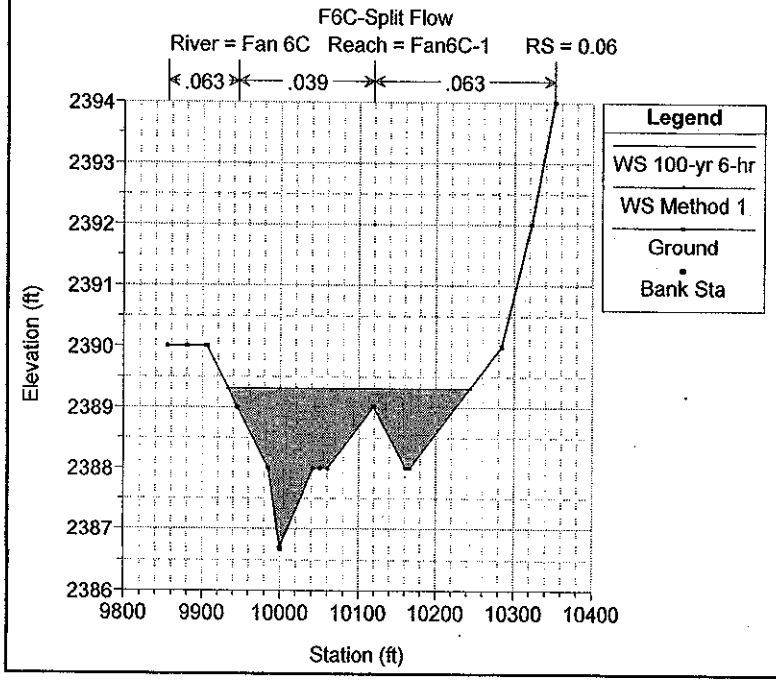

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.44
.063
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.39
.063
.063
.039
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

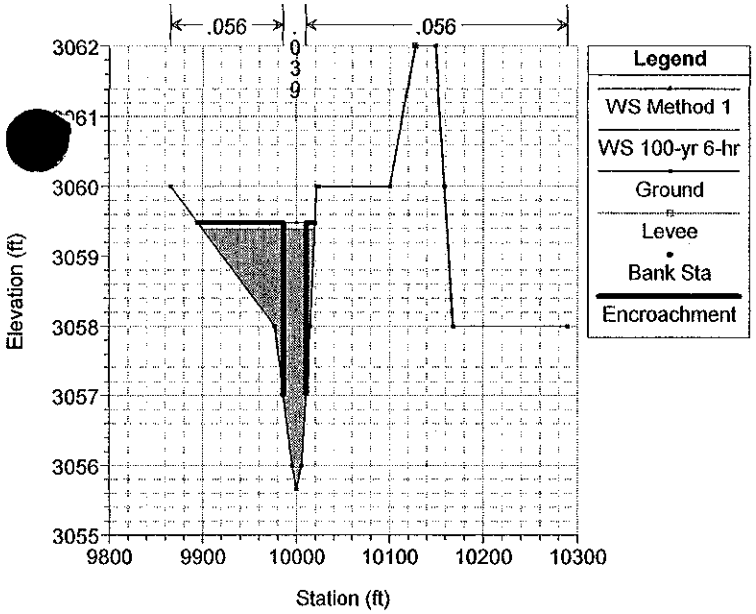

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.30
.063
.039
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)


F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.25
.063
.039
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

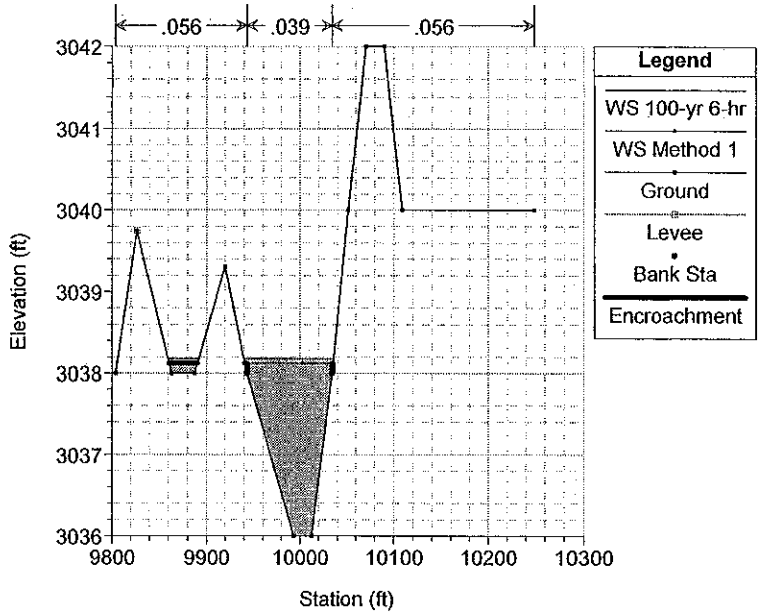

F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.15
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


F6C-Split Flow
River = Fan 6C Reach = Fan6C-1 RS = 0.06
.063
.039
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

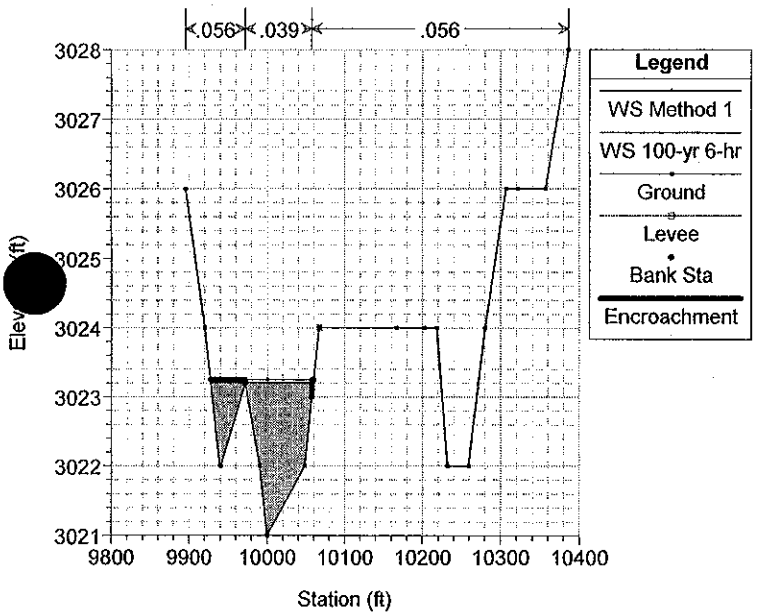
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 5.17



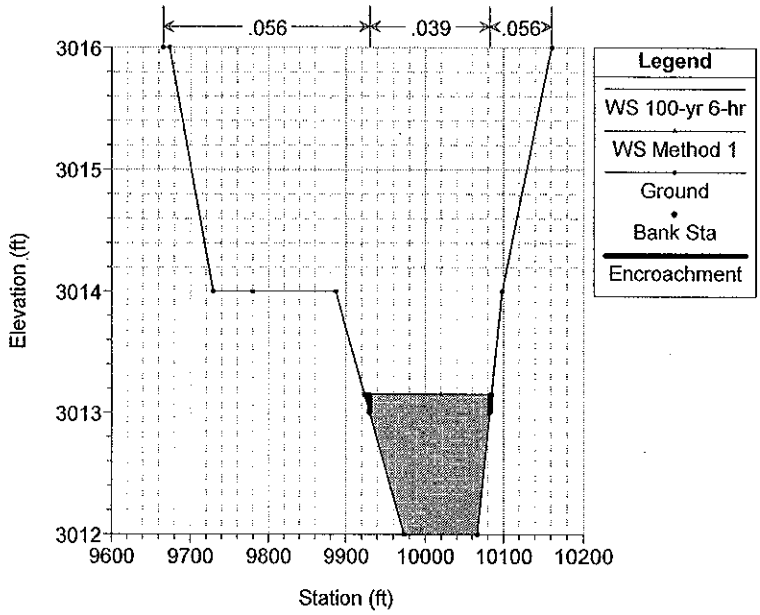
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 5.07



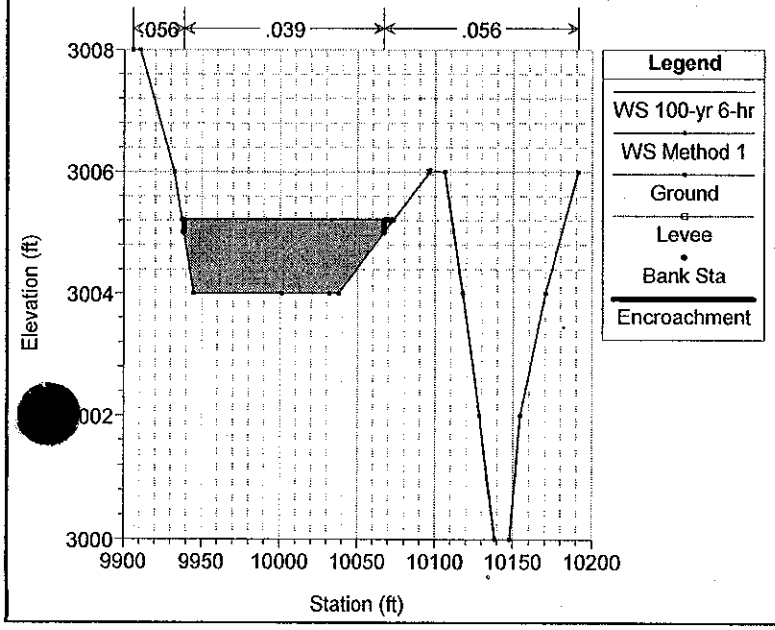
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 5.00



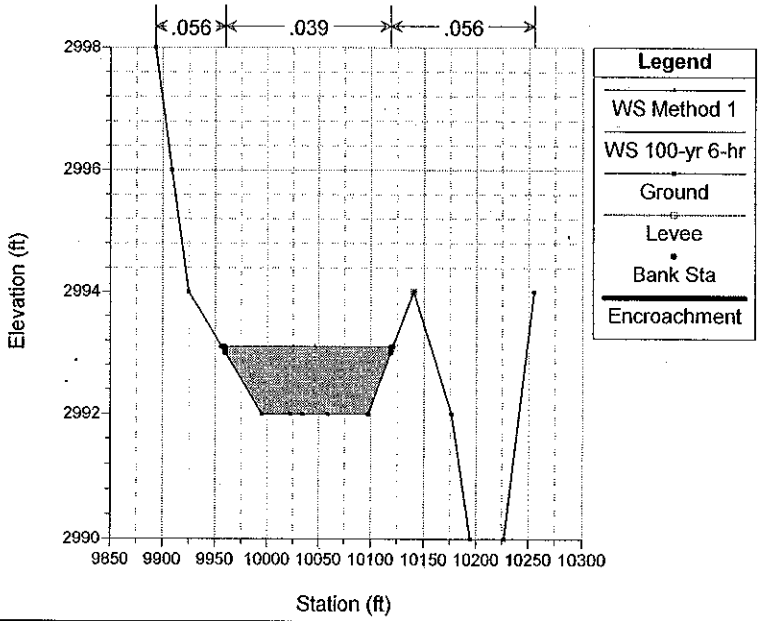
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.95



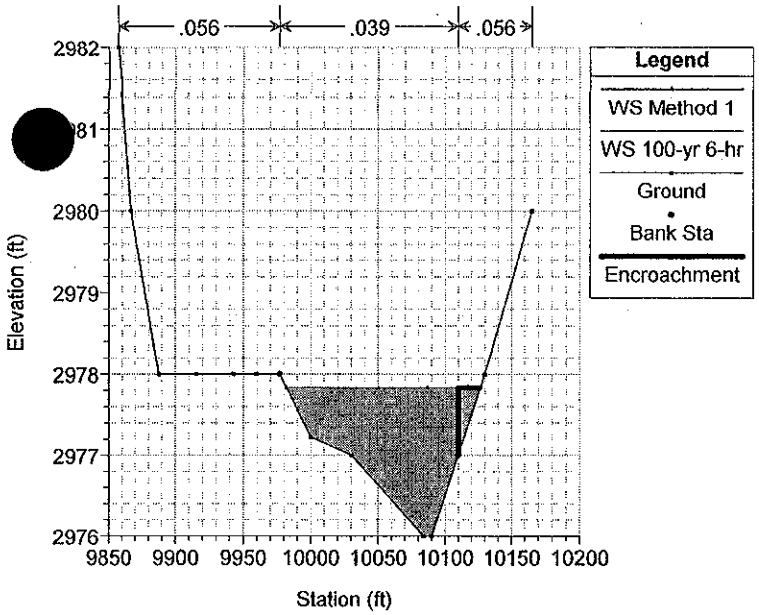
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.91



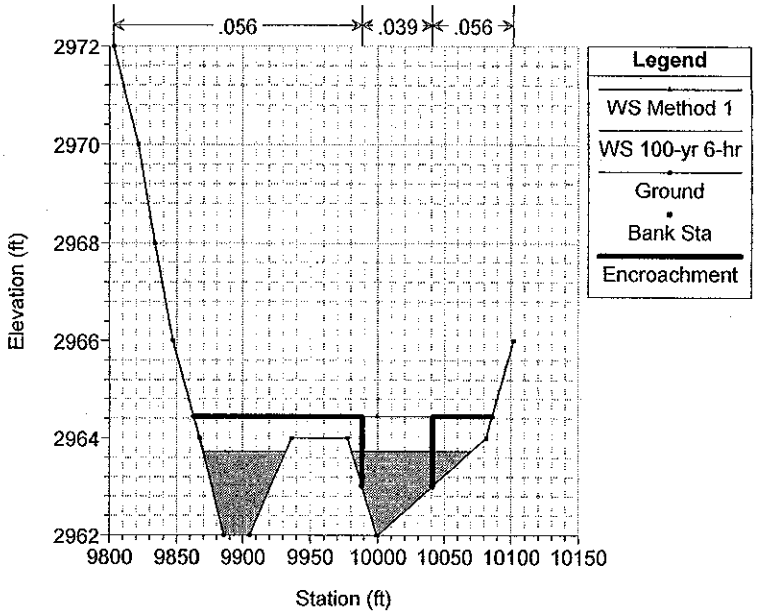
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.84



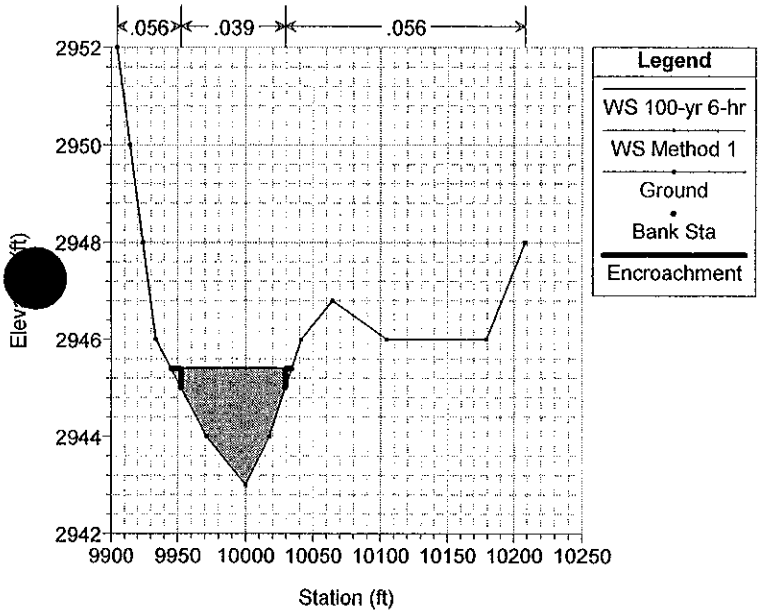
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.77



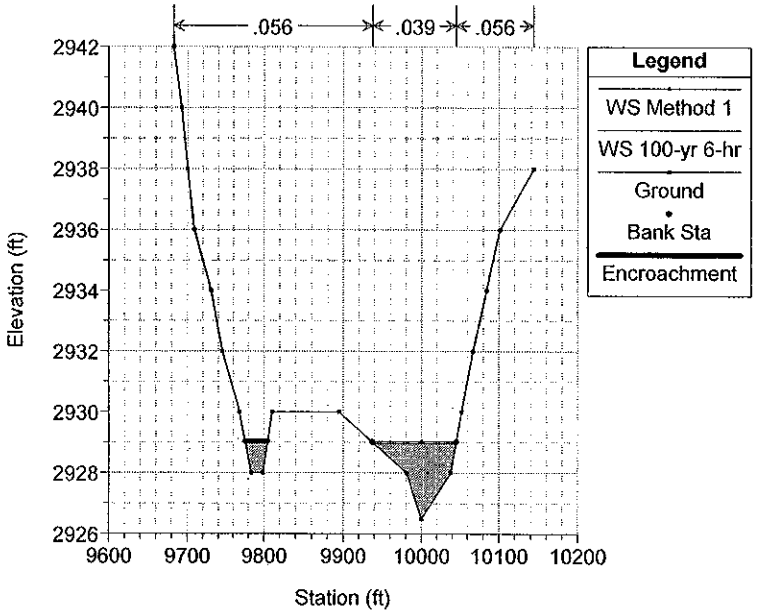
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.69



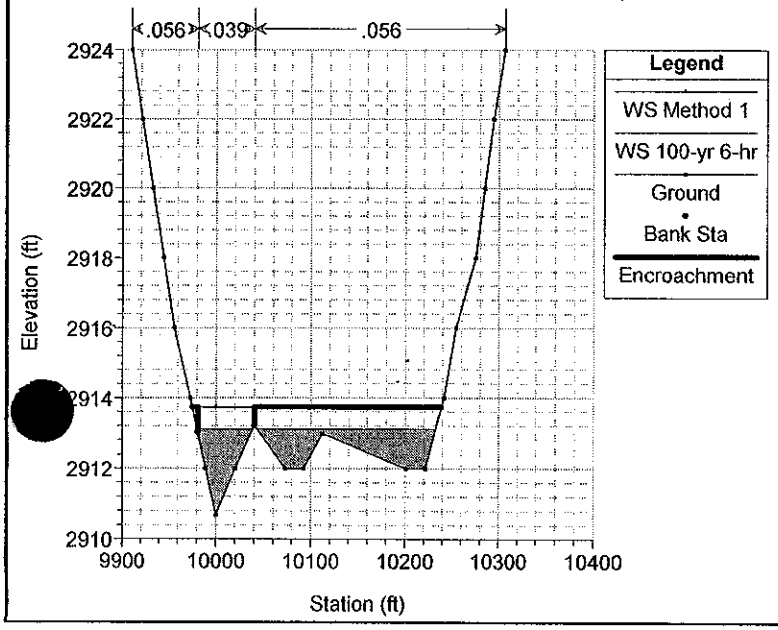
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.59



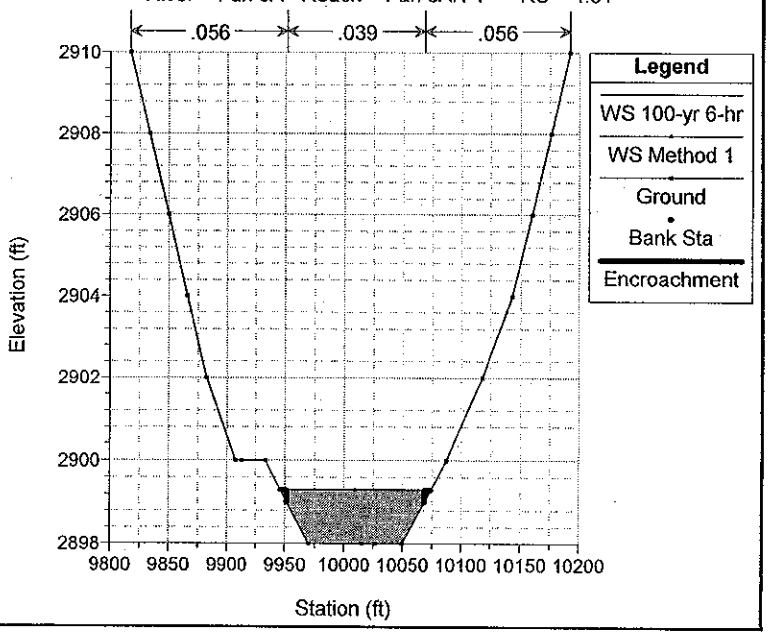
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.50

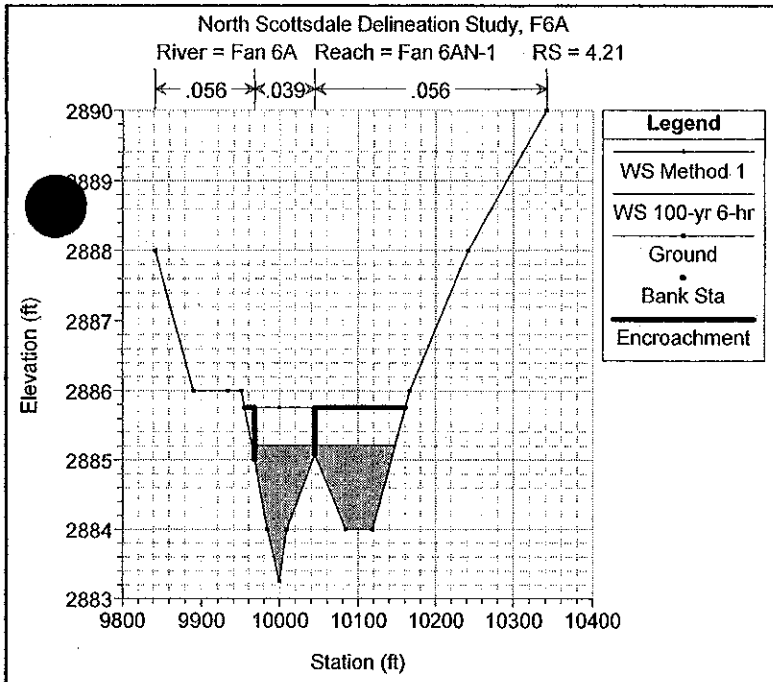


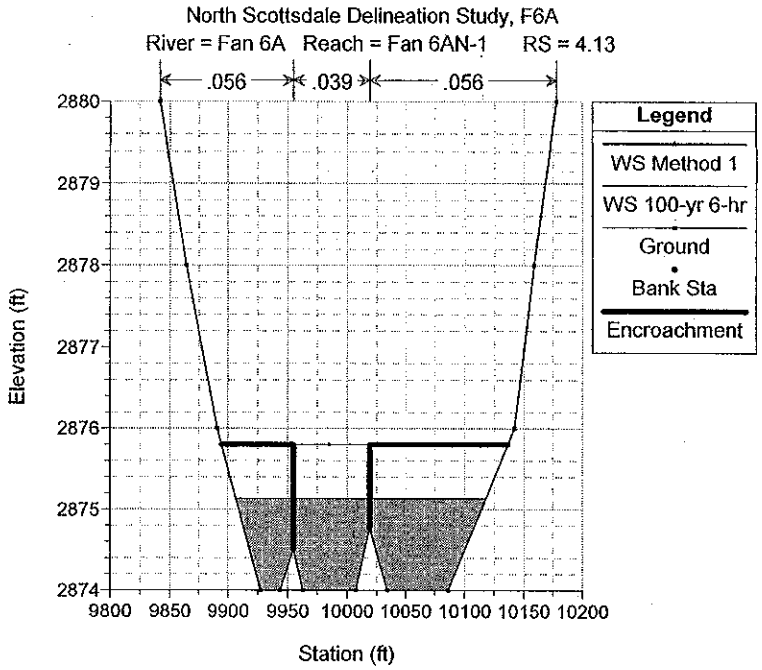
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.40

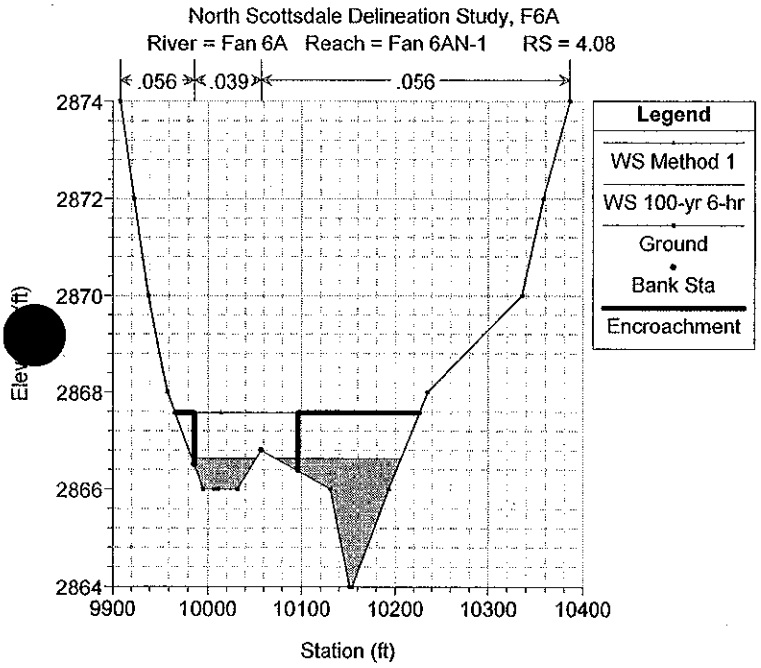


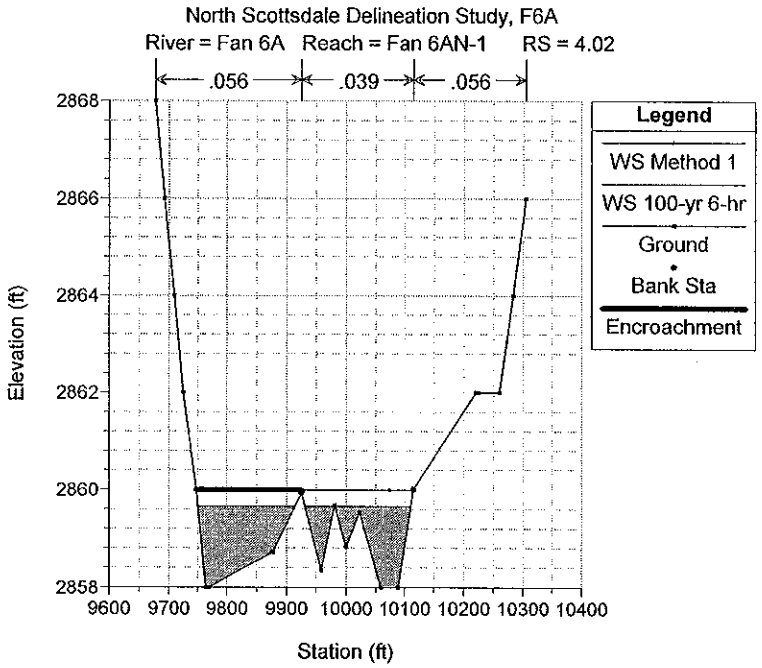
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.31

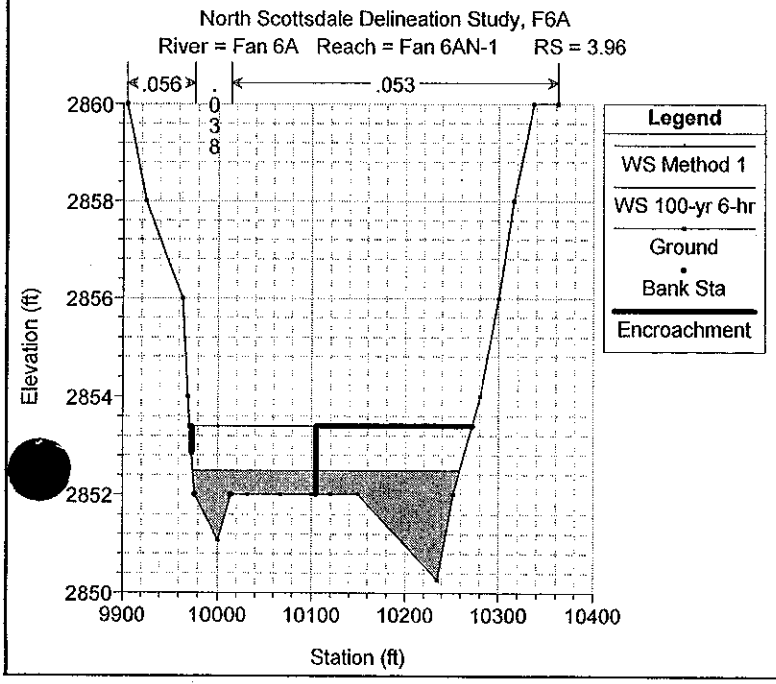


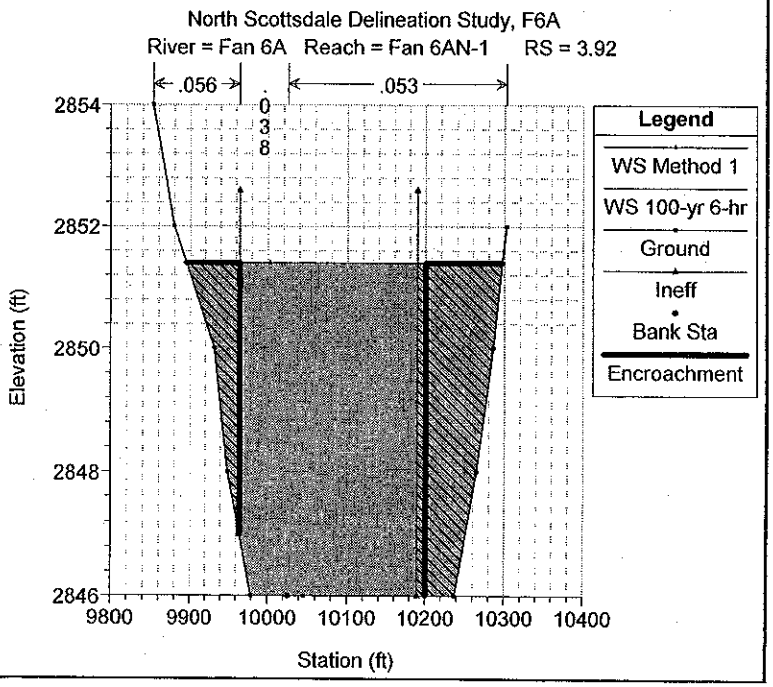

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.21
.056
.039
.056
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.13
.056
.039
.056
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

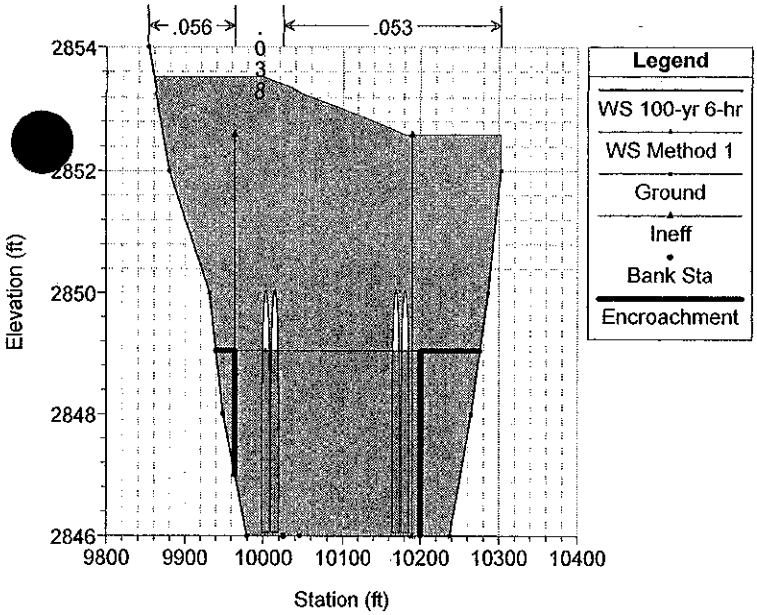

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.08
.056
.039
.056
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 4.02
.056
.039
.056
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

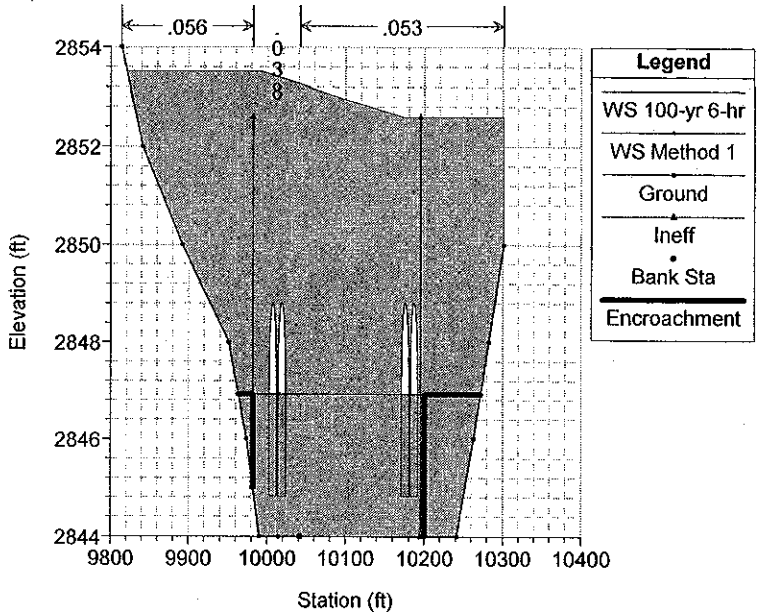

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.96
.056
.038
.053
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.92
.056
.038
.053
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.915 Culv



North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.915 Culv



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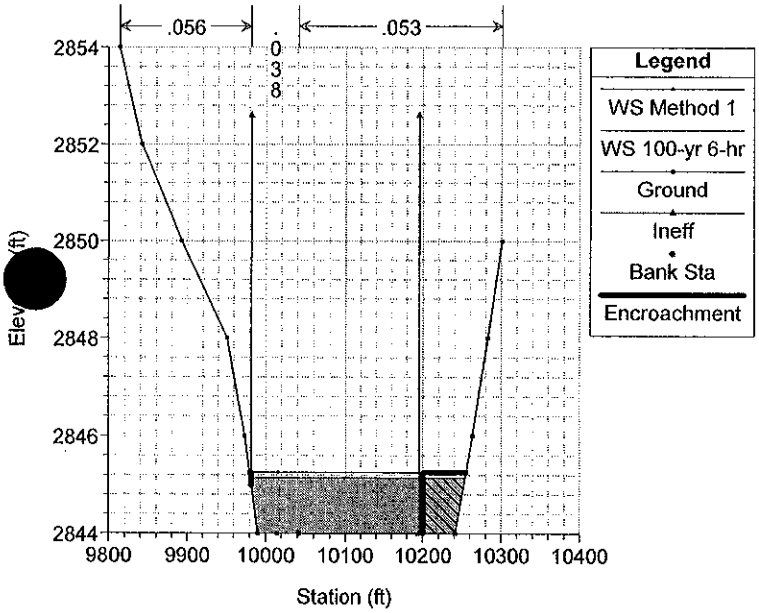
River = Fan 6A Reach = Fan 6AN-1 RS = 3.91



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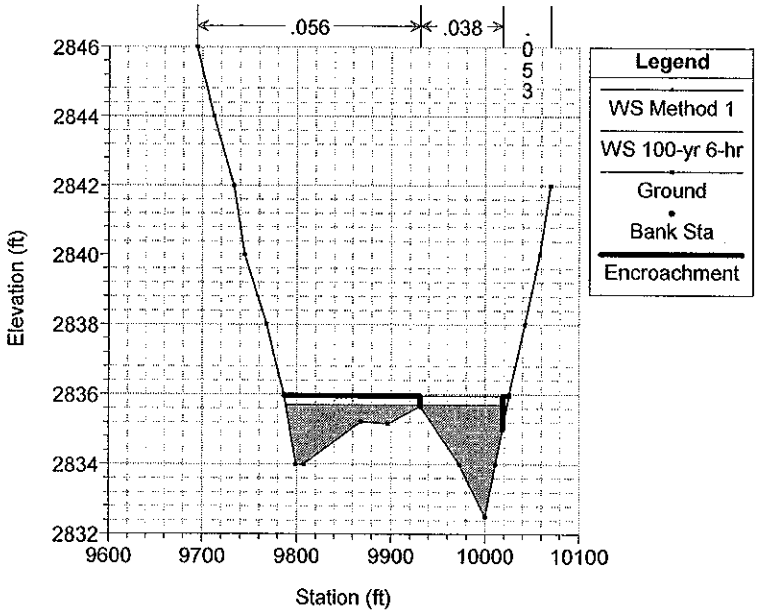
River = Fan 6A Reach = Fan 6AN-1 RS = 3.81



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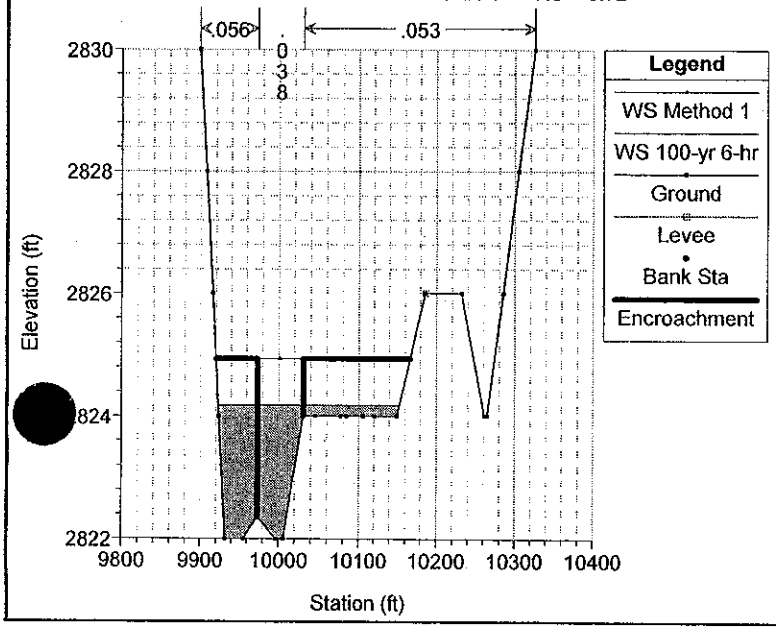
River = Fan 6A Reach = Fan 6AN-1 RS = 3.72



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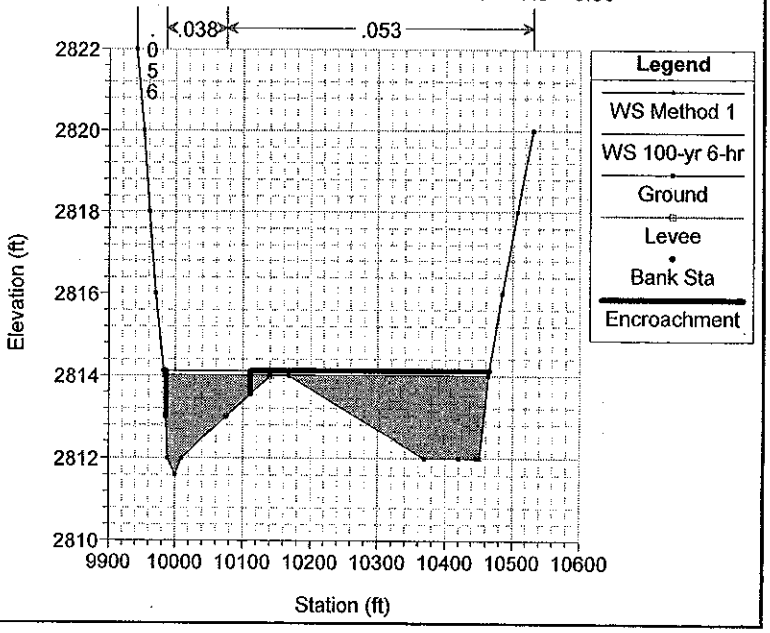
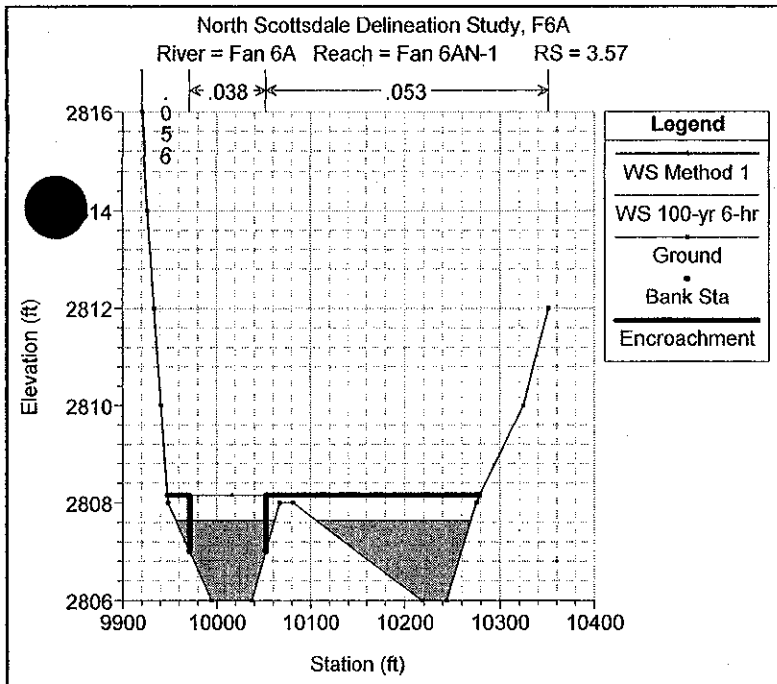
River = Fan 6A Reach = Fan 6AN-1 RS = 3.63




North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.57
.056
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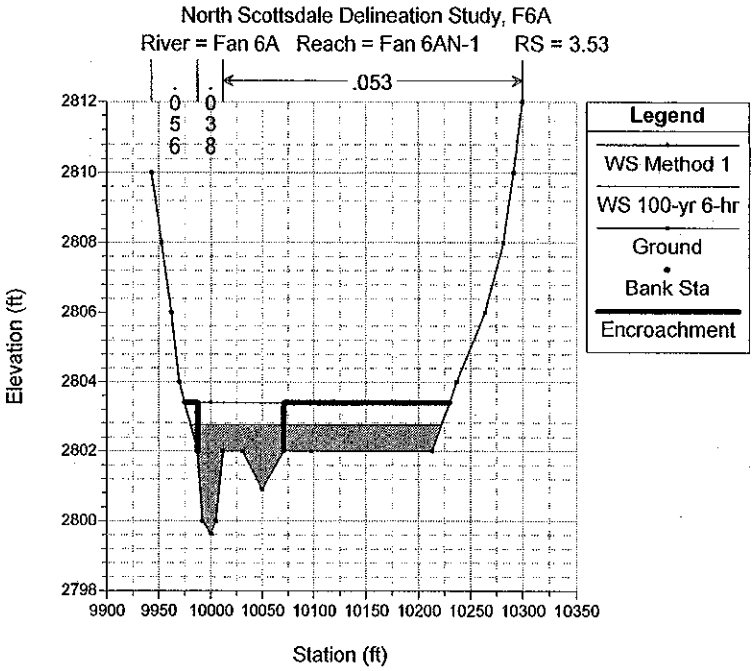
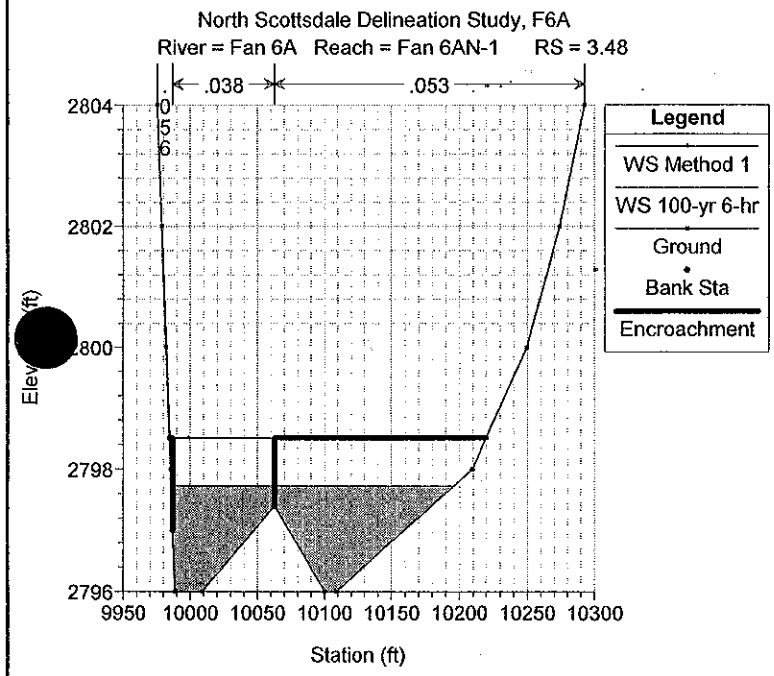
.053
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.53
.056
.038
.053
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.48
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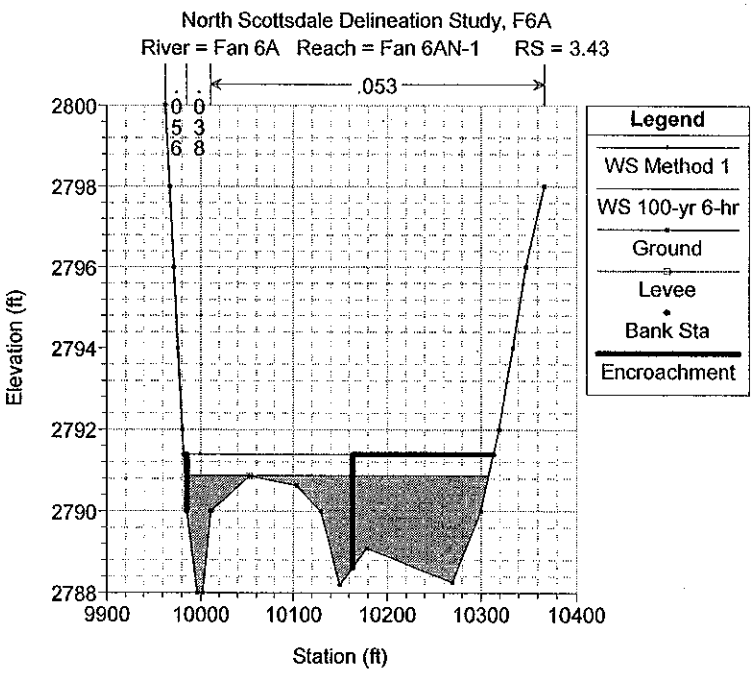
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.43
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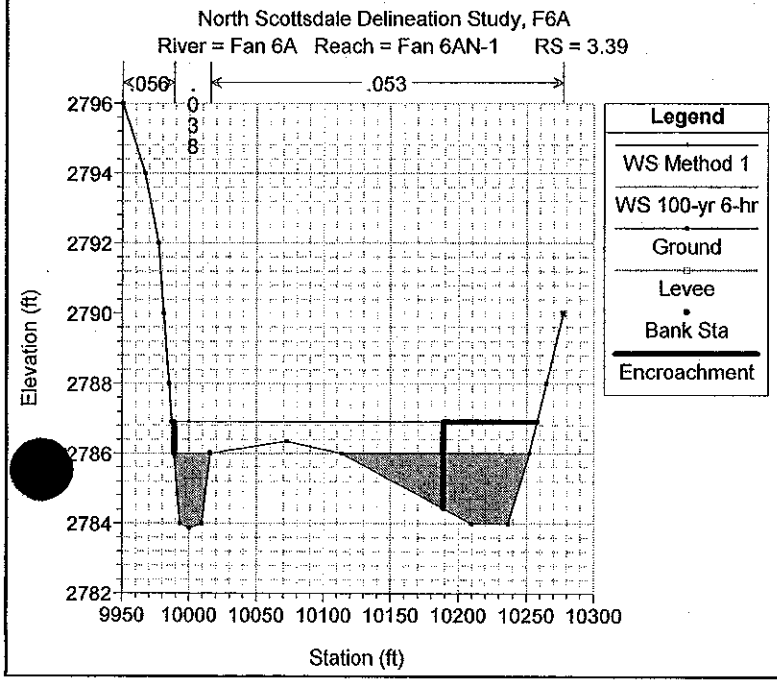
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.39
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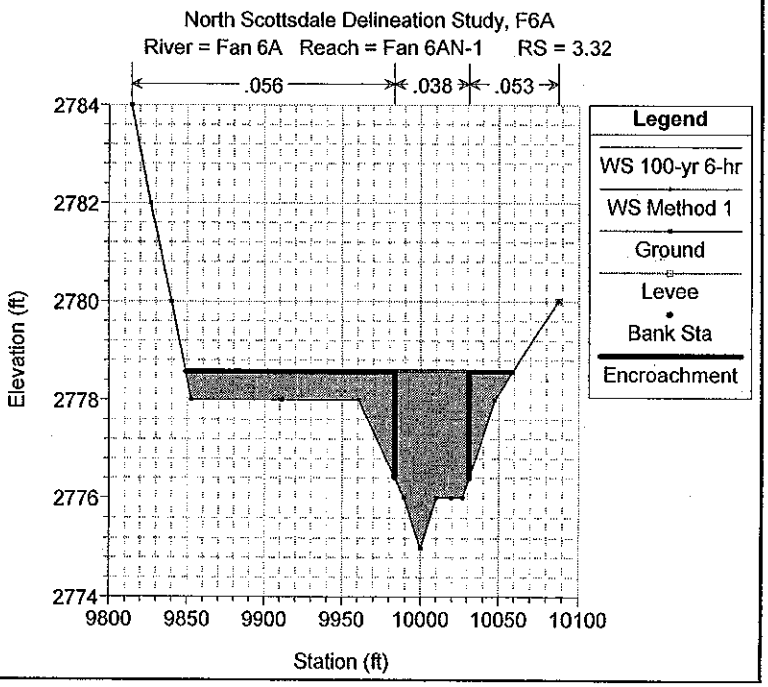
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.32
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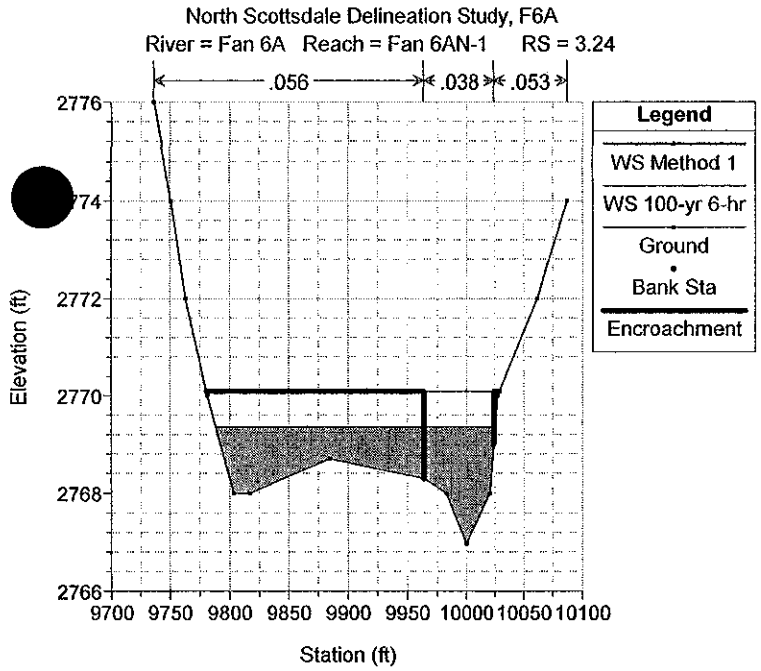
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.24
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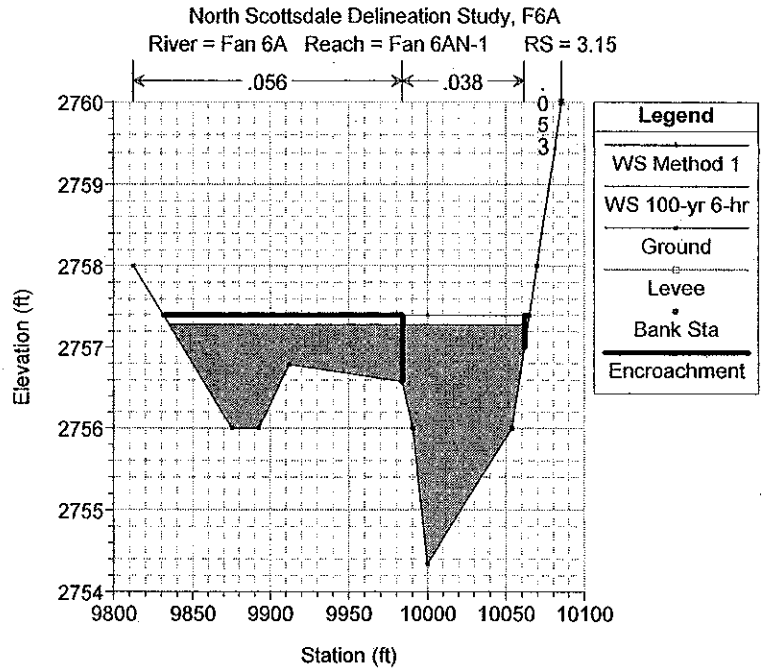
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.15
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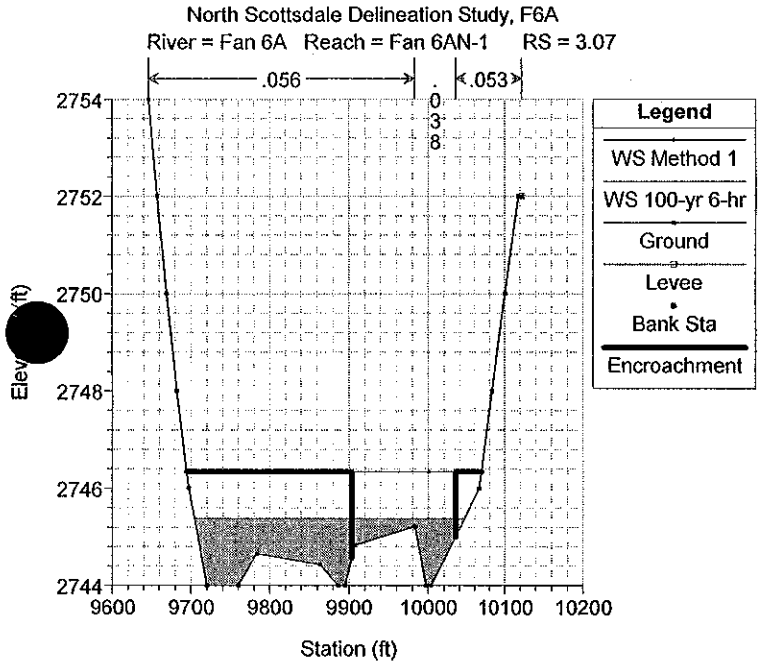
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 3.07
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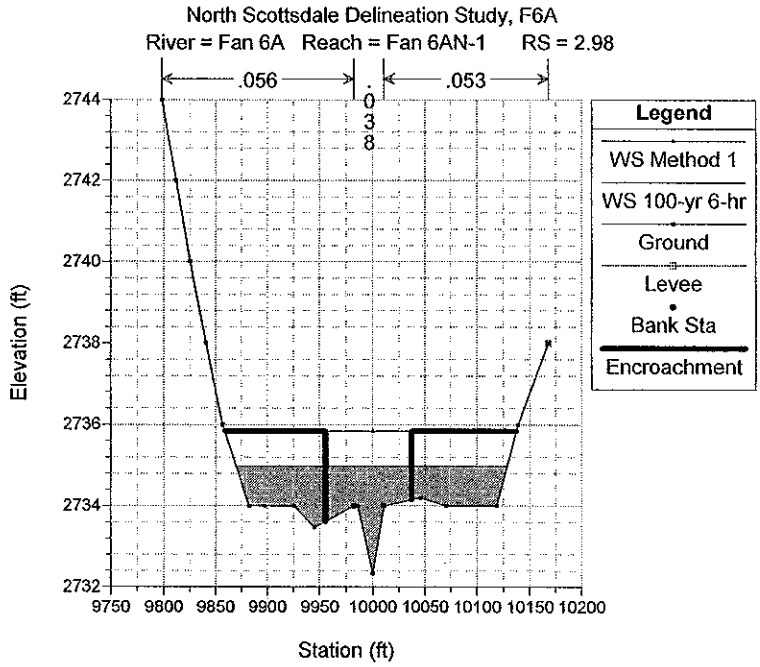
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.98
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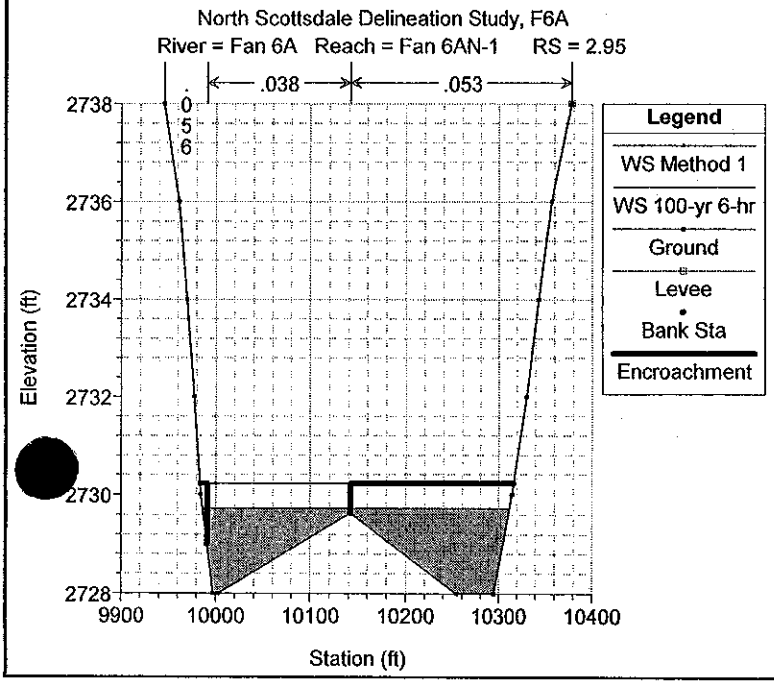
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.95
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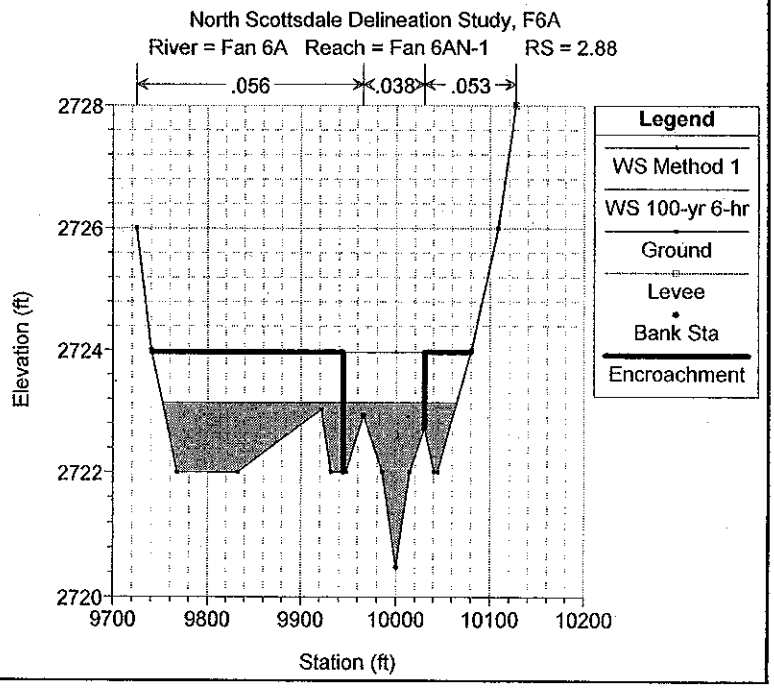
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.88
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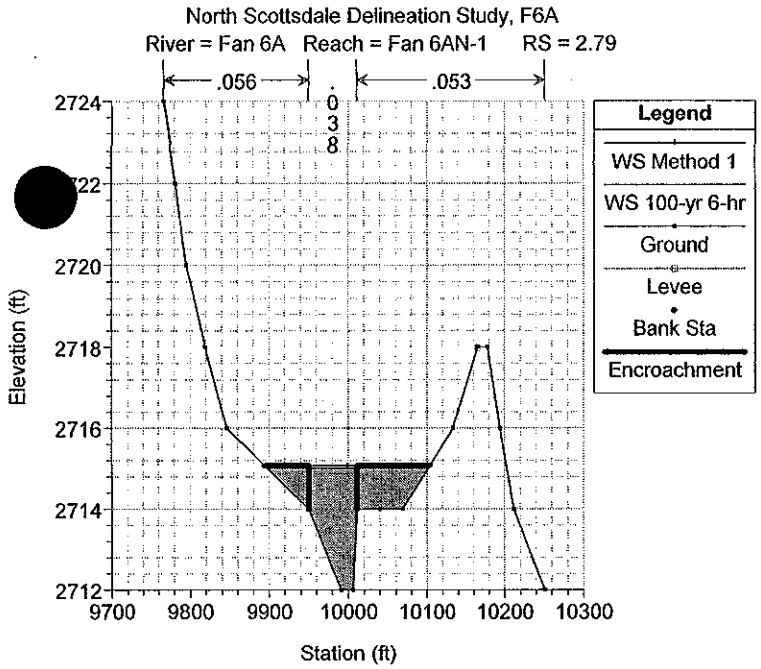
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.79
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.038
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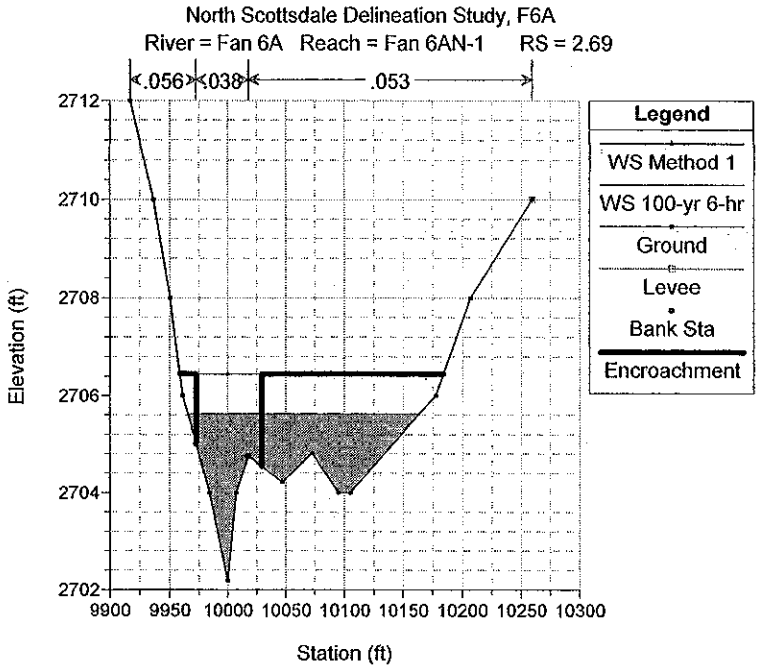
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.69
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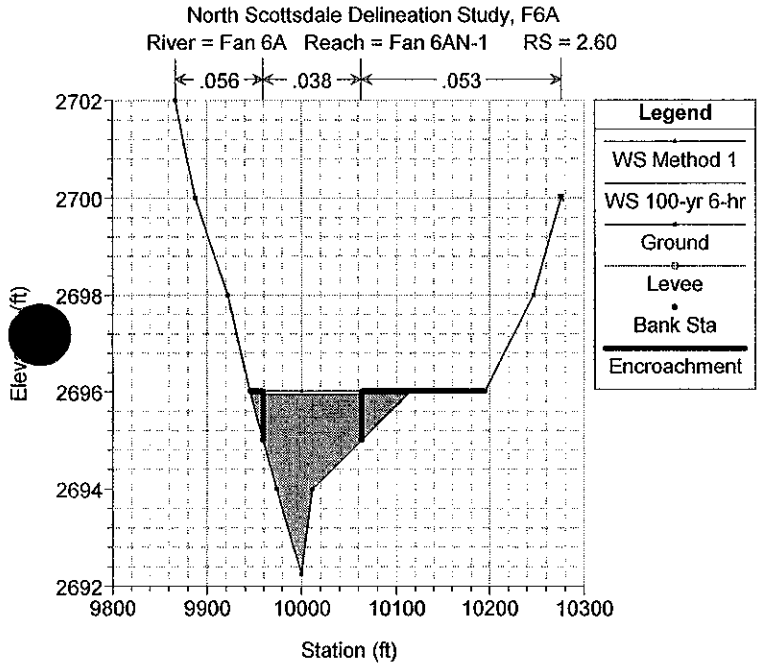
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.60
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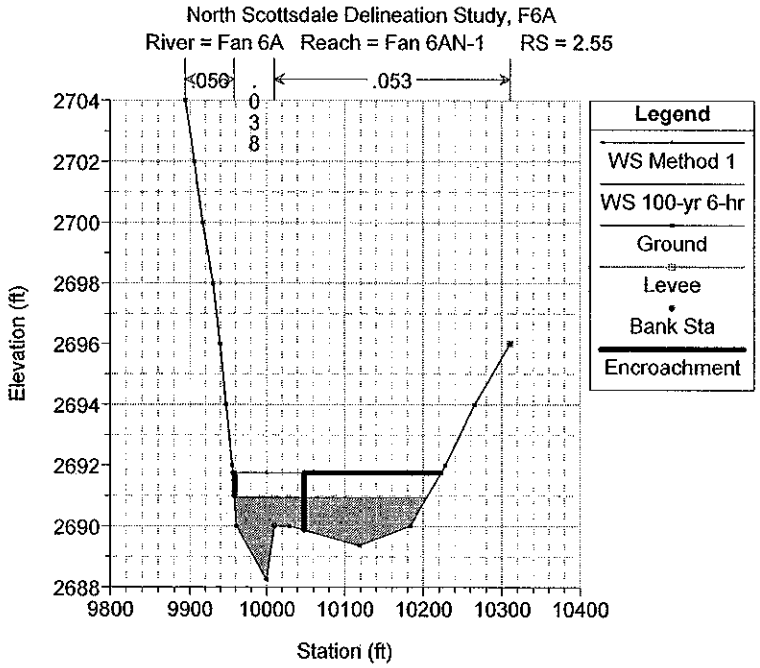
.038
.053
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.55
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.038
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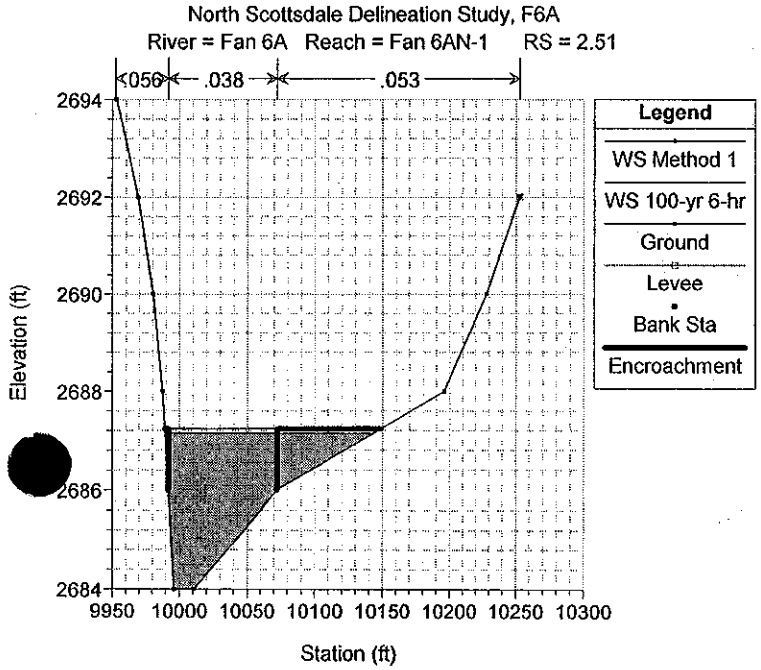
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.51
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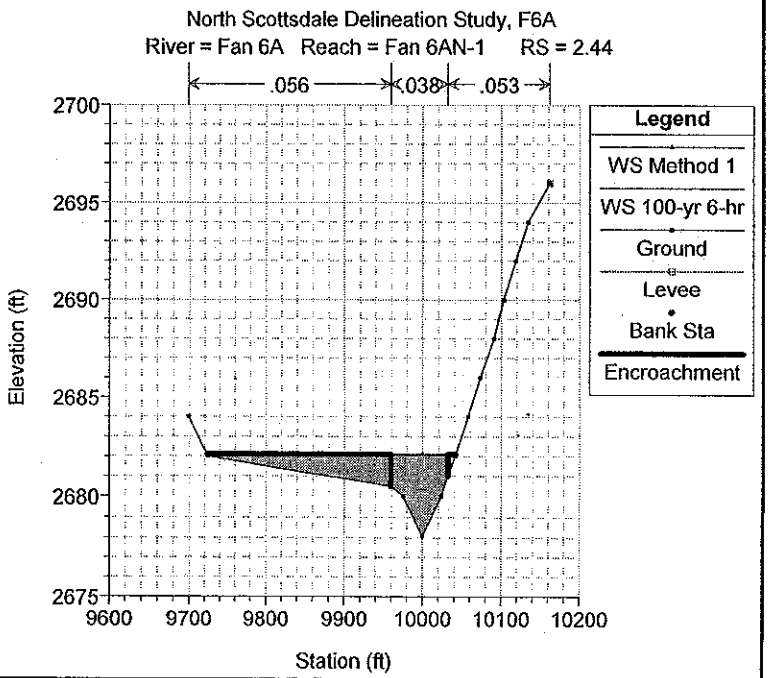
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.44
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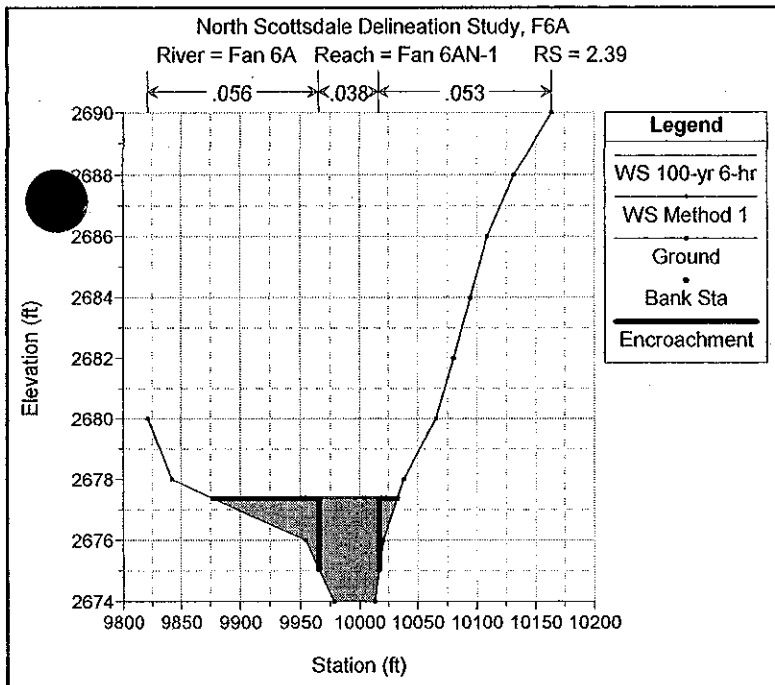
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.39
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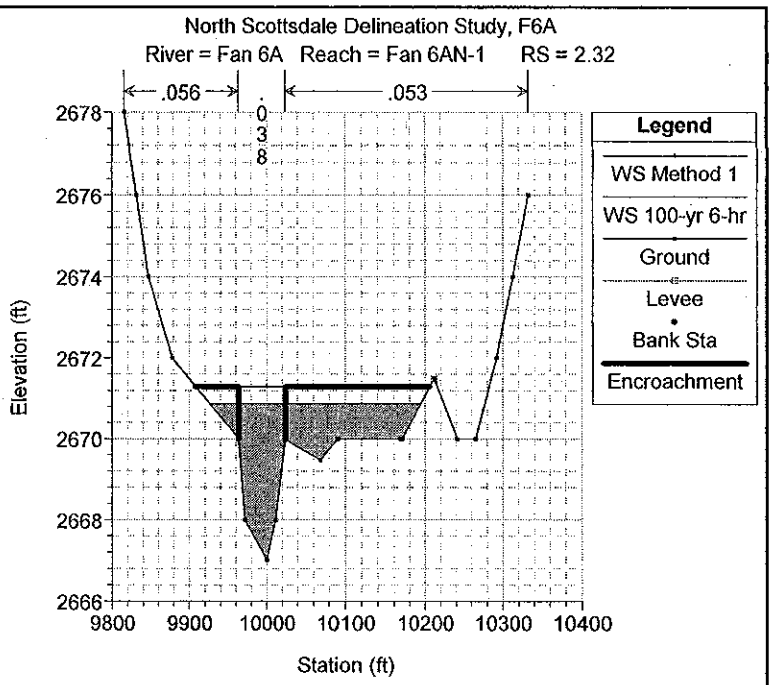
.038
.053
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.32
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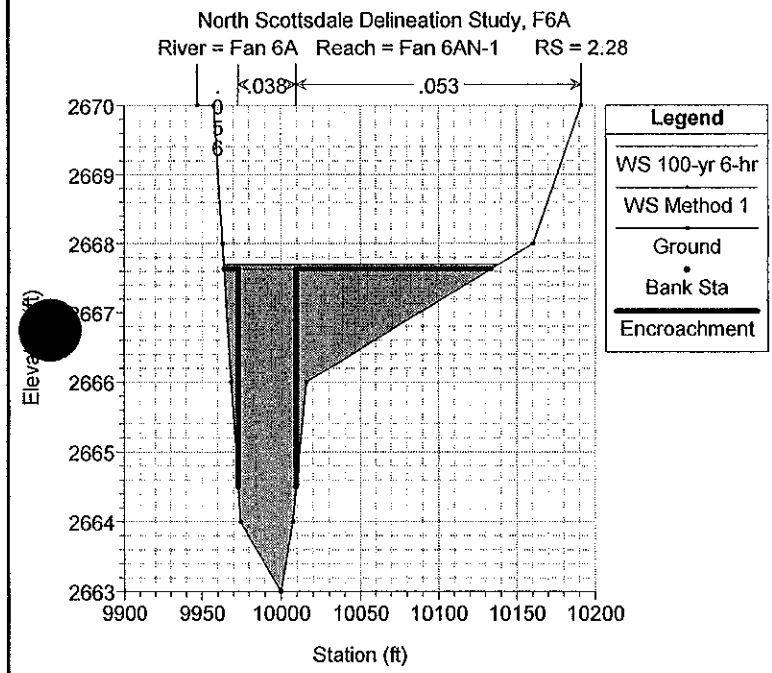
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.28
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.038
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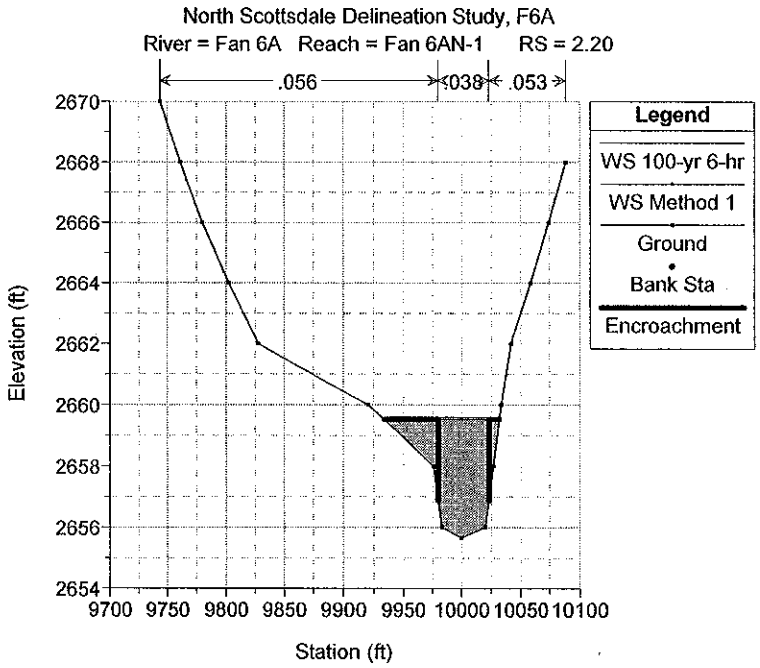
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.20
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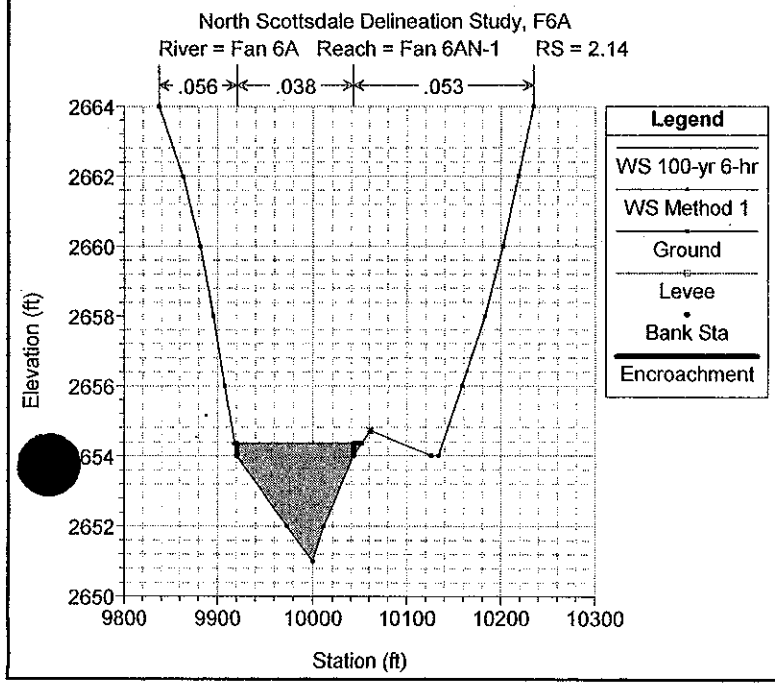
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.14
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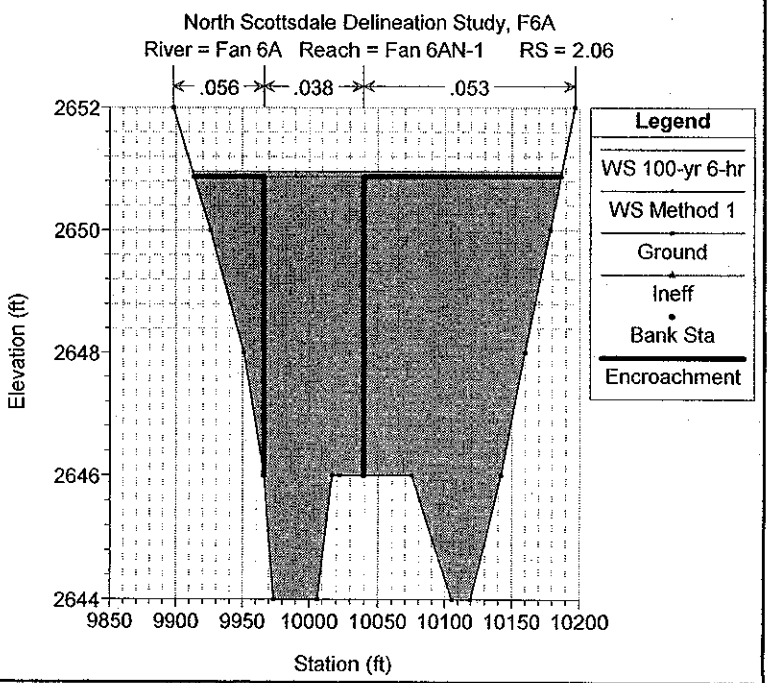
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.06
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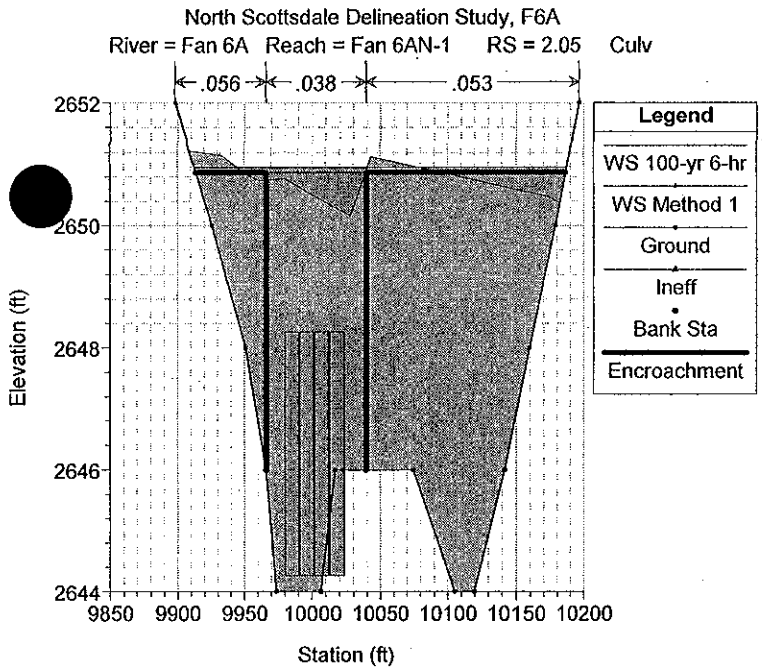
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.05 Culv
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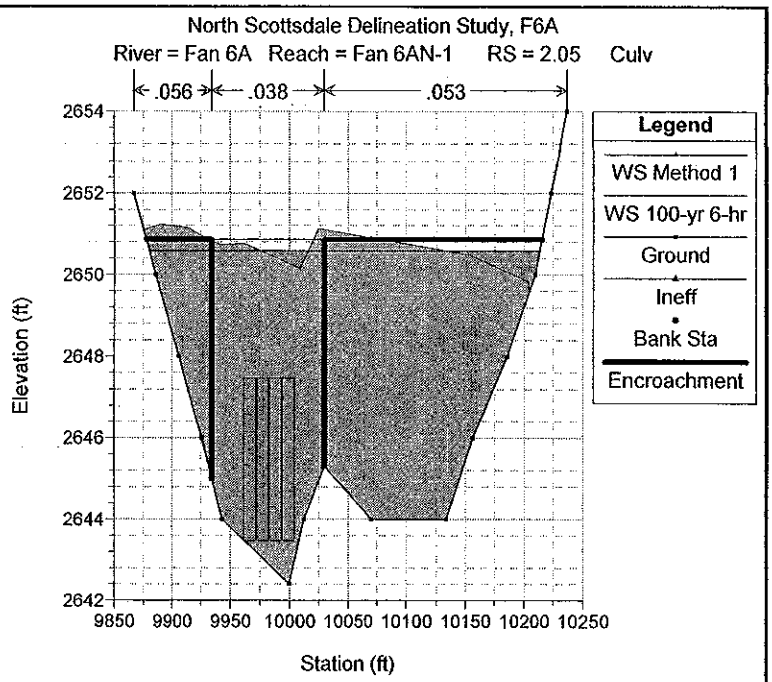
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.05 Culv
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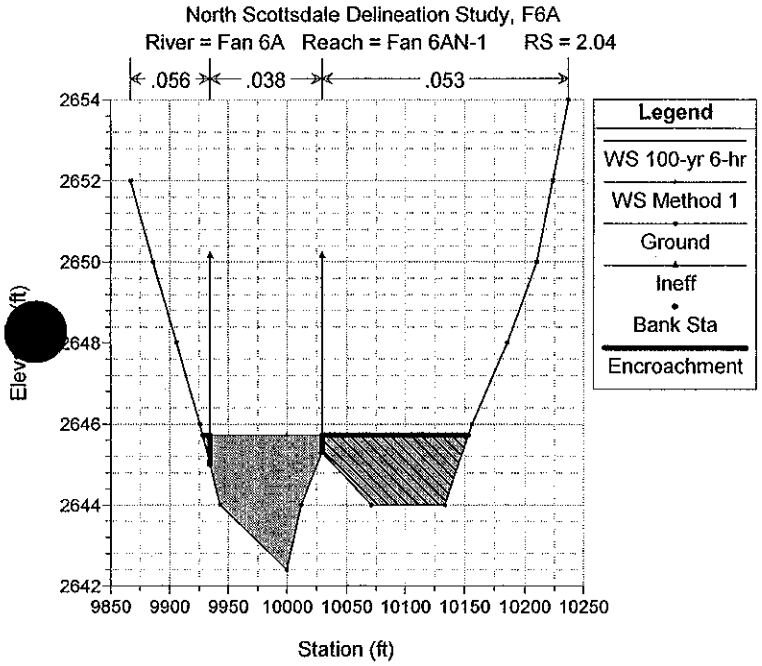
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 2.04
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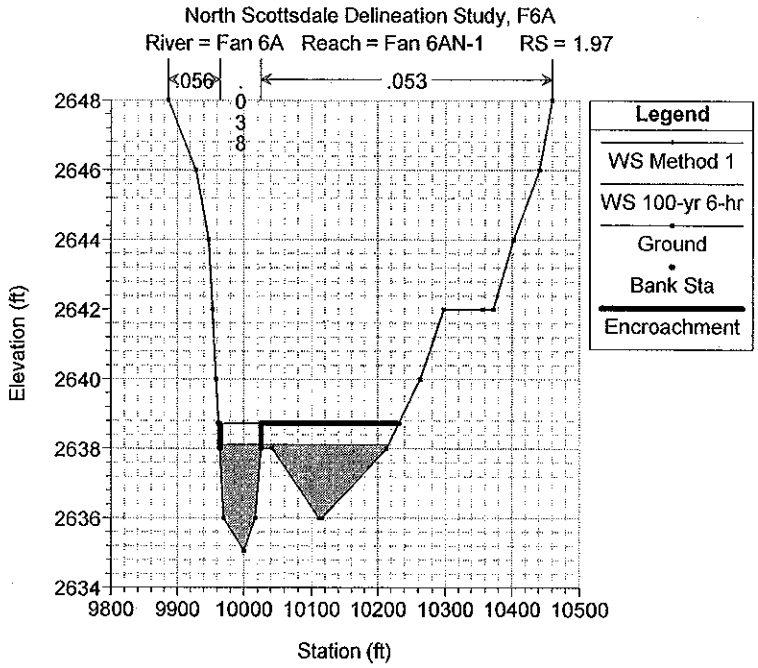
.053
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.97
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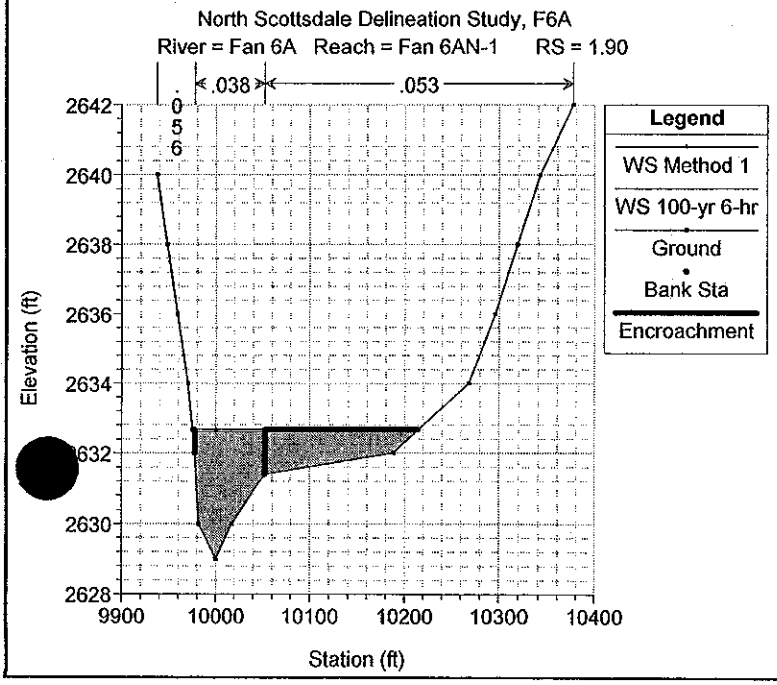
.038
.053
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.90
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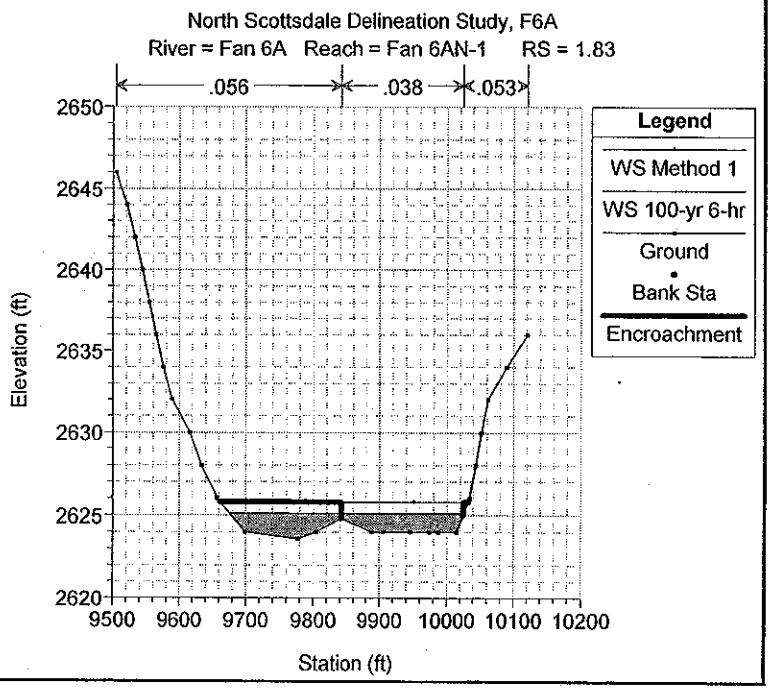
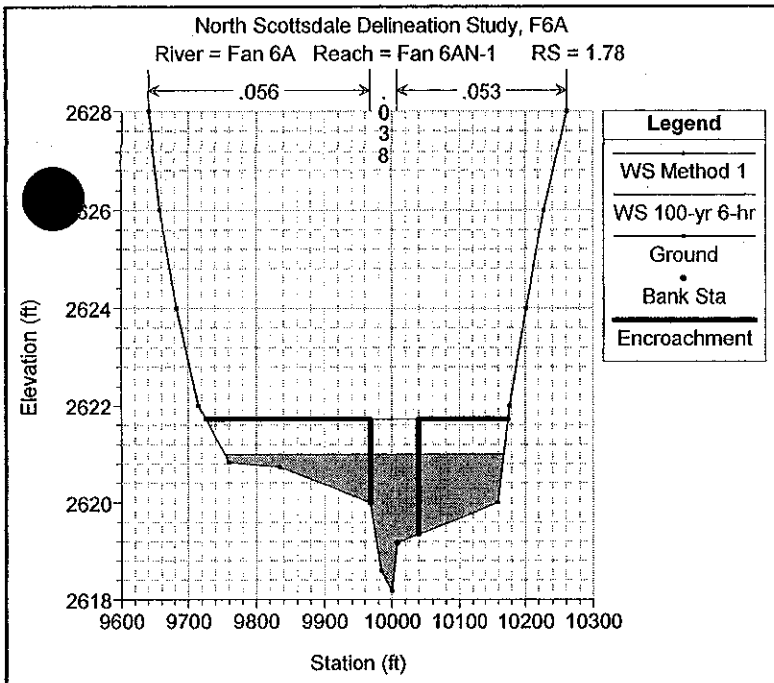
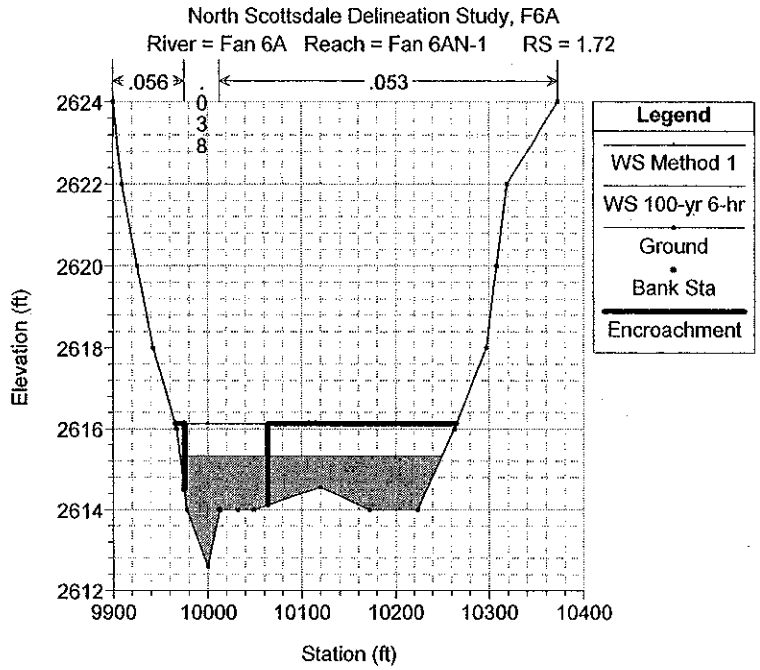
.053
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.83
.056
.038
.053
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.78
.056
.053
.038
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.72
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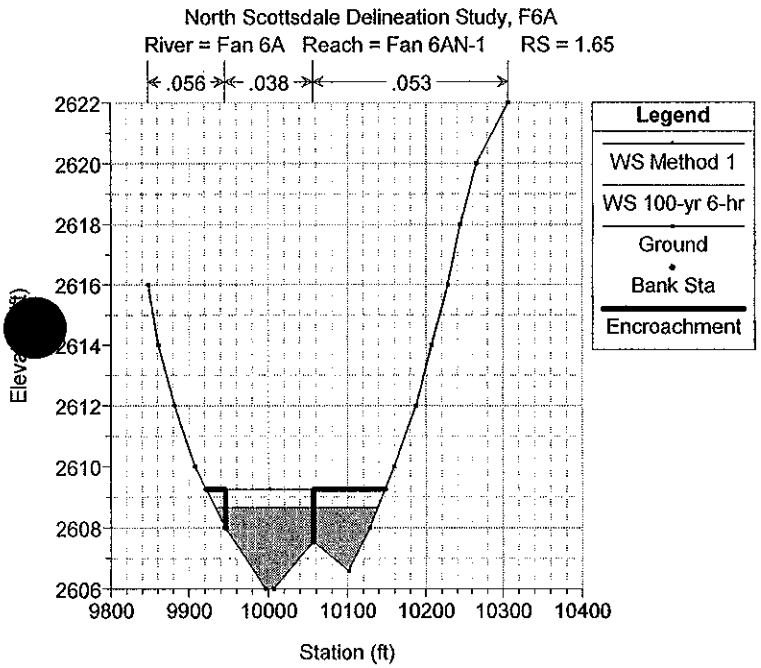
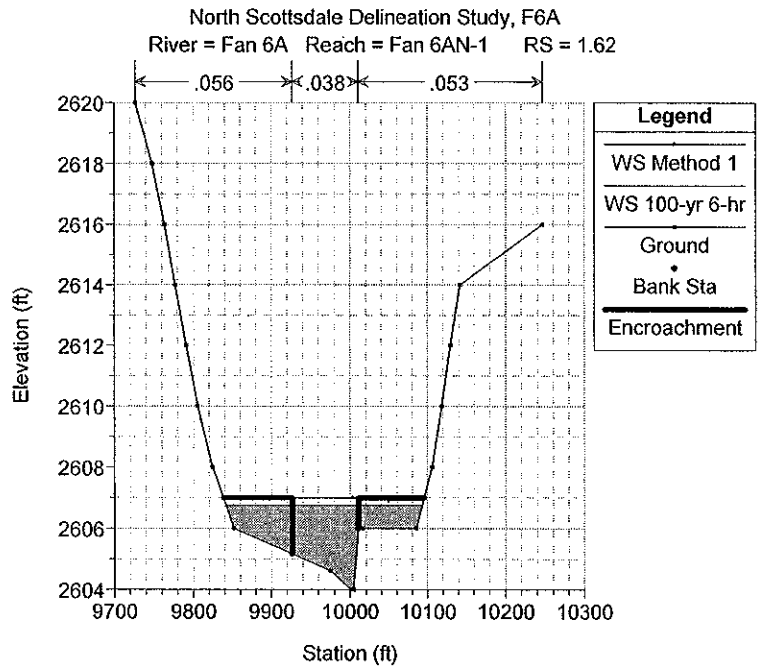
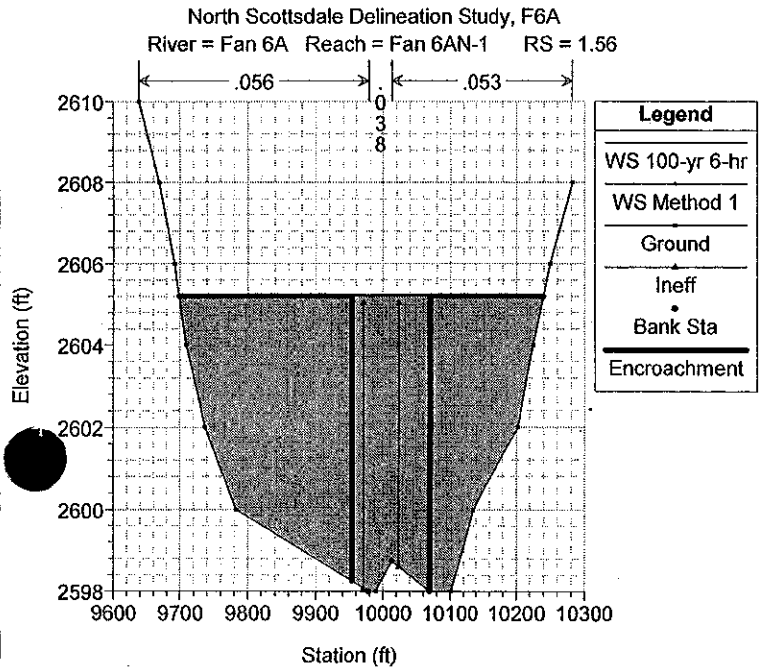
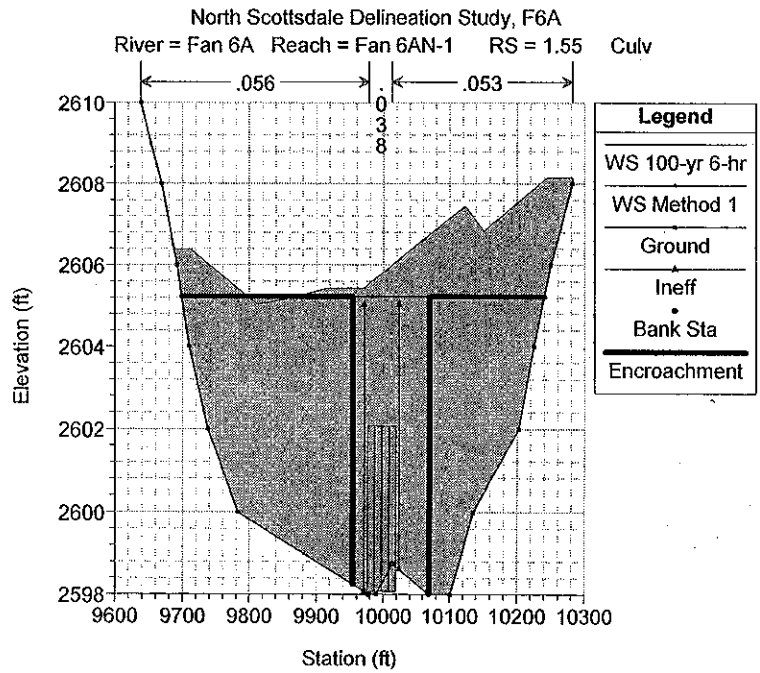
.053
.038
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

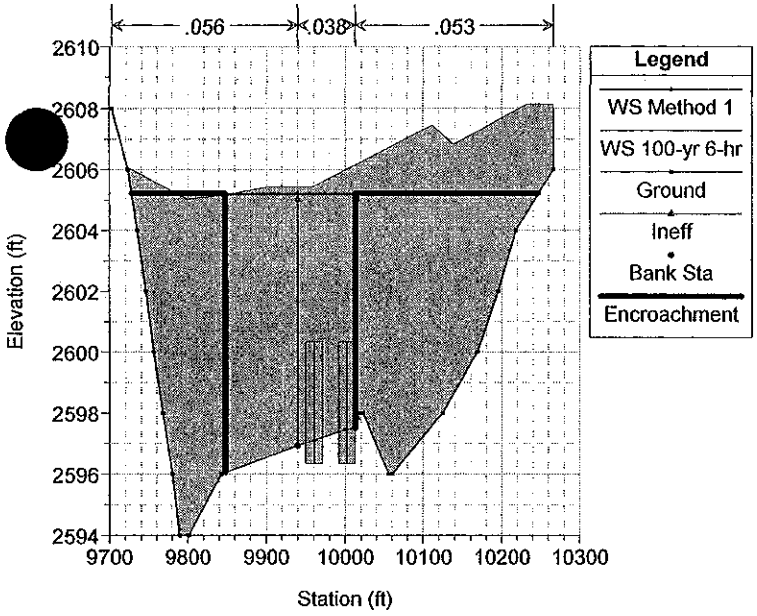

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.65
.056
.038
.053
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.62
.056
.038
.053
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

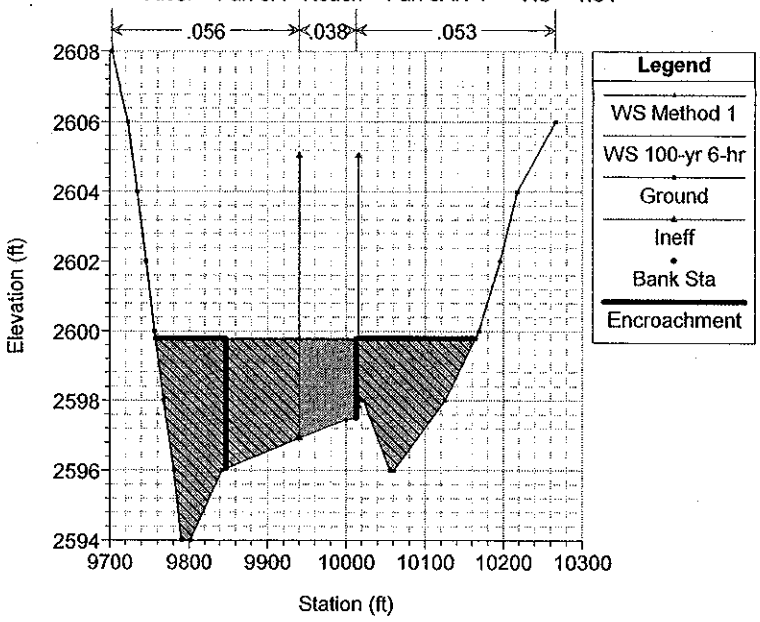

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.56
.056
.053
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.55 Culv
.056
.053
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

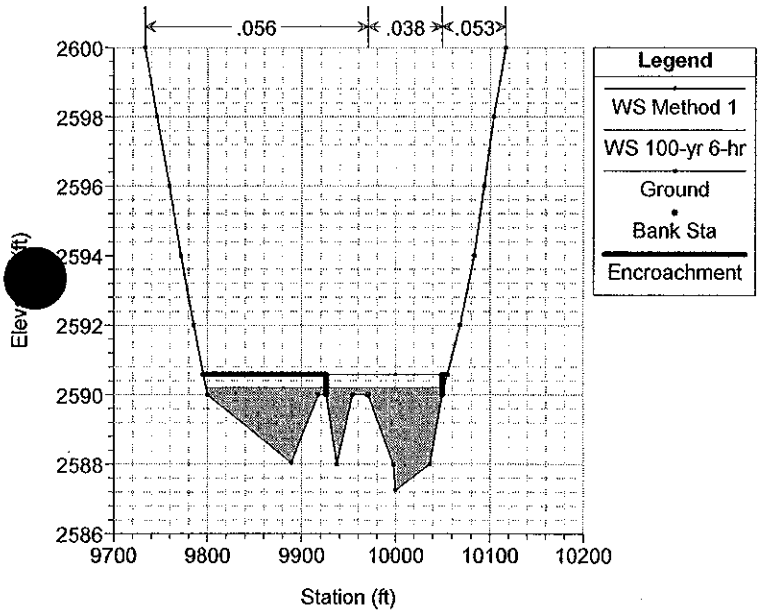
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.55 Culv



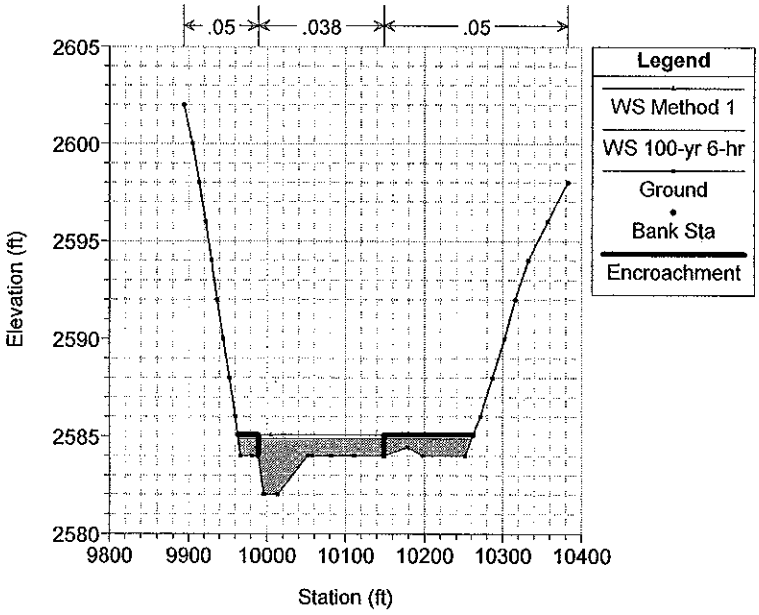
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.54



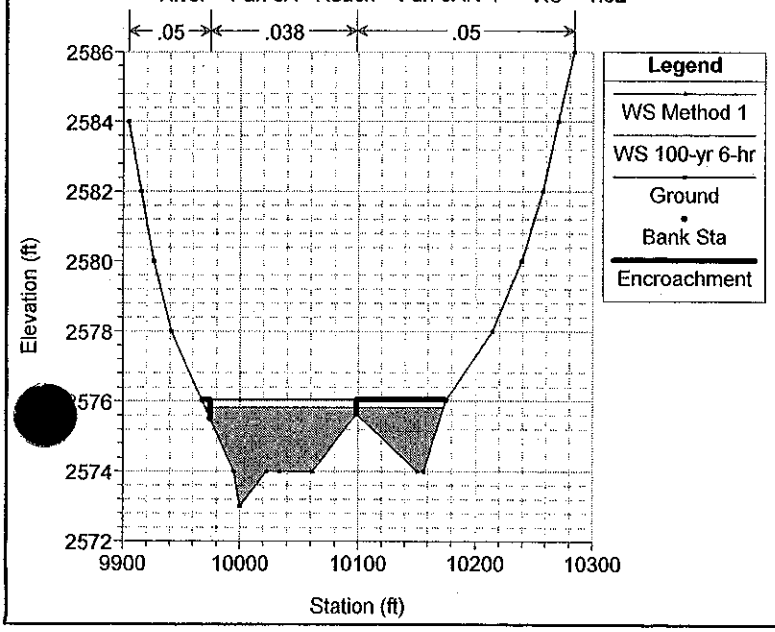
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.48



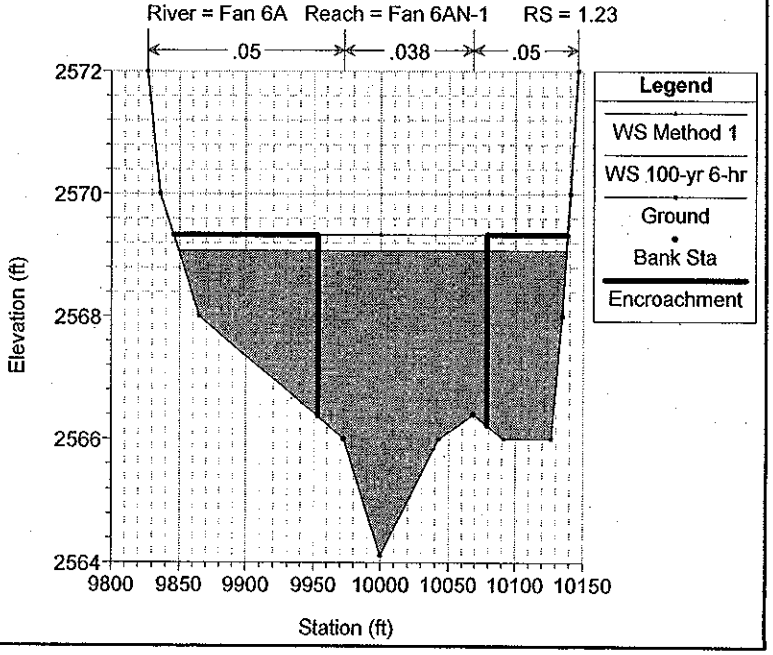
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.42

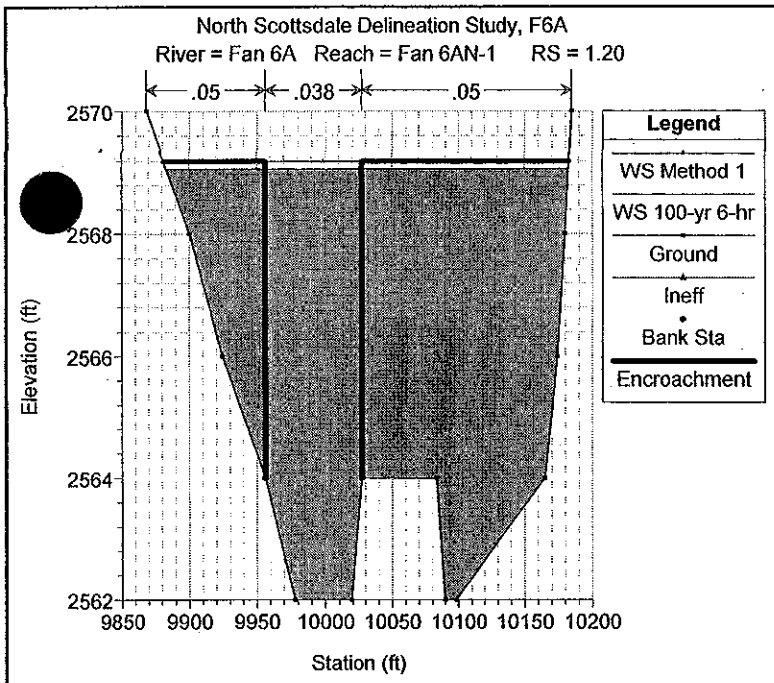


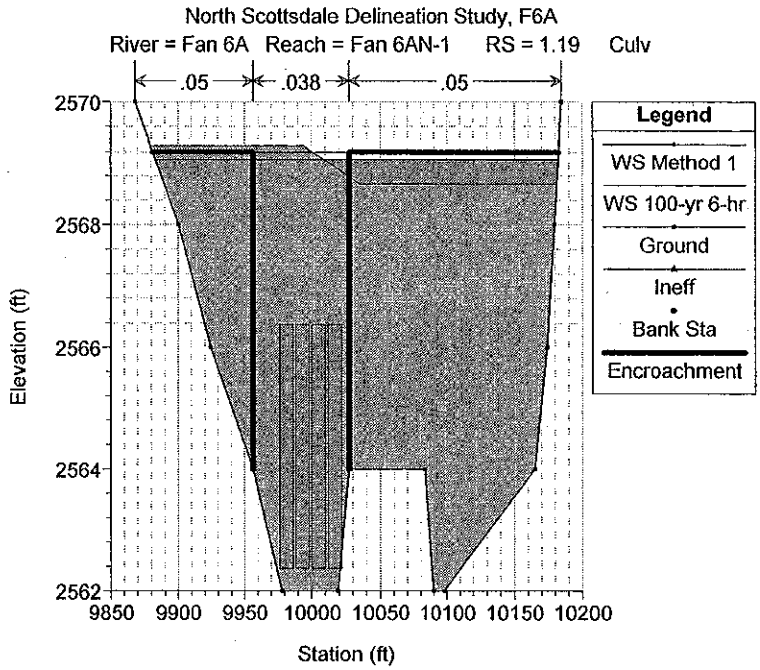
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.32

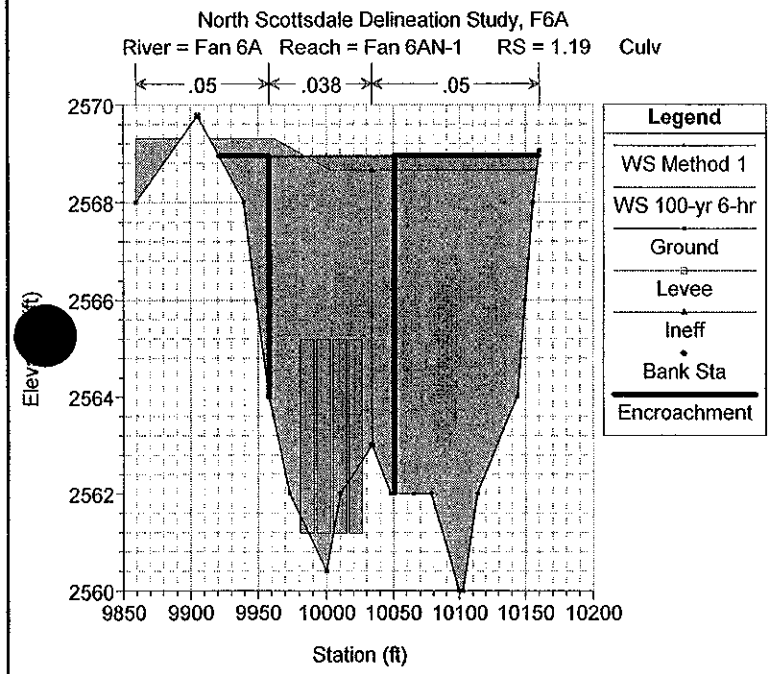


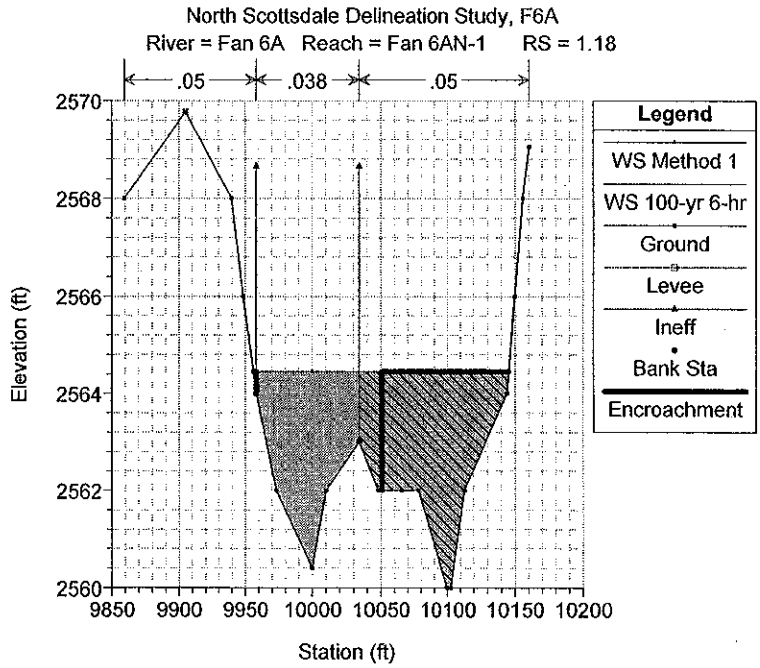
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.23

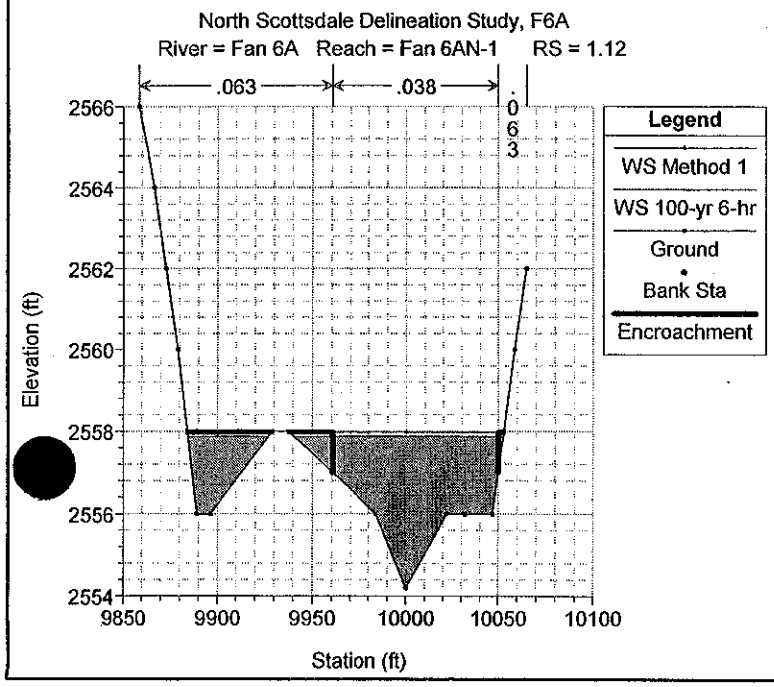



North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.20
.05
.038
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.19 Culv
.05
.038
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.19 Culv
.05
.038
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Ineff
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.18
.05
.038
.05
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.12
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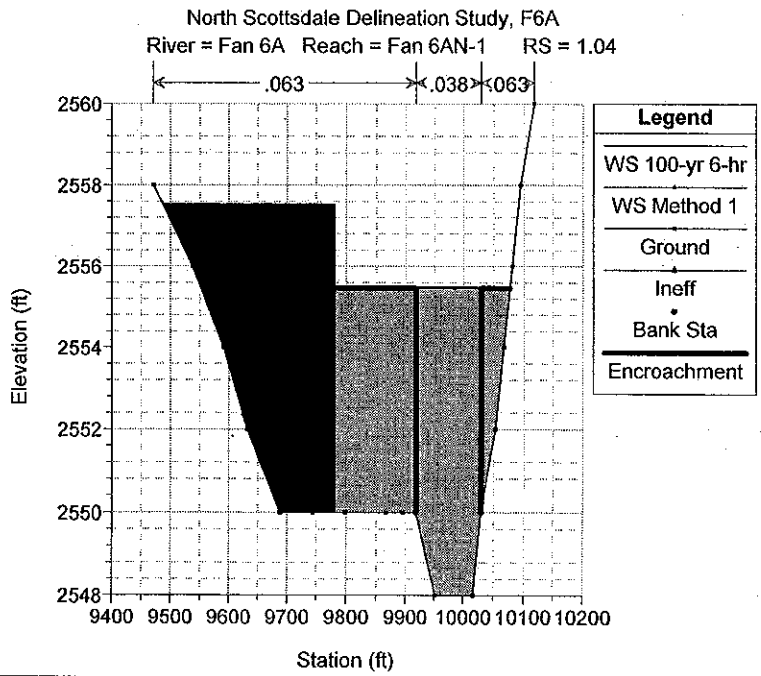
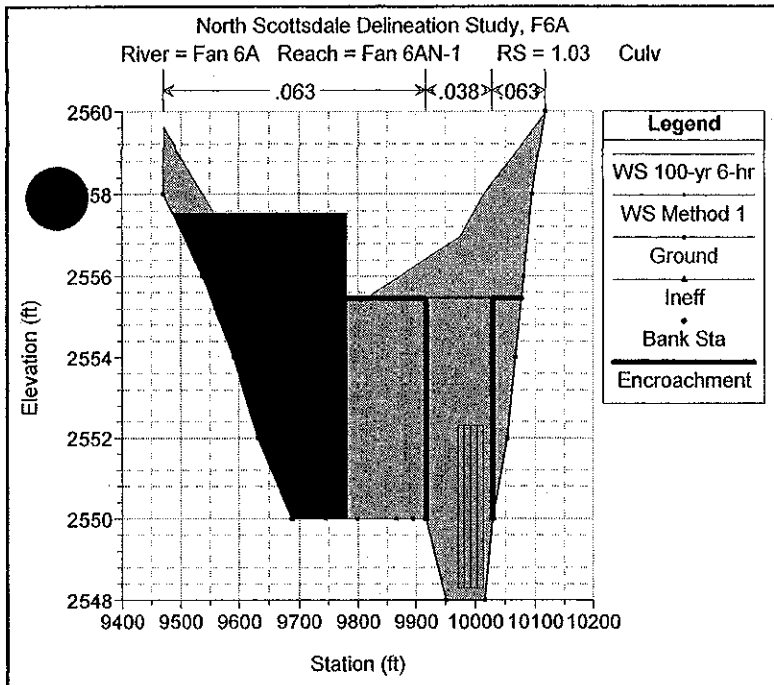
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.04
.063
.038
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.03 Culv
.063
.038
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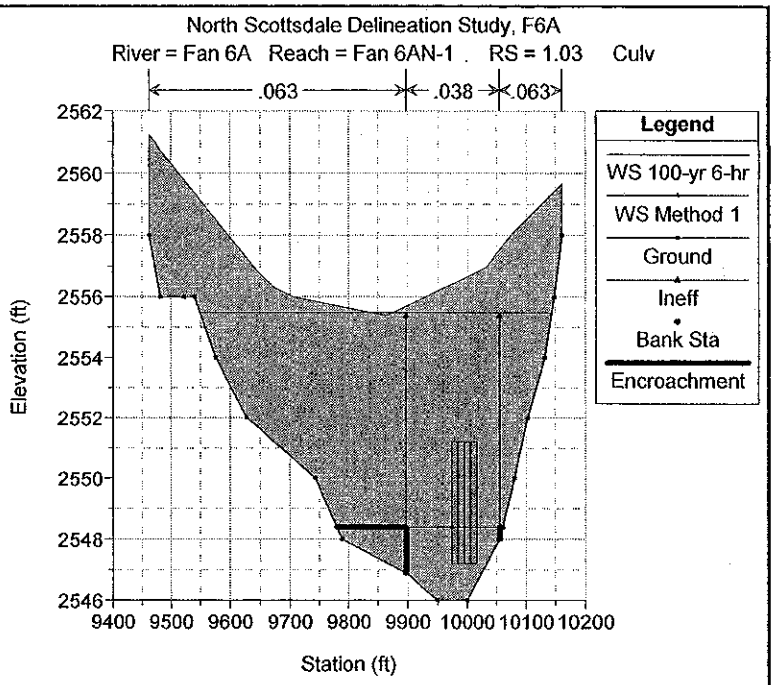
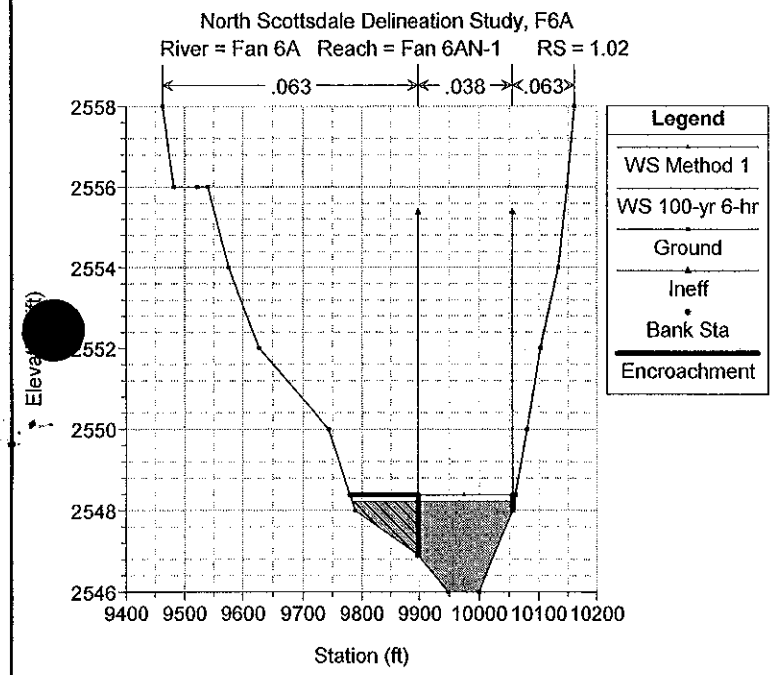
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.03 Culv
.063
.038
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 1.02
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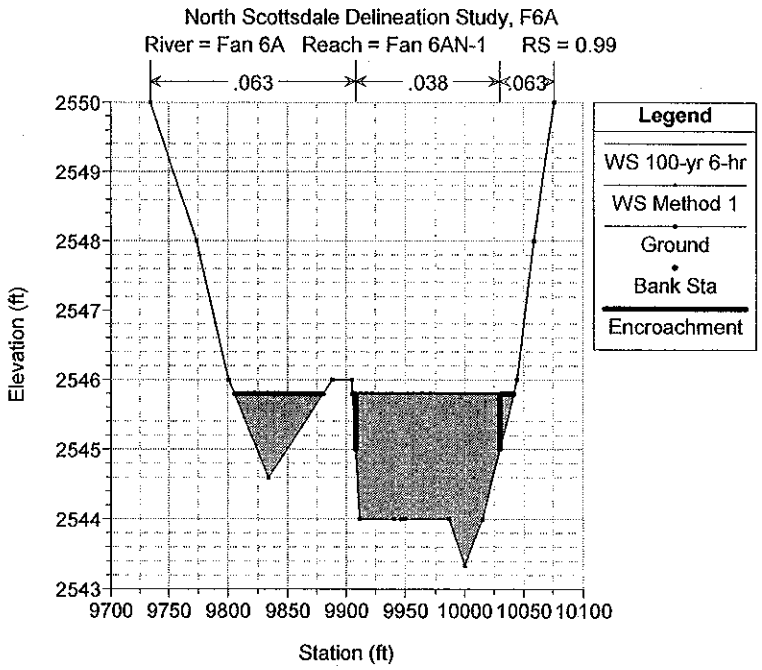
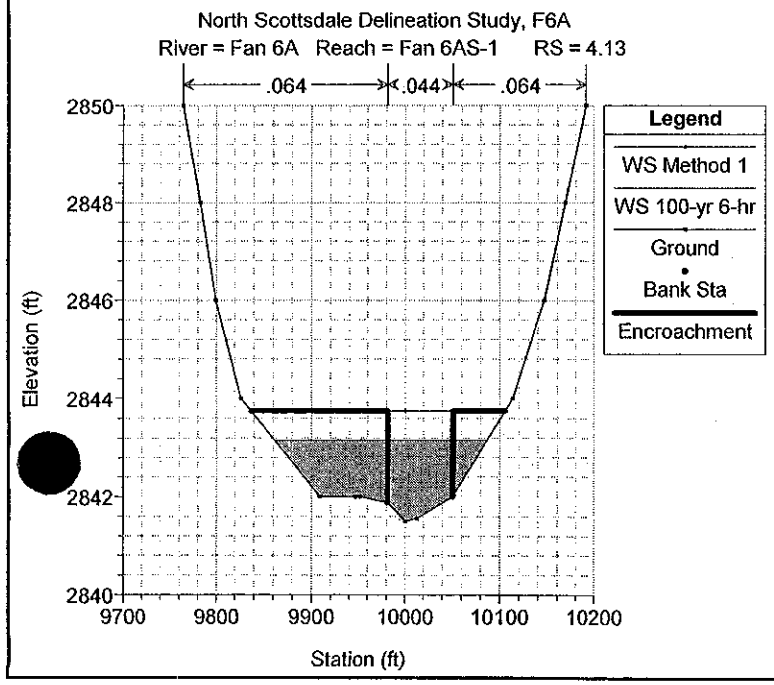
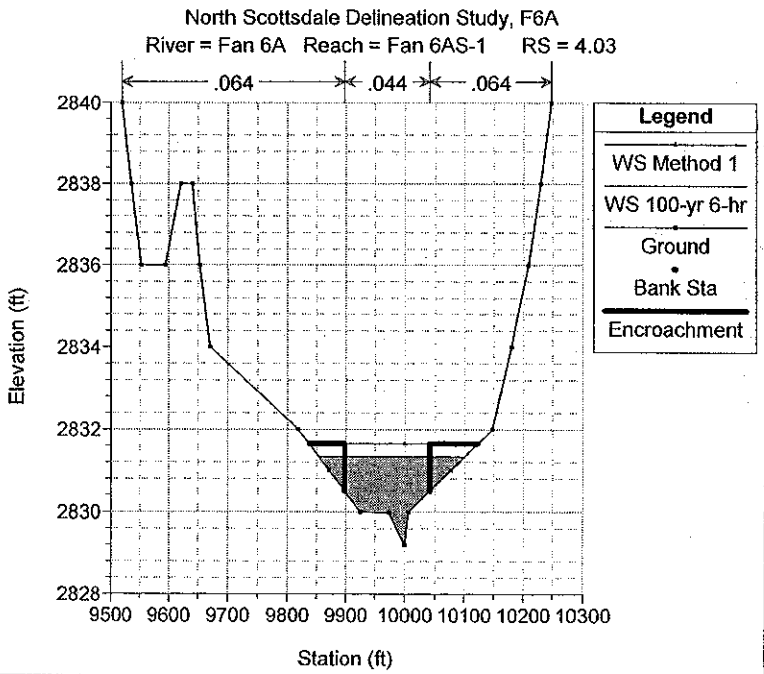
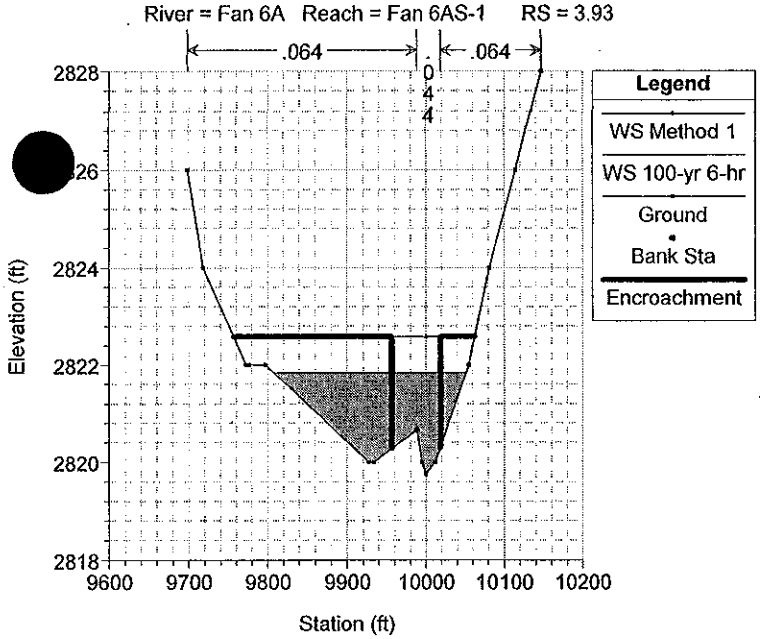
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AN-1 RS = 0.99
.063
.038
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

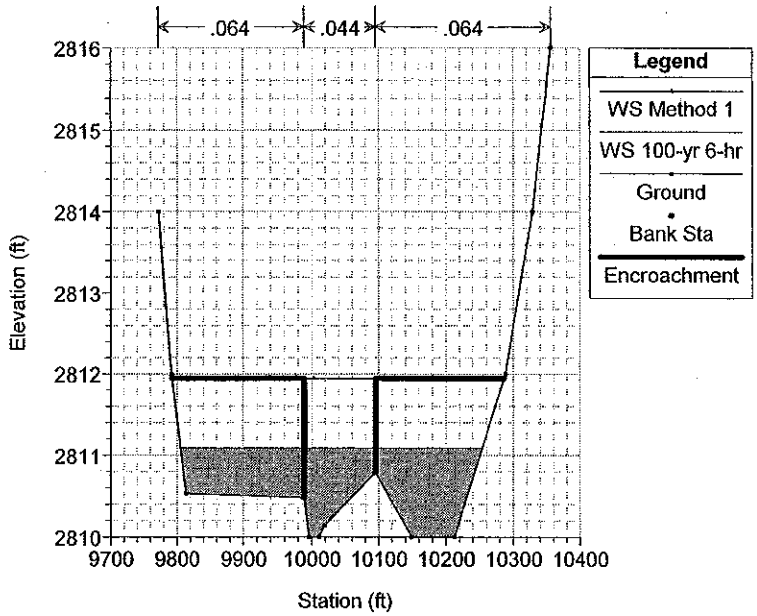

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 4.13
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 4.03
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

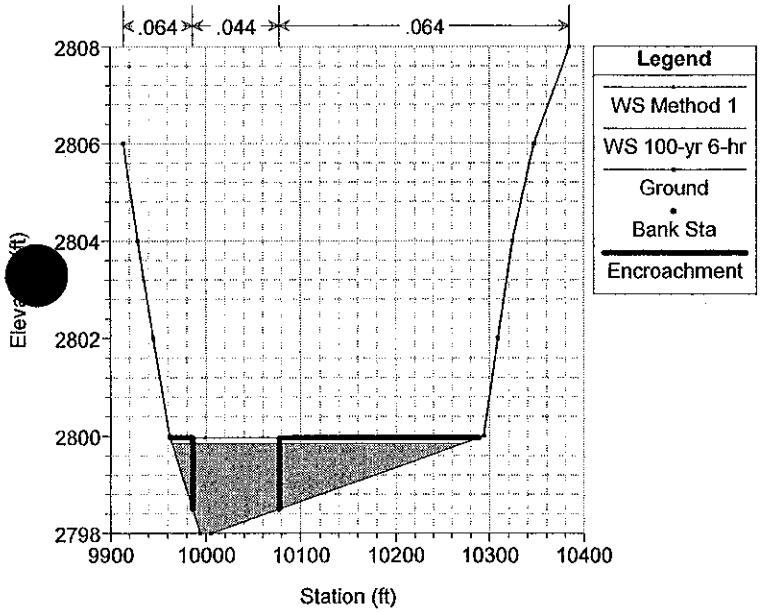
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.93



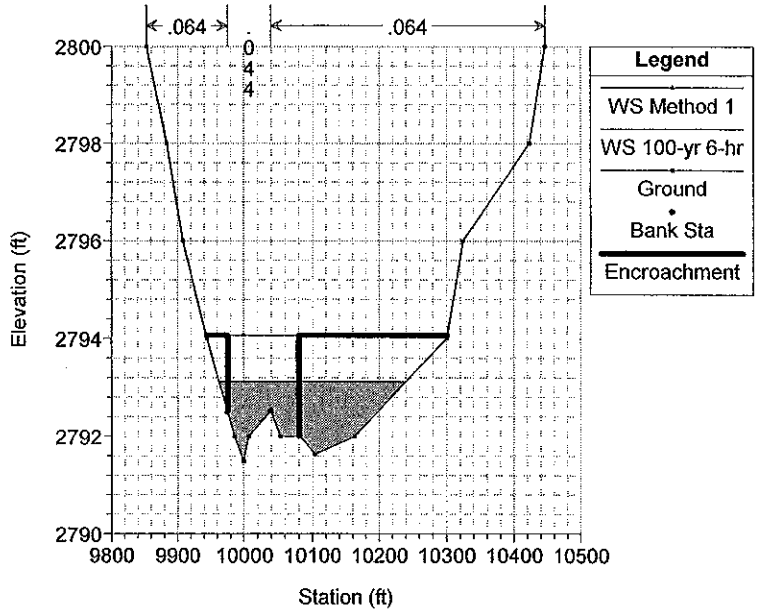
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.85



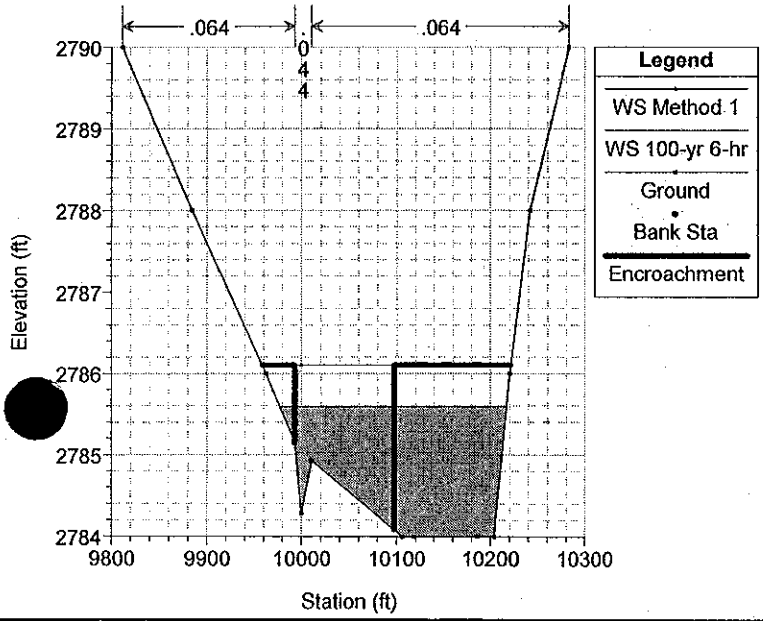
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.75



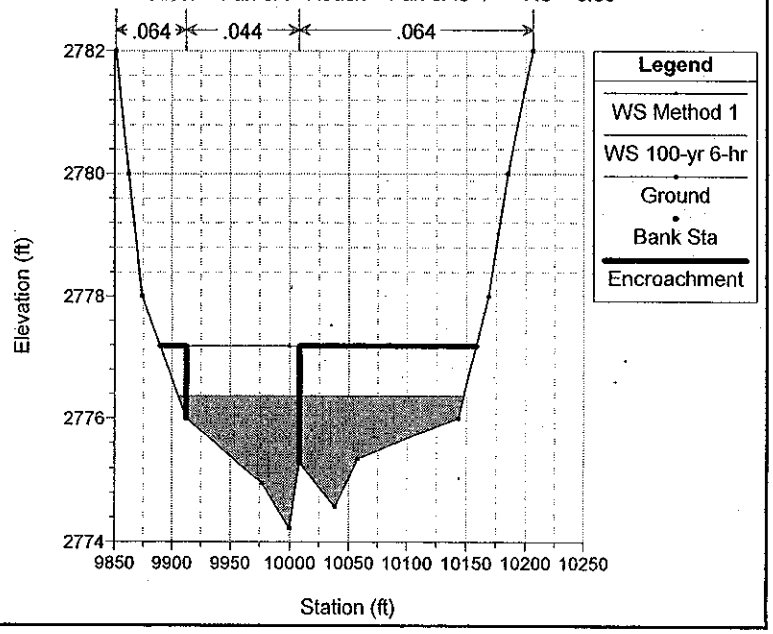
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.68

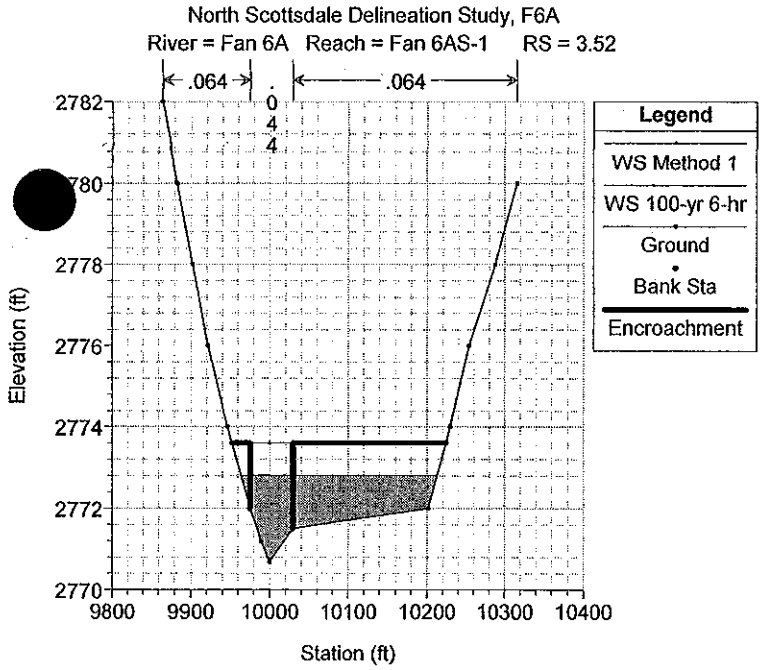


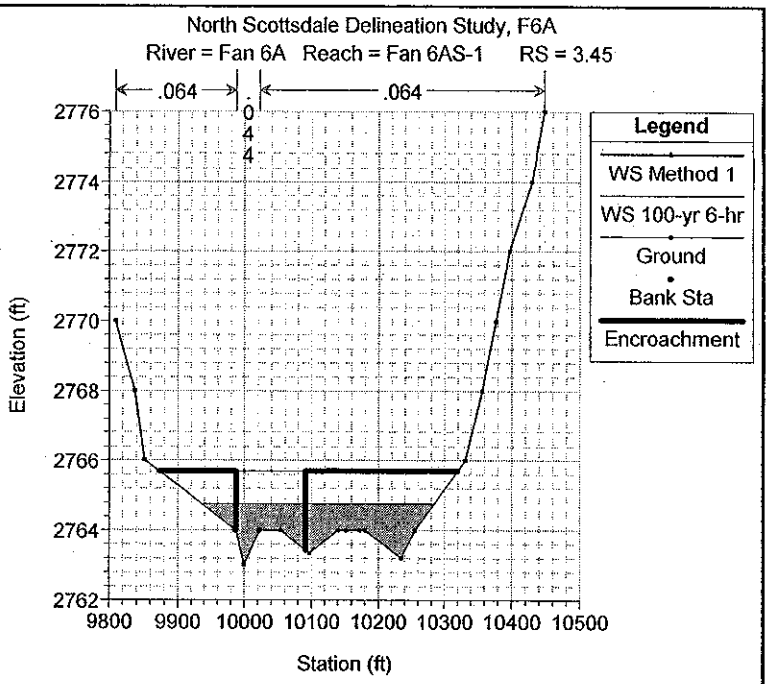
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.62

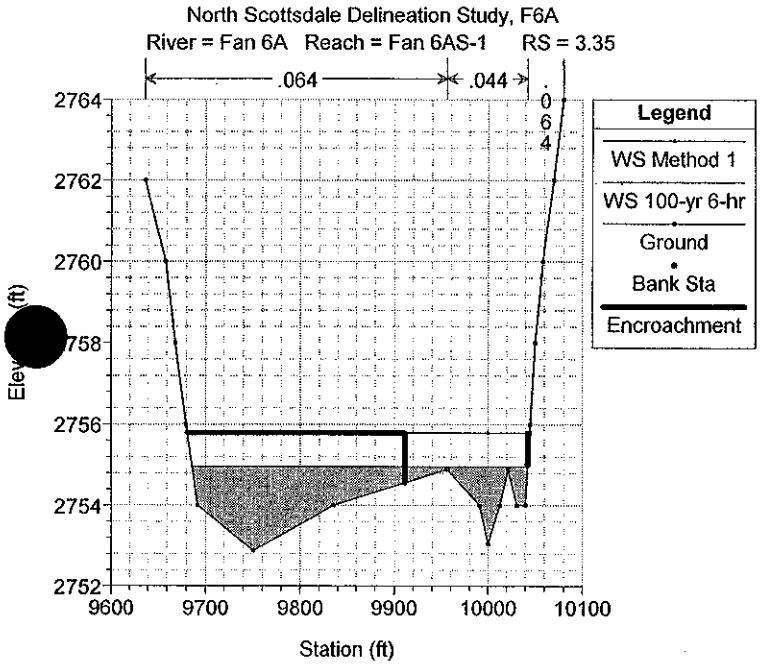


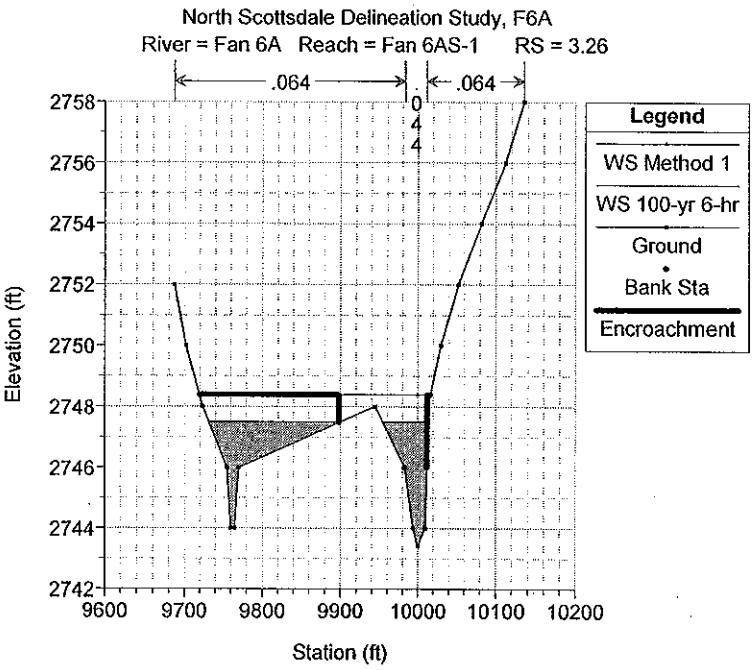
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.55




North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.52
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.45
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.35
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.26
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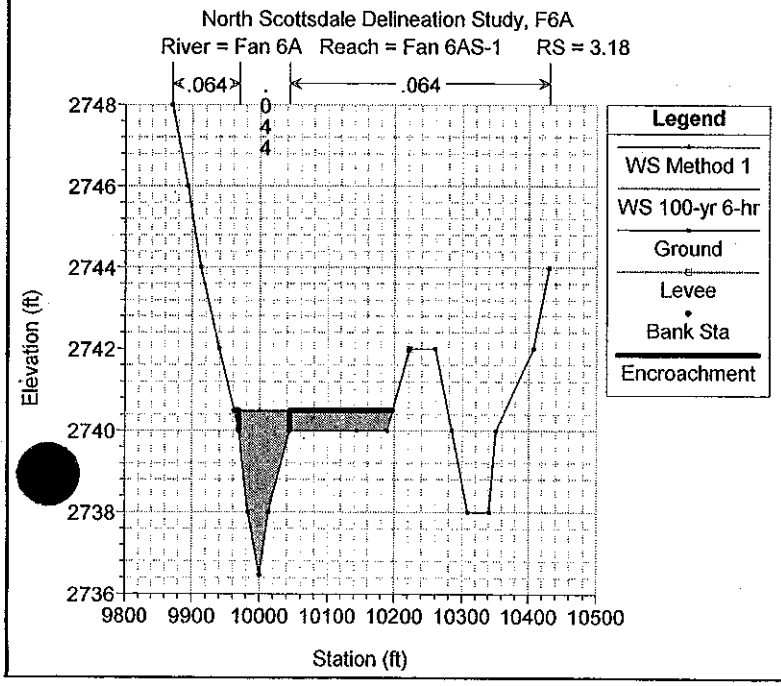
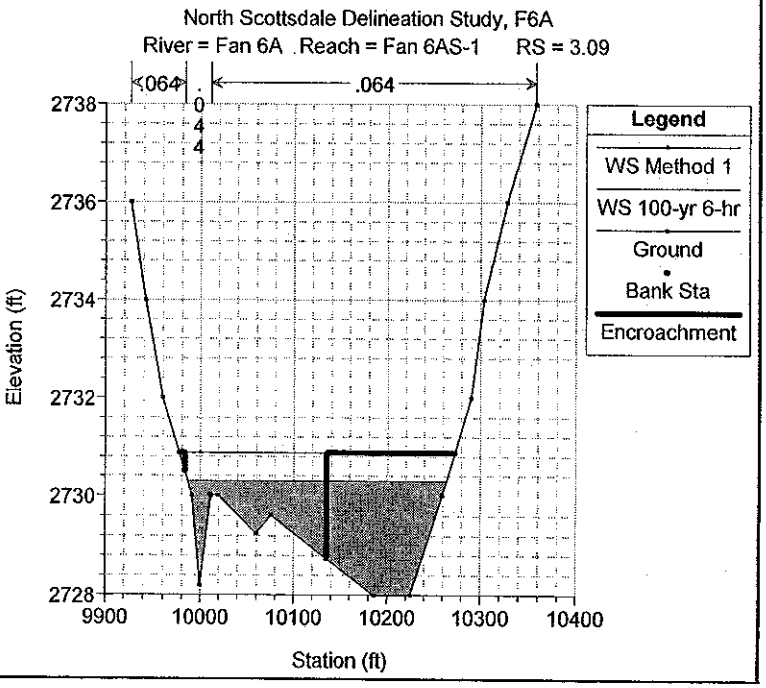
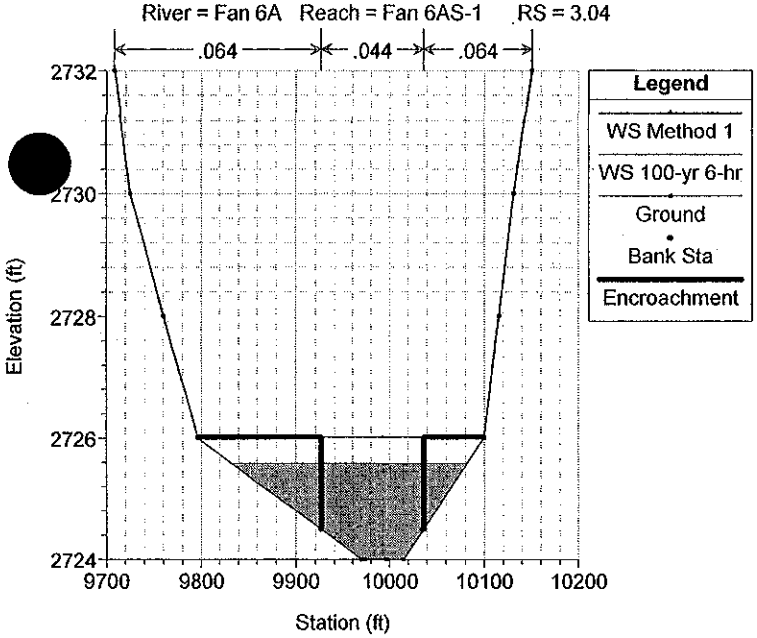
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

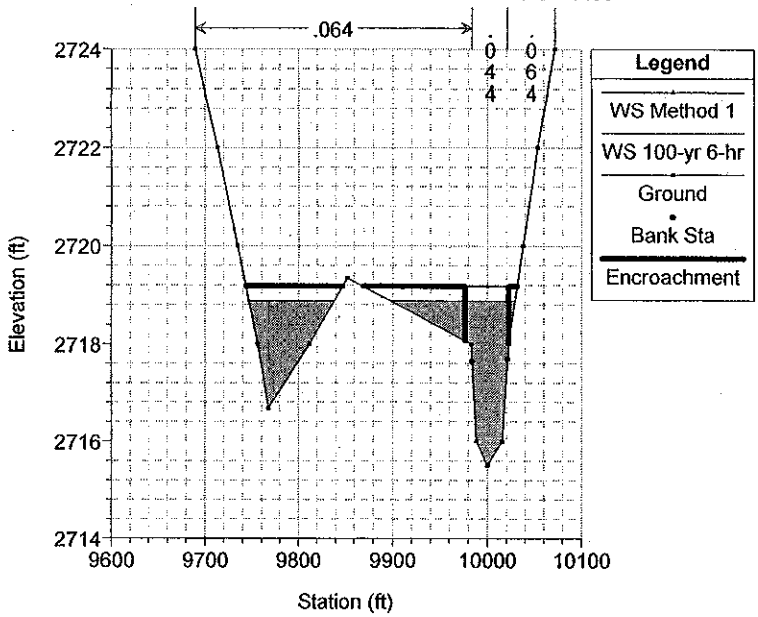

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.18
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.09
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

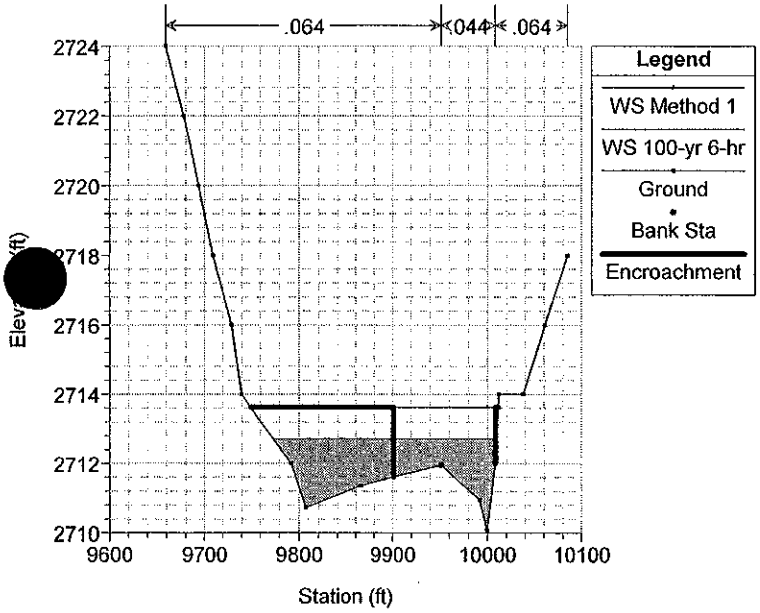
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 3.04



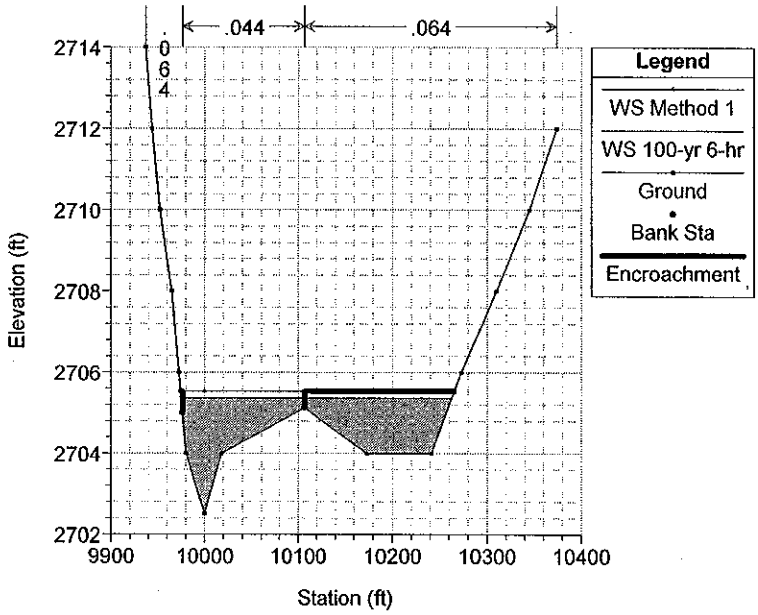
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.96



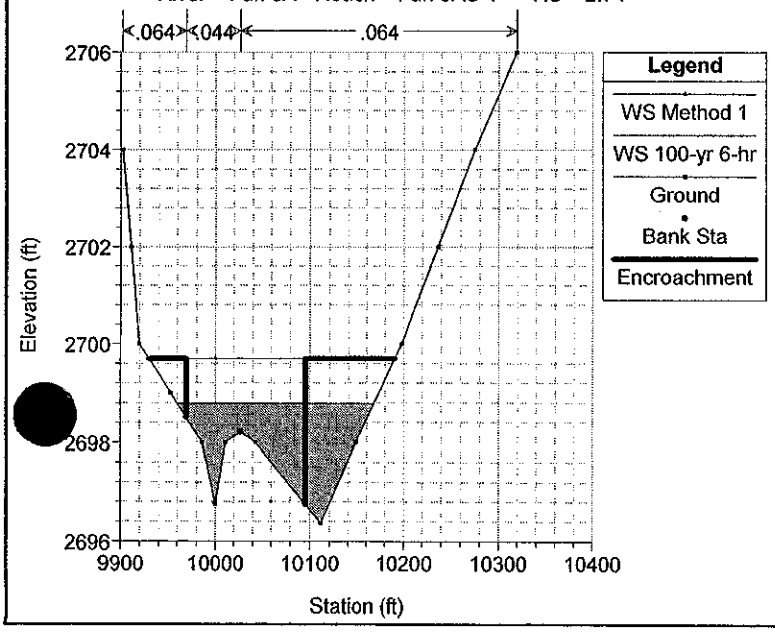
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.90



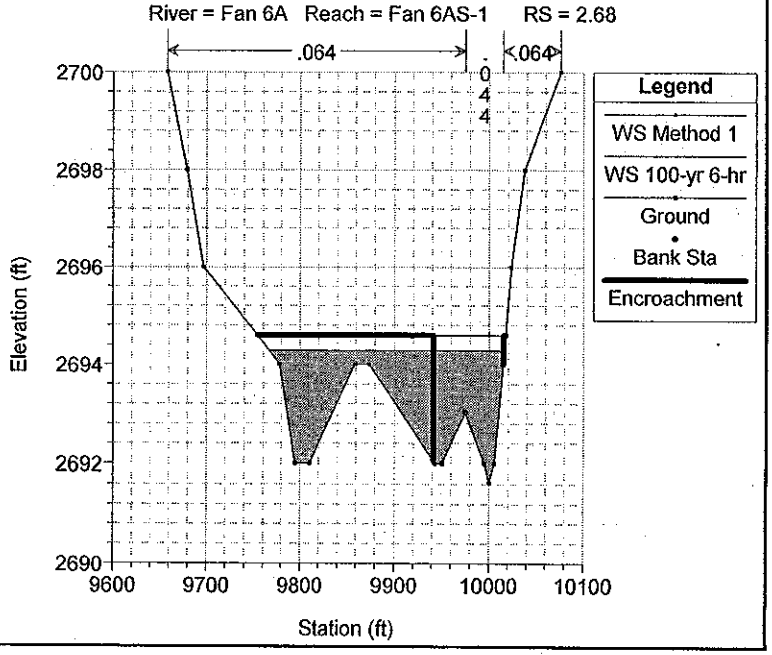
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.8

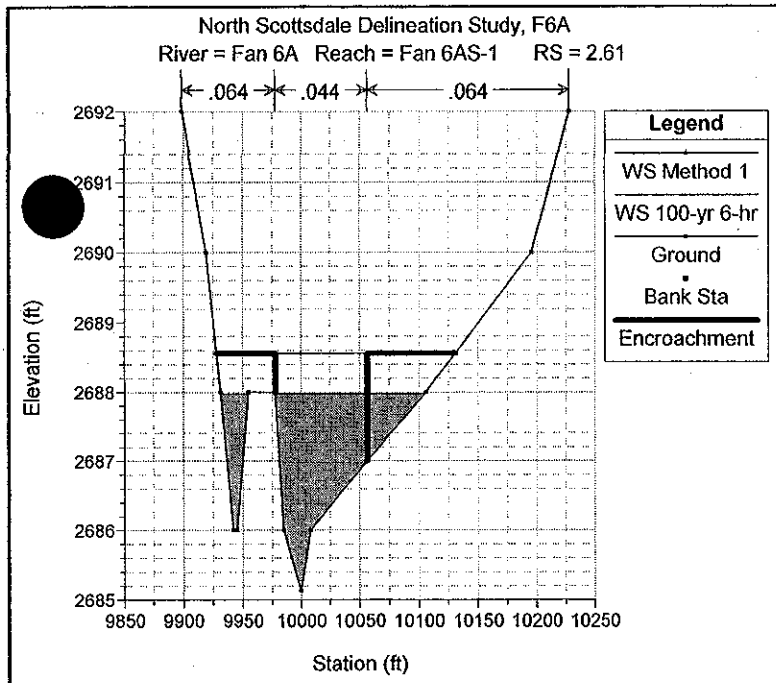


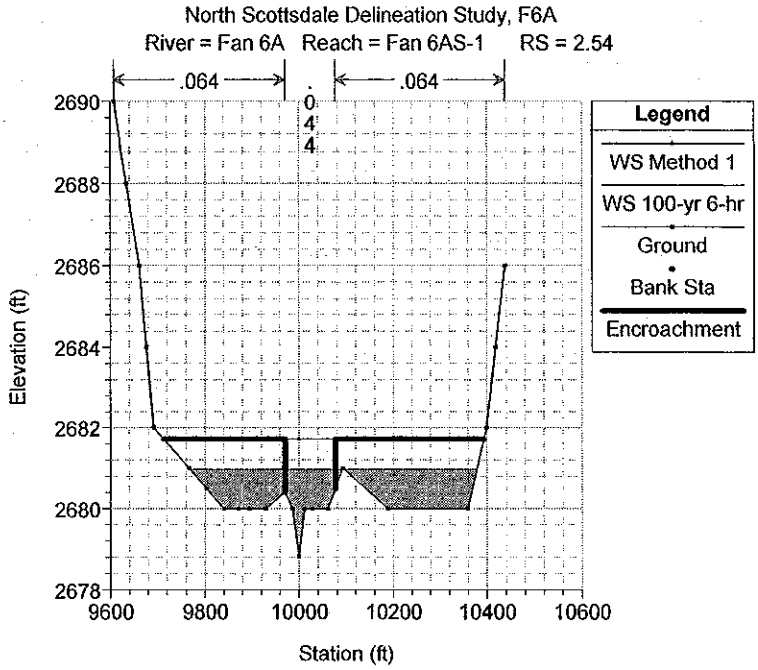
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.74



North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.68




North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.61
.064
.044
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.54
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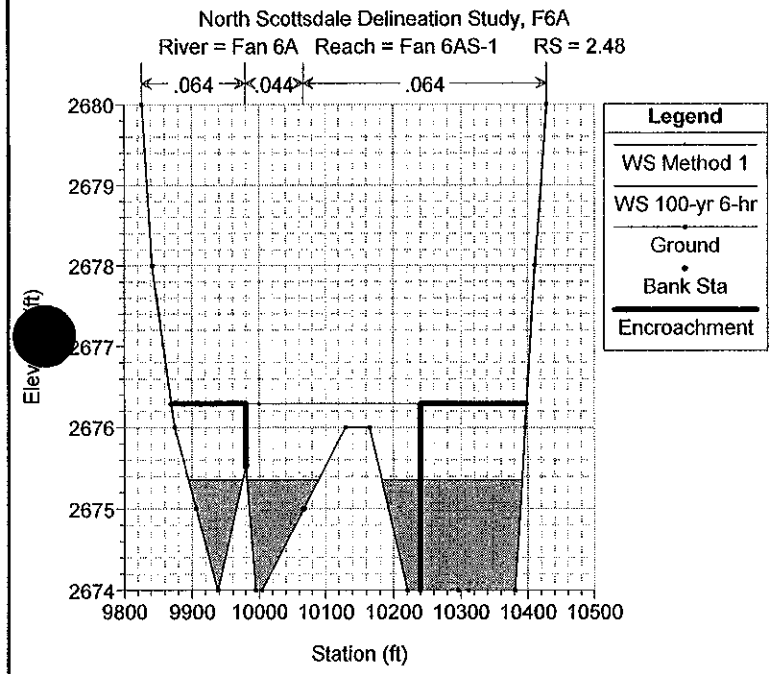
.044
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.48
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.044
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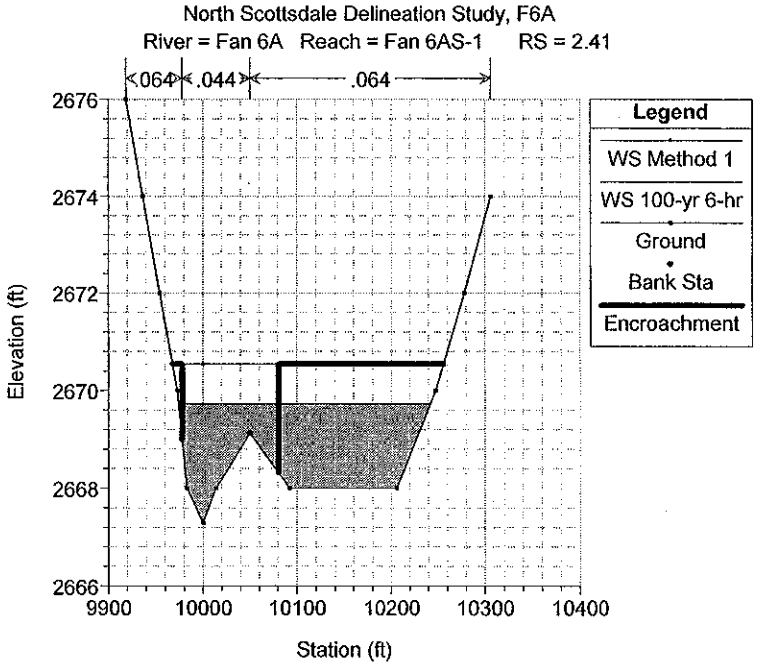
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.41
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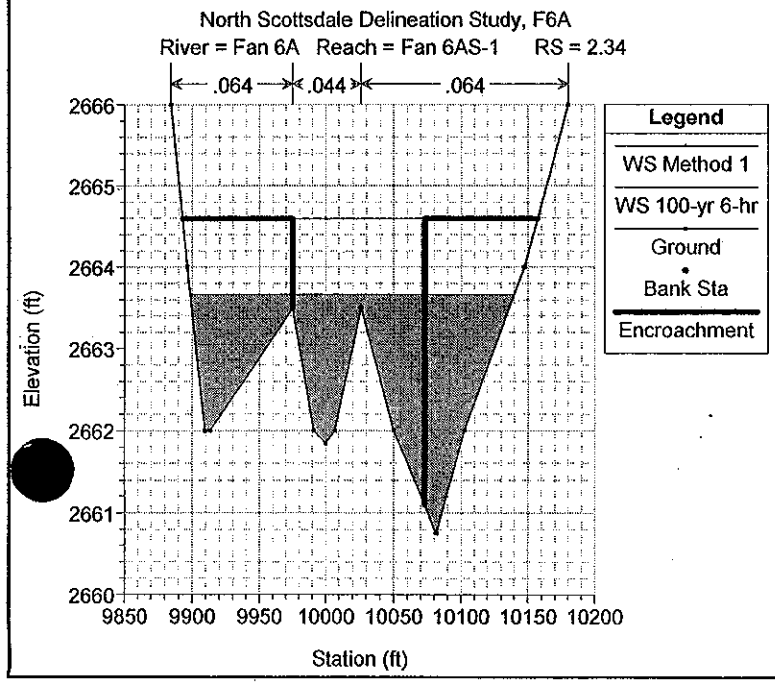
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.34
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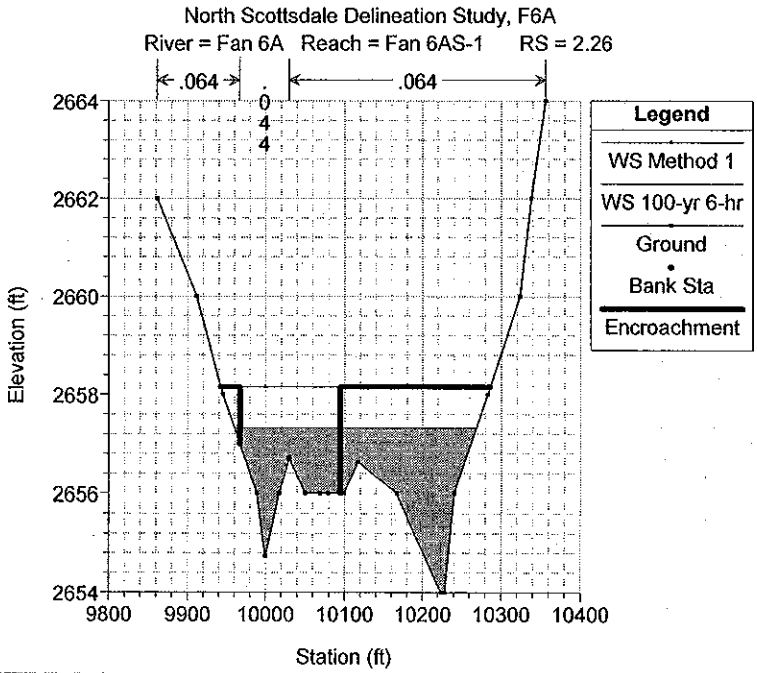
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.26
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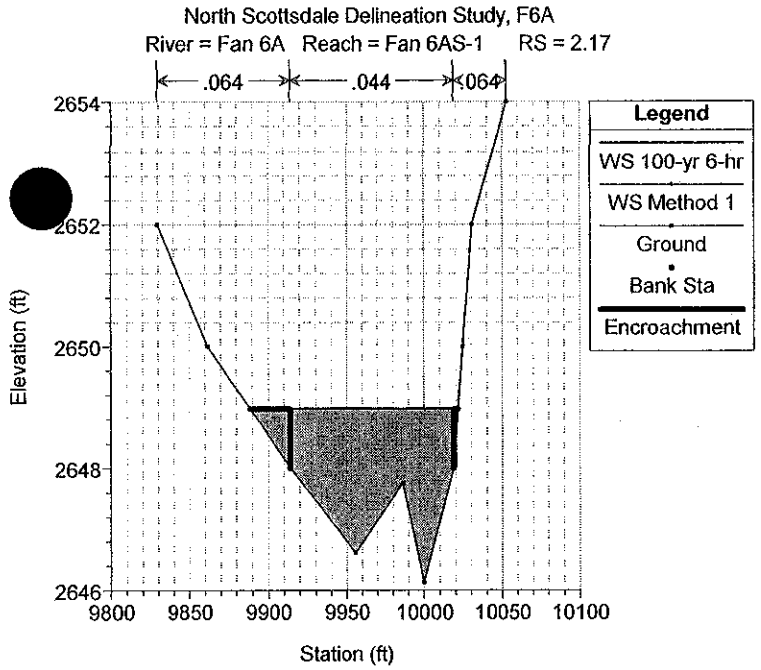
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.17
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.044
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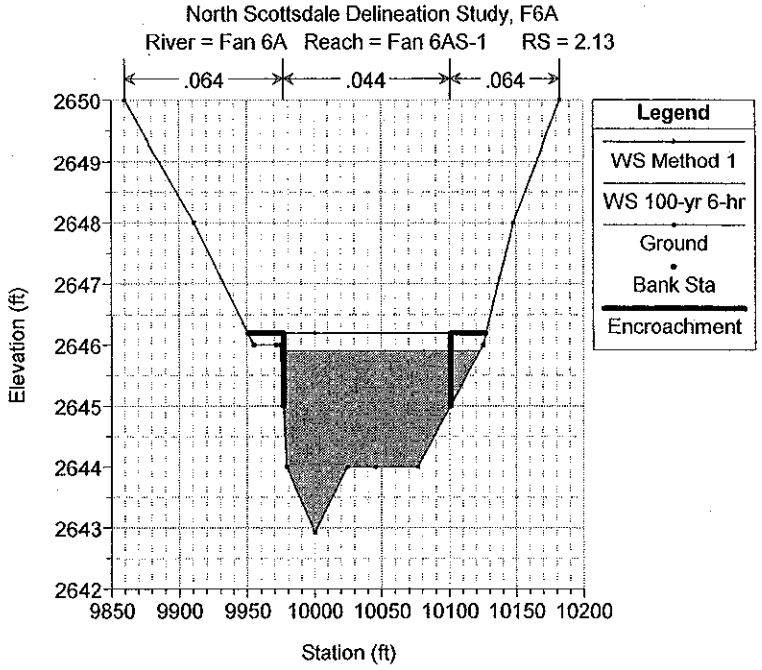
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.13
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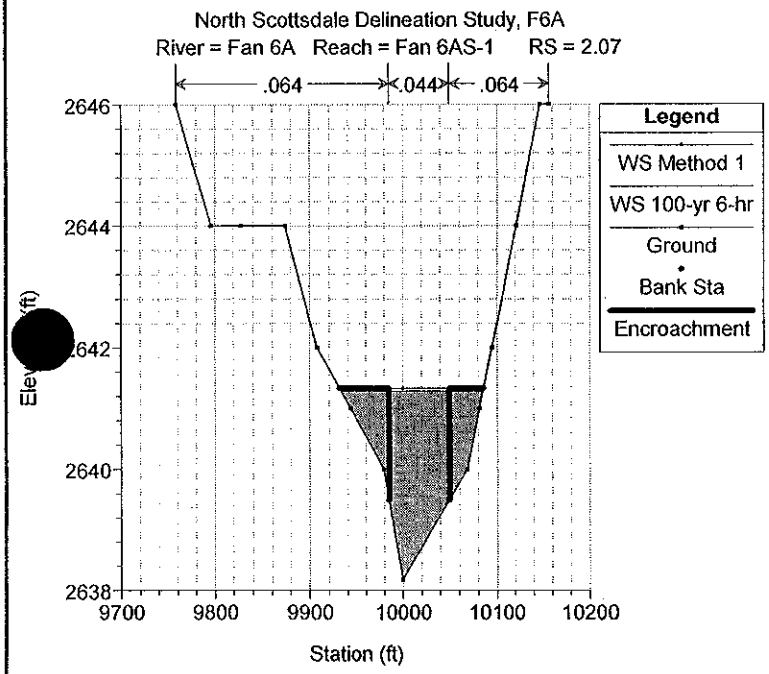
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.07
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.044
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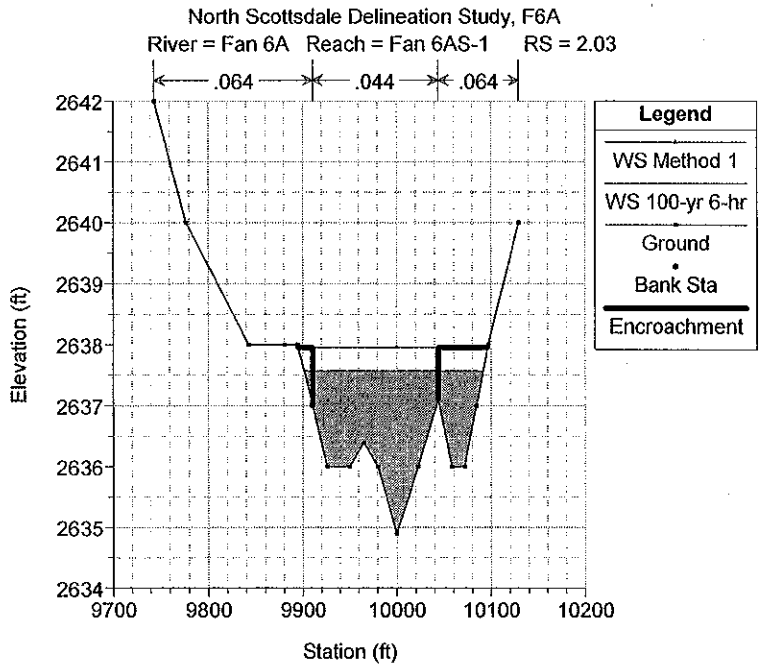
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 2.03
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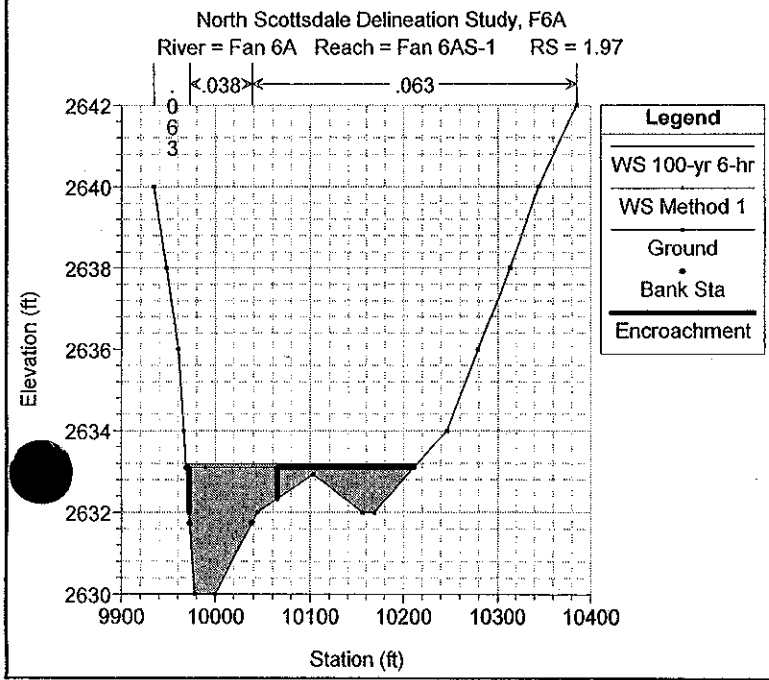
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.97
.038
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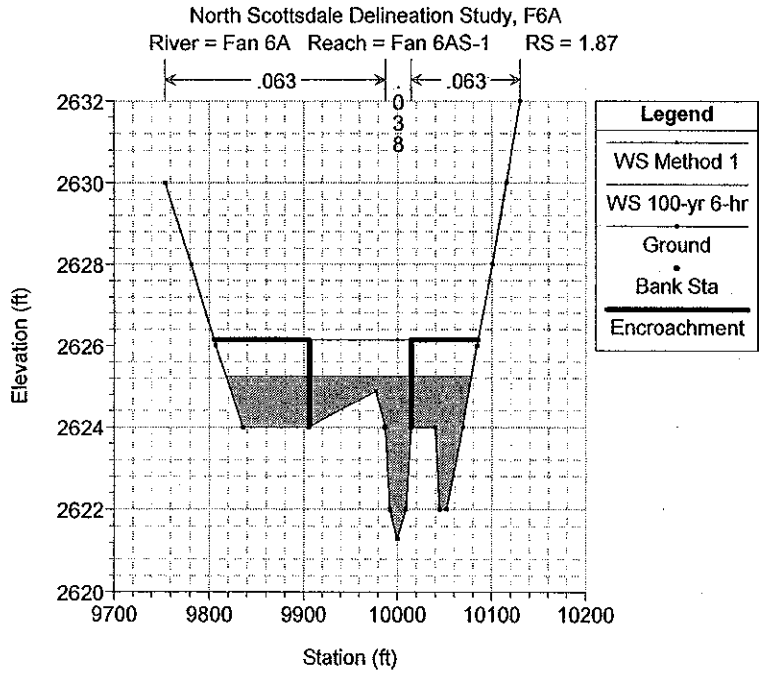
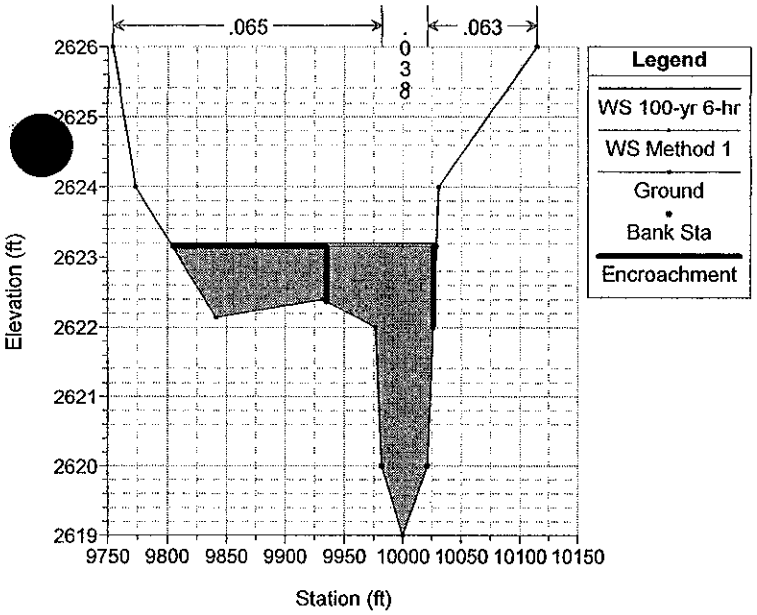
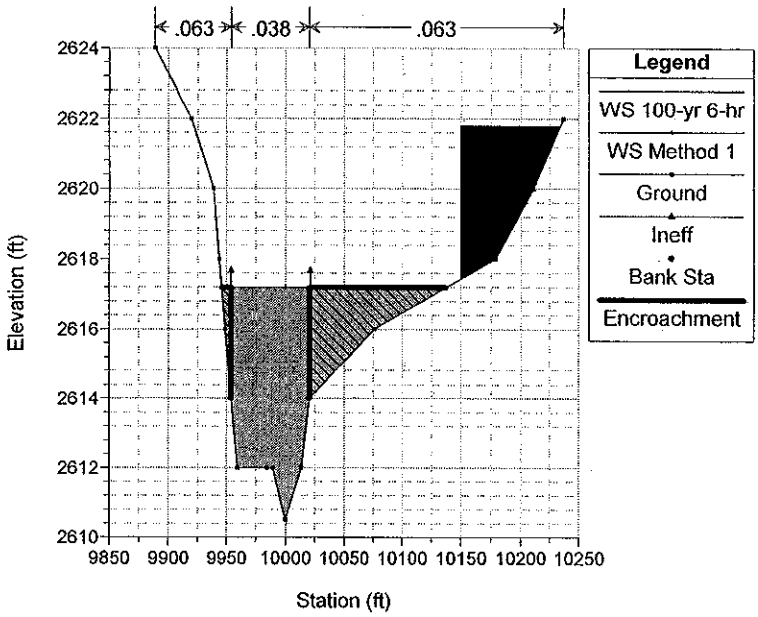
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.87
.063
.063
.038
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

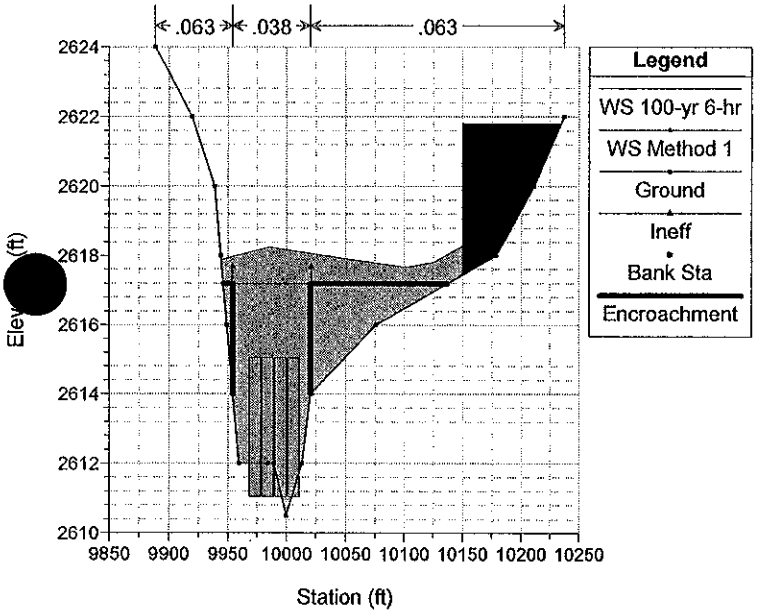
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.85



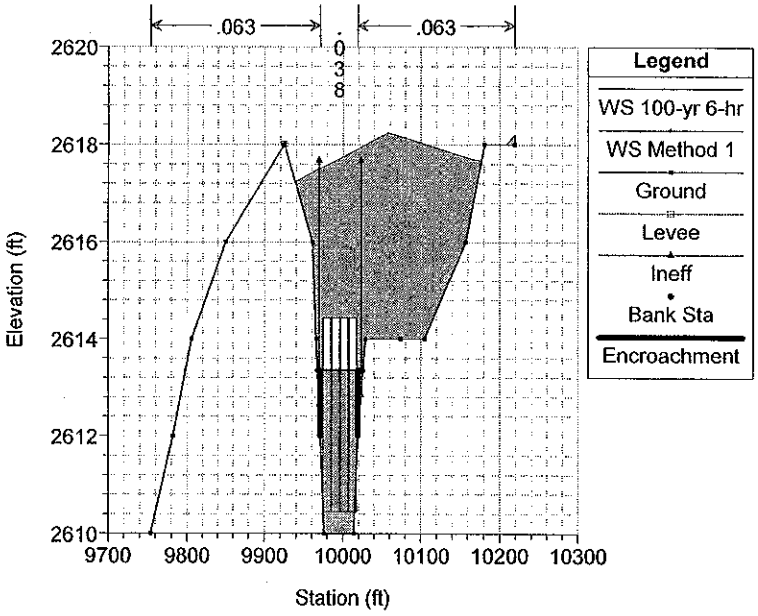
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.78



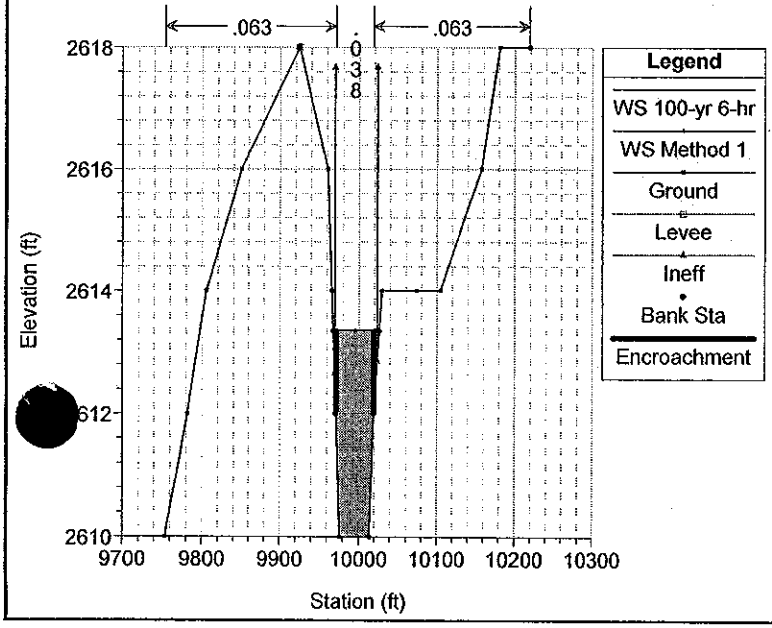
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.77 Culv



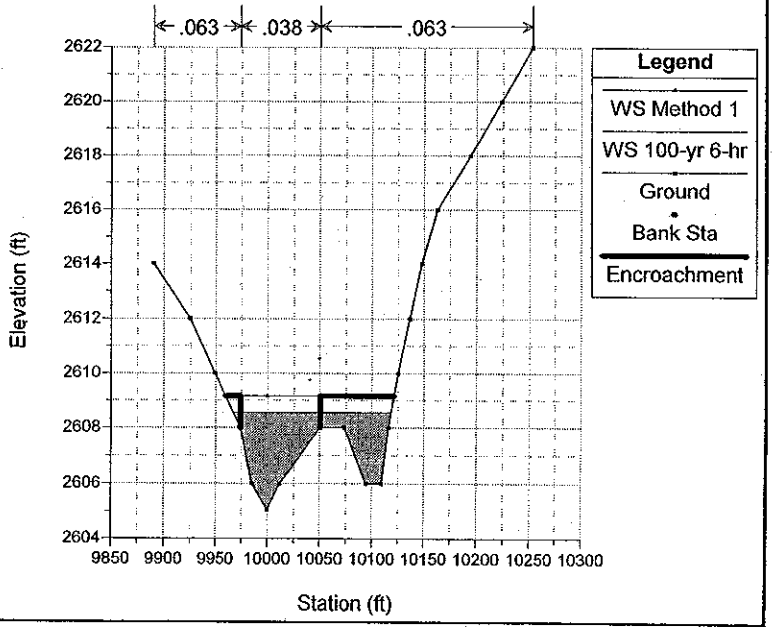
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.77 Culv

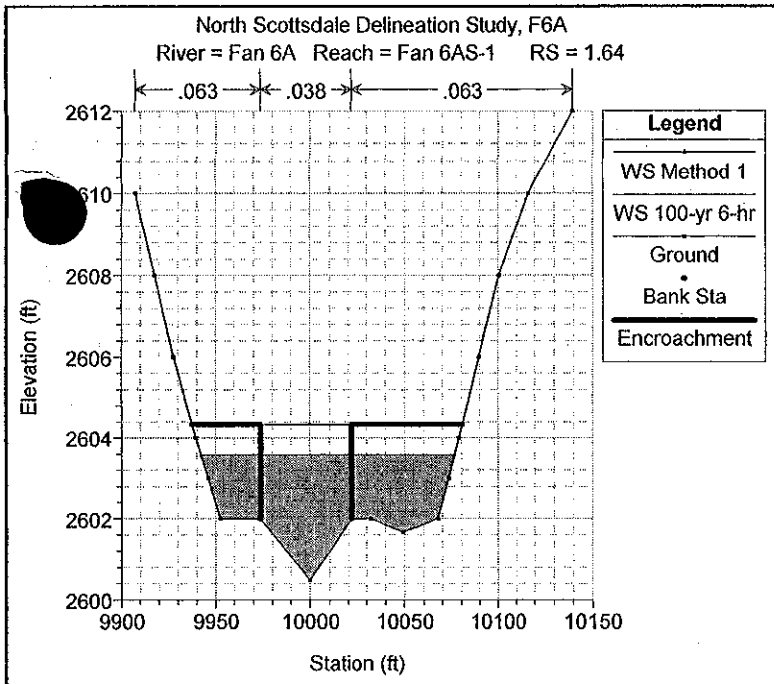


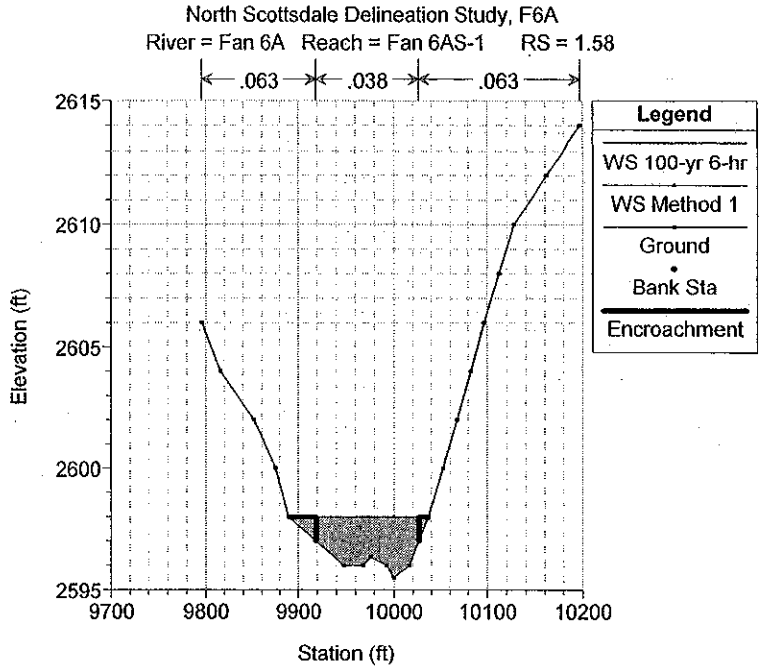
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.76

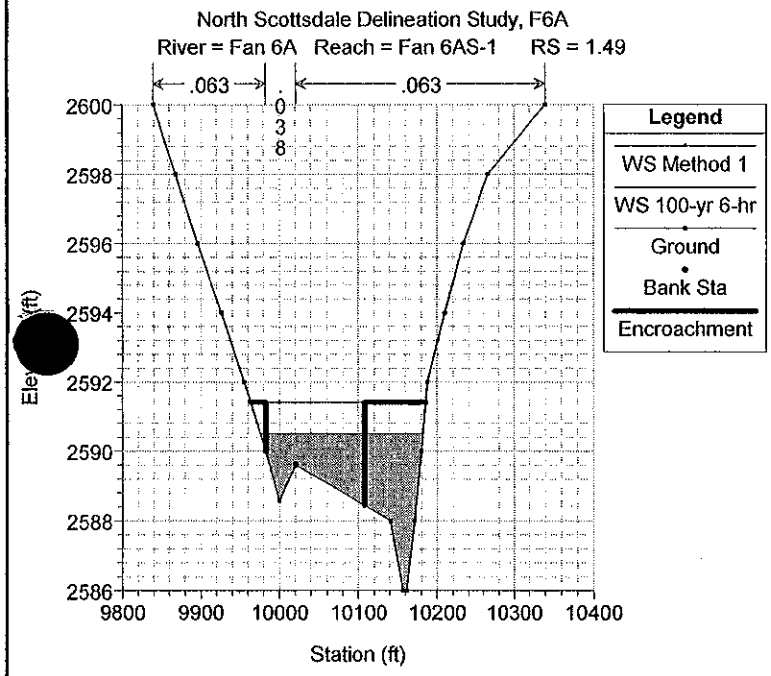


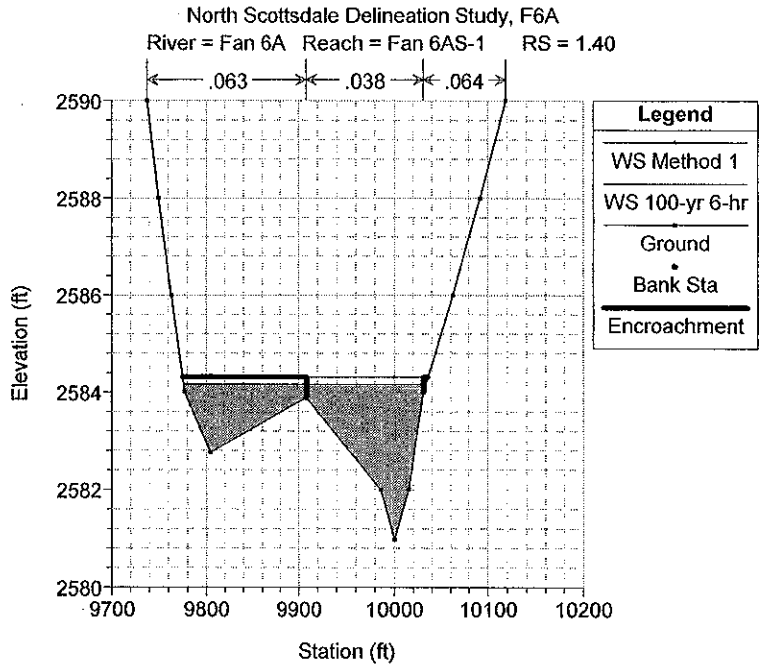
North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.70

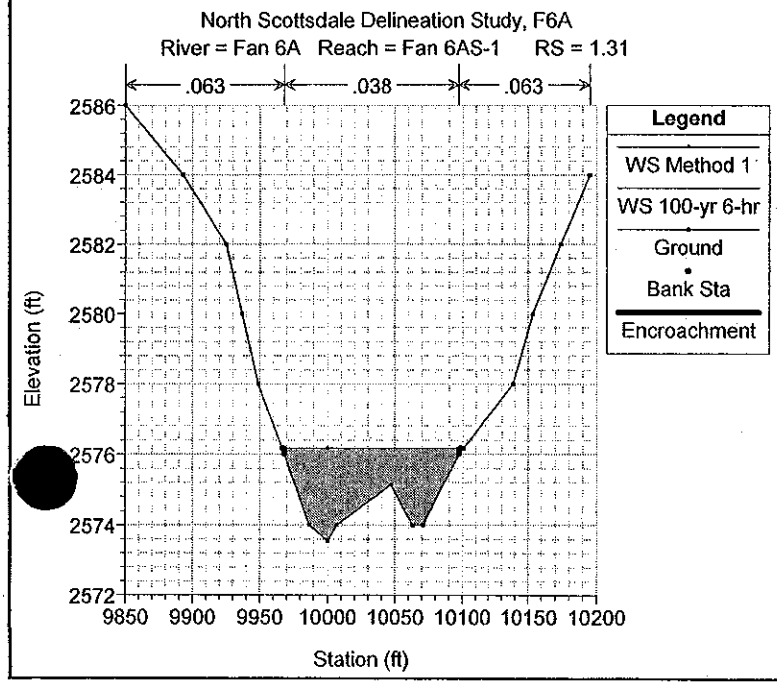


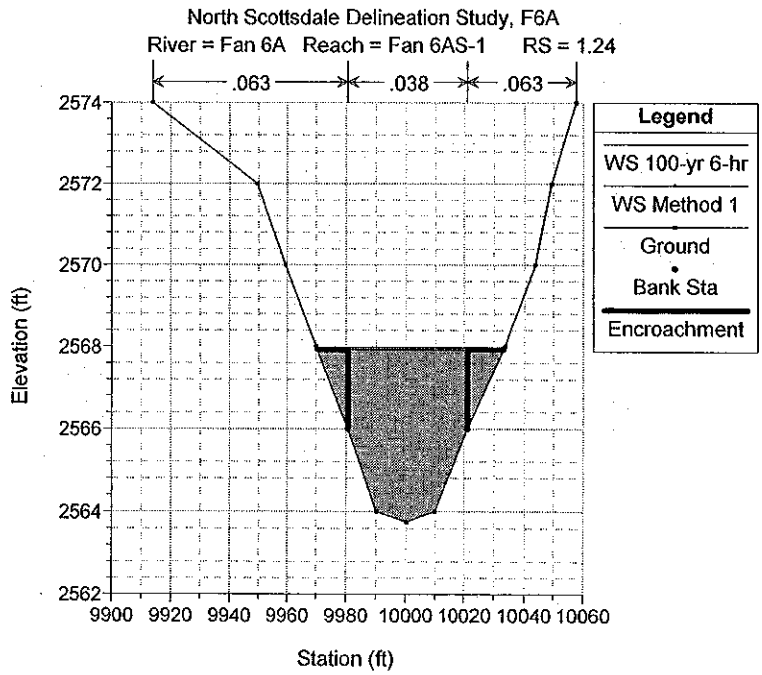

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.64
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

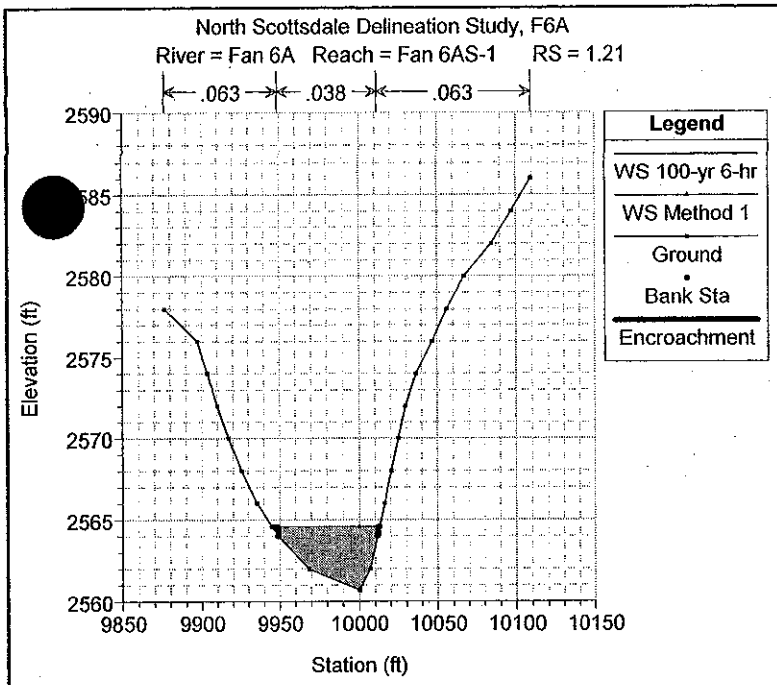

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.58
.063
.038
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.49
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.40
.063
.038
.064
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.31
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.24
.063
.038
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.21
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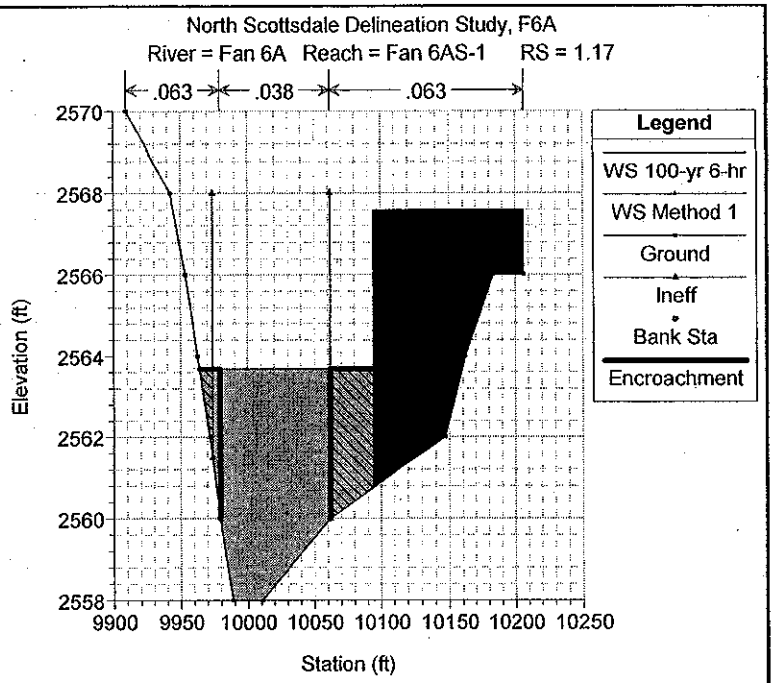
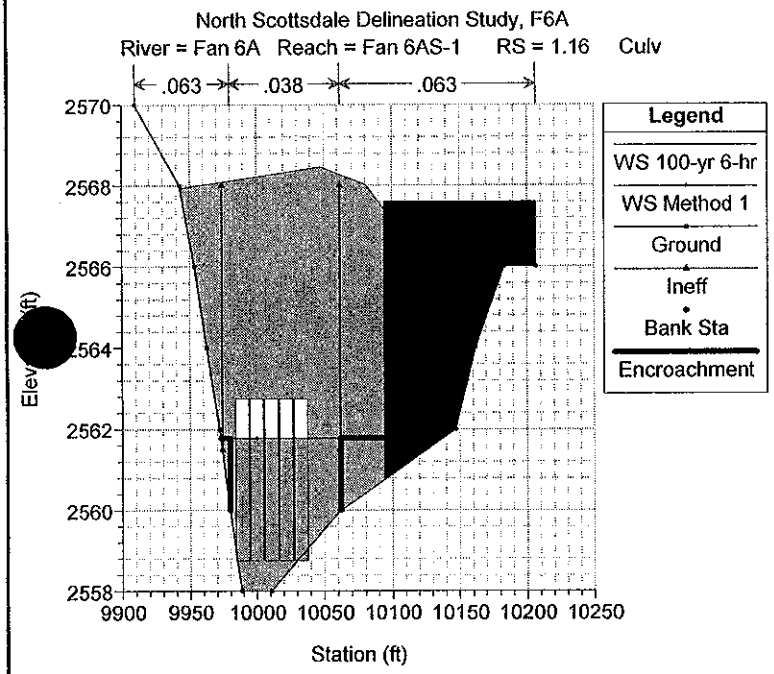
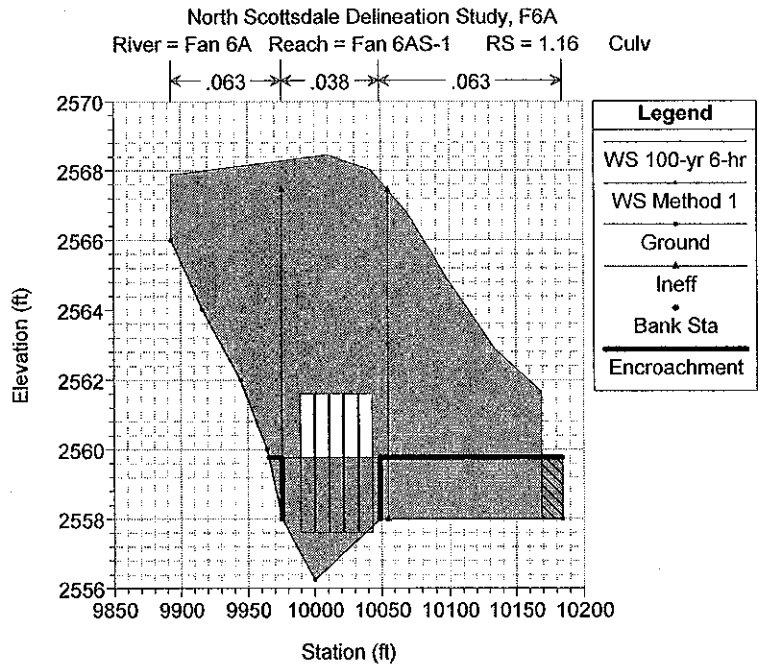
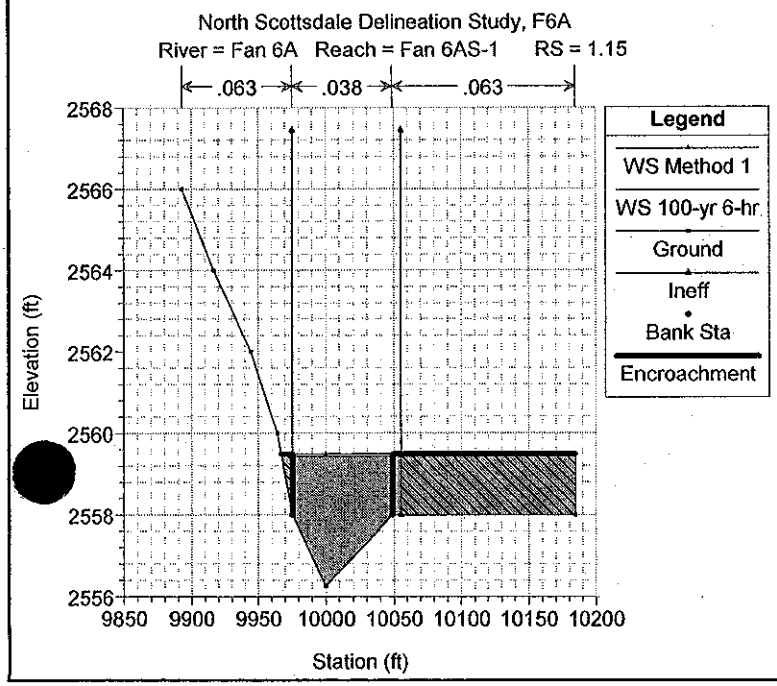
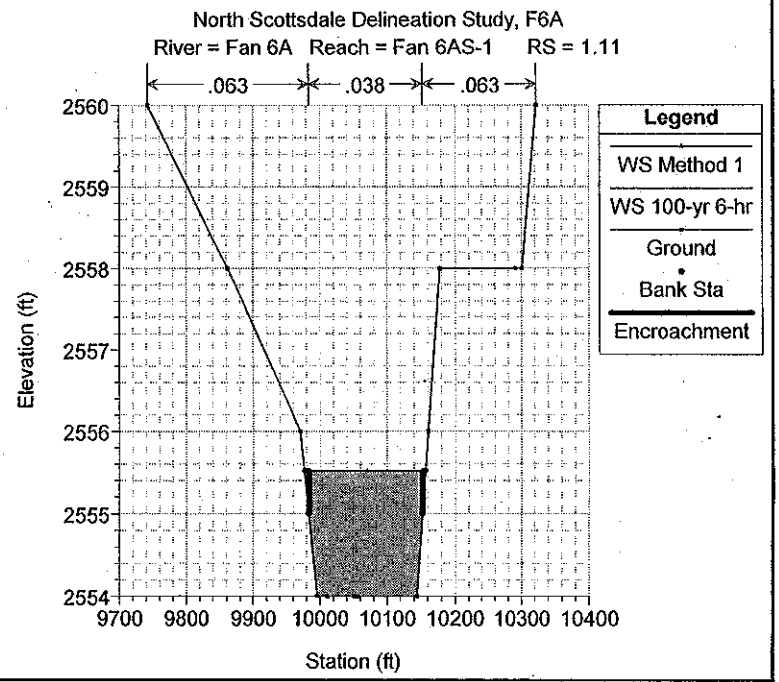
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

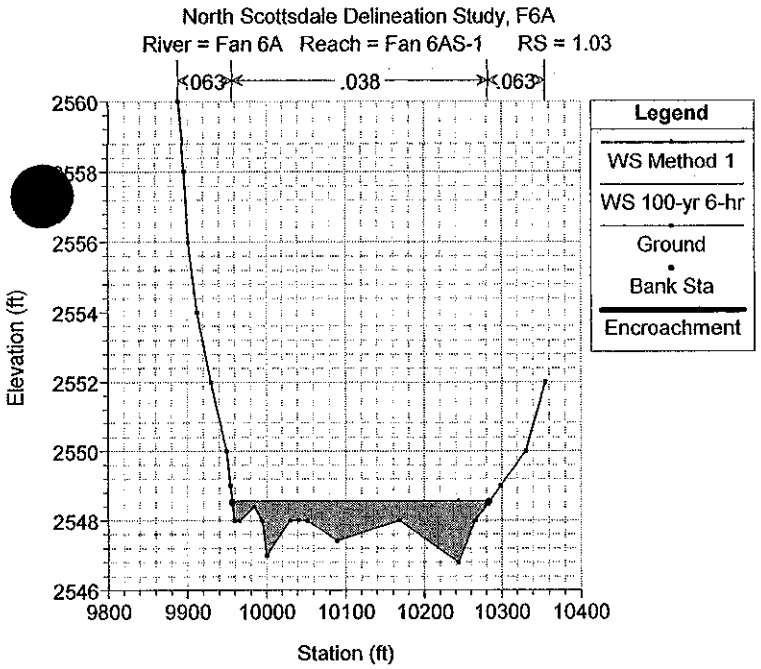

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.17
.063 .038 .063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.16 Culv
.063 .038 .063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.16 Culv
.063 .038 .063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.15
.063 .038 .063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.11
.063 .038 .063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6AS-1 RS = 1.03
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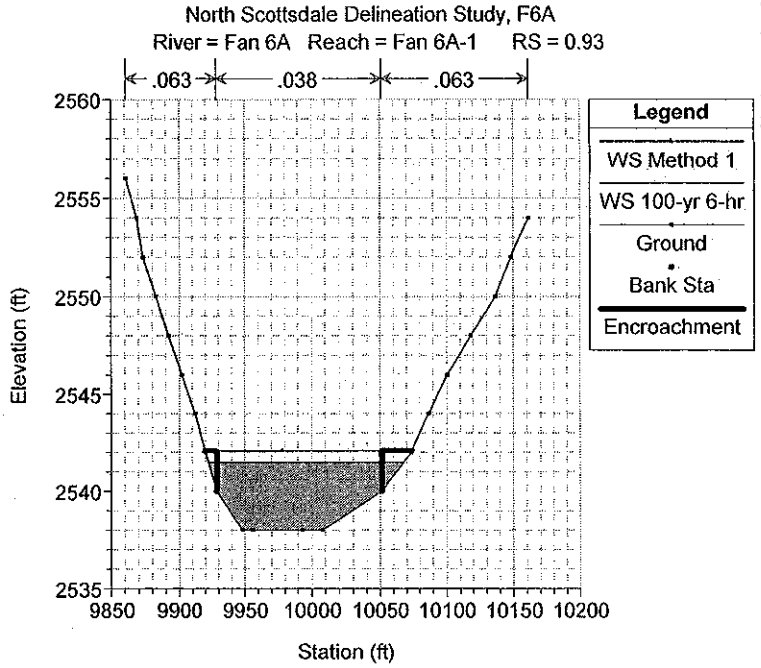
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6A-1 RS = 0.93
.063
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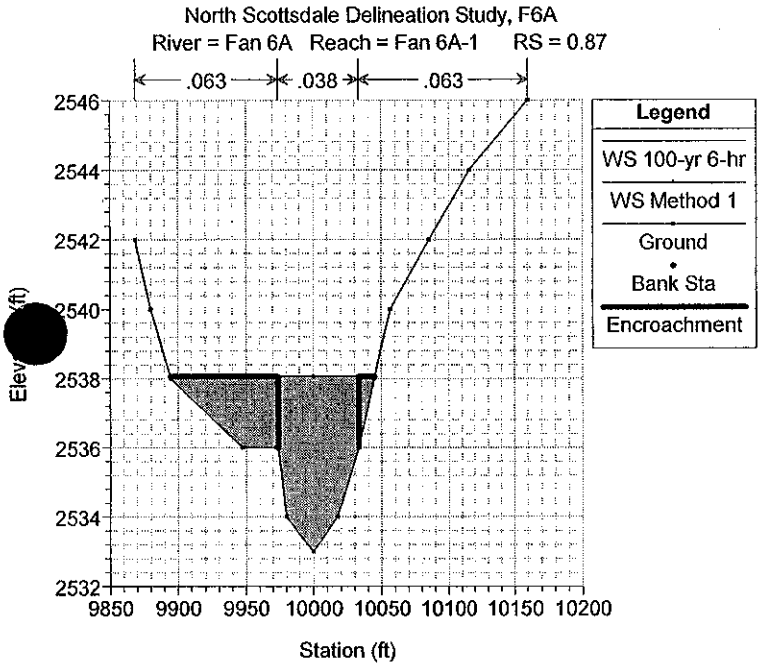
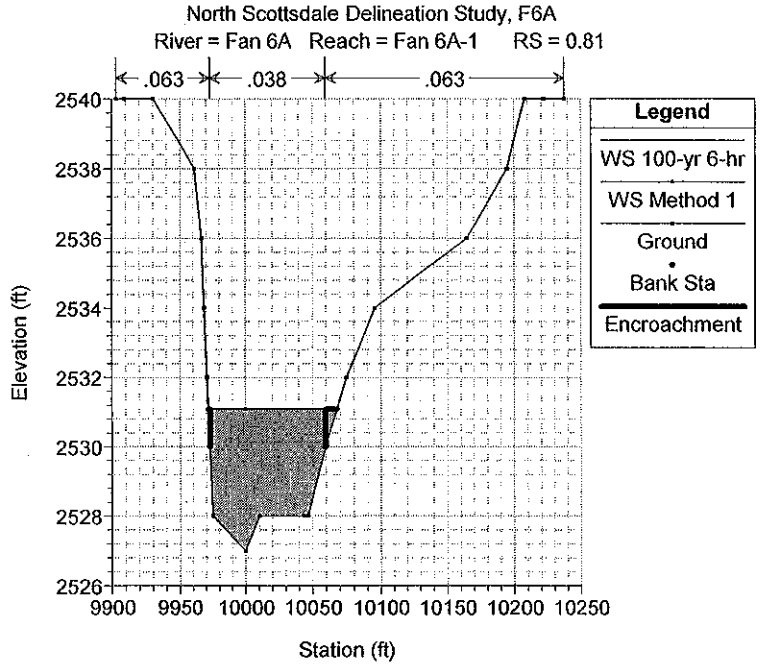
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6A-1 RS = 0.87
.063
.038
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6A-1 RS = 0.81
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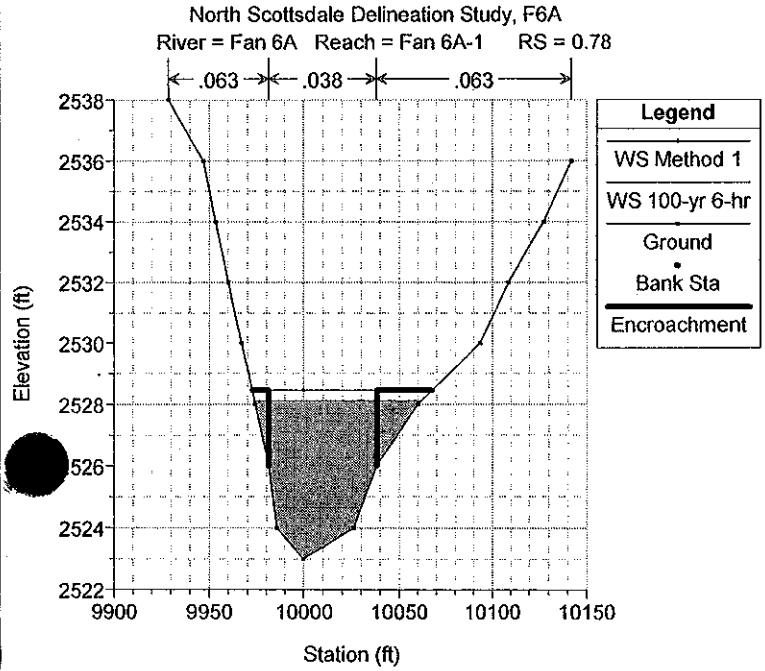
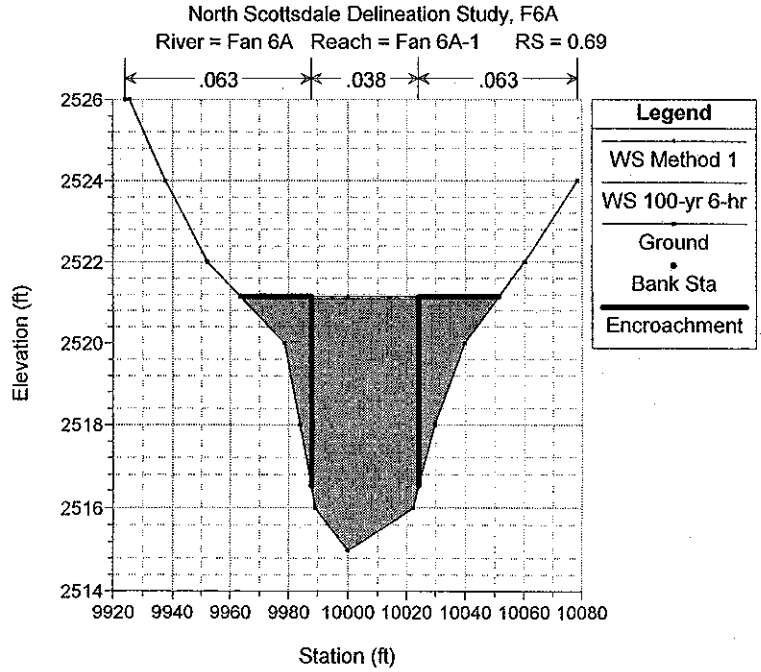
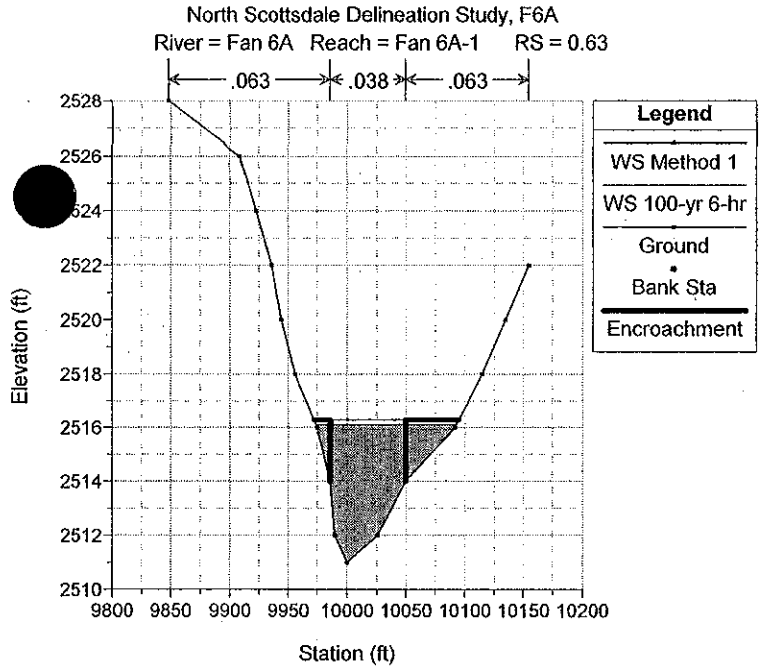
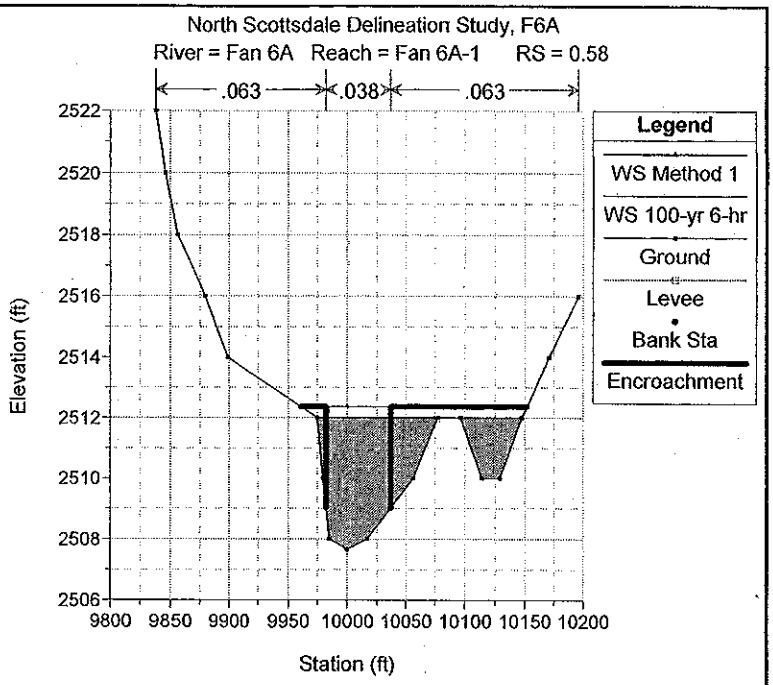
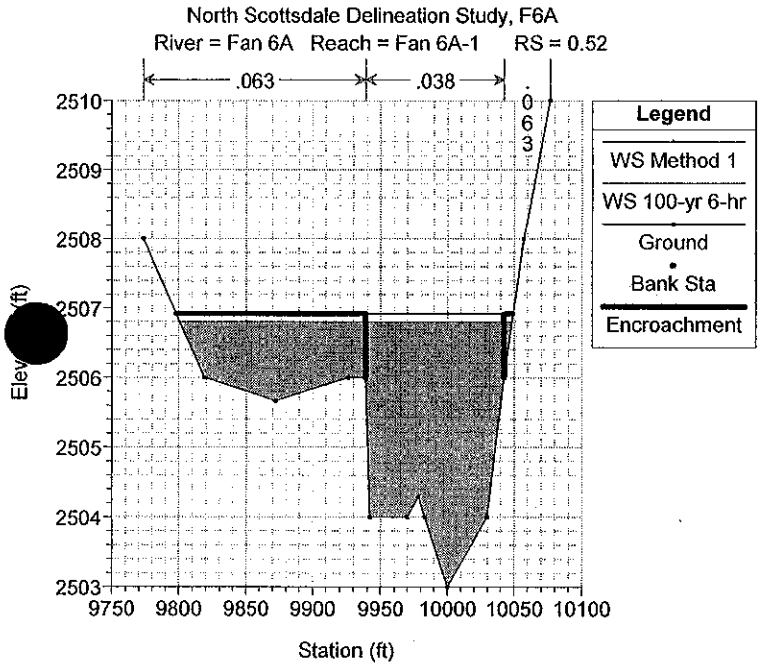
.038
.063
Legend
WS 100-yr 6-hr
WS Method 1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

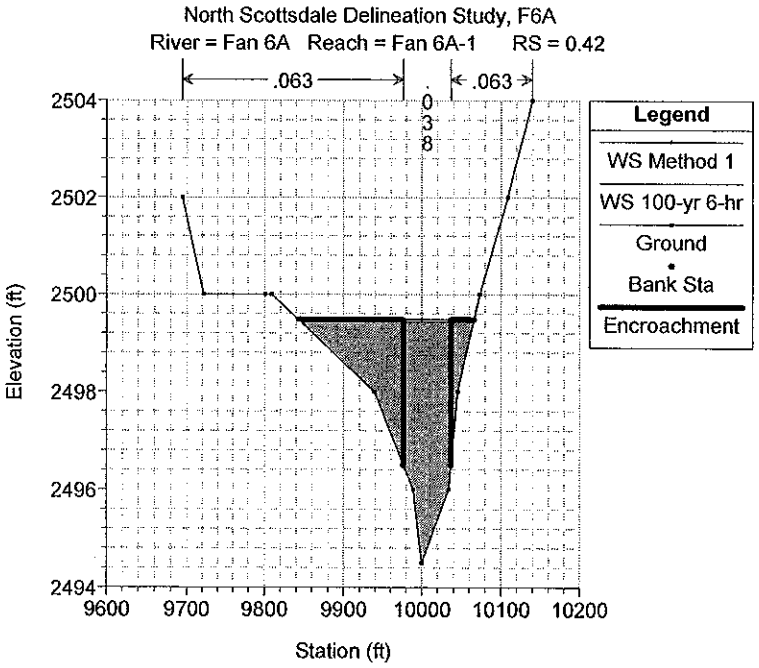

North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6A-1 RS = 0.78
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6A-1 RS = 0.69
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6A-1 RS = 0.63
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6A-1 RS = 0.58
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6A-1 RS = 0.52
.063
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6A-1 RS = 0.42
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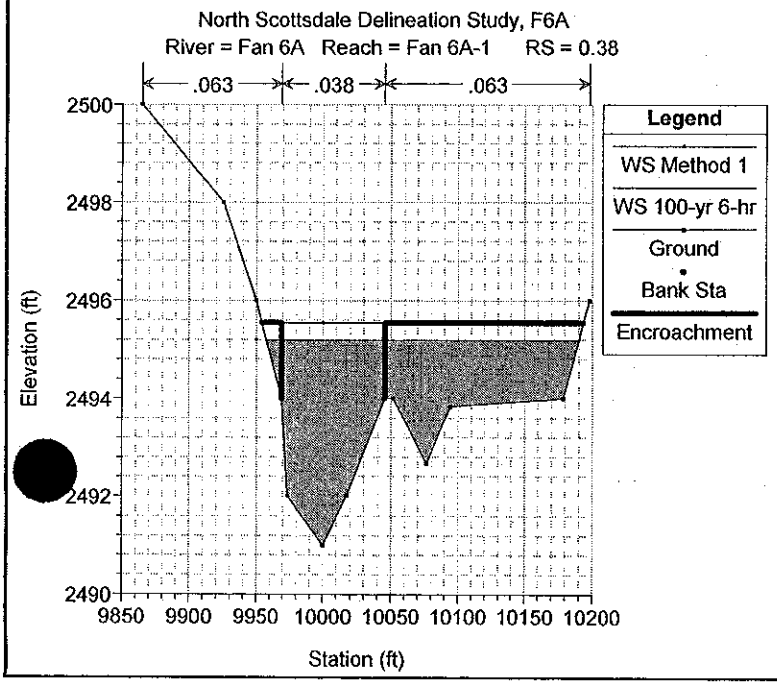
.038
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, F6A
River = Fan 6A Reach = Fan 6A-1 RS = 0.38
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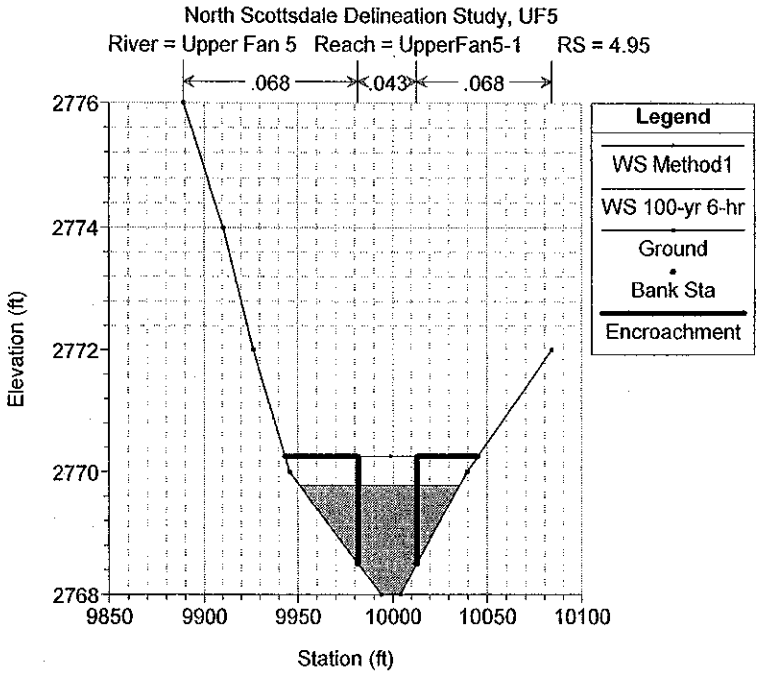
.038
.063
Legend
WS Method 1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

UPPER FAN 5


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.95
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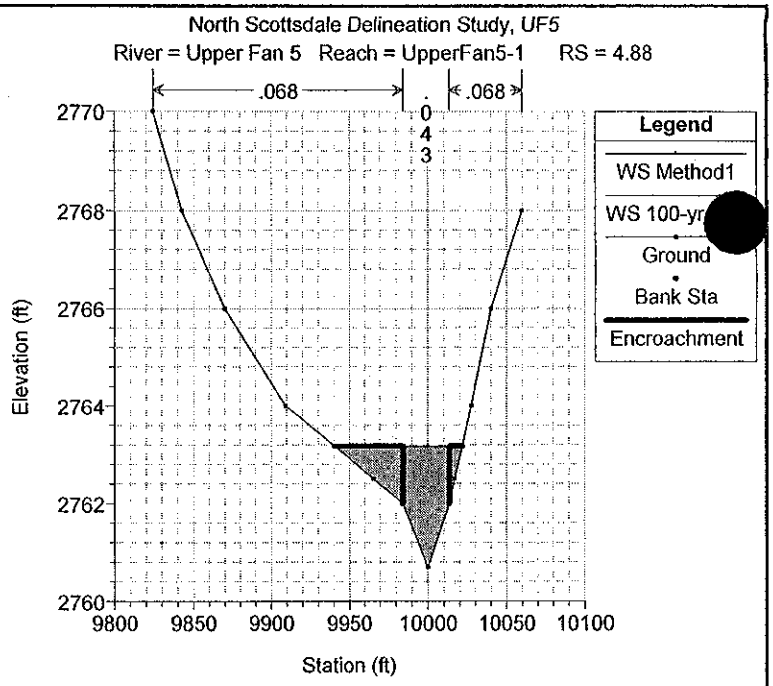
.043
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.88
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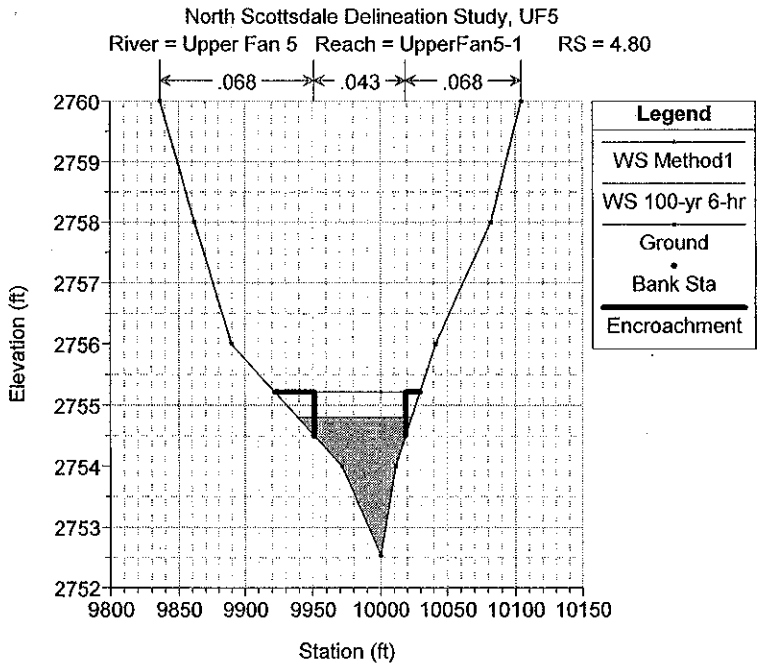
Legend
WS Method1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.80
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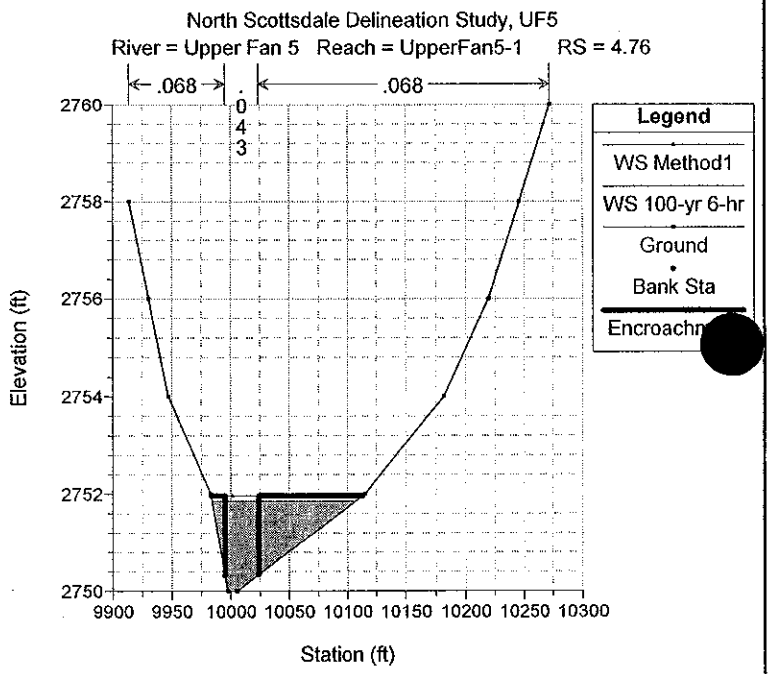
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.76
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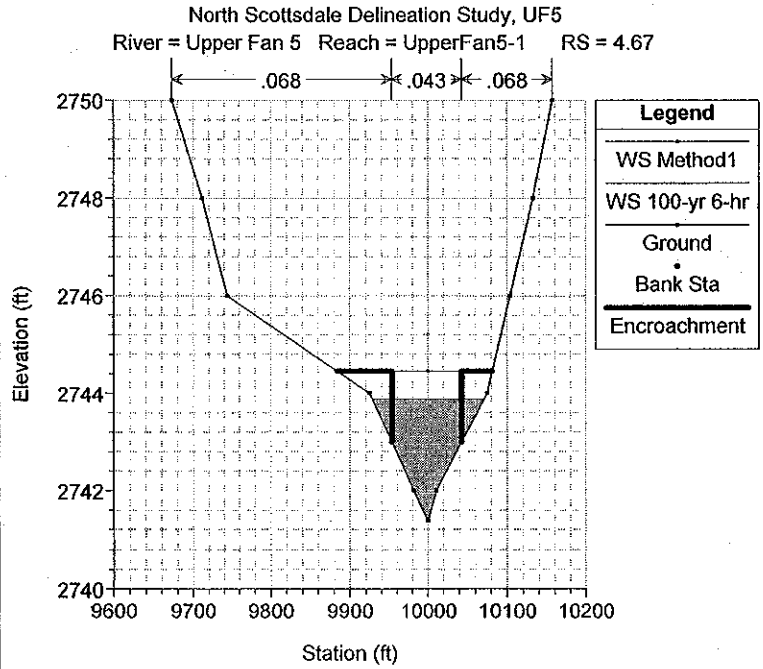
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.67
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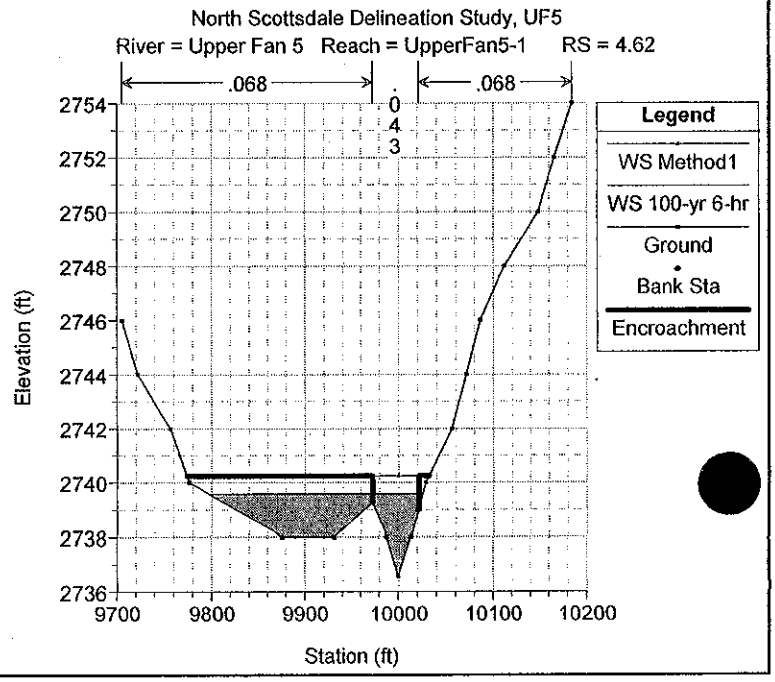
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.62
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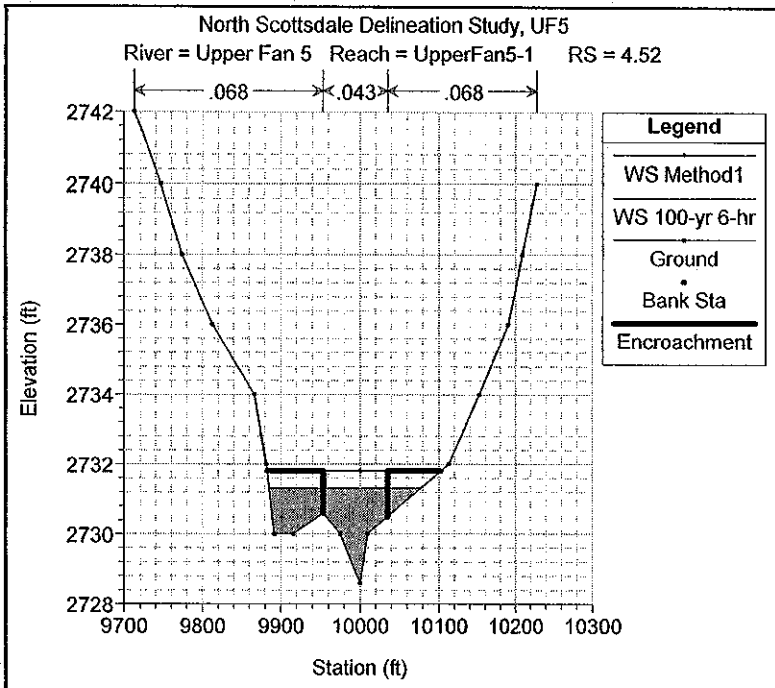
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.52
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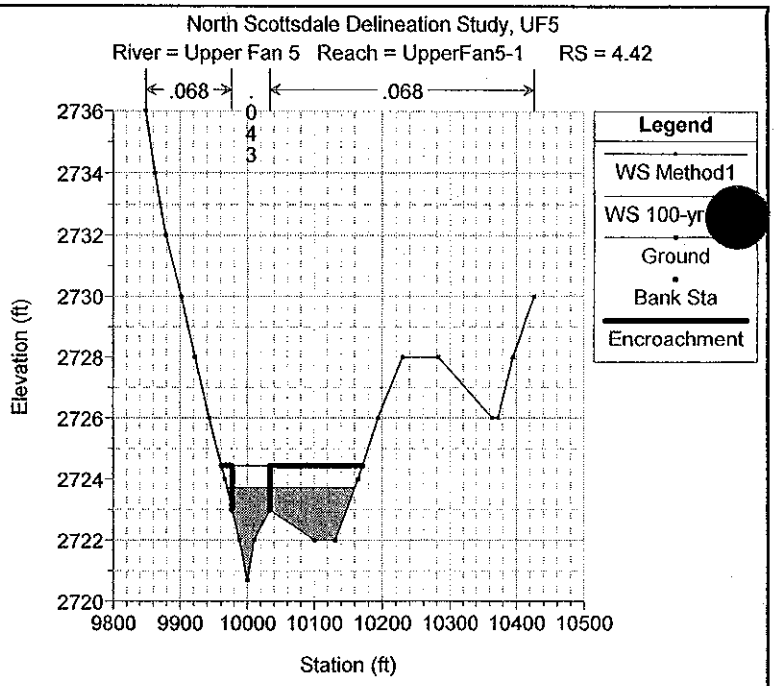
.043
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.42
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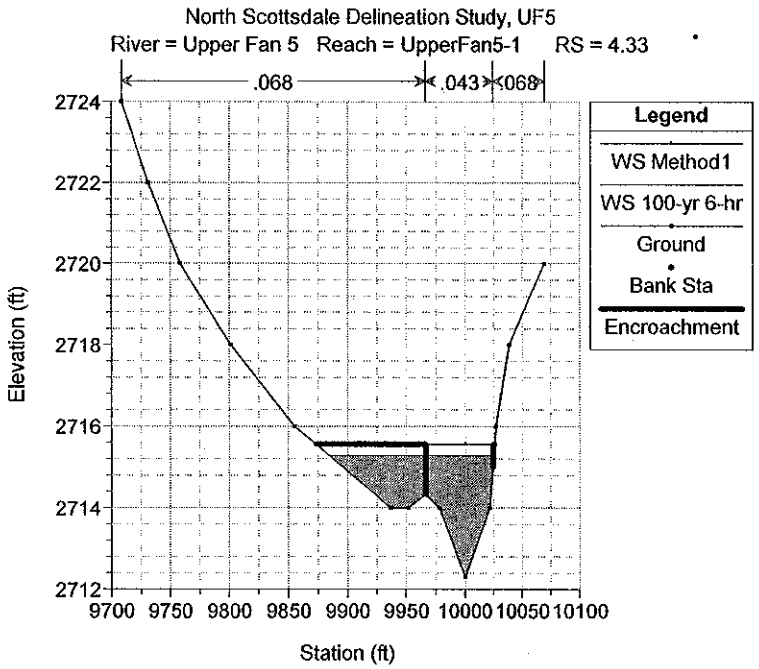
.043
.068
Legend
WS Method1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.33
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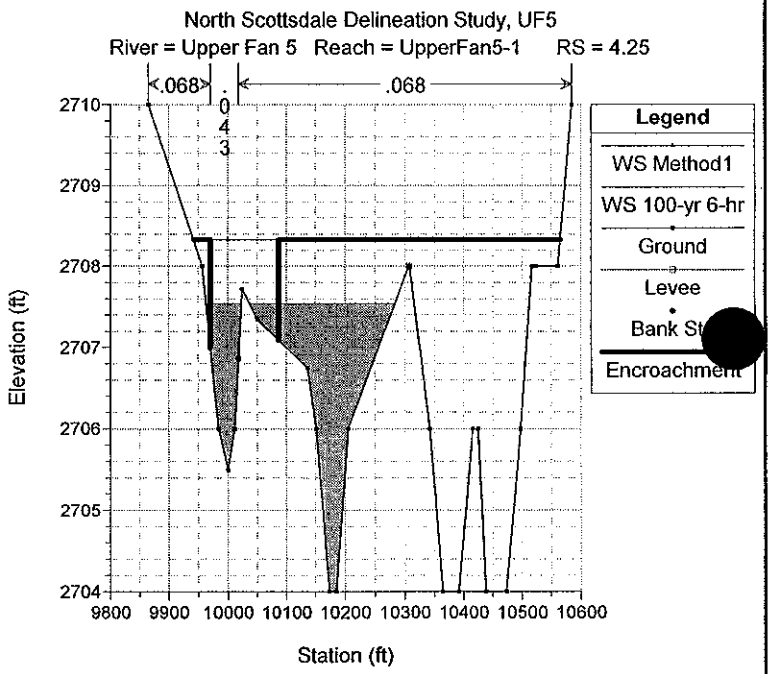
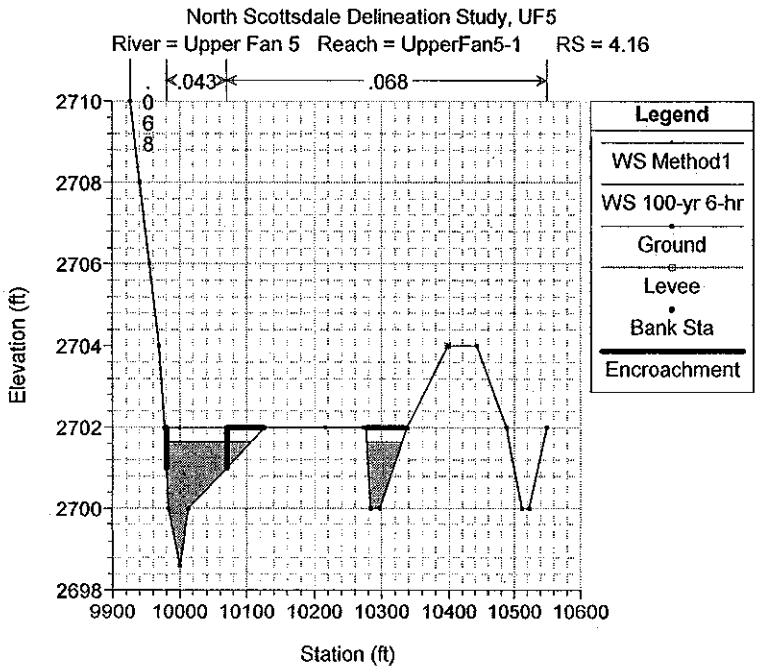
.043
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.25
.068
.043
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Levee
Bank St
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.16
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.043
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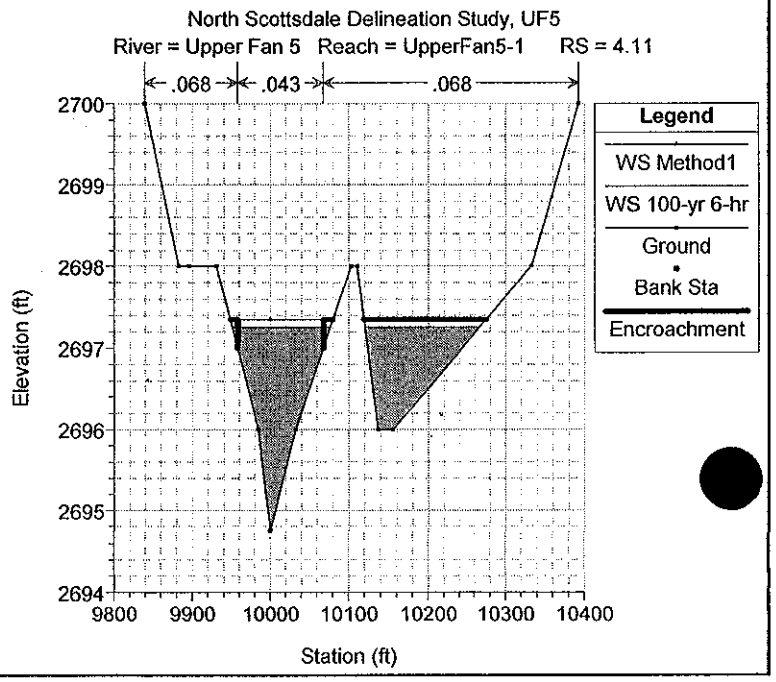
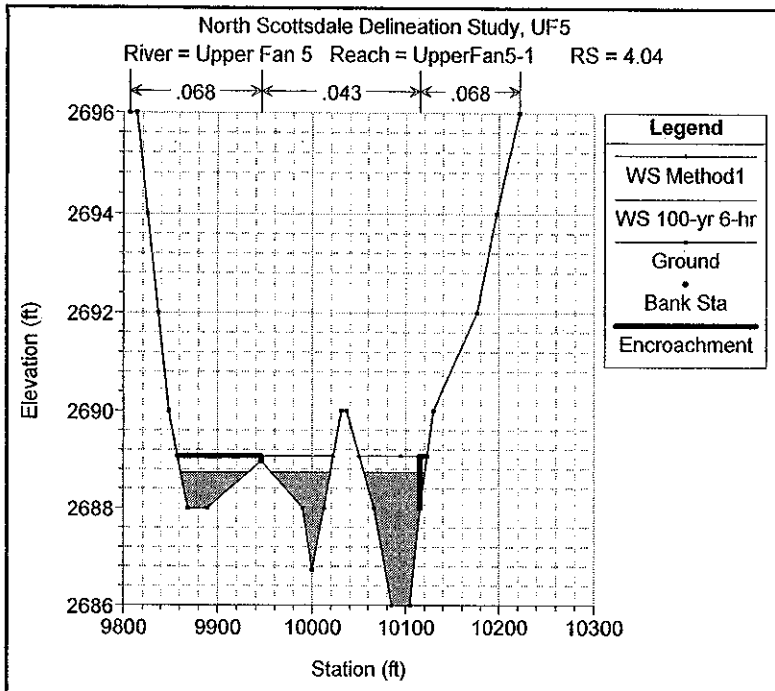
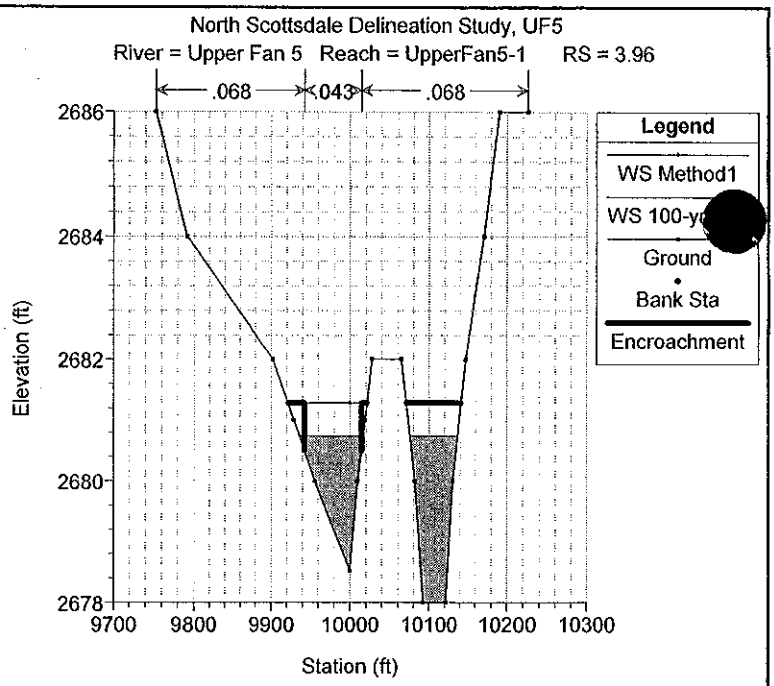
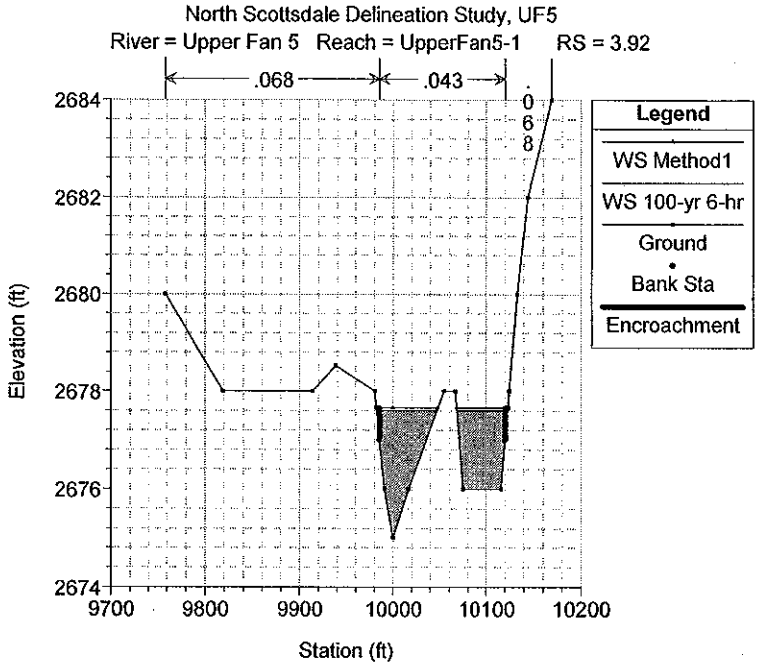
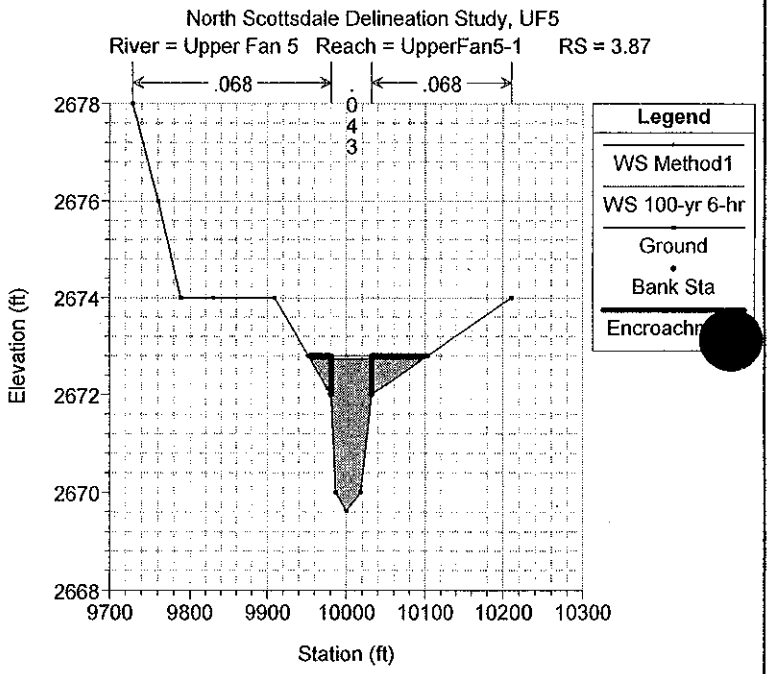
Legend
WS Method1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.11
.068
.043
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 4.04
.068
.043
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.96
.068
.043
.068
Legend
WS Method1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.92
.068
.043
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.87
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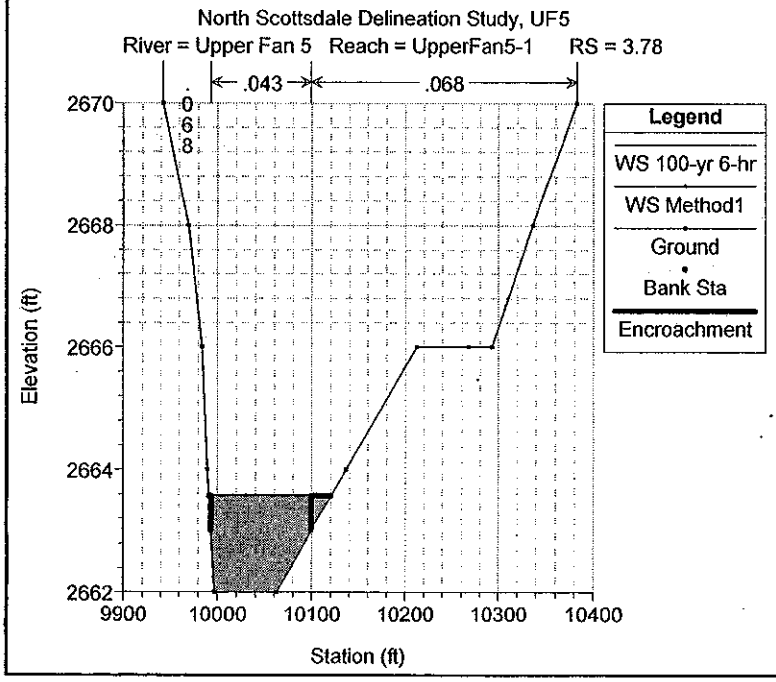
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.78
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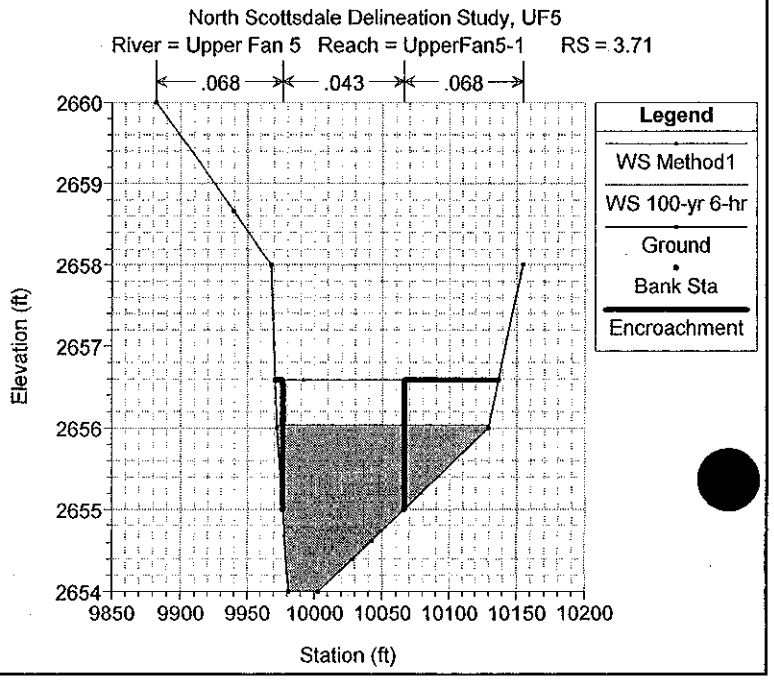
.068
Legend
WS 100-yr 6-hr
WS Method1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.71
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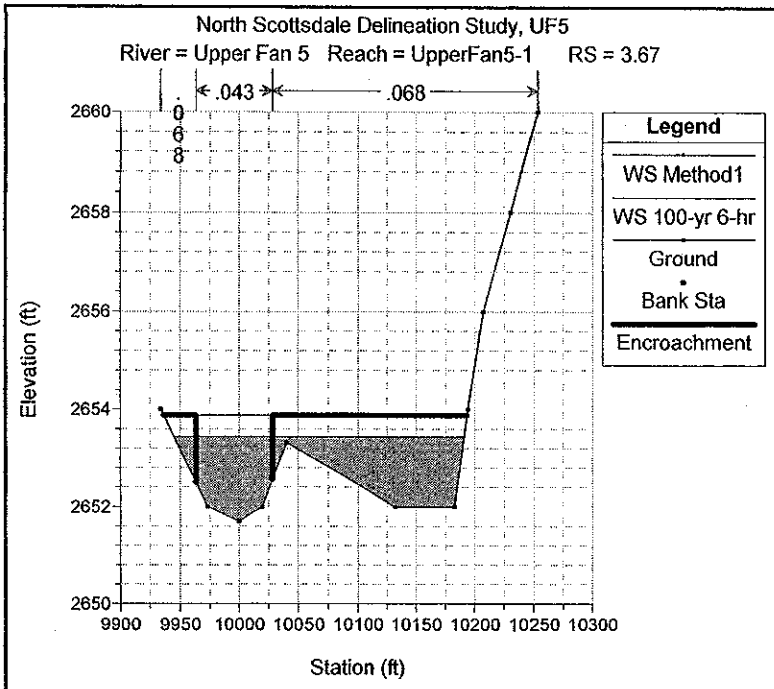
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.67
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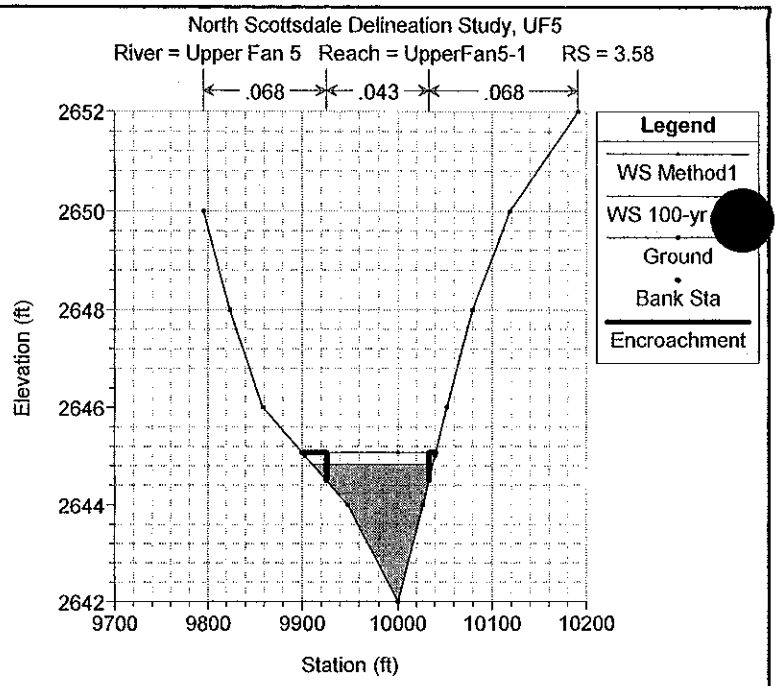
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.58
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.043
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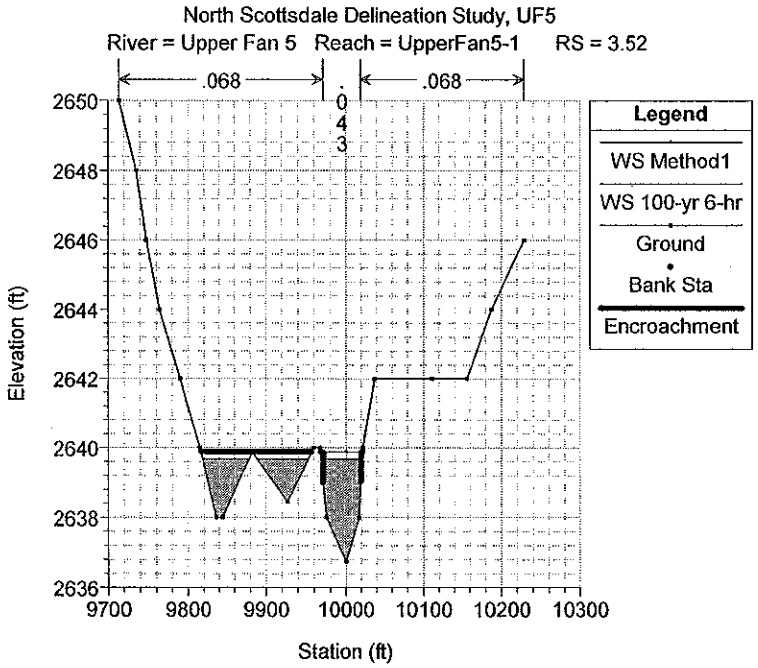
Legend
WS Method1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.52
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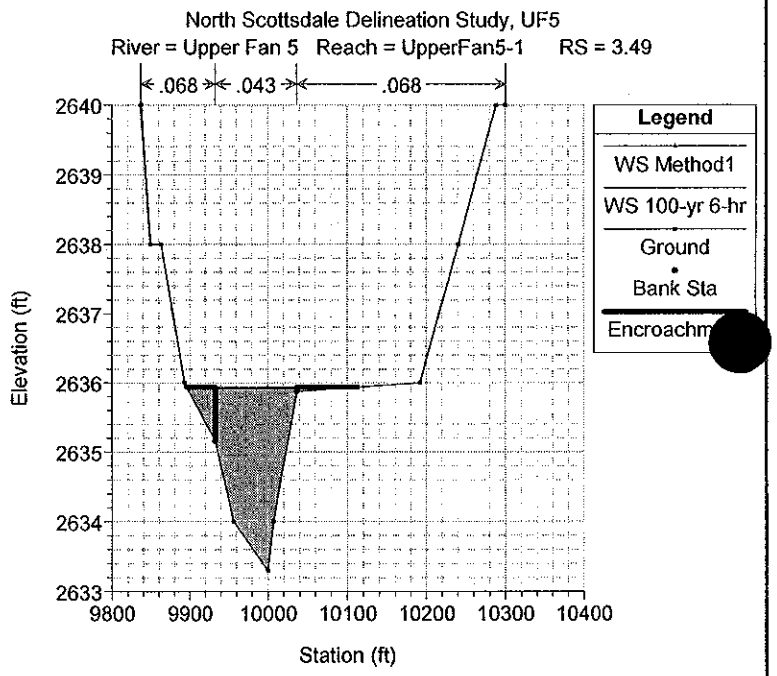
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.49
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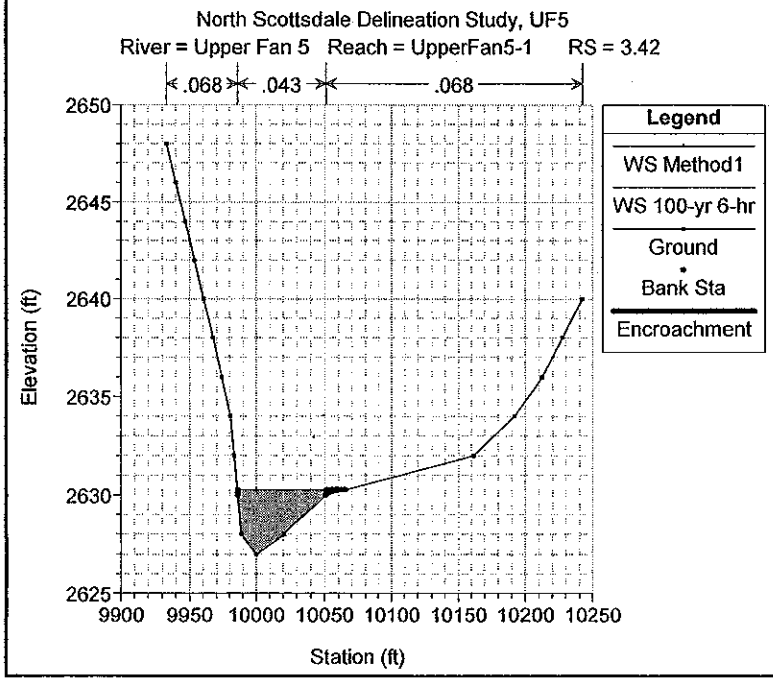
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.42
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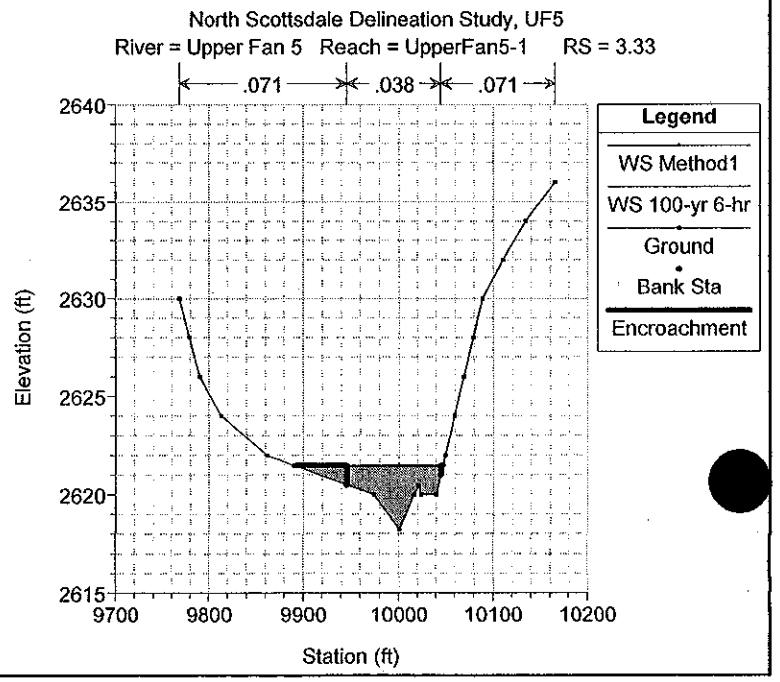
.068
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.33
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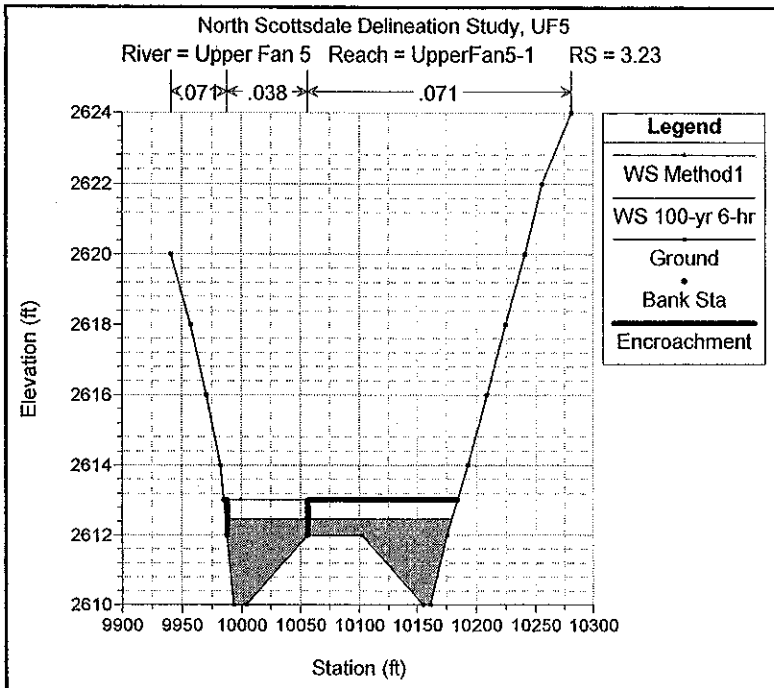
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.23
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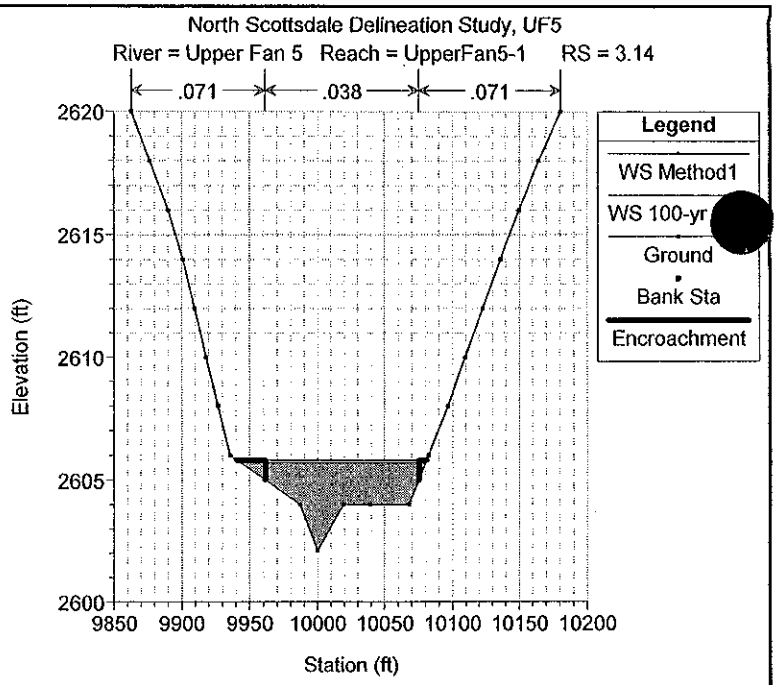
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.14
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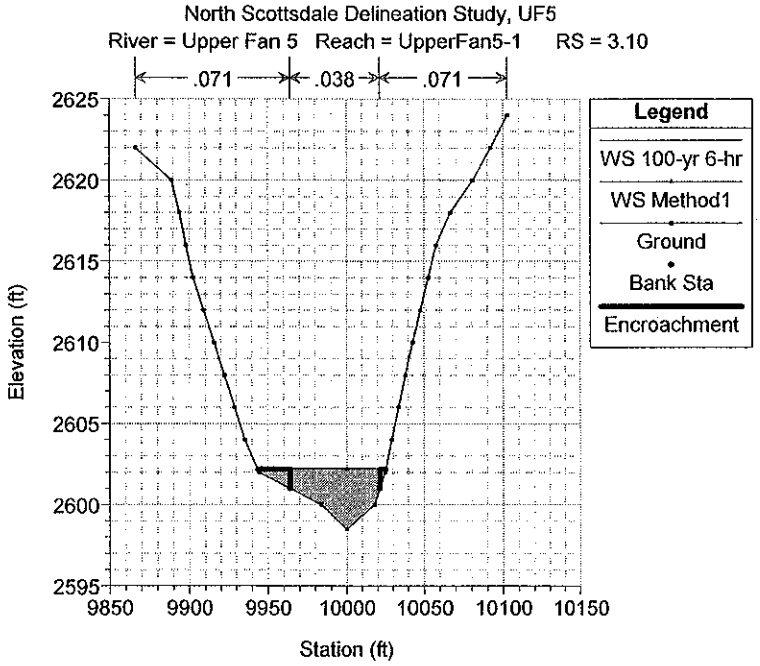
Legend
WS Method1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.10
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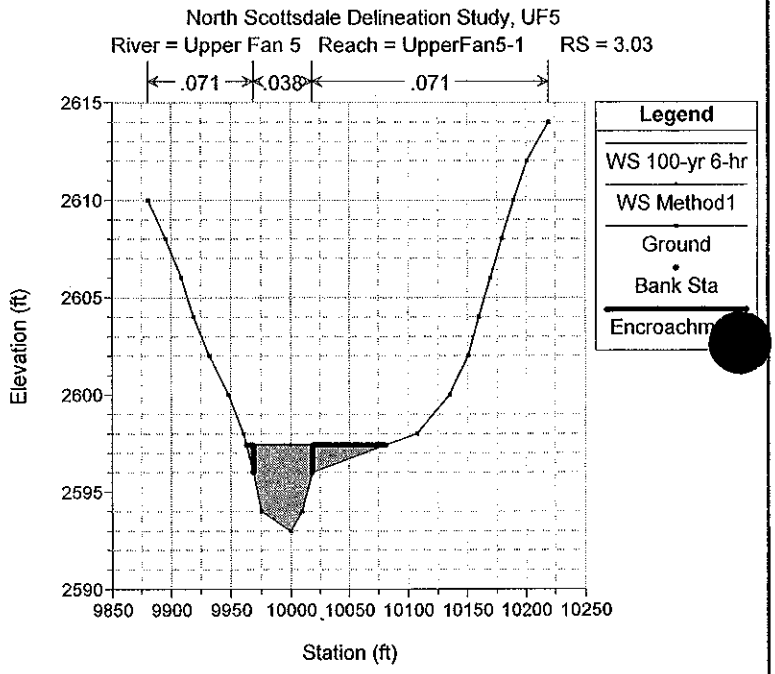
Legend
WS 100-yr 6-hr
WS Method1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.03
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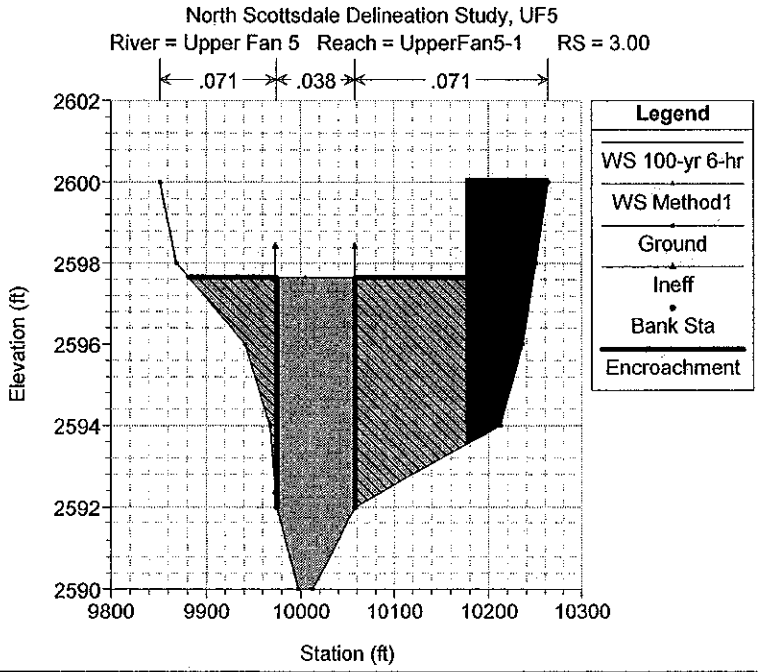
Legend
WS 100-yr 6-hr
WS Method1
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 3.00
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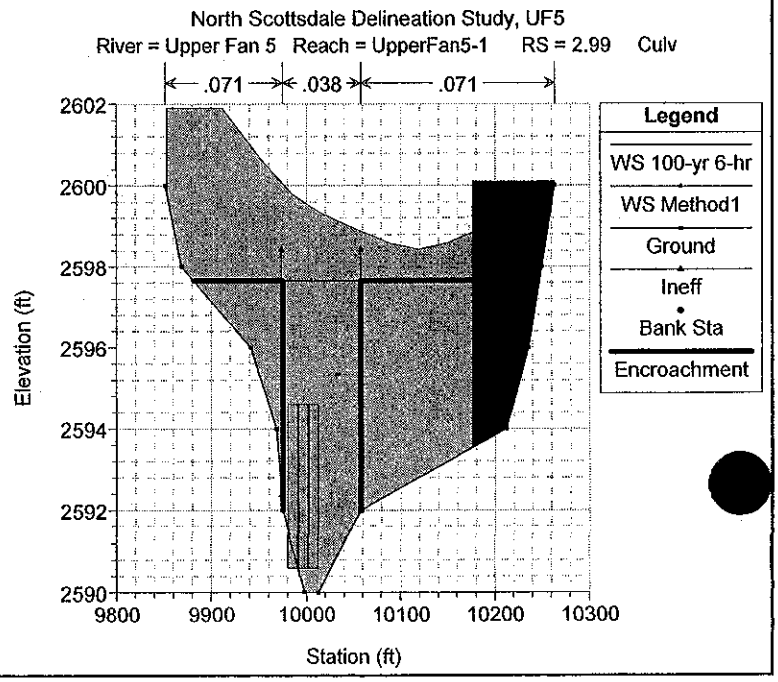
Legend
WS 100-yr 6-hr
WS Method1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.99 Culv
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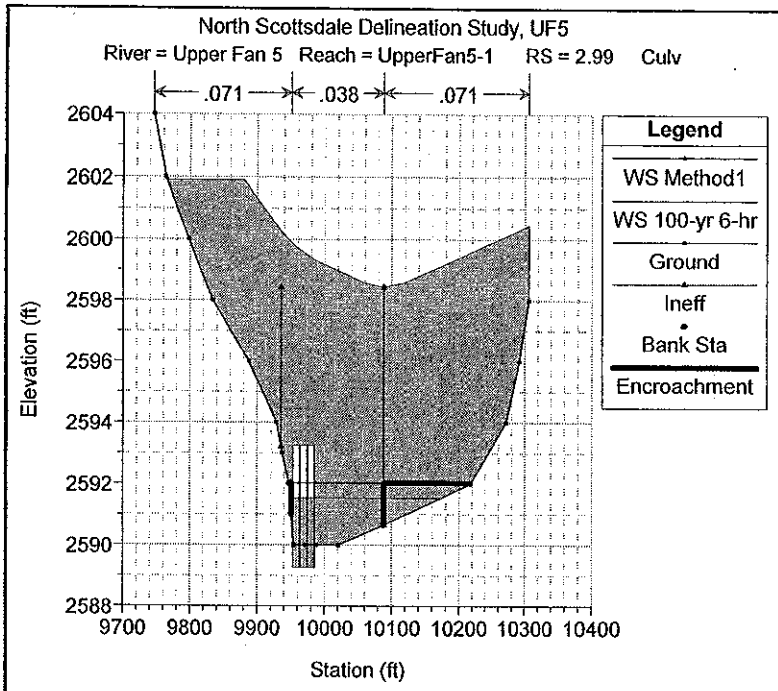
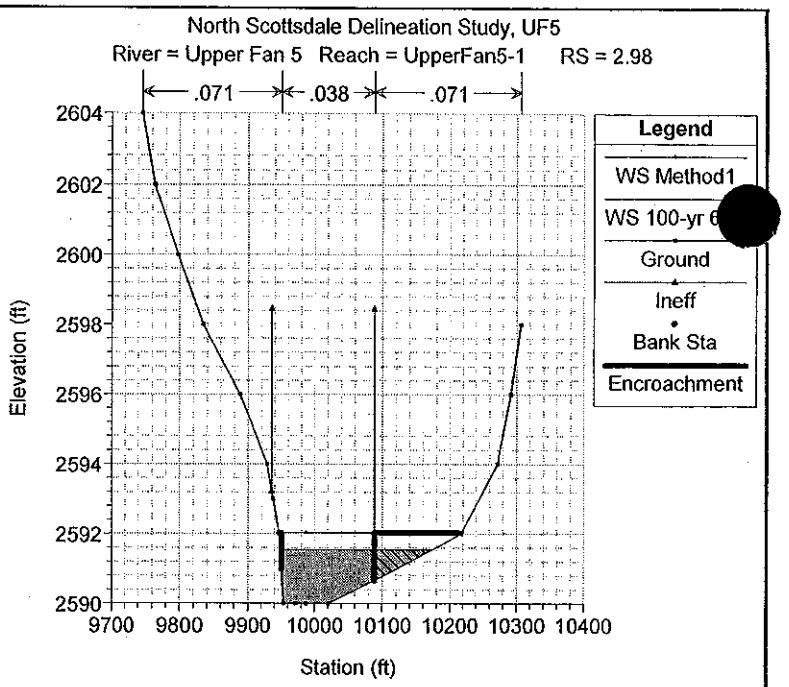
Legend
WS 100-yr 6-hr
WS Method1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.99 Culv
.071
.038
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.98
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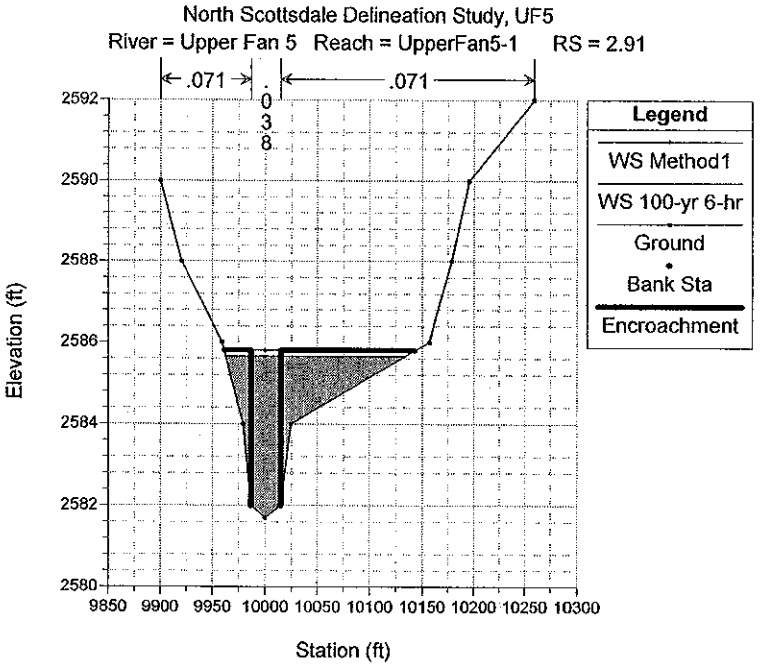
.071
Legend
WS Method1
WS 100-yr 6
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.91
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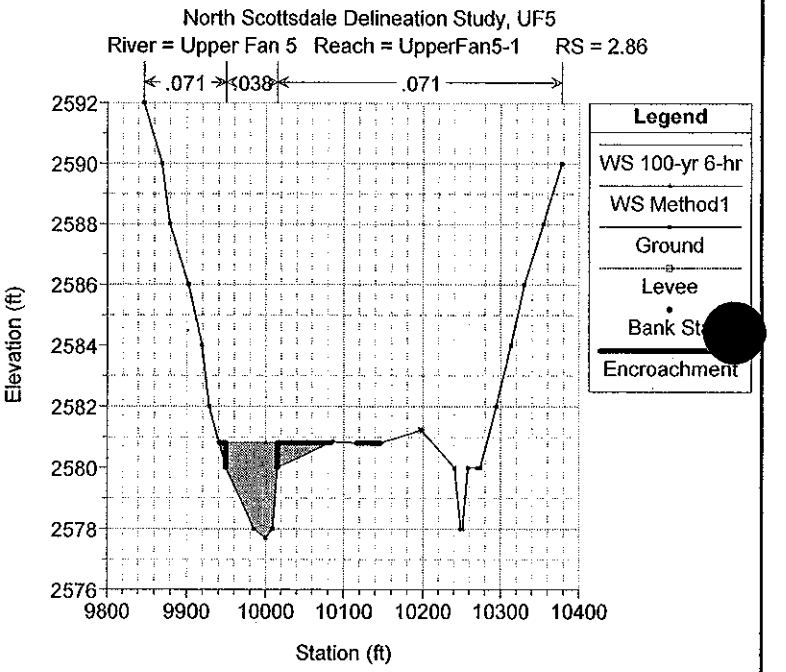
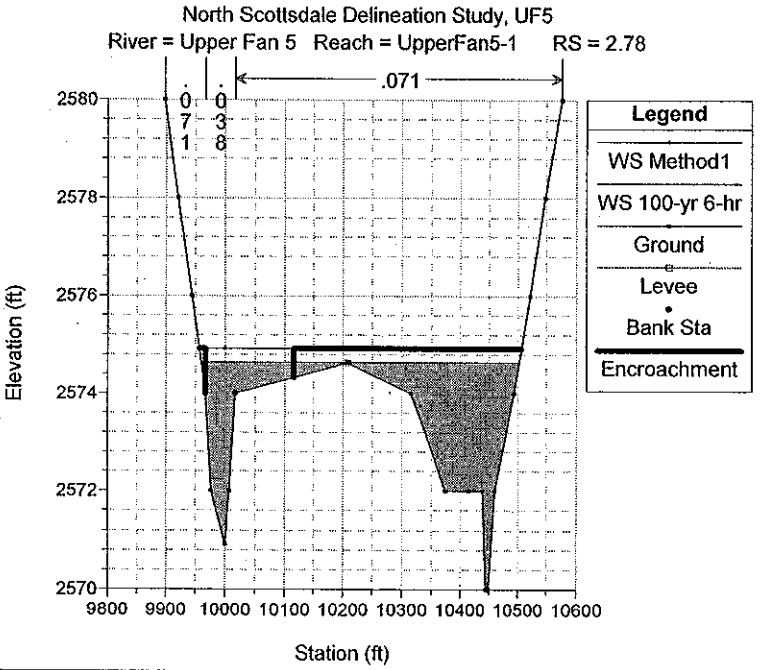
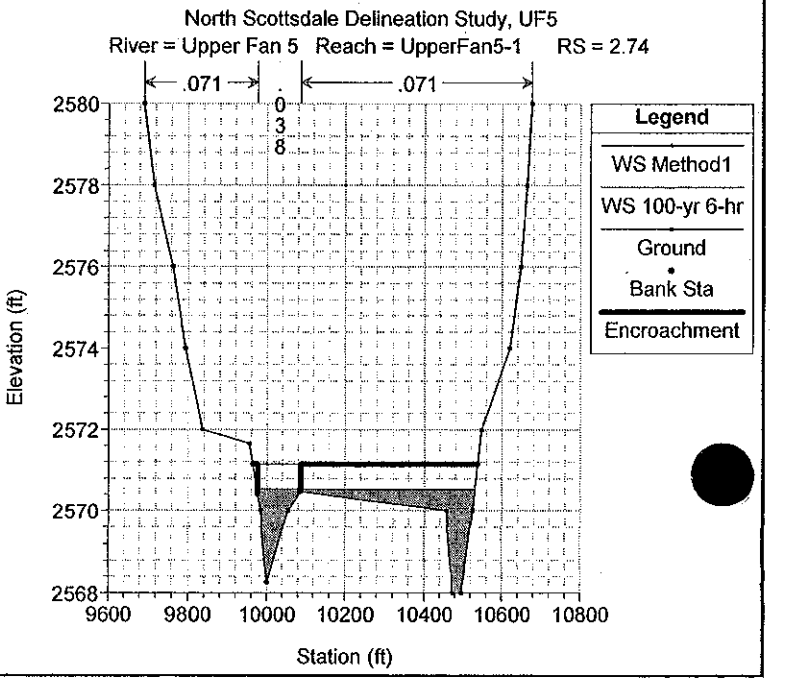
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.86
.071
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.78
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.74
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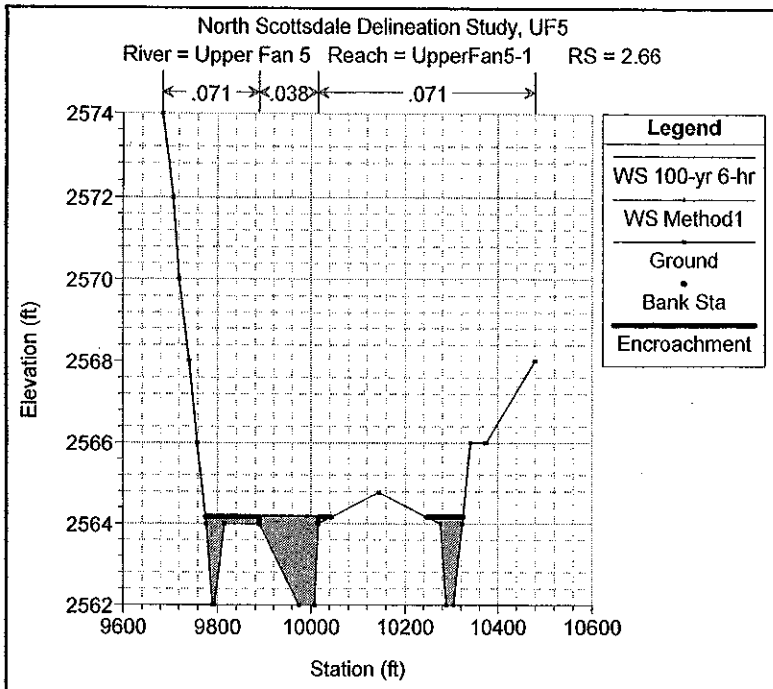
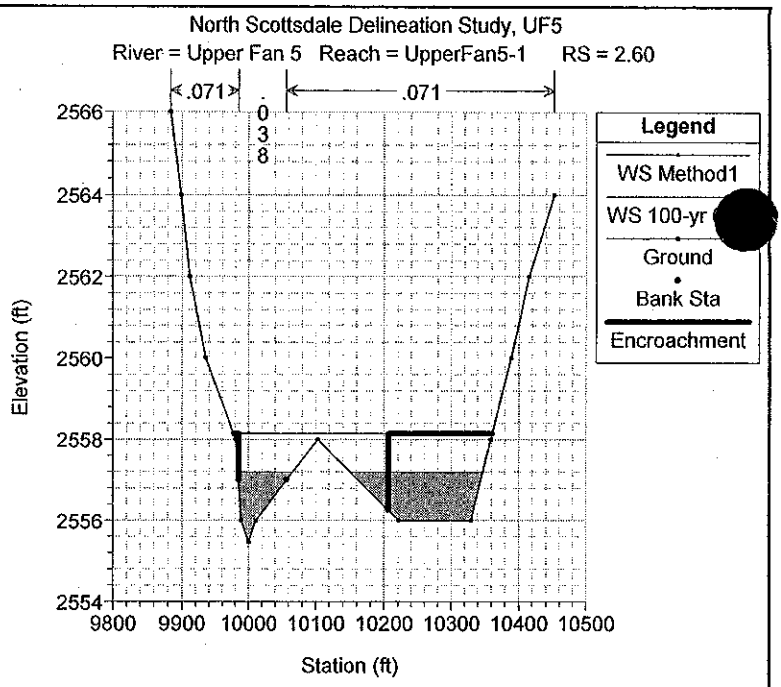
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.66
.071
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.60
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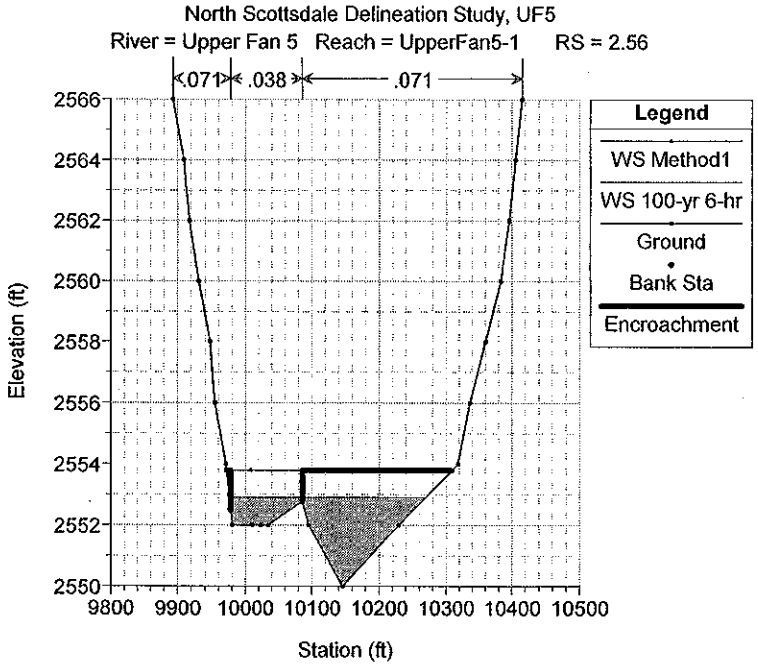
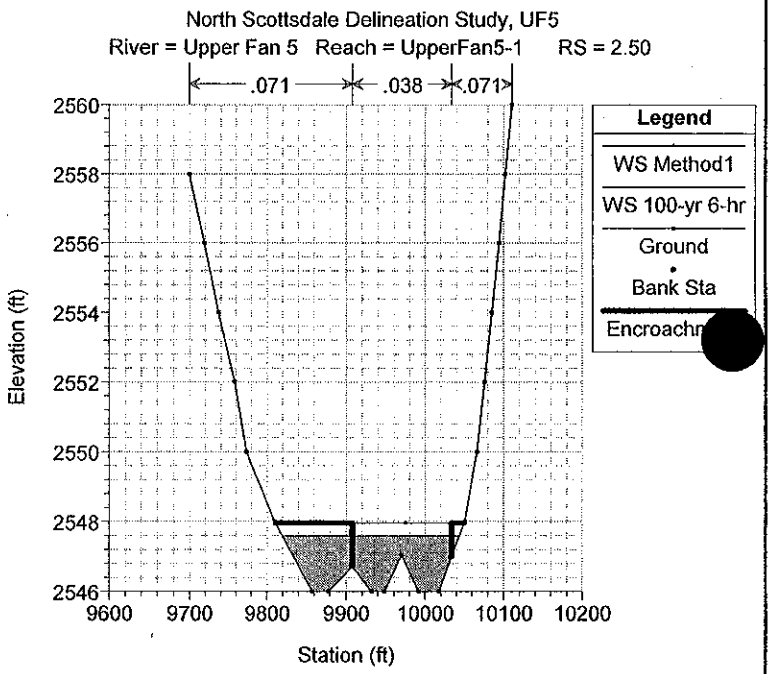
.038
.071
Legend
WS Method1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.56
.071
.038
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.50
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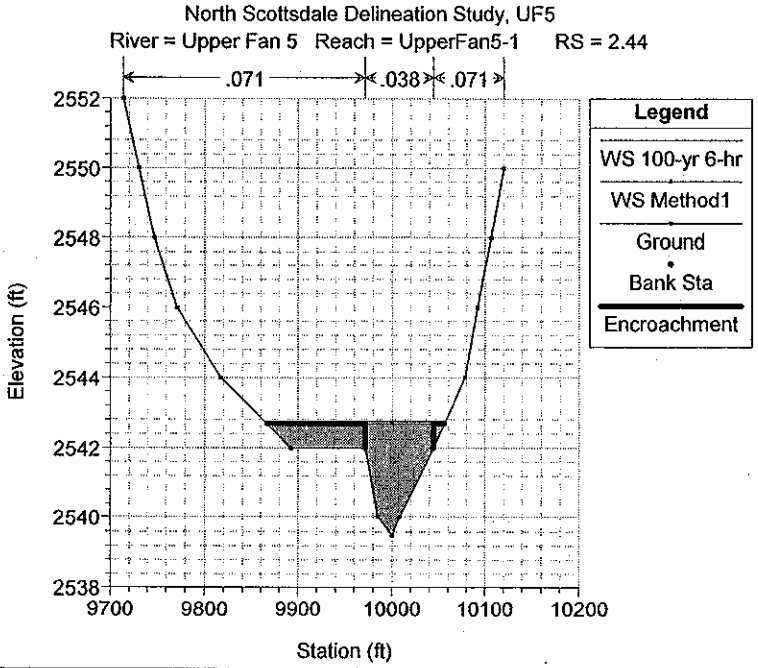
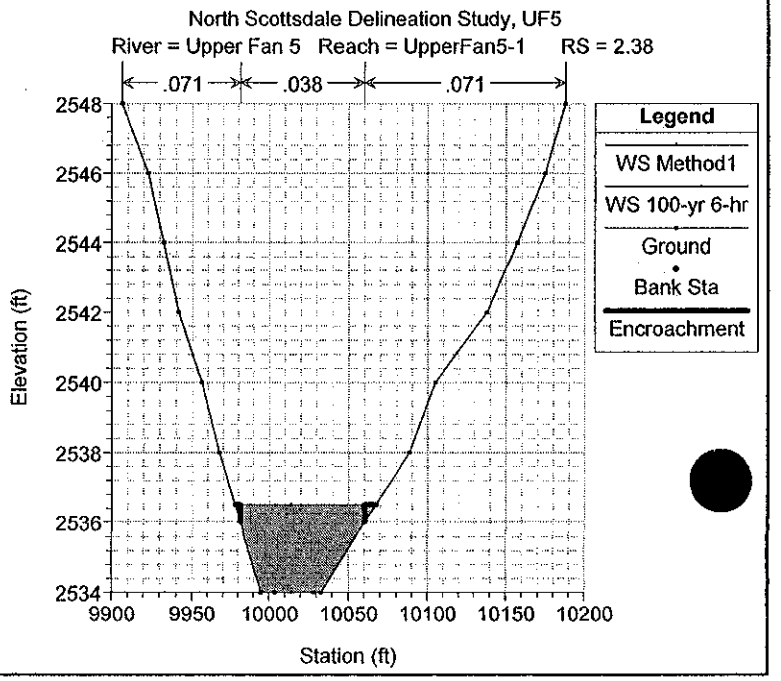
.038
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.44
.071
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.38
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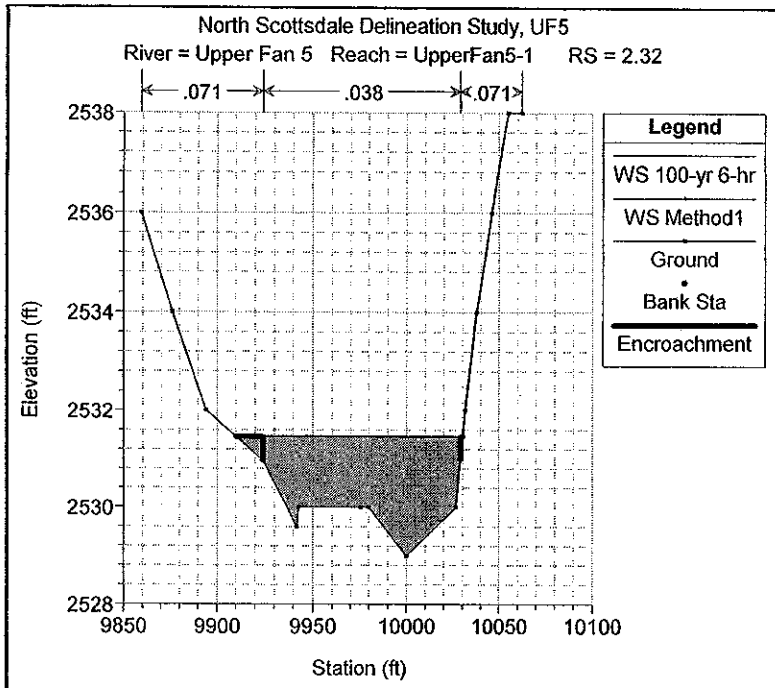
.038
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.32
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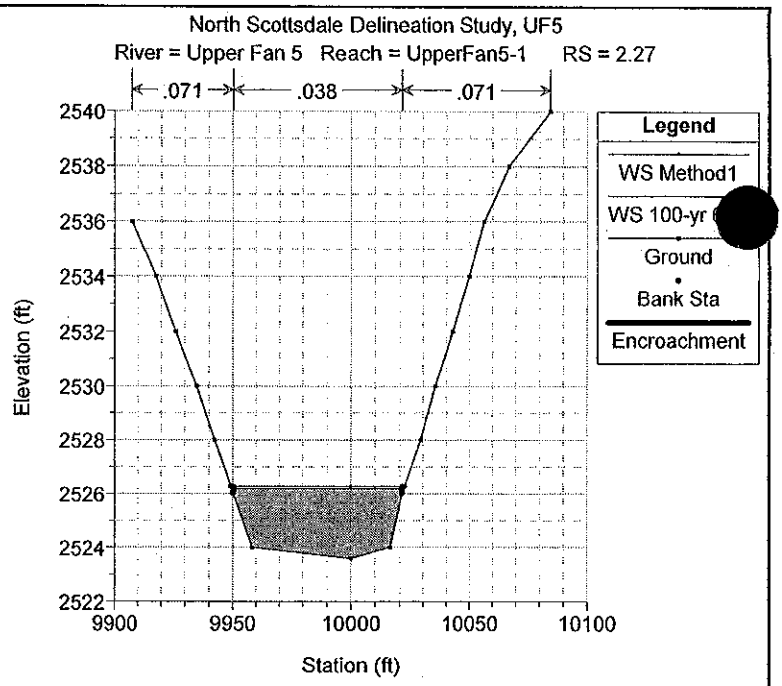
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.27
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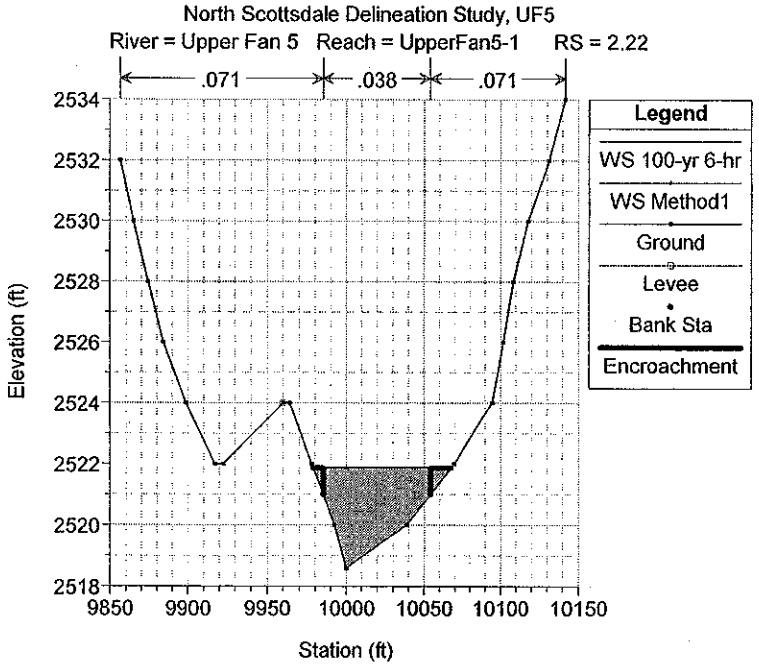
.038
.071
Legend
WS Method1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.22
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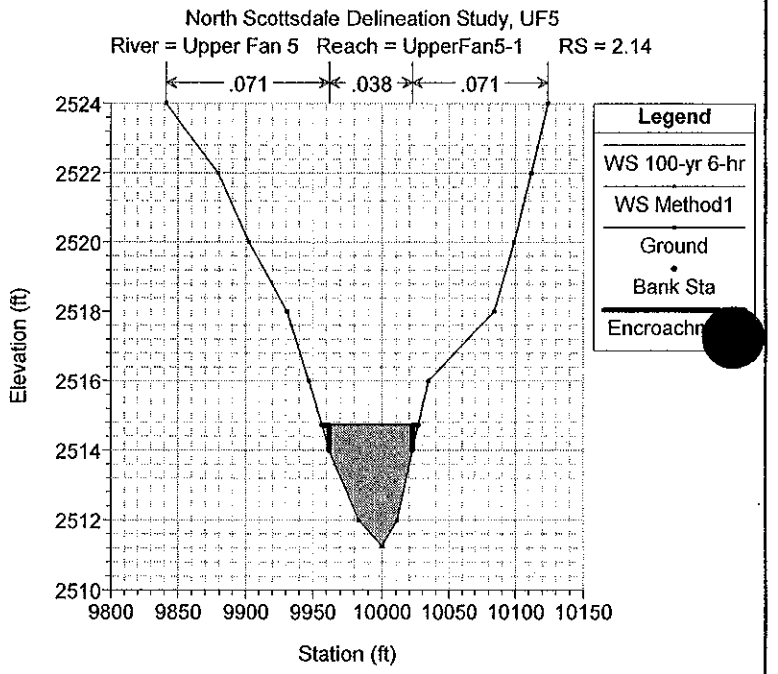
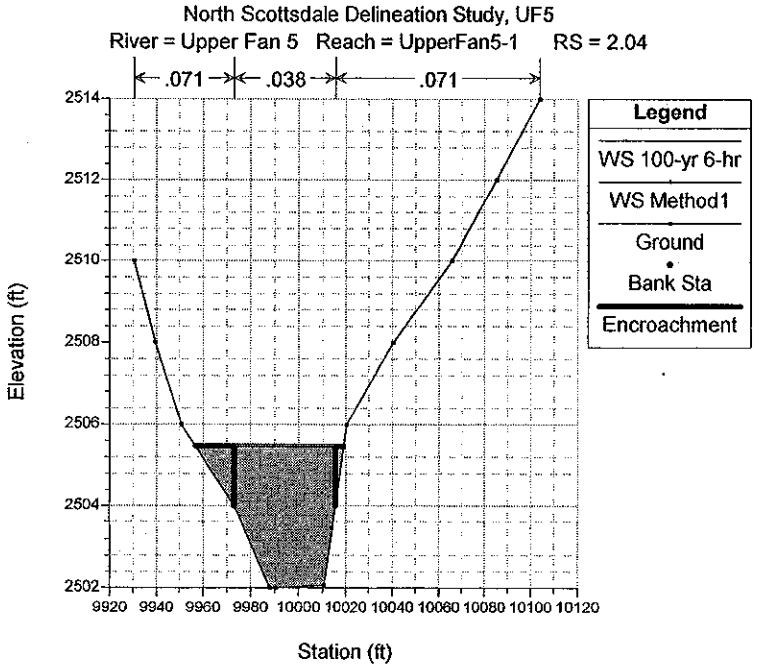
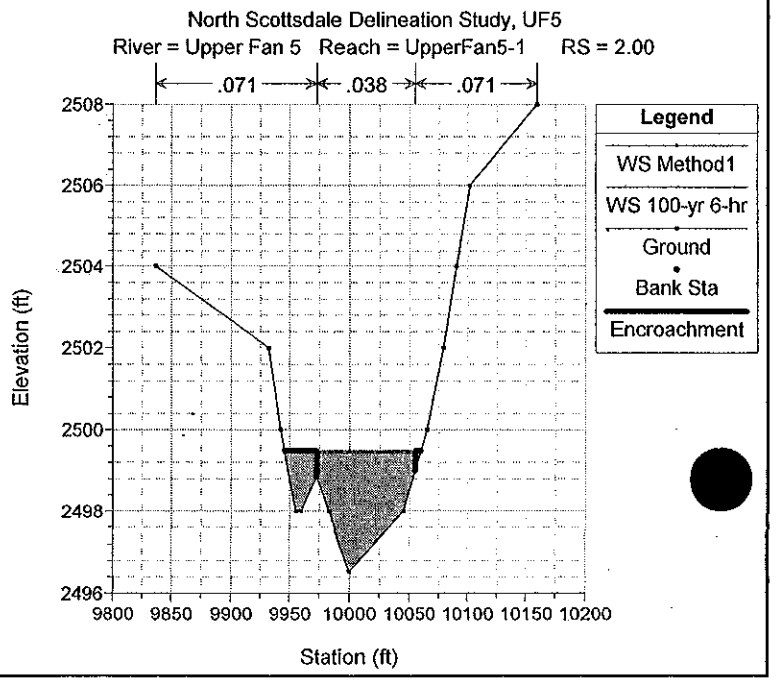
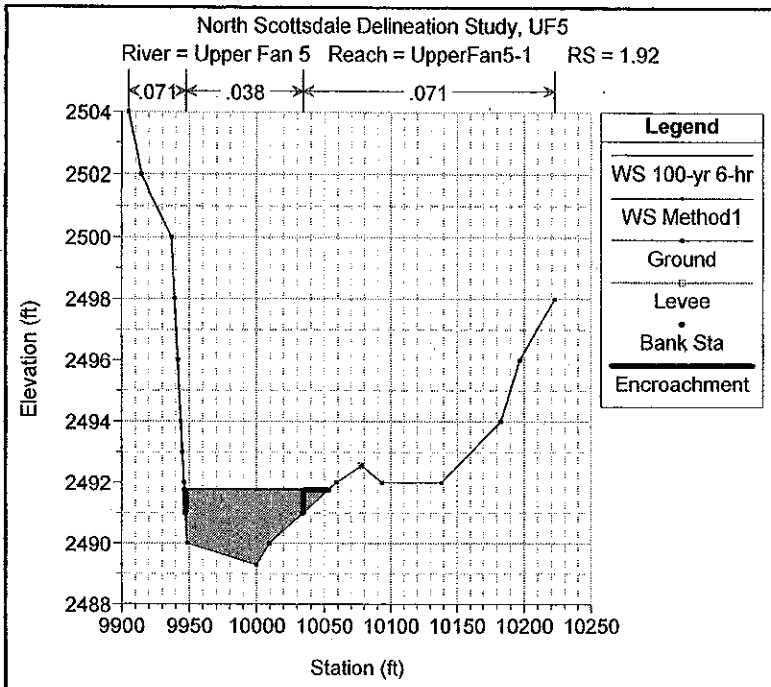
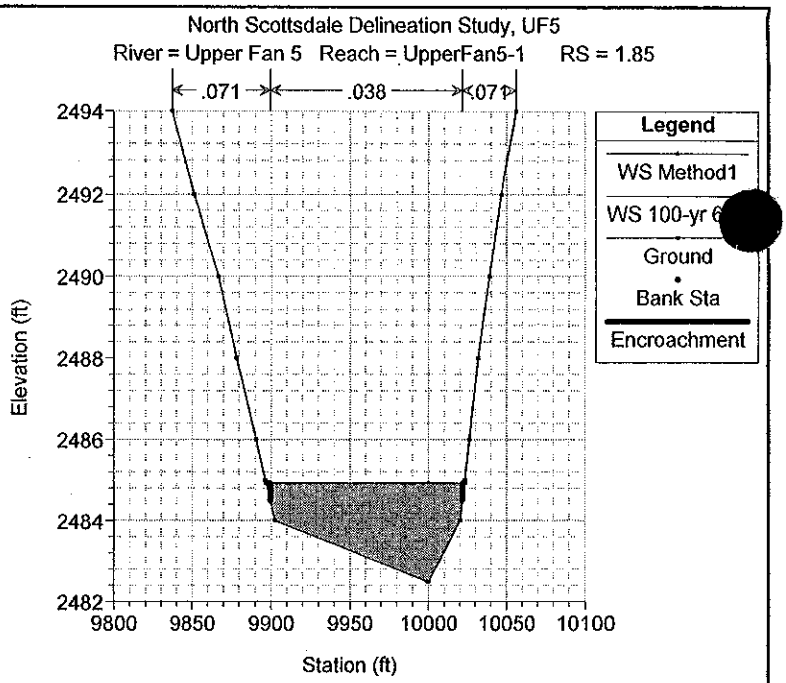
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

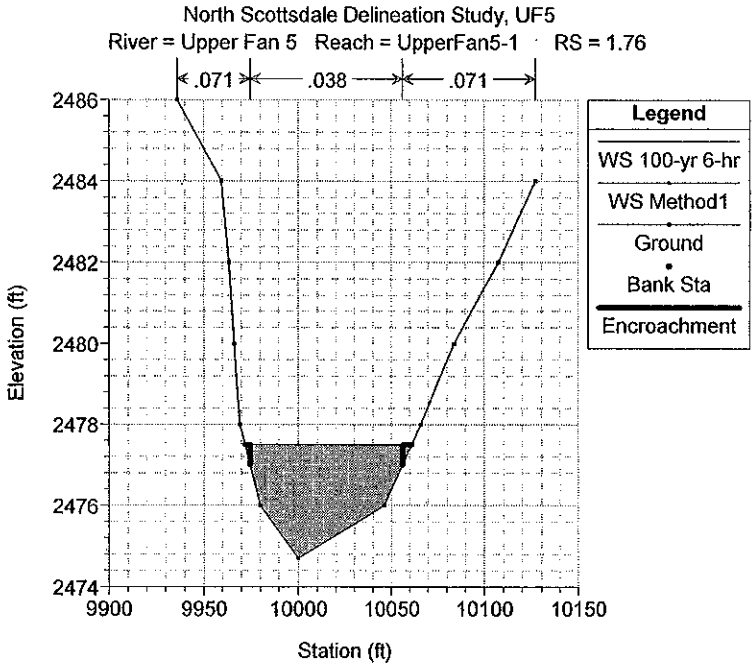

North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.14
.071
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)

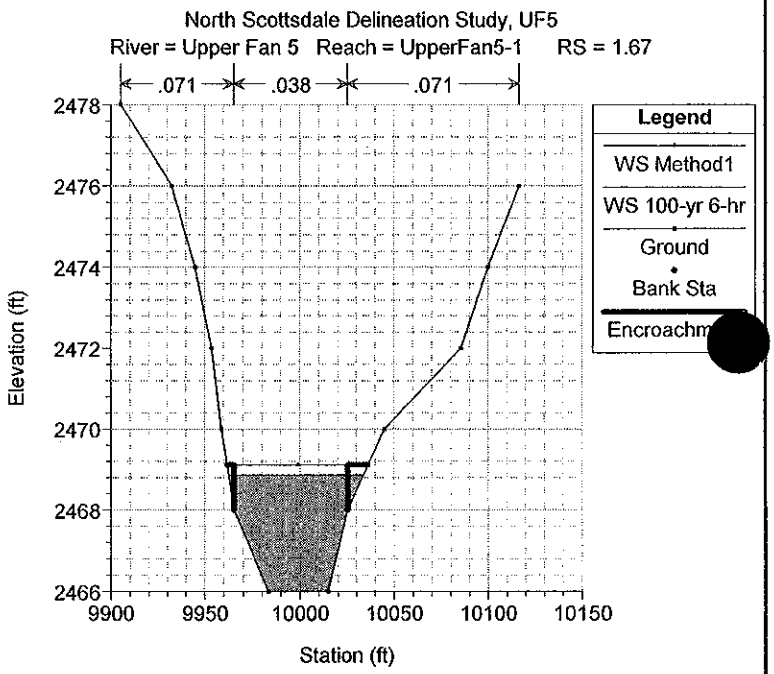

North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.04
.071
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

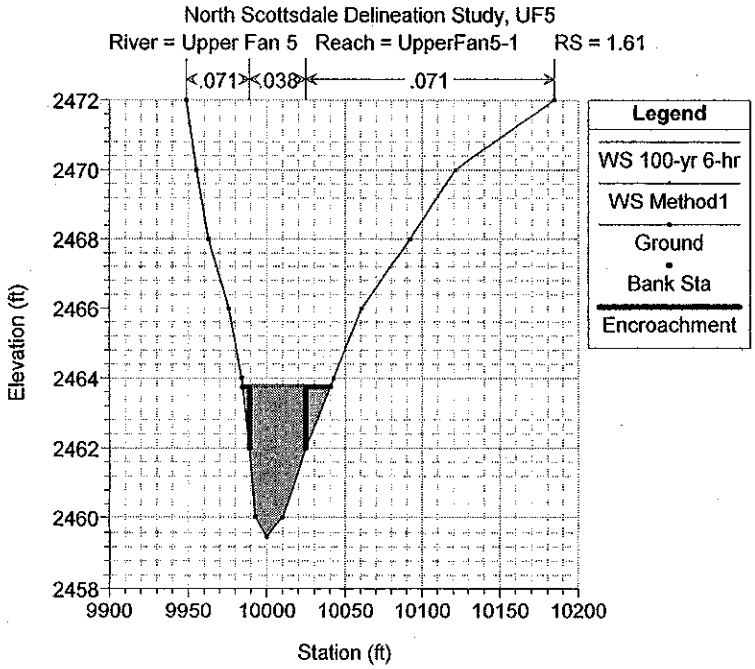

North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 2.00
.071
.038
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

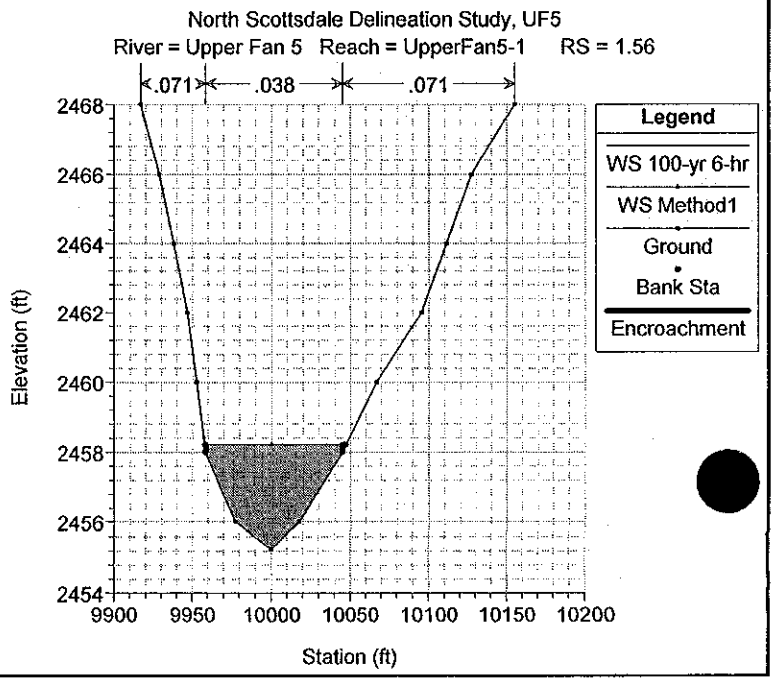

North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.92
.071
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.85
.071
.038
.071
Legend
WS Method1
WS 100-yr 6
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

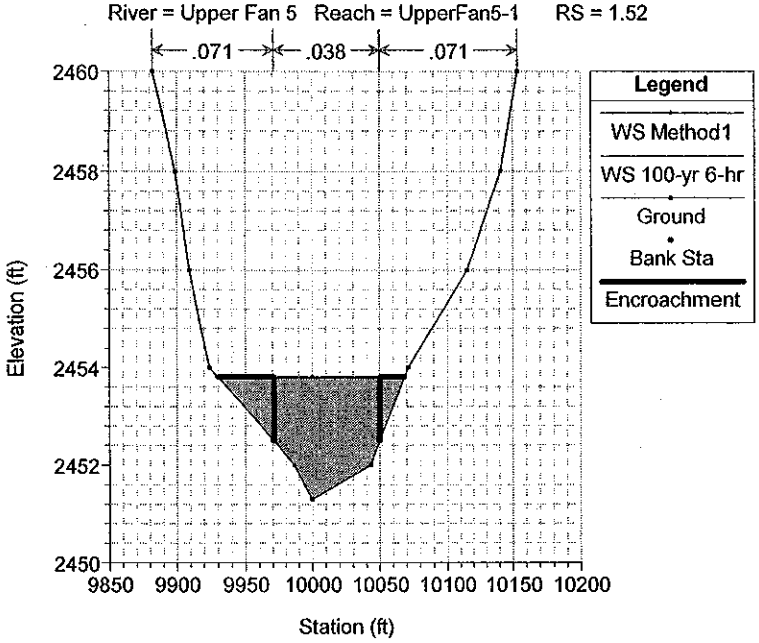

North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.76
.071
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.67
.071
.038
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachm
Elevation (ft)
Station (ft)

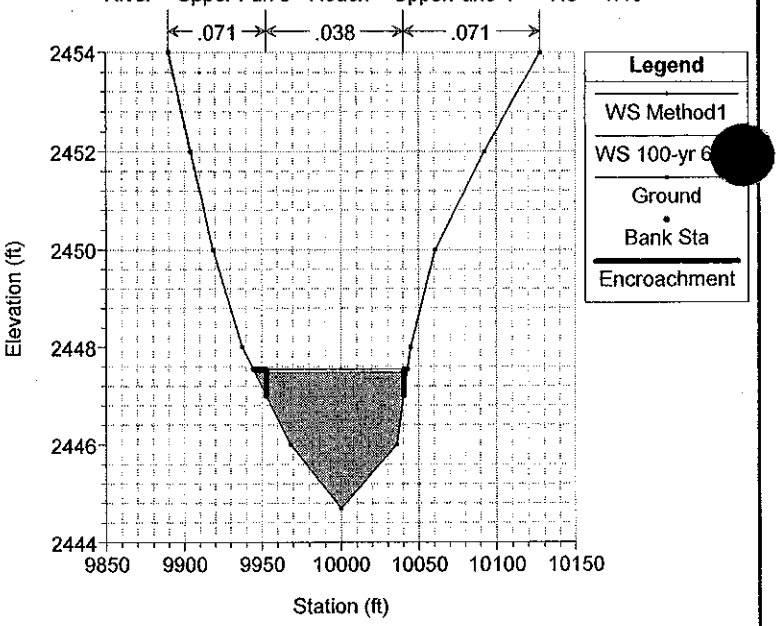

North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.61
.071
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.56
.071
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

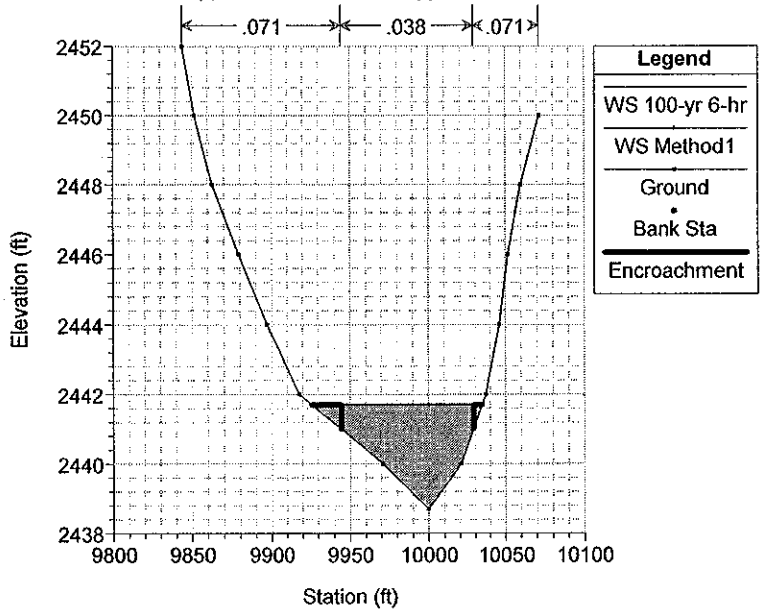
North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.52



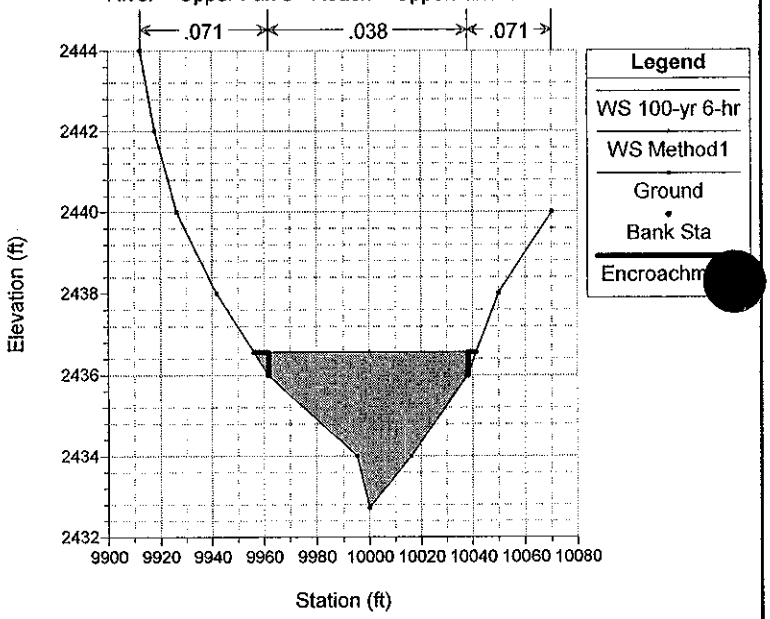
North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.45



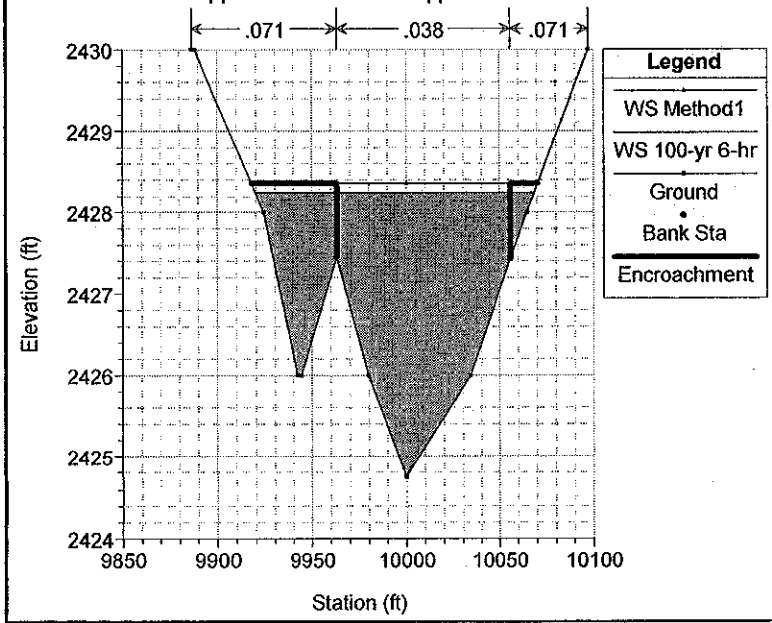
North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.38



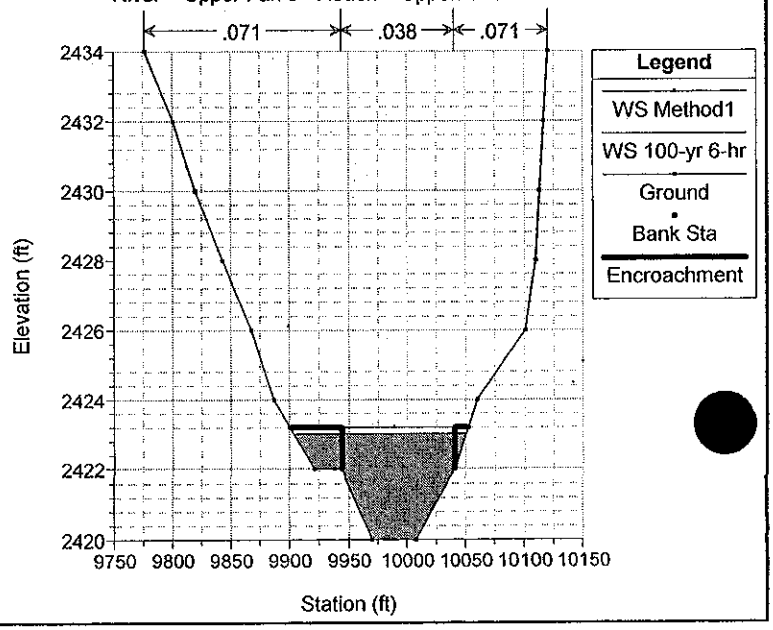
North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.33

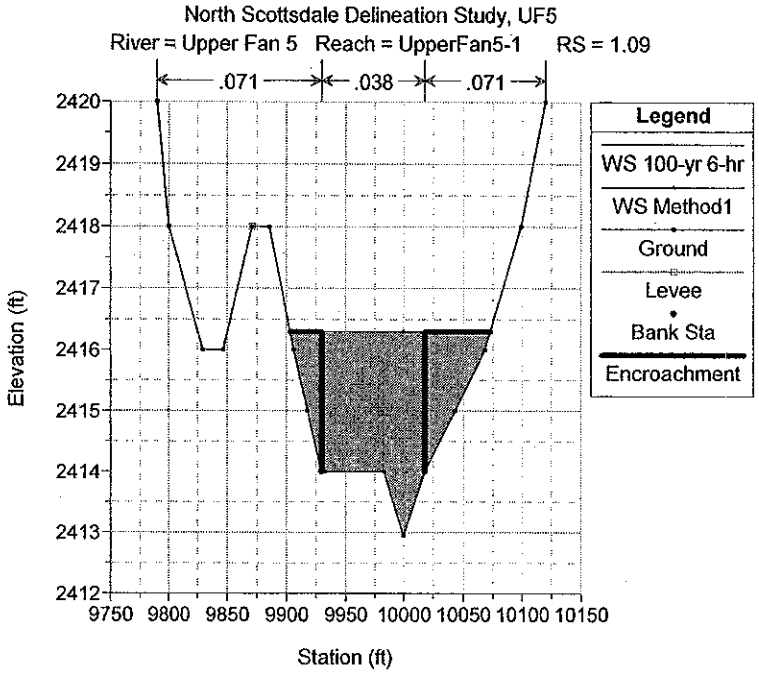


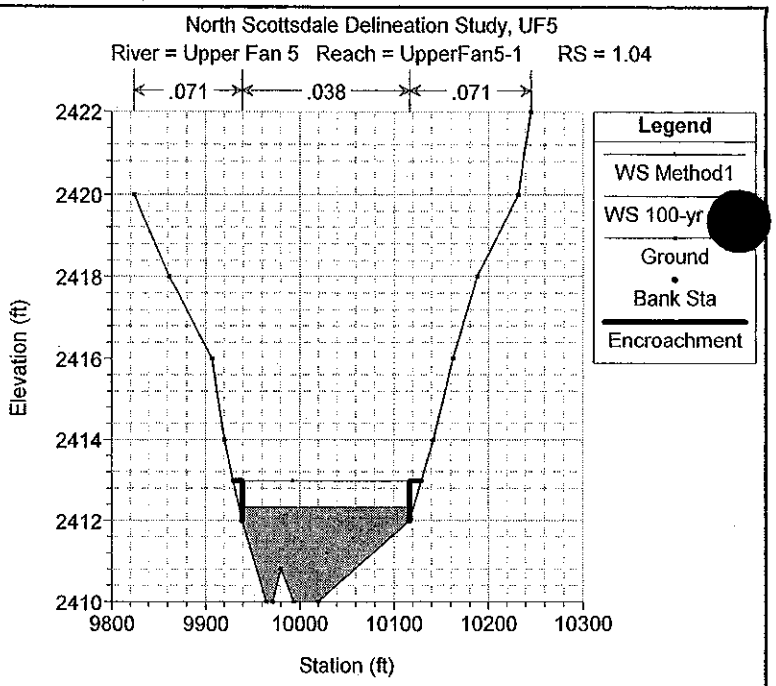
North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.24

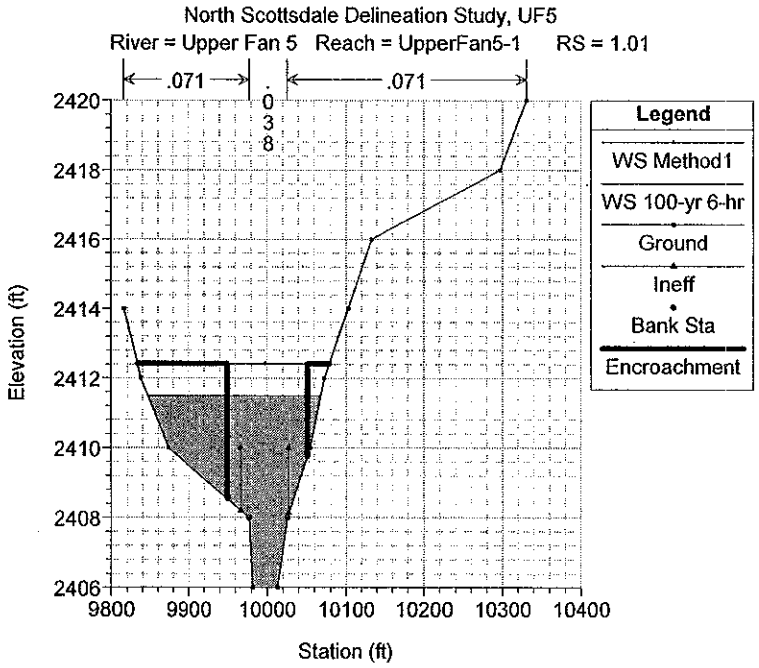


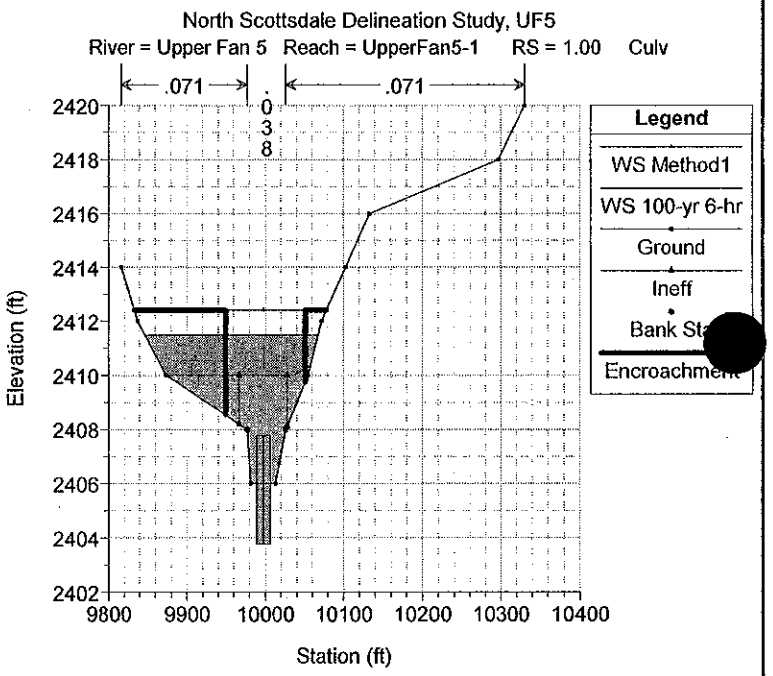
North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.18

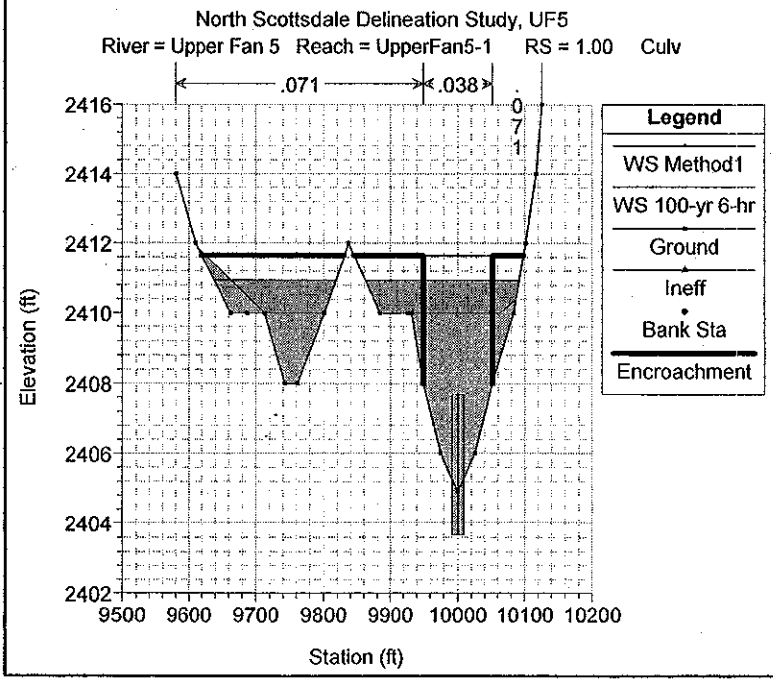


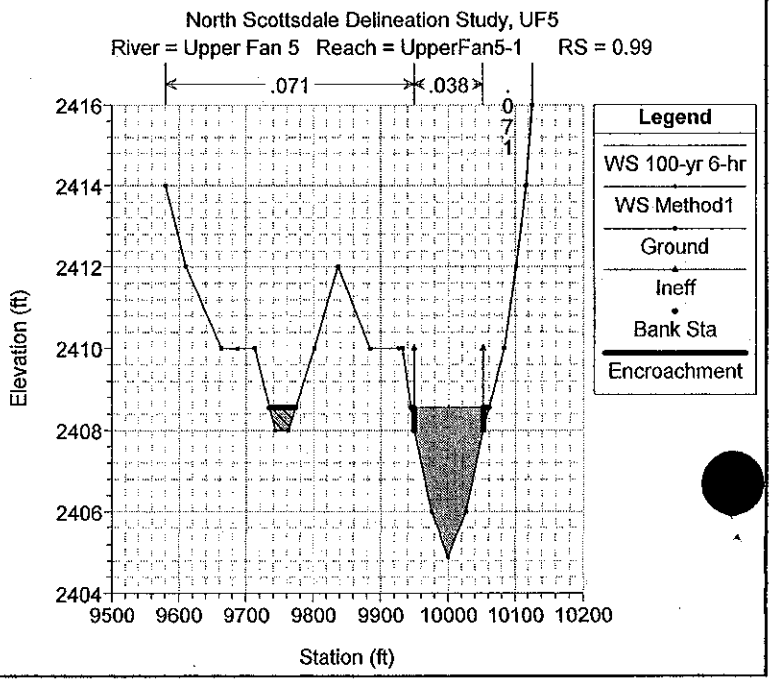

North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.09
.071
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Levee
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

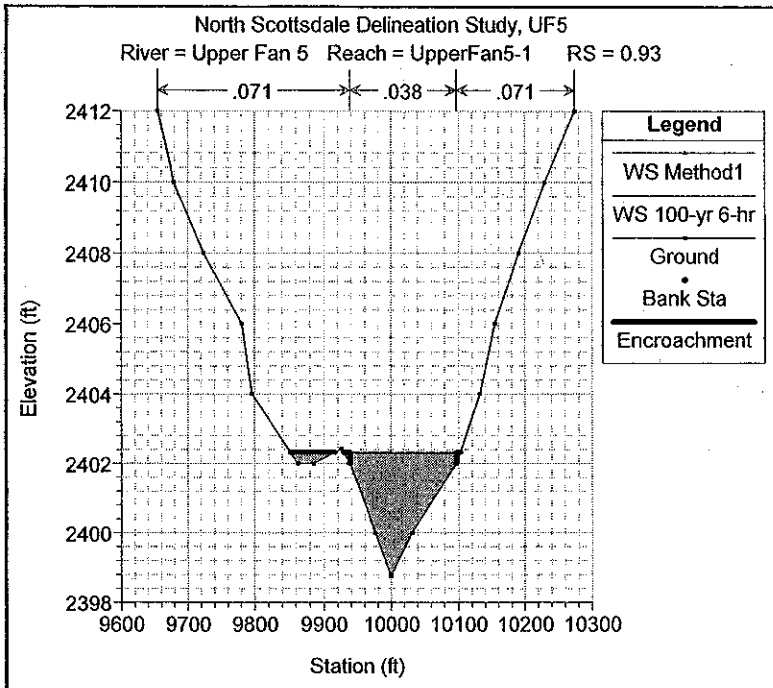

North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.04
.071
.038
.071
Legend
WS Method1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
Station (ft)

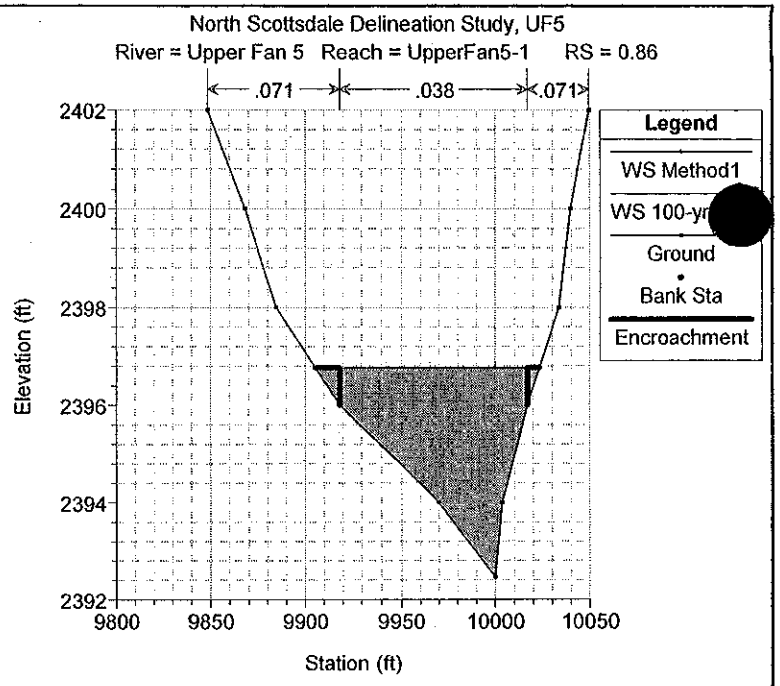

North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.01
.071
.038
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.00 Culv
.071
.038
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 1.00 Culv
.071
.038
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 0.99
.071
.038
.071
Legend
WS 100-yr 6-hr
WS Method1
Ground
Ineff
Bank Sta
Encroachment
Elevation (ft)
Station (ft)


North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 0.93
.071
.038
.071
Legend
WS Method1
WS 100-yr 6-hr
Ground
Bank Sta
Encroachment
Elevation (ft)
2412
2410
2408
2406
2404
2402
2400
2398
9600 9700 9800 9900 10000 10100 10200 10300
Station (ft)

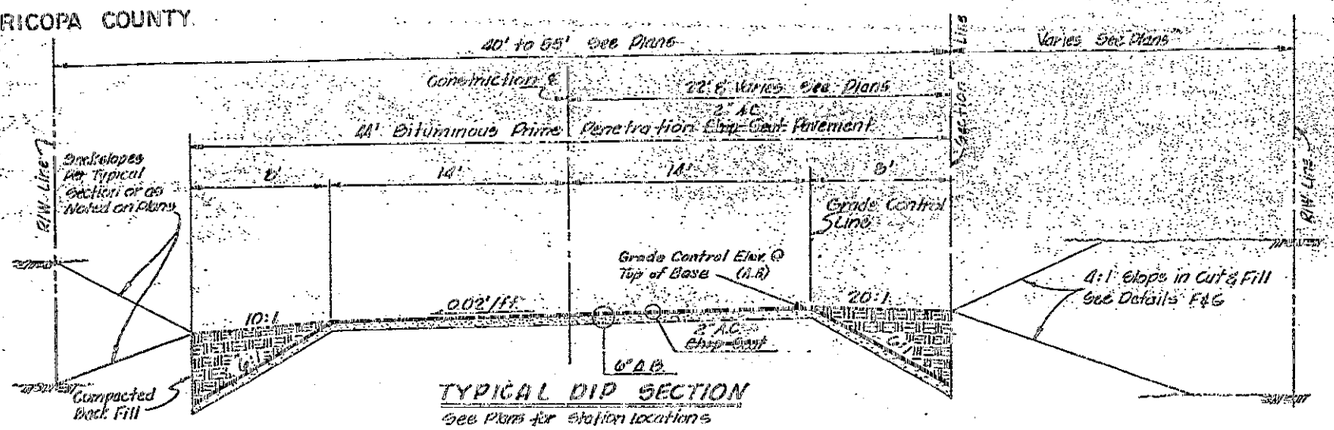

North Scottsdale Delineation Study, UF5
River = Upper Fan 5 Reach = UpperFan5-1 RS = 0.86
.071
.038
.071
Legend
WS Method1
WS 100-yr
Ground
Bank Sta
Encroachment
Elevation (ft)
2402
2400
2398
2396
2394
2392
9800 9850 9900 9950 10000 10050
Station (ft)

E.3 EXPANSION AND CONTRACTION COEFFICIENTS

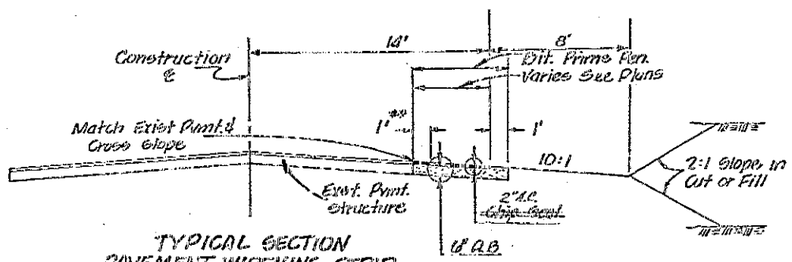
E.4 ANALYSIS OF STRUCTURES

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
MARICOPA	ARIZ.	[illegible]			

PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY



TYPICAL DIP SECTION
See Plans for station locations



TYPICAL SECTION
PAVEMENT WIDENING STRIP
See Plans for station location

** Raw Cut Exist. Pvmt. 1' Min. or to Reach Sound Material. Extent of Cut to be Determined by Engineer in Field.

PIPE CULVERT SUMMARY

℄ STATION	CALL OUT ON PLANS		APPROVED ALTERNATES ▣		HEADWALLS			
					L		R	
	SIZE (IN.)	LENGTH (L.F.)	CMP/CMPA SIZE (IN.)	RCP/RCP (HOR ELIP.) SIZE (IN.)	TYPE	AREA (S.F.)	TYPE	AREA (S.F.)
108+80	29×18	68	29×18	30×19				
115+20	24	52	24	24	Straight	40	U	53
117+40	24	50	24	24	Straight	34	U	35
130+20	36×22	52	36×22	38×24	Straight	48	U	36
138+40	24	66	24	24	Straight	34	U	35
142+55	24	68	24	24	Straight	34	U	35
145+10	(2) 36×22	(2) 52	(2) 36×22	(2) 38×24	Straight	64	U	52
149+70	(2) 29×18	(2) 54	(2) 29×18	(2) 30×19	Straight	54	U	67
150+85	30	68	30	30	Straight	43	U	36
174+05	30	80	36	36	U	58	U	47
182+40	29×18	62	29×18	30×19	Straight	40	U	34
187+35	36	80	36	36	Straight	63	U	47
196+25	30	~~98~~ 120 (AB)	30	30	U	60	U	36
220+80	24	~~82~~ 94 (AB)	24	24	U	50	U	35
227+65	30	50	30	30	Straight	44	U	36
233+40	30	50	30	30	Straight	44	U	36
241+35	(2) 30	(2) 50	(2) 30	(2) 30	Straight	60	U	52
246+44	22×13	22	22×13	23×14	none	none	none	none
248+75	30	58	30	30	Straight	44	U	36
251+90	36	16	none	36	Straight	63	none	none
255+80	22×13	32	22×13	23×14	none	none	none	none
263+30	(2) 30	(2) 50	(2) 30	(2) 30	Straight	60	U	52
Stage Coach Pass 4+71	30	12	none	30	none	none	Straight	44

▣ Note: All R.C.P./R.C.P. (Hor. Elip.) shall be Class III and shall conform to the requirements of Section 735 of the Uniform Standard Specifications.
All C.M.P./C.M.P.A. shall be 12 Gauge, AASHTO Designation M-190, Type A.

QUANTITY SUMMARY – OTHER ITEMS

SURVEY MONUMENT	STD. DTL. 120-2 TYPE D	6 Each
	STD. DTL. 120-2 TYPE E	1 Each
GUARD RAIL	DETAIL H SHEETS 9-6	~~[illegible]~~ 800 (AB) L.F.
BOX CULVERT	A.D.O.T. STD. CM-1, C82 & CW6-5 (Modified) 2-8'×4'×52'	2 Each

Changes in Pipe Culvert Summary Based On As Built Quantities

	Est. (L.F.)	As Built (L.F.)
24" Pipe Culvert	324	336
30" " "	522	562
30" RCP	12	0
36" RCP	16	22.5

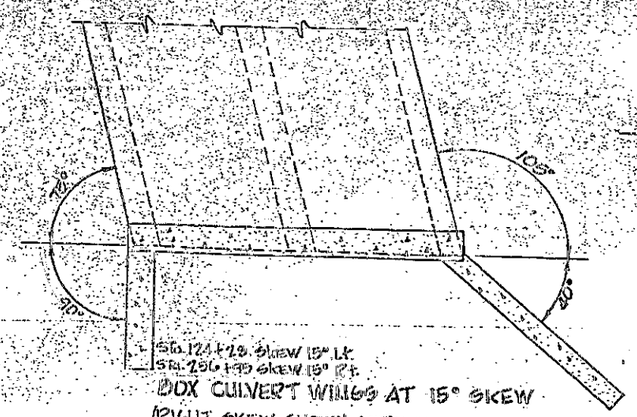
Changes in Headwall Quantities Based on As Built Quantities

Headwall	1,621 (S.F.)	2,253 (S.F.)

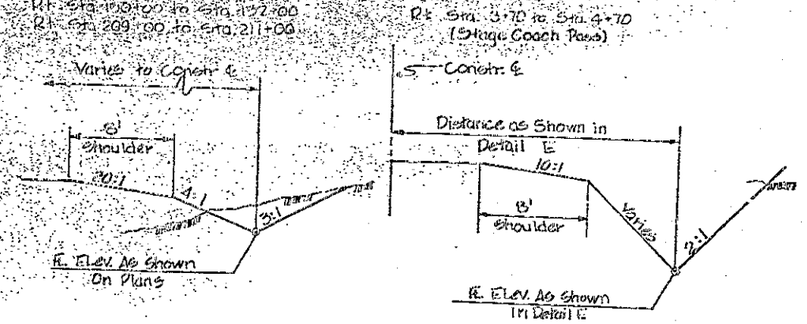
6943

PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOT. SHEETS	AS BUILT
MARICOPA	ARIZ.	68171	18	28	



BOX CULVERT WING AT 15° SKEW
(RIGHT SKEW SHOWN, LEFT IS A MIRROR IMAGE)
SEE STANDARD CW6-5
DETAIL A



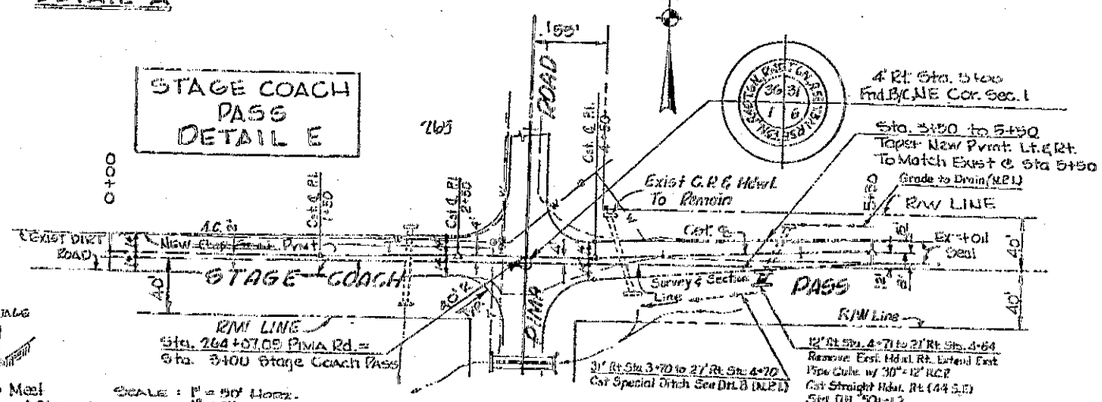
SPECIAL DITCH
(NTS)
DETAIL B

HEADWALL DIMENSIONS FOR ARCH OR HORIZONTAL ELIPTICAL PIPE CULVERT

PIPE CULVERT SIZE (in)		HEADWALL DIMENSIONS				
CMPA	RCP(Elip)	L^1	L^2	L^3	L^4	L^5
29 x 18	30 x 19	8'-8"	8'-4"	6'-8"	1'-10"	4'-7"
36 x 22	38 x 24	9'-4"	6'-8"	8'-0"	1'-10"	5'-2"

Sta. 108+80 144+70
130+20 182+40
145+10 See Std. Detail 601-1,2

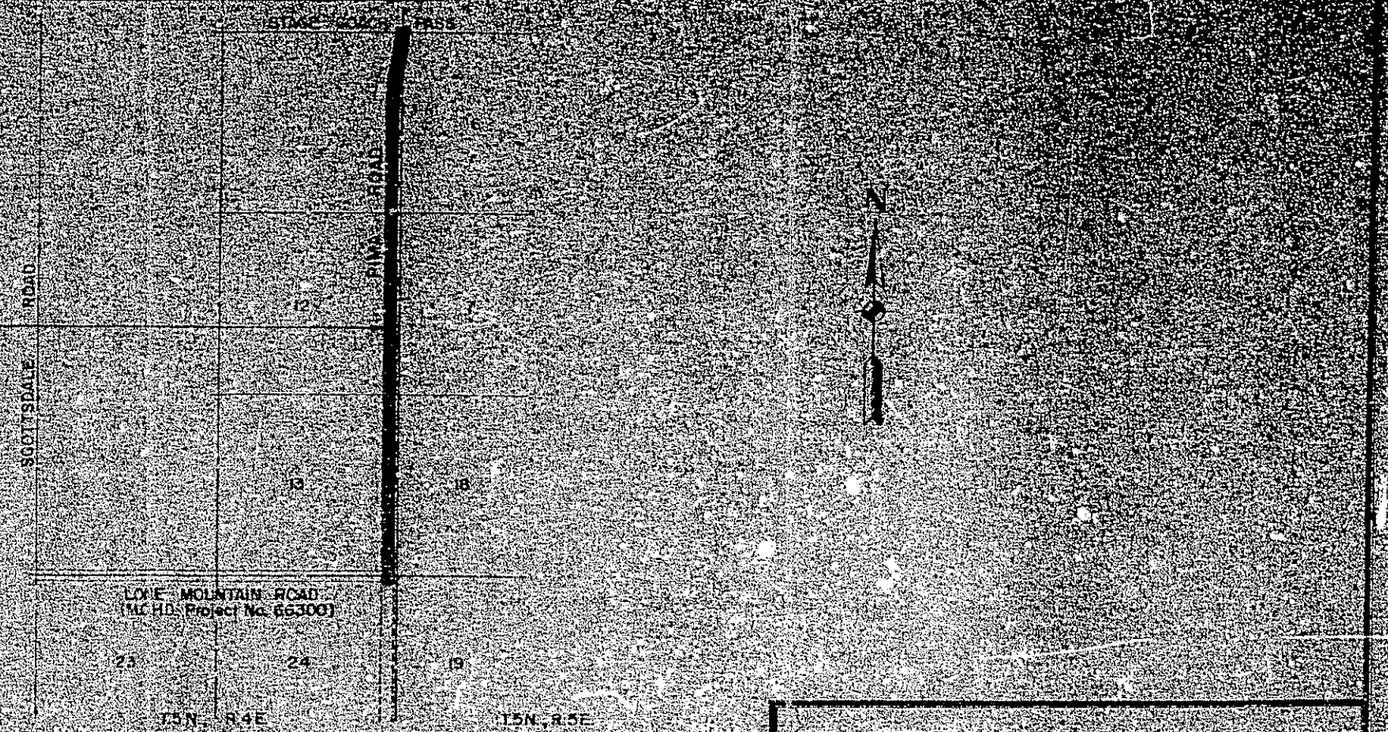
DETAIL C

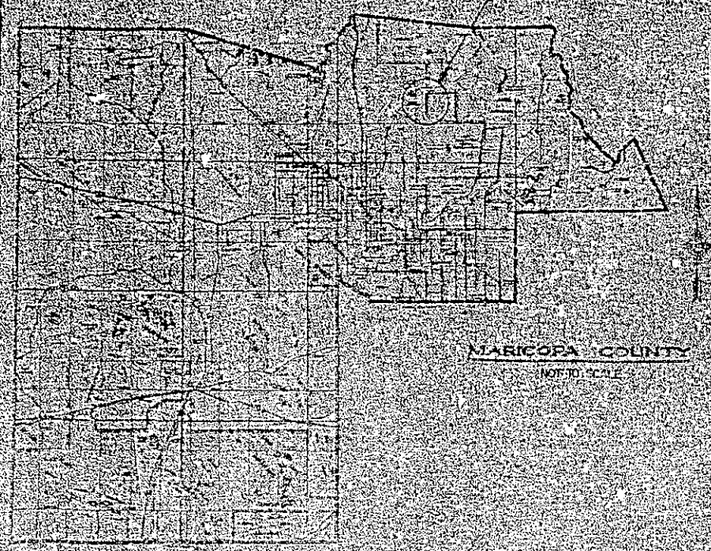


6944

MARICOPA COUNTY HIGHWAY DEPARTMENT

PLANS FOR THE CONSTRUCTION OF
PIMA ROAD - LONE MOUNTAIN RD TO STAGE COACH PASS
PROJECT NO. 68171





DATE: APPROVED: ASST. COUNTY ENGINEER
ENGINEERING DIVISION

DATE: APPROVED: ASST. COUNTY ENGINEER
STRUCTURE DIVISION

DATE: 4-26-82 APPROVED: COUNTY ENGINEER

APPROVED: DEPUTY COUNTY ENGINEER
DATE:

COUNTY BOARD OF SUPERVISORS

DISTRICT 1 TOM FREESTONE
DISTRICT 2 [illegible]
DISTRICT 3 FRED KOURY
DISTRICT 4 HAWK ATKINSON
DISTRICT 5 EDWARD L. PASTOR

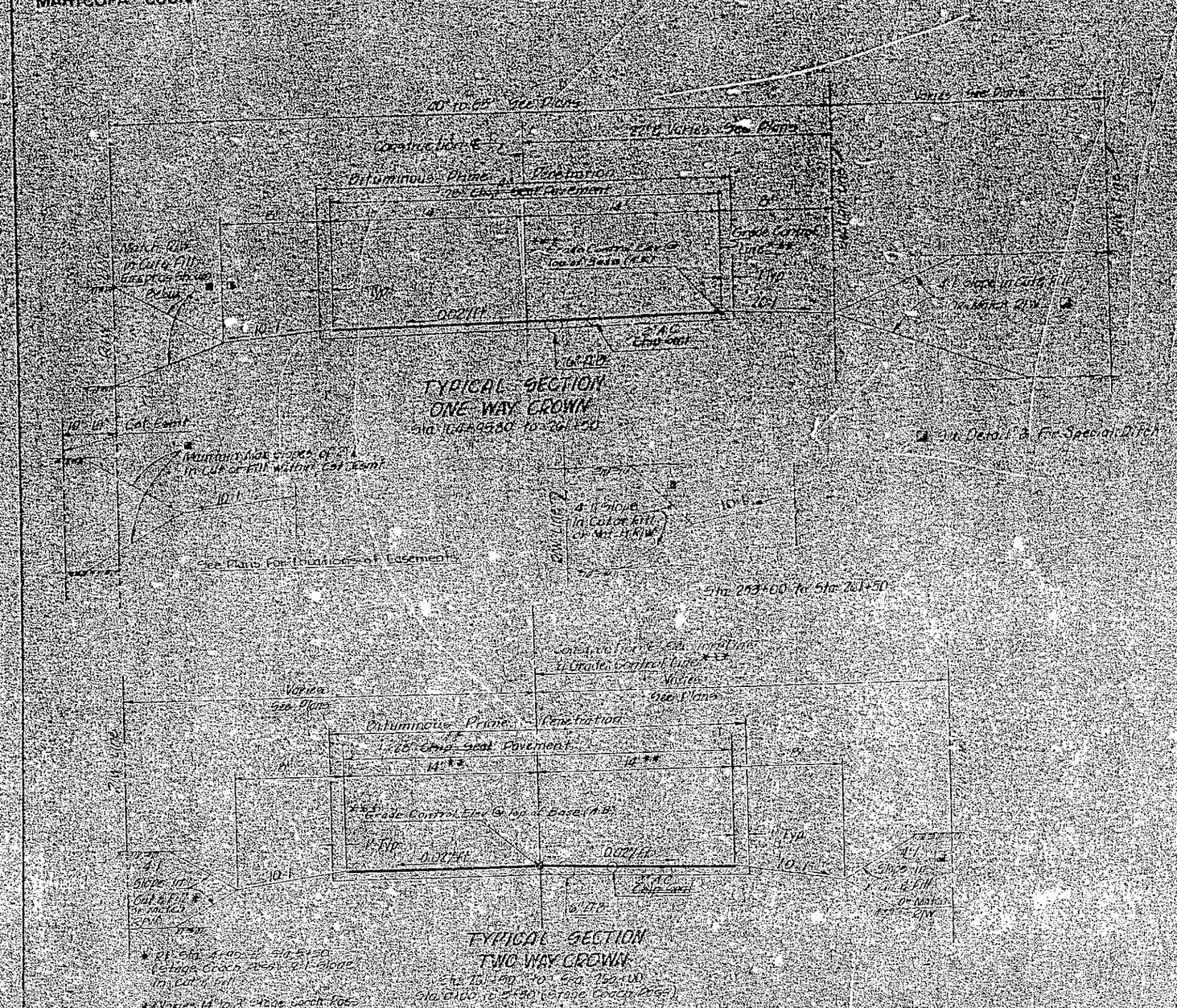
APPROVED: CHAIRMAN

DATE: 5-10-82

PROJECT NO. 68171

6941

PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY



INDEX OF SHEETS

Sheet No.	Title
1	Title Sheet
2-8	Typical Section, Summary Sheet, Notes
9-20	Plan & Profile Sheets
21A-22	Earthwork Summary Sheet

LENGTH OF PROJECT

PIMA ROAD - Sta. 0+41.95 to Sta. 251+46.43 (Sta. 61+10.3 Ahead to Sta. 267+56.

Total 216.00 Miles

STANDARDS

MAG 120-2 Survey Monuments
MAG 205-1 Pipe Turnouts
MAG 501-1-2 Headwalls
ADOT CM-1 Miscellaneous Details for Culverts
ADOT CD-2 Double Barrel Box Culvert
ADOT CW-1 Inlet or Outlet Wings

GENERAL NOTES

1. All work is to conform to M.A.G. Uniform Standard Specifications for Public Works Construction, dated 1979 and current revisions thereto together with the M.C.H.D. Supplement to the MAG Uniform Standard Specifications and the Special Provisions.
2. Standard Details refer to the M.A.G. Standard Details for Public Works Construction unless otherwise noted.
3. All existing utility lines shown on plans are from available utility records. Contractor shall verify the actual field location before starting construction.
4. Disposal of all waste material, broken concrete, p.c. will be the responsibility of the Contractor, subject to the approval of the Engineer.
5. All stationing is Construction ℄ Stationing unless otherwise noted.
6. All callout distances (L, R) are from Construction ℄ unless otherwise noted.
7. All mailboxes interfering with construction will be relocated by the Contractor so as to provide uninterrupted mail service. This is a non-pay item.
8. Fences inside the R/W which interfere with construction will be removed or relocated by M.C.H.D. unless otherwise noted.
9. All paved turnouts shall have the same base requirements as adjacent roadway.
10. Where Reinforced Concrete Pipe is used, the Contractor, at his option, may furnish Reinforced Concrete Pipe (Rubber Gasket) of the class specified.
11. Pipe Culvert alignment and Headwall elevations have been set in the office according to available information and to accomodate future Construction. The Contractor shall grade to drain as required at inlet & outlet of new pipe culverts. This is a non-pay item.

6942

Wash	Crossing		Cross Sections		Subdivision	Engineer	Sheet	COS AS-Built Archive Sheet #	Data Collection	Elevation	Notes
	Street	Type	Location	RS						Culvert Invert	
Upper Fan 5	Pima Road	2-8ft x 4ft Culvert	Upstream	1.00	N/A	MC Highway Dept.	16	6956	Plans	2403.77	Adjusted by DEI from
			Downstream							2403.67	survey points north on Pima road
	Seven Palms Drive	3-10ft x 4ft Culvert	Upstream	2.99	Legend Trail	Carter Burgess	18	34983	Plans/Survey	2590.60	1, 2, 3
			Downstream							2589.25	
Fan 6A	None										
Fan 6A North	Preserve Way	4-10'x4' CBC Culvert	Upstream	1.03	Legend Trail	Carter Burgess	3 & 4	34968-34969	Plans/Survey	2548.30	
			Downstream							2547.21	
	Roadrunner Drive	4-10'x4' CBC Culvert	Upstream	1.19	Legend Trail	N/A	-	-	DEI Survey	2562.37	1
			Downstream							2561.18	
	Desert Ridge Drive	4-10'x4' CBC Culvert	Upstream	1.55	Legend Trail	CVL	C3 &C4	32109-32110	Plans/Survey	2598.07	6
			Downstream							2596.34	
	Calvary Drive	4-10'x4' CBC Culvert	Upstream	2.05	Legend Trail	CVL	4 & 5	31034-31035	Plans/Survey	2644.26	
			Downstream							2643.47	
	Standing Stones Road	4-10ft x 4ft Arch	Upstream	3.915		N/A	N/A	N/A	DEI Survey	2846.05	
			Downstream							2844.82	
Fan 6A South	Preserve Way	5-10ft x 4ft CBC	Upstream	1.16	Legend Trail	Carter Burgess	5	34970	Plans/Survey	2558.75	
			Downstream							2557.60	
	Preserve Way & 99th	4-10ft x 4ft CBC	Upstream	1.77	Legend Trail	Carter Burgess	11	34976	Plans/Survey	2611.04	
			Downstream							2610.44	
Fan 6C	Westland Drive	2-10ft x 4ft CBC	Upstream	0.775	Boulder Ridge	Wood Patel	7-9, 12	32215-32217	Plans/Survey	2454.70	6
			Downstream							2453.80	
	Pima Road	Weir-1 Way Crown		1.23					Plans/Survey		
	92nd Place	3-10ft x 4ft CBC	Upstream	1.875	Legend Trail	N/A	-	N/A	Survey	2563.30	7
			Downstream							2562.59	
	Sandy Vista Drive	3-12ft x 5ft CBC	Upstream	2.22	Legend Trail	N/A	-	N/A	Survey	2597.88	7
			Downstream							2596.74	
	Sandy Vista Drive	3-12ft x 5ft CBC	Upstream	2.28	Legend Trail	N/A	-	N/A	Survey	2603.98	7
			Downstream							2601.32	
	Legend Trail PKWY	3-10ft x 4ft CBC	Upstream	2.56	Legend Trail	CVL	32	26087	Survey	2628.03	7
			Downstream							2628.03	
Upper Boulders Wash	Winfield Drive	6-10ft x 4ft CBC	Upstream	0.49	Winfield	Gilbertson	5	31083	Plans	2314.32	6
			Downstream							2313.82	
	Westland Drive	5-6ft x 3ft CBC	Upstream	0.73	Winfield	Brooks Hersey	12	37433	Plans	2344.00	
			Downstream							2338.50	
	Hayden Road	2-6ft x 4ft CBC	Upstream	1.17	Boulders	Pinnacle	2	30586	Plans	2390.00	
			Downstream							2389.00	
		1-8ft x 4ft CBC	Upstream	1.17	Boulders	Pinnacle	2	30586	Plans	2390.00	
			Downstream							2389.00	
	Pima Road	Weir-1 Way Crown		1.23					Plans/Survey		
	92nd Place	3-12ft x 5ft CBC	Upstream	3.045	Legend Trail	N/A	-	N/A	Survey	2603.98	7
			Downstream							2601.32	
	Legend Trail PKWY	2-3ft CP	Upstream	3.64						2627.00	
			Downstream							2623.10	
Stage Coach Pass Wash	Scottsdale Road	4-10ft x 4ft CBC	Upstream	0.99	Boulders				DEI Survey	2265.83	
			Downstream							2260.72	
	Ironwood Drive	Weir		1.94	Boulders	Gilbertson	5	33880	Plans/Survey		8
	79th Way	4-10ft x 4ft CBC	Upstream	2.145	Boulders	Pinnacle	3	30587	Plans/Survey	2395.84	
			Downstream							2394.65	
	81st Street	5-6ft x 4ft CBC	Upstream	2.495	Sandflower				DEI Survey	2438.83	
			Downstream							2437.53	
	84th Street	5-6ft x 3ft CBC	Upstream	2.96	Sandflower				DEI Survey	2486.30	

Wash	Crossing		Cross Sections		Subdivision	Engineer	Sheet	COS AS-Built Archive Sheet #	Data Collection	Elevation	Notes
	Street	Type	Location	RS						Culvert Invert	
			Downstream							2484.41	
	Pima Road	2-8ft x 4ft CBC	Upstream	3.63					DEI Survey	2547.76	
			Downstream							2546.84	
		N/A		4.09					DEI Survey		
		N/A		4.30					DEI Survey		
		N/A		4.53					DEI Survey		
		N/A		5.64					DEI Survey		
	102nd Street	2-6ft x 3ft CBC	Upstream	5.90					DEI Survey	2812.31	
			Downstream							2811.82	
	Stonehaven Drive (Mirabel West Entrance)	3-10ft x 3ft Arch	Upstream	6.505	Stonehaven/Mirabel	N/A	-	-	DEI Survey	2897.24	
			Downstream							2896.27	
	Stonehaven Drive (Mirabel East Entrance)	3-10ft x 3ft Arch	Upstream	6.545	Stonehaven/Mirabel	N/A	-	-	DEI Survey	2901.81	
			Downstream							2900.36	

[1] Listed invert elevation under plan information is shown prior to datum adjustment and when applicable shows invert for upstream side of culverts.

1 Inverts from DEI Survey.
2 Roadway Deck from Plan.
3 Plan data adjusted based on Datum adjustment factor.
4 Plan data adjusted based common point with DEI Survey.
5 Plan data used for basic road geometry.
6 See detailed calcualtion sheet for detailed information.
7 Inverts from City of Scottsdale Survey.
8 Topographic mapping provided by FCDMC used.

Plan Set: Infrastructure Improvement Plans for Boulder Ridge
Boulder Ridge Improvement Plans
Prepared by: Wood/Patel Associates
Sheets: 7, 8, 9 and 12
Wash Fan 6C
COS AS-Built Sheets 32215-32217

		Plan Station	*Flip Direction*	*Station Correction Factor*		*Station Correction Factor Applied*		*Elevation Per Plan*	*Elevation COS 88 Per Plan w/ Correction* 2.35
WESTLAND ROAD ALIGNMENT				*5423.7*	*5386.1*				
P		4740	-4740			683.7	646.1	2466.94	2469.29
P		4475	-4475			948.7	911.1	2460.67	2463.02
2-10'x4' CBC		4404.9	-4404.9			1018.8	981.2		
	INV N =	4423.7	-4423.7			1000	962.4	2452.4	
	INV S =	4386.1	-4386.1			1037.6	1000	2451.4	
P		4325	-4325			1098.7	1061.1	2456.71	2459.06
P		4300	-4300			1123.7	1086.1	2455.98	2458.33
P		4000	-4000			1423.7	1386.1	2449.98	2452.33
P		3950	-3950			1473.7	1436.1	2449.44	2451.79
P		3840	-3840			1583.7	1546.1	2448.14	2450.49
3-24" RGRCP		3711.4	-3711.4			1712.3	1674.7		
	INV N =	3736.8	-3736.8			1686.9	1649.3	2441.5	
	INV S =	3686	-3686			1737.7	1700.1	2440	
MH10		3650.05	-3650.05			1773.65	1736.05	2444.91	2447.26
85th STREET ALIGNMENT									
MH10		1024.14				1773.65		2444.91	2447.26
P		1033.15				1782.66		2444.74	2447.09
P		1275				2024.51		2448.57	2450.92

Plan Set: Paving, Grading, Drainage & Utility Plan for Winfield
Winfield Plat Two Phase 1
Prepared by: Gilbertson
Sheets: 5
Wash: Upper Bolders Wash
COS AS-Built Sheets 32215-32217

		Plan Station	*Station Correction Factor*		*Station Correction Factor Applied*		*Elevation Per Plan*	*Elevation COS 88 Per Plan w/ Correction*
WINFIELD DRIVE ALIGNMENT			*-2486.66*	*-2694.88*				1.92
		3650			1163.34	955.12	2322.21	2324.13
P		3707.93			1221.27	1013.05	2321.77	2323.69
6-10'x3' CBC		3787			1300.34	1092.12		
	INV E =	3787			1300.34	1092.12	2312.4	2314.32
	INV W =	3787			1300.34	1092.12	2311.9	2313.82
P		3807.93			1321.27	1113.05	2318.5	2320.42
P		3810.94			1324.28	1116.06	2318.34	2320.26
P		3900.94			1414.28	1206.06	2315.18	2317.1
P		3954.07			1467.41	1259.19	2314.44	2316.36
P		3975.15			1488.49	1280.27	2314.38	2316.3
P		3990.94			1504.28	1296.06	2314.42	2316.34
P		4089.97			1603.31	1395.09	2314.92	2316.84
P		4144.97			1658.31	1450.09	2316.02	2317.94

Plan Set:	Legend Trail Recreation Center Phase I of Parcel D
Prepared by:	CVL
Sheets:	C3 and C4
Wash	Fan 6AN
COS AS-Built Sheets	32109,32110

		Plan Station	***Flip Direction***	***Station Correction Factor Upstream***	***Station Correction Factor Downstream***	***Station Correction Factor Applied Upstream***	***Station Correction Factor Applied Downstream***	***Elevation Per Plan***	***Elevation COS 88 Per Plan w/ Correction***
									3.13
DESERT RIDGE DRIVE ALIGNMENT				*2693.8*	*2585.59*				
P		1620.64	-1620.64			1073.16	964.95	2603.24	2606.37
P		1520.64	-1520.64			1173.16	1064.95	2601.9	2605.03
P		1477.09	-1477.09			1216.71	1108.5	2601.8	2604.93
P		1415.38	-1415.38			1278.42	1170.21	2602.03	2605.16
P		1362	-1362			1331.8	1223.59	2602.3	2605.43
2-10'x4' CBC									
	INV S =	1	-1					2594	2597.13
	INV N =	1356.33	-1356.33					2595.1	2598.23
Inbetween Culvets		1339.36	-1339.36			1354.44	1246.23		
2-10'x4' CBC									
	INV S =	1	-1					2594	2597.13
	INV N =	1322.39	-1322.39					2595.1	2598.23
P		1208.98	-1208.98			1484.82	1376.61	2604.32	2607.45
VG		1181.96	-1181.96			1511.84	1403.63	2603.7	2606.83
P		1088	-1088			1605.8	1497.59	2605.02	2608.15

Plan Set:	Legend Trail Recreation Center Parcel E
Prepared by:	CVL
Sheets:	4, 5
Wash	Fan 6AN
COS AS-Built Sheets	31034,31035

		PLAN STATION	***Flip Direction***	***Correction Factor***		***Correction Factor Applied***		***Elevation Per Plan***	***Elevation COS 88 Per Plan w/ Correction*** 1.95
CAVALRY DRIVE ALIGNMENT				*2047.26*	*2028.71*				
		1245.09	-1245.09			802.17	783.62	2645.55	2647.5
		1213.8	-1213.8			833.46	814.91	2647.51	2649.46
		1184	-1184			863.26	844.71	2648.87	2650.82
P		1139	-1139			908.26	889.71	2649.28	2651.23
P		1114	-1114			933.26	914.71	2649.2	2651.15
P		1097	-1097			950.26	931.71	2648.9	2650.85
P		1086.32	-1086.32			960.94	942.39	2648.78	2650.73
P		1067	-1067			980.26	961.71	2648.81	2650.76
4-10'x4' CBC									
	INV N =	1046	-1046			1001.26	982.71	2641.5	2643.45
	INV S =	1046	-1046			1001.26	982.71	2640	2641.95
P		1019.5	-1019.5			1027.76	1009.21	2648.2	2650.15
P		1004.09	-1004.09			1043.17	1024.62	2649.18	2651.13
		892.88	-892.88			1154.38	1135.83	2648.62	2650.57
		874.54	-874.54			1172.72	1154.17	2648.53	2650.48
		824.54	-824.54			1222.72	1204.17	2847.88	2849.83

Plan Set: Offsite Sewer
Scottsdale Road to Hayden Road Alignment
Prepared by: Tecolote
Sheets: 11 and 12
Wash
COS AS-Built Sheets

		Plan Station	*Flip Direction*	*Station Correction Factor Upstream*	*Station Correction Factor Downstrea*	*Station Correction Factor Applied Upstream*	*Station Correction Factor Applied Downstream*	*Elevation Per Plan*	*Elevation COS 88 Per Plan w/ Correction 2*
WESTLAND ROAD				*5827.06*	*5693.35*				
P		4100	-4100			1727.06	1593.35	2334.45	2336.45
P		4480	-4480			1347.06	1213.35	2343.74	2345.74
5-6'x3' CBC									
	INV S =	4540	-4540			1287.06			
	INV N =	4540	-4540			1287.06			
P		4844	-4844			983.06	849.35	2349.52	2351.52
P		5028	-5028			799.06	665.35	2351.36	2353.36
P		5324	-5324			503.06	369.35	2356.51	2358.51

Plan Set: Legend Trail Parcel A

Prepared by: Carter Burgess
Sheets: 3 and 4
Wash Fan 6 AN
COS AS-Built Sheets 34968-34969

	Plan Station	***Flip Direction***	***Station Correction Factor Upstream***	***Station Correction Factor Downstream***	***Station Correction Factor Applied Upstream***	***Station Correction Factor Applied Downstream***	***Elevation Per Plan***	***Elevation COS 88 Per Plan w/ Correction 2.75***
PRESERVE WAY ALIGNMENT (Fan 6A North)			*1606.7*	*1547.23*				
P	875.55	-875.55			731.15	671.68	2559.99	2562.74
P	840.55	-840.55			766.15	706.68	2558.78	2561.53
P	734.38	-734.38			872.32	812.85	2556.23	2558.98
P	645.14	-645.14			961.56	902.09	2554.09	2556.84
P	615.14	-615.14			991.56	932.09	2553.52	2556.27
P	585.14	-585.14			1021.56	962.09	2553.25	2556
P	494.19	-494.19			1112.51	1053.04	2552.89	2555.64
P	426	-426			1180.7	1121.23	2552.62	2555.37
P	296.14	-296.14			1310.56	1251.09	2553.84	2556.59
4-10'x4' CBC								
INV N =	267	-267			1339.7	1280.23	2545.5	2548.25
INV S =	204	-204			1402.7	1343.23	2544.5	2547.25
P	256.68	-256.68			1350.02	1290.55	2554.21	2556.96
VG	218.95	-218.95			1387.75	1328.28	2555.18	2557.93
P	74.83	-74.83			1531.87	1472.4	2557.95	2560.7

Plan Set: Legend Trail Parcel A

Prepared by: Carter Burgess
Sheets: 11
Wash Fan 6AS
COS AS-Built Sheets 34976

		Plan Station	***Flip Direction***	***Station Correction Factor Upstream***	***Station Correction Factor Downstream***	***Station Correction Factor Applied Upstream***	***Station Correction Factor Applied Downstream***	***Elevation Per Plan***	***Elevation COS 88 Per Plan w/ Correction 2.24***
PRESERVE WAY ALIGNMENT and 99TH WAY (Fan 6A South)									
				-2830.07	*-2684.2*				
		3800.18				970.11	1115.98	2614.93	2617.17
		3837.18				1007.11	1152.98	2615.25	2617.49
		3847.28				1017.21	1163.08	2615.32	2617.56
5-10'x4' CBC									
	INV N =	3920				1089.93	1235.8	2608	2610.24
	INV S =	3920				1089.93	1235.8	2609	2611.24
P		3927				1096.93	1242.8	2616	2618.24
P		3988.53				1158.46	1304.33	2615.69	2617.93
P		4036.53				1206.46	1352.33	2615.45	2617.69
P		4044.77				1214.7	1360.57	2615.43	2617.67
P		4066.53				1236.46	1382.33	2615.57	2617.81
P		4096.53				1266.46	1412.33	2616.12	2618.36
		4257.89				1427.82	1573.69	2620.54	2622.78

Plan Set: Legend Trail Parcel A

Prepared by: Carter Burgess
Sheets: 5
Wash F6AS
COS AS-Built Sheets 34970

		Plan Station	*Flip Direction*	*Station Correction Factor Upstream*	*Station Correction Factor Downstream*	*Station Correction Factor Applied Upstream*	*Station Correction Factor Applied Downstream*	*Elevation Per Plan*	*Elevation COS 88 Per Plan w/ Correction* 2.88
PRESERVE WAY ALIGNMENT (Fan 6A South)				*2138.18*	*2116.8*				
P		1182.5	-1182.5			955.68	934.3	2566.22	2569.1
P		1116.5	-1116.5			1021.68	1000.3	2565.01	2567.89
P		1107.5	-1107.5			1030.68	1009.3	2565.04	2567.92
5-10'x4' CBC									
	INV N =	1015	-1015			1123.18	1101.8	2556	2558.88
	INV S =	1015	-1015			1123.18	1101.8	2554.5	2557.38
P		999.78	-999.78			1138.4	1117.02	2565.57	2568.45
		967.28	-967.28			1170.9	1149.52	2565.14	2568.02
		940.48	-940.48			1197.7	1176.32	2563.93	2566.81
		934.78	-934.78			1203.4	1182.02	2563.57	2566.45
		910.55	-910.55			1227.63	1206.25	2561.96	2564.84
		875.55	-875.55			1262.63	1241.25	2559.99	2562.87
		840.55	-840.55			1297.63	1276.25	2558.78	2561.66

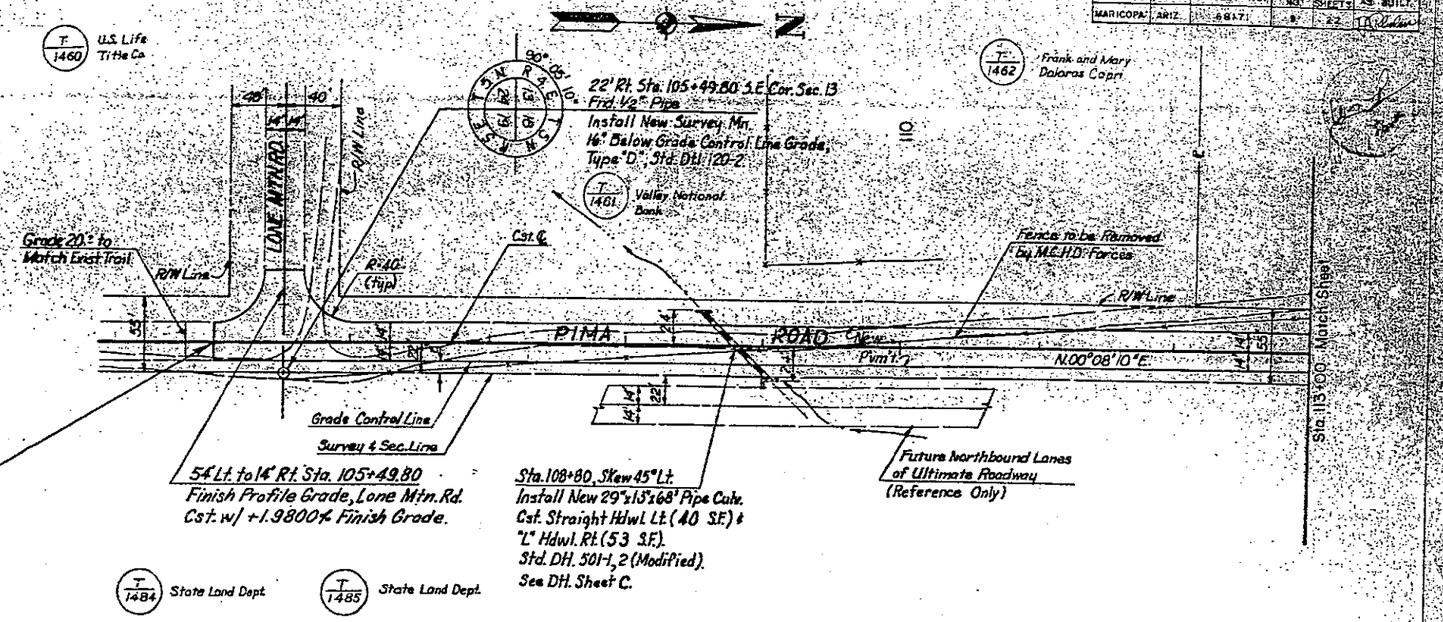
Plan Set: Legend Trail Parcel A

Prepared by: *Carter Burgess*
Sheets: 18
Wash Upper Fan 5
COS AS-Built Sheets 34983

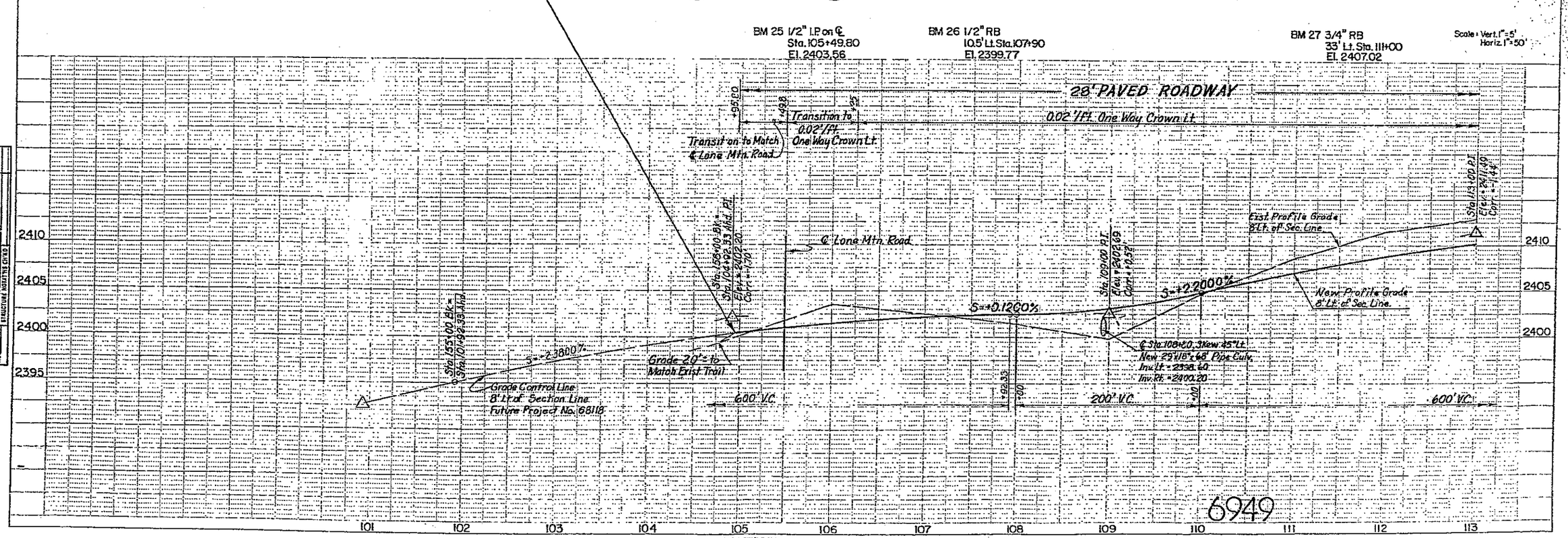
		Plan Station	*Flip Direction*	*Station Correction Factor Upstream*	*Station Correction Factor Downstream*	*Station Correction Factor Applied Upstream*	*Station Correction Factor Applied Downstream*	*Elevation Per Plan*	*Elevation COS 88 Per Plan w/ Correction* 2.73
SEVEN PALMS DRIVE ALIGNMENT (Upper Fan 5)				*2034.77*	*2114.23*				
P									
P		976.38	-976.38			1058.39	1137.85	2599.17	2601.9
P		932.88	-932.88			1101.89	1181.35	2597.82	2600.55
3-10'x4' CBC									
	INV N =	895	-895			1139.77	1219.23	2587.8	2590.53
	INV S =	895	-895			1139.77	1219.23	2586.6	2589.33
P		902.88	-902.88			1131.89	1211.35	2597.05	2599.78
P		872.88	-872.88			1161.89	1241.35	2596.59	2599.32
P		799	-799			1235.77	1315.23	2595.85	2598.58
P		769	-769			1265.77	1345.23	2595.7	2598.43
P		739	-739			1295.77	1375.23	2595.85	2598.58
P		691.76	-691.76			1343.01	1422.47	2596.32	2599.05
P		532.58	-532.58			1502.19	1581.65	2597.91	2600.64

PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
MARICOPA	ARIZ.	68171	9	22	



STA 158+03.47 Bk.=
STA. 104+95.80 Ahd.
BEGIN PROJECT 68171

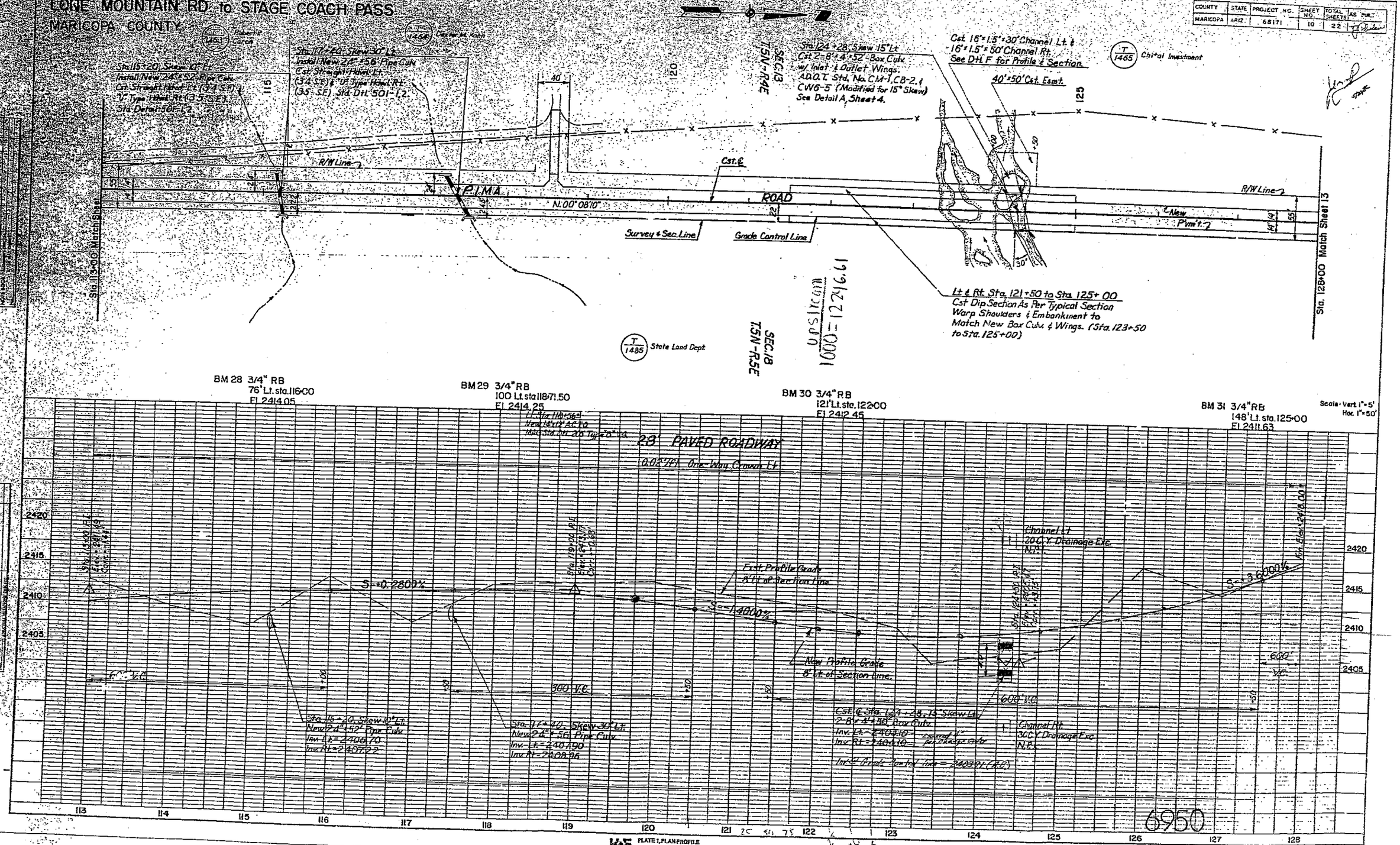


6949

PLATE 3 SINGLE PLAN - PROFILE - DOTTED
CHARLES TRUSING COMPANY
MADE IN U.S.A.

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS PUBT.
MARICOPA	ARIZ.	68171	10	22	

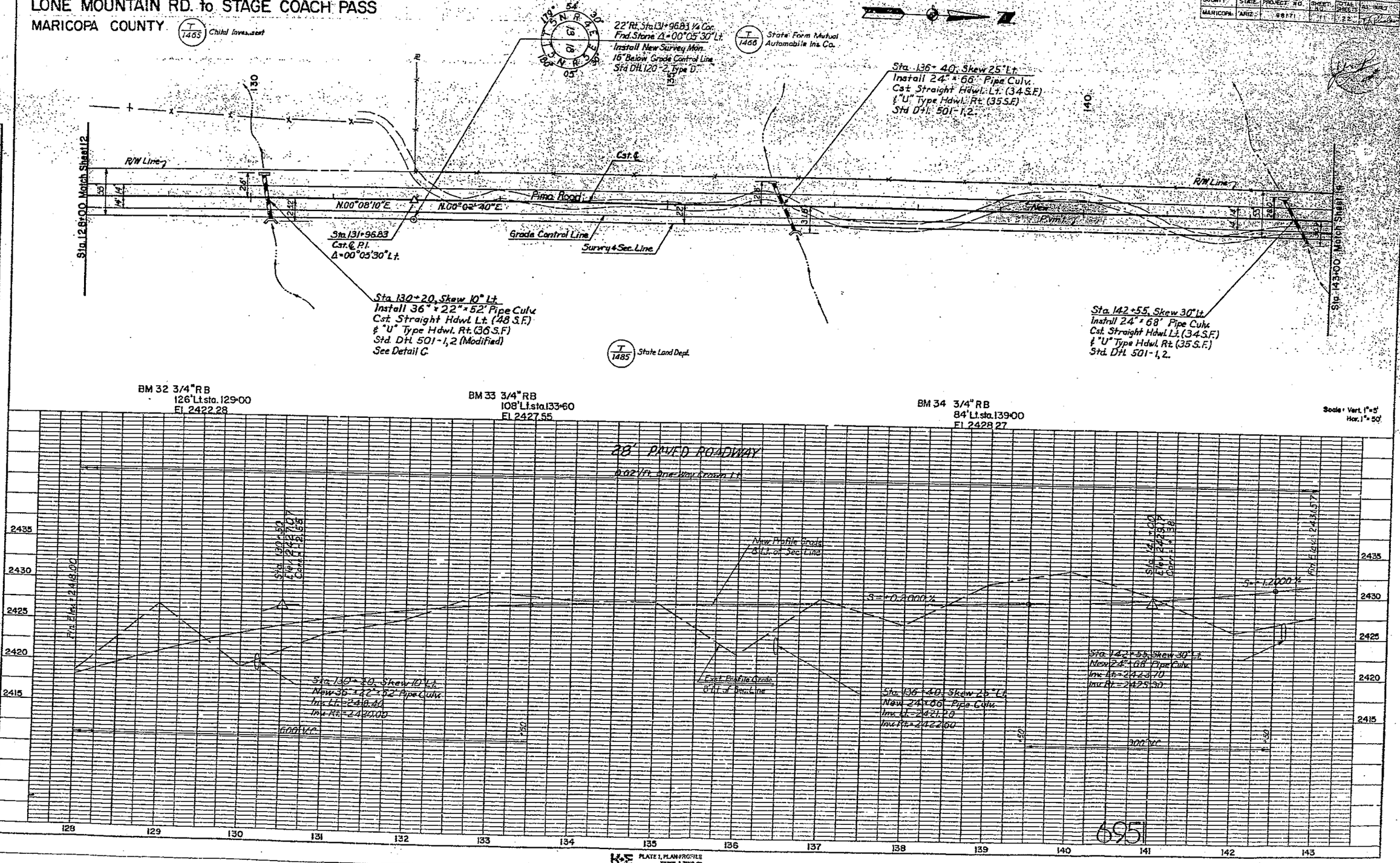
PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY



K+E PLATE 1, PLAN-PROFILE

PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	ALL WORK
MARICOPA	ARIZ.	881-71	11	22	



PLAN
NOTE BOOK No.
SURVEYED
PLOTTED
TRACED
S. M. H.
CHECKED
SUBMITTED RECOMMENDED APPROVED

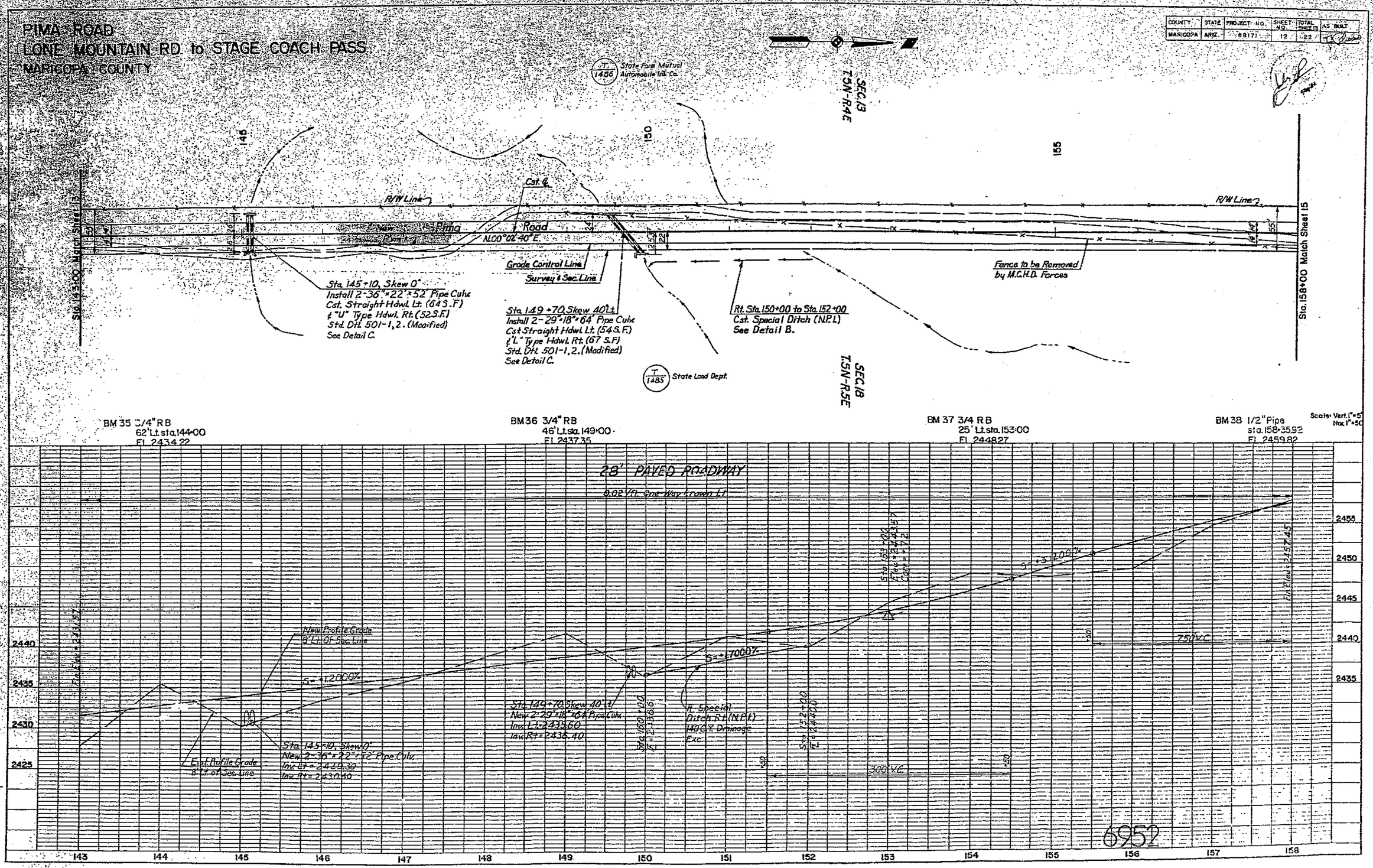
PROFILE
NOTE BOOK No.
SURVEYED
PLOTTED
TRACED
S. M. H.
CHECKED
SUBMITTED RECOMMENDED APPROVED

6951

K+E PLATE 1, PLAN-PROFILE
KEUFFEL & ESSER CO.
48 7024 MADE IN U.S.A.

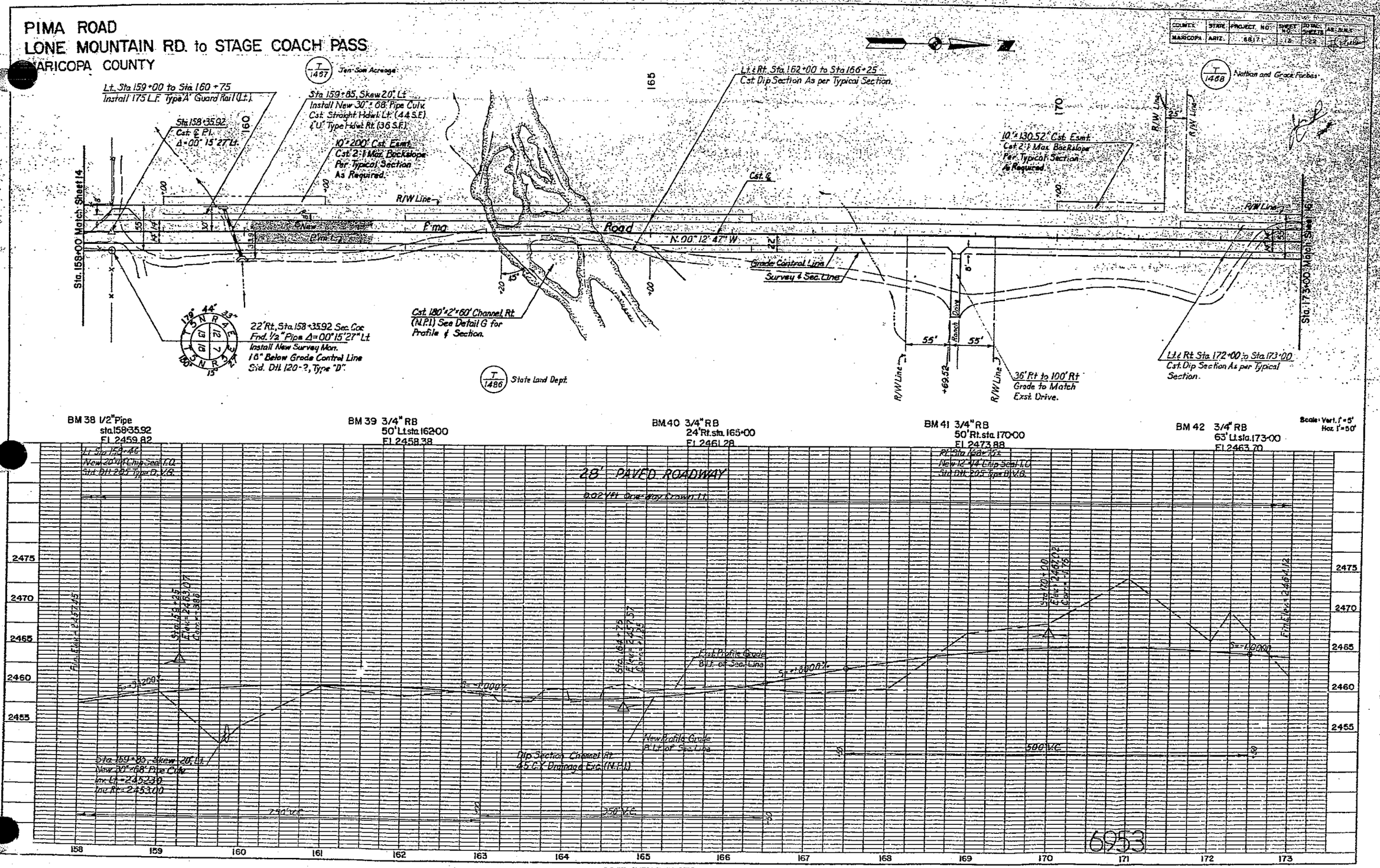
COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
MARICOPA	ARIZ.	88171	12	22	

PIMA ROAD
LONE MOUNTAIN RD to STAGE COACH PASS
MARICOPA COUNTY



PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
MARICOPA	ARIZ.	68,171	12	22	

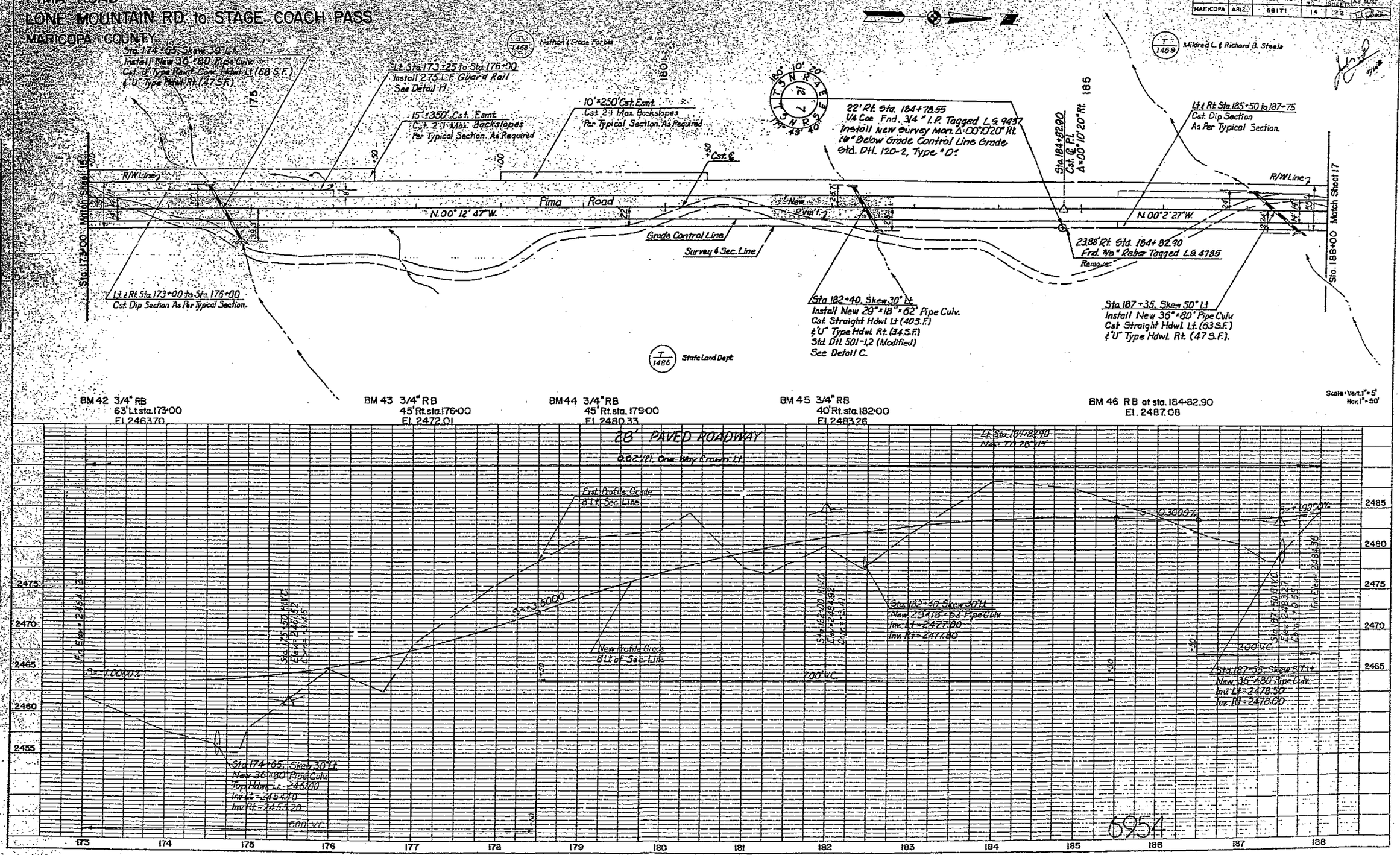


6953

K+E PLATE 1, PLAN-PROFILE
KEUFFEL & ESSER CO.
487026 MADE IN U.S.A.

COUNTY	STATE	PROJECT NO	SHEET NO	TOTAL SHEETS	AS BUILT
MARICOPA	ARIZ.	68171	14	22	

PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY

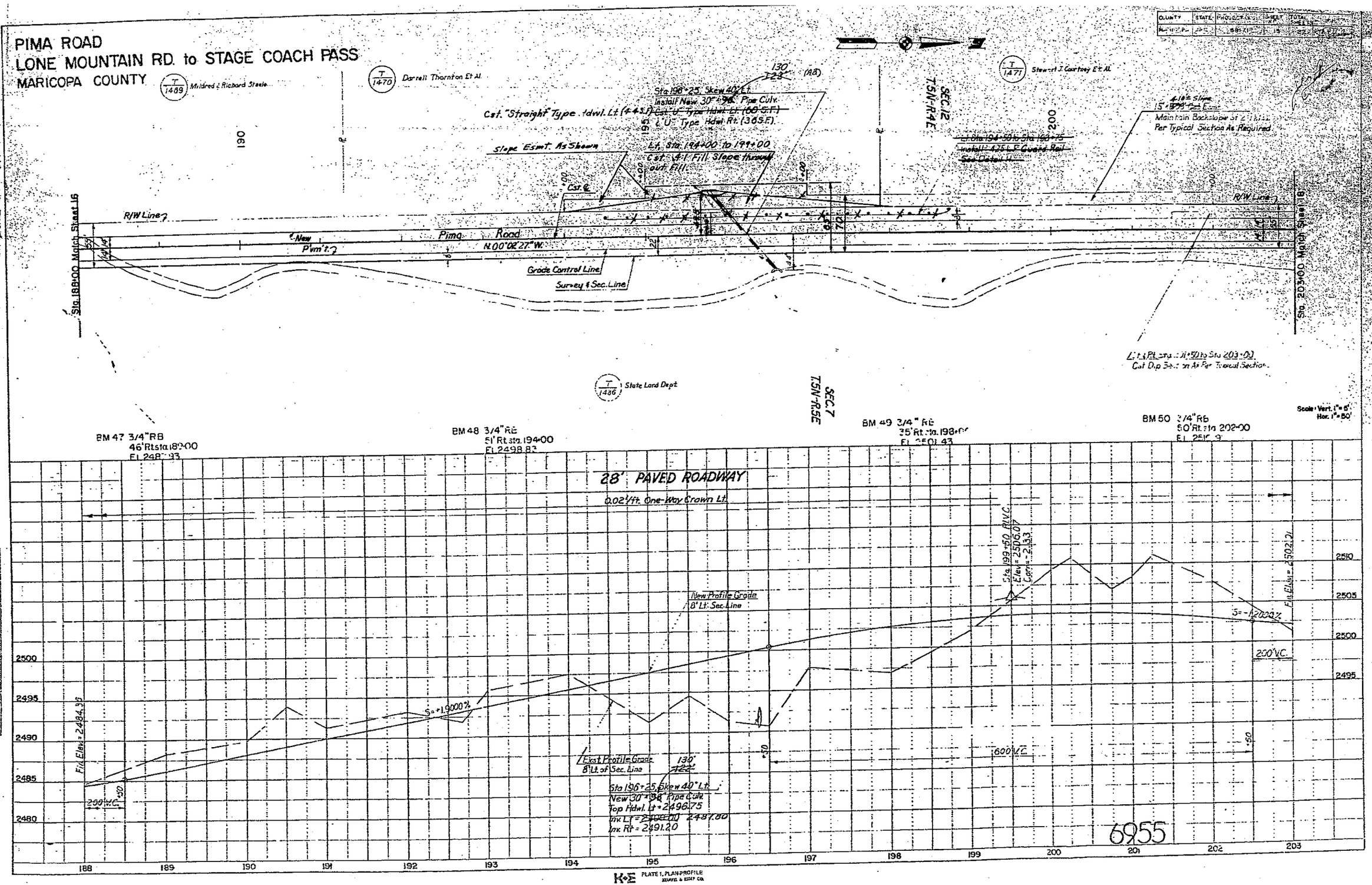


6954

PLATE 1, PLAN-PROFILE

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
Maricopa	Ariz.	881-A(1)	15	22

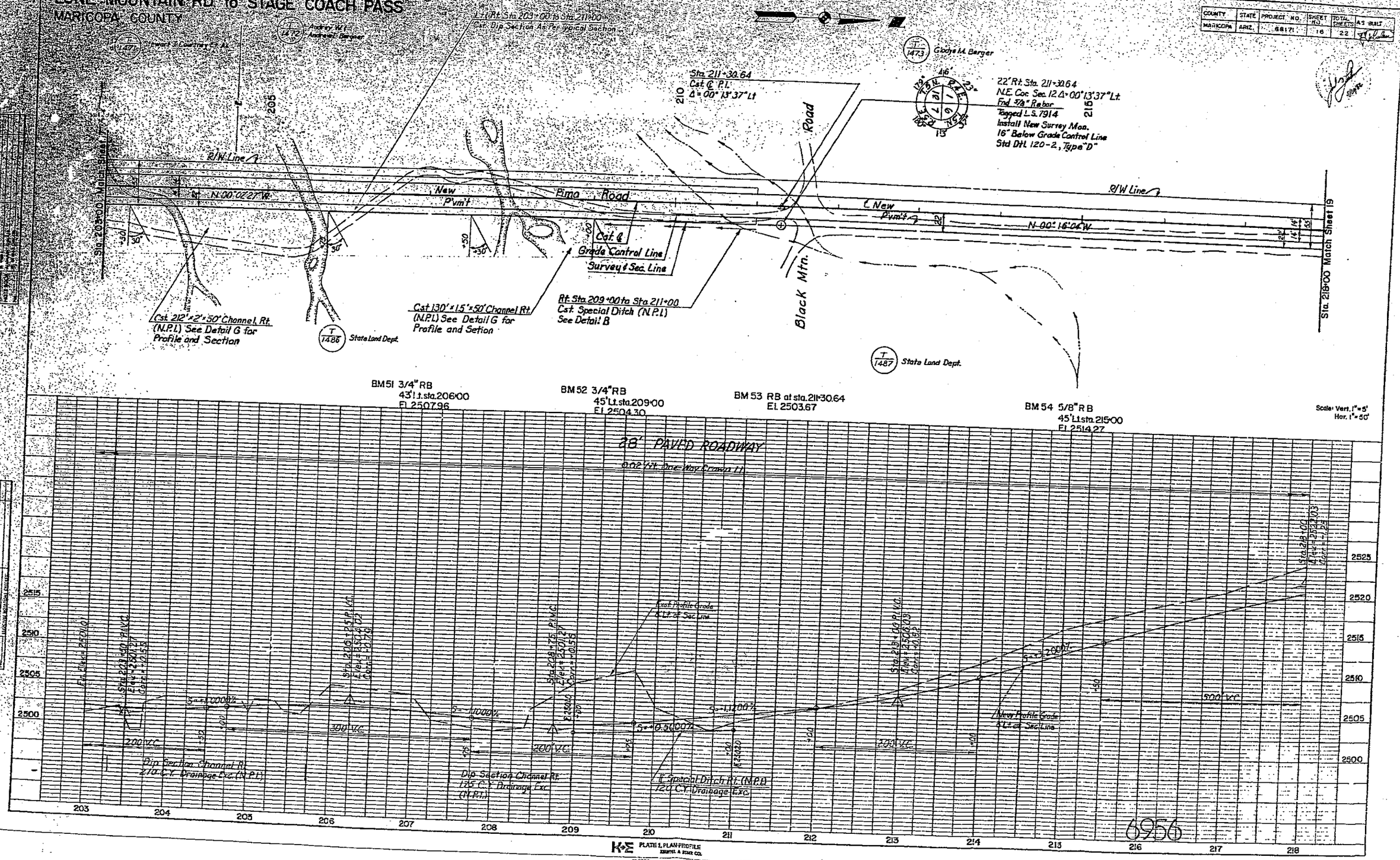
PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY



K+E PLATE 1, PLAN-PROFILE KEUFFEL & ESSER CO.

PIMA ROAD
LONE MOUNTAIN RD to STAGE COACH PASS
MARICOPA COUNTY

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
MARICOPA	ARIZ.	68171	16	22	



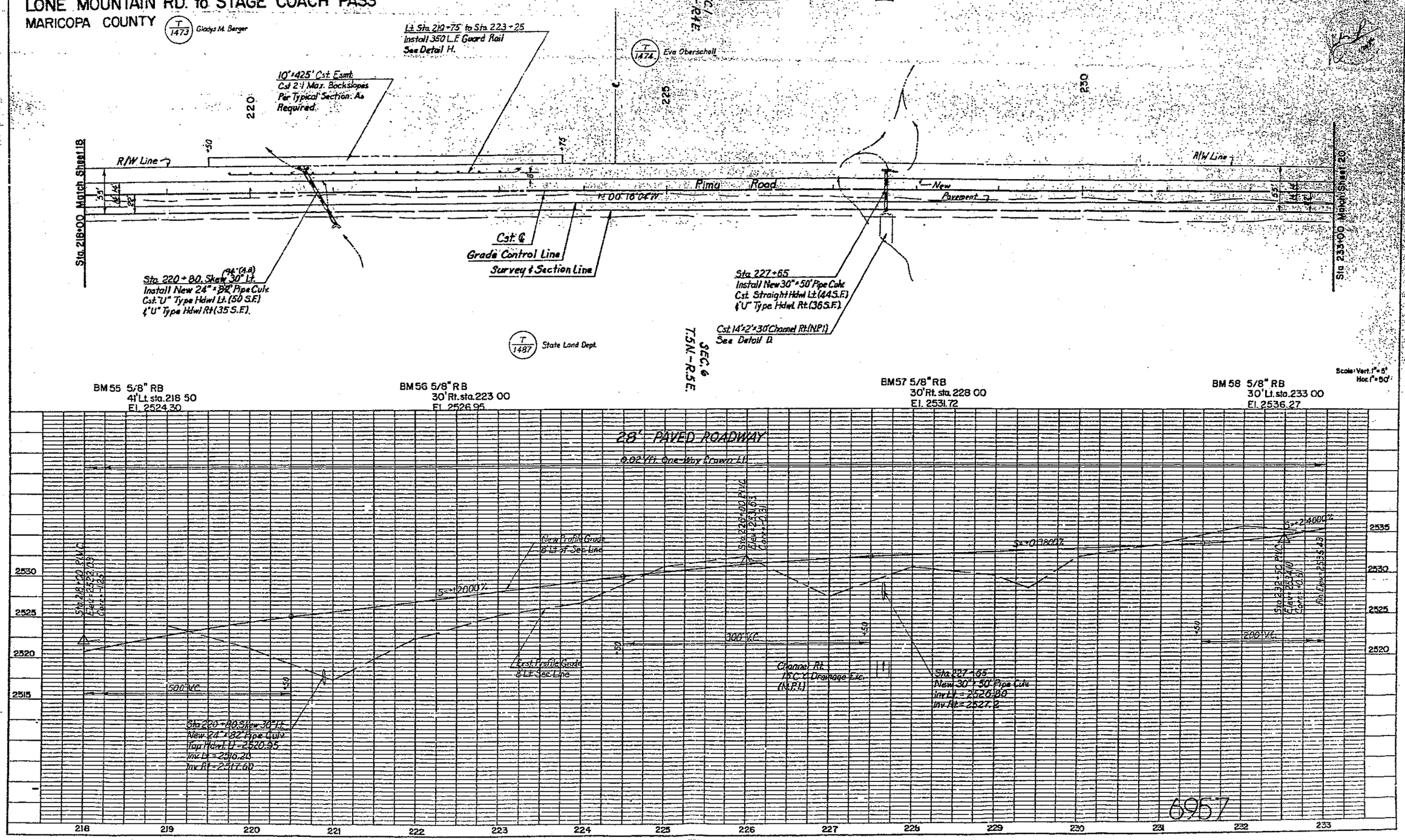
PROFILE
NOTE BOOK
No.

K+E PLATE 1, PLAN-PROFILE
KEUFFEL & ESSER CO.
48 1024 MADE IN U.S.A.

6956

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
MARICOPA	ARIZ.	68171	17	22	

PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY

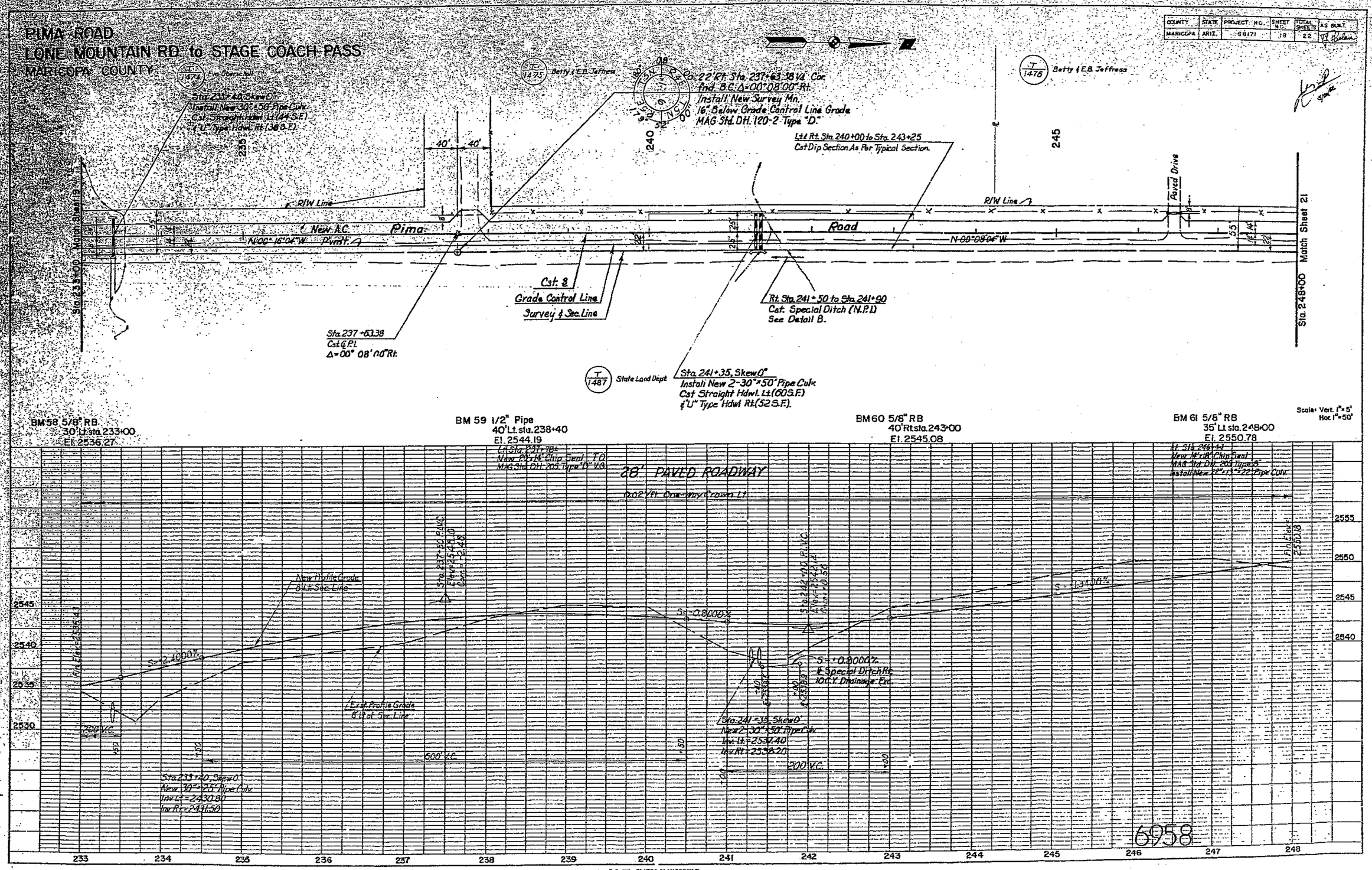


6957

K+E PLATE 1, PLAN-PROFILE
KEUFFEL & ESSER CO.
48 7024

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
MARICOPA	ARIZ.	68171	18	22	

PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY



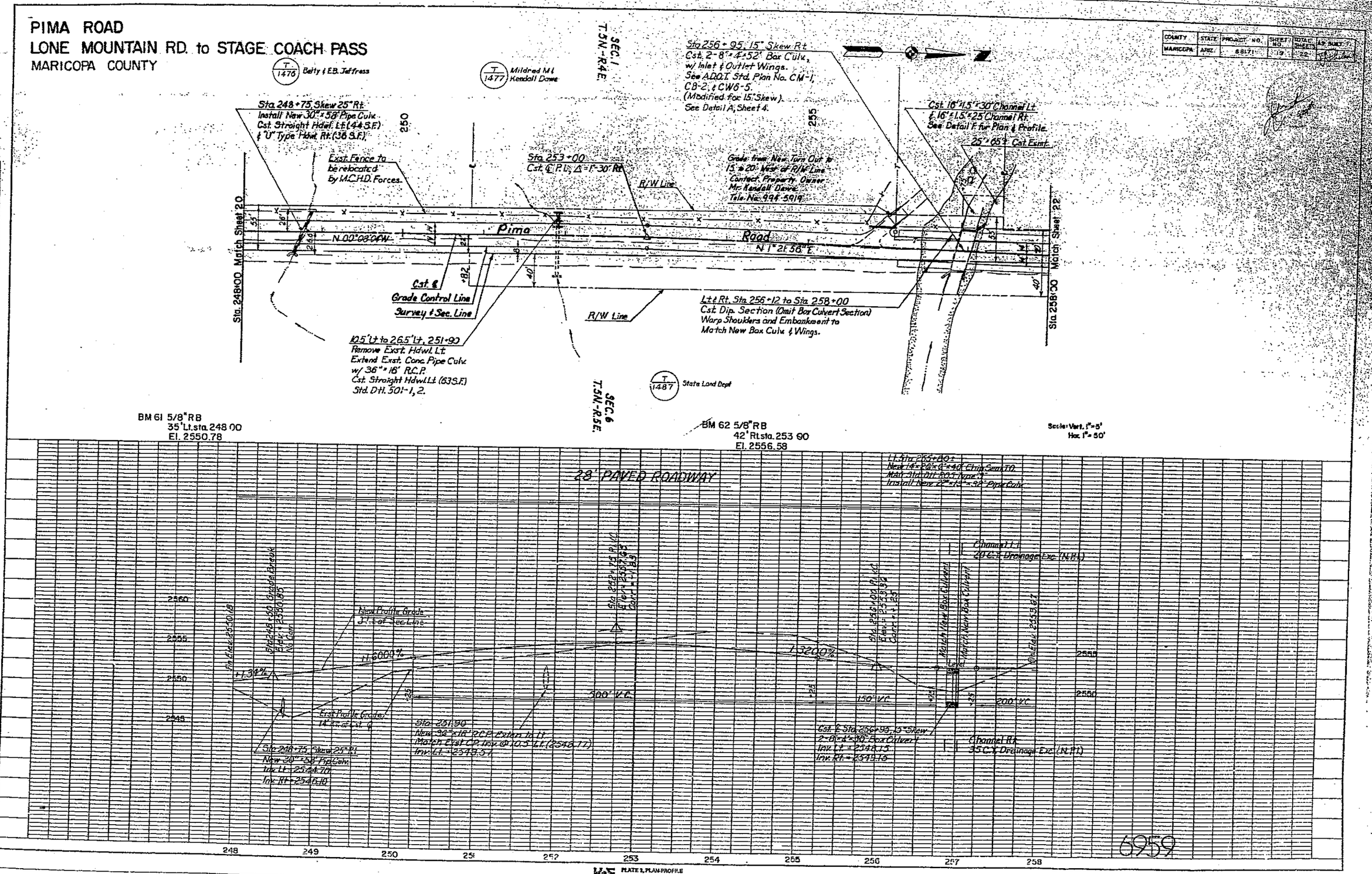
6958

PLATE I, PLAN-PROFILE

K+E KEUFFEL & ESSER CO.

PIMA ROAD
LONE MOUNTAIN RD. to STAGE COACH PASS
MARICOPA COUNTY

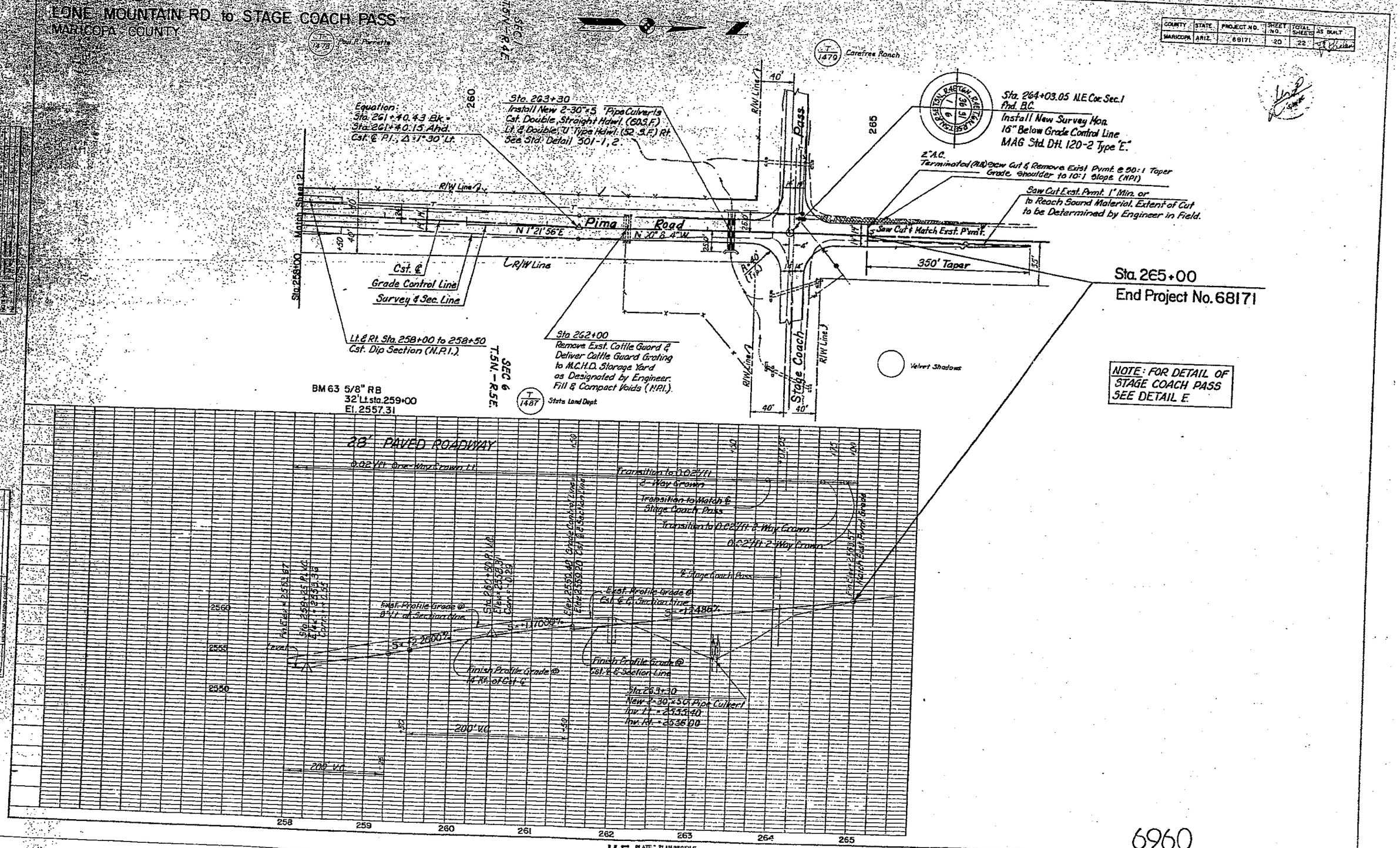
COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	A.P. SUBT.
MARICOPA	ARIZ.	681-71	19	22	



K+E PLATE 2, PLAN-PROFILE
KEUFFEL & ESSER CO.

PIMA ROAD
LONE MOUNTAIN RD to STAGE COACH PASS
MARICOPA COUNTY

COUNTY	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS	AS BUILT
MARICOPA	ARIZ.	68171	20	22	



K+E PLATE 2, PLAN-PROFILE

6960

CITY OF SCOTTSDALE

PUBLIC IMPROVEMENTS

COUNCIL

HERBERT R. DRINKWATER, MAYOR
GREGORY S. BIELLI
JAMES BURKE
ROBERT PETTYCREW
MARY MANROSS
DON PRIOR
RICHARD THOMAS

CITY MANAGER

RICHARD A. BOWERS

CITY ATTORNEY

RICHARD W. GARNETT III

CITY CLERK

SONIA ROBERTSON

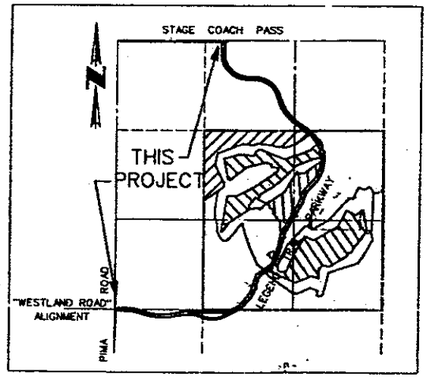
"AS-BUILT" CERTIFICATION

THIS "AS BUILT" PLAN INCLUDES SHEETS 1 THRU 49
I HEREBY CERTIFY THAT THE "AS-BUILT" IMPROVEMENTS AS SHOWN HEREON ARE LOCATED AS NOTED, AND THE LOCATIONS ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

LARRY E. SULLIVAN — REGISTERED LAND SURVEYOR
12-5-94 — DATE

DESERT RANCH
IMPROVEMENT DISTRICT NO 13705
CIVIL PLANS BID CALL VOL 1 OF 3

A PART OF THE WEST ½ OF SECTION 5, THE EAST ½ OF SECTION 6, THE EAST ½ AND THE SW ¼ OF SECTION 7 AND THE NW ¼ OF SECTION 8, T5N, R5E, G&SRB&M, MARICOPA COUNTY, ARIZONA.



Vicinity Map
N.T.S.

ENGINEER

COE & VAN LOO CONSULTANTS, INC.
4550 NORTH 12TH STREET
PHOENIX, AZ 85014
PHONE (602) 264-6831
FAX (602) 264-0928

BASIS OF COORDINATES

SOUTHWEST CORNER, SECTION 7, TOWNSHIP 5 N, RANGE 5 E
N: 9999.9127
E: 9999.9587

BENCH MARK

STAGE COACH & PIMA ROAD BRASS CAP IN HAND HOLE
C.O.S. DATUM 2959.15

NOTE:
SEE SHEET 4 FOR CITY OF SCOTTSDALE SIGNOFF BLOCK.

SHEET INDEX

	SHT. NO.	DESCRIPTION
VOL. 1		COVER SHEET
	1	NOTES, OVERALL INDEX MAP, LEGEND, BENCH MARKS
	2	STANDARD STREET SECTIONS, TYPICAL DETAILS
	3-3D	MASTER QUANTITY SHEET/SUMMARY SHEETS
	4	INDEX MAP FOR LEGEND TRAIL
	5-35	IMPROVEMENT PLANS FOR LEGEND TRAIL W/ (ON-SITE & OFF-SITE) SPECIFIC DETAILS
	36-38	PIMA ROAD IMPROVEMENT PLANS
	39-43	DRAINAGE DETAILS
	44	PEDESTRIAN UNDERPASS-W/RETAINING WALLS
	45-48	DRAINAGE PIPE PROFILES
	49	PIMA ROAD & LEGEND TRAIL LIGHTING DETAILS
	TS1-TS9	SIGNING AND STRIPING PLANS
	BC1	INDEX MAP FOR PARCEL B/C
	BC2-BC25	IMPROVEMENT PLANS FOR PARCEL B/C W/ SPECIFIC DETAILS, QUANTITY SHEETS
	F1	INDEX MAP FOR PARCEL F
	F2-F20	IMPROVEMENT PLANS FOR PARCEL F W/ SPECIFIC DETAILS, QUANTITY SHEET
	GH1	INDEX MAP FOR PARCEL G/H
	GH2-GH22	IMPROVEMENT PLANS FOR PARCEL G/H W/ SPECIFIC DETAILS, QUANTITY SHEET
	IJ1	INDEX MAP FOR PARCEL I/J
	IJ2-IJ17	IMPROVEMENTS PLANS FOR PARCEL I/J W/ SPECIFIC DETAILS, QUANTITY SHEET
	K1-K9	OFF SITE SEWER PARCEL K, QUANTITY SHEET
	L1	NOTES, SHEET INDEX
	L2-L23	LANDSCAPE PLANS
	L24-L45	IRRIGATION PLANS
	L47-L50	LANDSCAPE, IRRIGATION DETAILS & SPECIFICATIONS
VOL. 2	PS1-PS21	DESERT RANCH BOOSTER STATION
VOL. 3	1 OF 16	DRY UTILITIES (APS, US WEST & BLACK MOUNTAIN GAS)

DEPARTMENT OF ENVIRONMENTAL SERVICES AS

APPROVED: Donald Conroy PE 7/7/94
DEPARTMENT OF ENVIRONMENTAL SERVICES (WATER) — DATE

APPROVED: Donald Conroy PE 7/7/94
DEPARTMENT OF ENVIRONMENTAL SERVICES (SEWER) — DATE

AS BUILT
26052

DESERT RANCH
PROJECT NO. 13705 BID CALL

8 DR 94 318 E 94
5/6 & 94

CVL JOB #480010

IMPROVEMENT PLANS FOR
LEGEND TRAIL PARCEL E
PHASE I AND PHASE II

LOCATED IN A PART OF THE SOUTHWEST QUARTER OF SECTION 5 AND A PART OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 5 NORTH, RANGE 5 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA

ZONING

R1-35 HD

ENGINEERS NOTES TO CONTRACTORS

THE CONTRACTOR SHALL WAIVE NO CLAIM AGAINST THE OWNER OR THE ENGINEER REGARDING ALLEGED INACCURACY OF CONSTRUCTION STAKES SET BY THE ENGINEER UNLESS ALL SURVEY STAKES SET BY THE ENGINEER ARE MAINTAINED INTACT AND CAN BE VERIFIED AS TO THEIR ORIGIN. IF, IN THE OPINION OF THE ENGINEER, THE STAKES ARE NOT MAINTAINED INTACT AND CANNOT BE VERIFIED AS TO THEIR ORIGIN, ANY REMEDIAL WORK REQUIRED TO CORRECT ANY ITEM OR IMPROPER CONSTRUCTION WORK IN THIS DEVELOPMENT SHALL BE PERFORMED AT THE SOLE EXPENSE OF THE RESPONSIBLE CONTRACTOR OR SUBCONTRACTOR.

NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL CREATE, NOR SHALL BE CONSTRUED TO CREATE, ANY CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR ANY SUBCONTRACTOR.

THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OR FOR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK, AND HE WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

A THOROUGH ATTEMPT HAS BEEN MADE TO SHOW THE LOCATIONS OF ALL UNDERGROUND OBSTRUCTIONS AND UTILITY LINES IN THE WORK AREA, HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO OBSTRUCTIONS AND UTILITY LINES ENCOUNTERED DURING CONSTRUCTION AND SHALL DETERMINE THE EXACT LOCATION OF UTILITIES IN THE AREA.

ALL EARTHWORK CONSTRUCTION SHALL CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS STANDARD DETAILS AND/OR SPECIFICATIONS INCLUDING ANY SUPPLEMENTS THERETO AND THE SOILS REPORT PREPARED BY:

CONSTRUCTION INSPECTION & TESTING

JOB # 96-6171

DATA FOR EARTHWORK CALCULATIONS IS PROVIDED IN THE SOILS REPORT AND (IF APPLICABLE) ANY SUPPLEMENTS THERETO.

THE CONTRACTOR SHALL, IN ALL CASES, BEGIN SEWERLINE CONSTRUCTION FROM THE DOWNSTREAM MANHOLE OR SEWER STUB, WHETHER EXISTING OR PROPOSED. PRIOR TO INSTALLATION OF ANY SEWER LINE, THE CONTRACTOR SHALL EXCAVATE AND EXPOSE THE POINT OF CONNECTION OF NEW SEWERLINE TO THE EXISTING STUB OR MANHOLE AND VERIFY THE ELEVATION AND LOCATION. SHOULD THE EXISTING CONDITION VARY FROM THE DESIGN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.

ALL SEWER SERVICES WILL BE STATIONED FROM THE NEAREST DOWNSTREAM MANHOLE. EACH NEAREST DOWNSTREAM MANHOLE WILL BE DESIGNATED AS STATION 0+00.

ALL COMPACTION IN STREETS TO BE TYPE I OR PER M.A.G. SPECS, SECTION 601.

THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING EARTHWORK QUANTITIES OR THAT THE EARTHWORK FOR THIS PROJECT WILL BALANCE DUE TO THE VARYING FIELD CONDITIONS, CHANGING SOIL TYPES, ALLOWABLE CONSTRUCTION TOLERANCES AND CONSTRUCTION METHODS THAT ARE BEYOND THE CONTROL OF THE ENGINEER.

PRIOR TO BIDDING THE WORK, THE CONTRACTOR SHALL THOROUGHLY SATISFY HIMSELF AS TO THE ACTUAL CONDITIONS, EARTHWORK QUANTITIES, IF ANY. NO CLAIM SHALL BE MADE AGAINST THE OWNER/DEVELOPER OR ENGINEER FOR ANY EXCESS OR DEFICIENCY THEREIN, ACTUAL OR RELATIVE.

ALL CONDUITS (BOX CULVERT, REINFORCED CONCRETE PIPE, AND/OR CORRUGATED METAL PIPE) SHOWN ON THESE PLANS ARE DESIGNED FOR STANDARD HIGHWAY LOADINGS. THE STANDARD SATISFACTORY MINIMUM COVER REQUIREMENTS AS ESTABLISHED BY THE CONDUIT MANUFACTURER MAY NOT ALWAYS BE ADEQUATE DURING CONSTRUCTION. WHEN CONSTRUCTION EQUIPMENT, FREQUENTLY HEAVIER THAN TRAFFIC LOADS FOR WHICH THE CONDUIT HAD BEEN DESIGNED, IS TO BE DRIVEN OVER OR CLOSE TO THE BURIED CONDUIT, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE CONDUIT. THE ADEQUACY OF THE COVER REQUIREMENTS FOR CONDUITS SHALL BE ANALYZED AND CHECKED BY THE CONTRACTOR TO ADDRESS LOADING CONDITIONS IMPOSED BY CONSTRUCTION ACTIVITY. ANY CONDUIT DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

COE & VAN LOO CONSULTANTS, INC., (CVL), HAS PROVIDED NO ENVIRONMENTAL INVESTIGATIONS ON THIS SITE/PROJECT, HAS NO KNOWLEDGE OF ANY ADVERSE ENVIRONMENTAL CONDITIONS ON THE SITE AND IS NOT RESPONSIBLE FOR AND HAS NO LIABILITY FOR ANY SUCH ENVIRONMENTAL CONDITION SHOULD ONE BE FOUND.

GENERAL CONSTRUCTION NOTES FOR PUBLIC WORKS CONSTRUCTION

1. ALL CONSTRUCTION IN THE PUBLIC RIGHTS-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE (COS) SUPPLEMENTAL STANDARD SPECIFICATIONS AND SUPPLEMENTAL STANDARD DETAILS. IF THERE IS A CONFLICT, THE LATTER SHALL GOVERN.
2. THE ENGINEERING DESIGNS ON THESE PLANS ARE ONLY APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
3. APPROVAL OF PLANS IS VALID FOR SIX (6) MONTHS. IF AN ENCROACHMENT PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN SIX MONTHS, THE PLANS SHALL BE RESUBMITTED TO THE CITY FOR REAPPROVAL.
4. A PUBLIC WORKS INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE RIGHTS-OF-WAY AND IN EASEMENTS. NOTIFY INSPECTION SERVICES 24 HOURS PRIOR TO STARTING OF CONSTRUCTION (TELEPHONE 391-5750).
5. WHENEVER EXCAVATION IS TO BE DONE, CALL THE "BLUE STAKE CENTER," 263-1100, TWO WORKING DAYS BEFORE EXCAVATION IS TO BEGIN. THE CENTER WILL SEE THAT THE LOCATION OF THE UNDERGROUND UTILITY LINES IS IDENTIFIED FOR THE PROJECT. CALL "COLLECT" IF NECESSARY.
6. ENCROACHMENT PERMITS ARE REQUIRED FOR ALL WORK IN PUBLIC RIGHTS-OF-WAY AND EASEMENTS GRANTED FOR PUBLIC PURPOSES. AN ENCROACHMENT PERMIT WILL BE ISSUED BY THE CITY UPON RECEIPT OF PAYMENT OF A BASE FEE PLUS A FEE FOR INSPECTION SERVICES TO BE PROVIDED BY THE CITY. COPIES OF ALL PERMITS SHALL BE RETAINED ON-SITE AND SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE WORK STOPPAGE UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.
7. ALL EXCAVATION AND GRADING WHICH IS NOT IN THE PUBLIC RIGHTS-OF-WAY OR NOT IN THE EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO CHAPTER 70, EXCAVATING AND GRADING, OF THE LATEST EDITION OF THE UNIFORM BUILDING CODE PREPARED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. A PERMIT OF THIS GRADING MUST BE SECURED FROM THE CITY FOR A FEE ESTABLISHED BY THE UNIFORM BUILDING CODE.

DATE: Jan. 14, 1997
TIME: 07:13:47
FILE: q:\480019\land\im01e01.dgn

STORM SEWER NOTES TO CONTRACTORS

1. ALL STATION AND OFFSET CALL-OFFS FOR CATCH BASINS ARE TO THE CENTERLINE OF THE PROPOSED CATCH BASIN SUMP. SEE INDIVIDUAL CATCH BASIN DETAILS FOR STANDARD LOCATIONS.
2. ALL CENTERLINE STATION AND OFFSET CALL-OFFS FOR OUTLET HEADWALLS ARE TO REPRESENT THE CENTER OF THE HEADWALL ON THE OUTLET SIDE.
3. ALL PEDESTRIAN RAILS ARE TO BE PAINTED PER ADOT SPECIFICATIONS. THE DESIRED COLOR WILL BE SPECIFIED AT TIME OF CONSTRUCTION BY THE DEVELOPER.
4. ALL EXPOSED CONCRETE FACES OF THE PROPOSED STORM DRAIN STRUCTURES AND BOX CULVERTS SHALL BE COLORED CONCRETE. THE DESIRED COLOR WILL BE SPECIFIED AT TIME OF CONSTRUCTION BY THE DEVELOPER.
5. RIP-RAP USED SHALL BE ONLY NATIVE STONE

CITY OF SCOTTSDALE GRADING & WALL NOTES TO CONTRACTORS

1. ALL GRADING WITHIN THE N.A.O.S. AREAS SHALL CONFORM TO CITY OF SCOTTSDALE GUIDELINES AND POLICES FOR ENVIRONMENTALLY SENSITIVE LANDS - SECTION 200.
2. CUT & FILL SLOPE SHALL BE ROUNDED TO BLEND INTO THE EXISTING NATURAL GRADE.
3. ROCK FEATURES DISTURBED BY CONSTRUCTION AND RIP-RAP SHALL BE TREATED WITH A DESERT VARNISH (EONITE OR EQUIVALENT)
4. ALL DRAINAGE STRUCTURES SHALL BE INTEGRALLY COLORED (TAUPE) TO BLEND WITH THE SURROUNDING DESERT.
5. BOULDER DISPLACED BY CONSTRUCTION SHALL BE PLACED AT THE TOE OF FILL SLOPES OR AT GRADE TRANSITIONS AT THE FRONT OF LOTS.
6. WALLS, OTHER THAN RETAINING WALLS, ADJACENT TO VISTA CORRIDORS SHALL BE CONSTRUCTED PER CASE 74-ZN-92. "SOLID OPAQUE WALLS, OTHER THAN RETAINING WALLS, SHALL BE SET BACK 4' FROM THE APPROVED VISTA CORRIDOR. FOR EVERY FOOT OF HEIGHT OVER 3', NOT TO EXCEED A HEIGHT OF 6'.

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

COMMUNITY NUMBER	PANEL NUMBER / PANEL DATE	SUFFIX	DATE OF FIRM (Index Date)	FIRM ZONE	BASE FLOOD ELEVATION (In AO Zone, Use Depth)
045012	850 / 4-15-1988	D	9-30-95	D	NONE

MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPT.

APPROVED: T. S. Chill 4/9/97
970061 DATE

LEGEND

Symbol	Description	Symbol	Description
—W—	EXISTING WATER	D/W	DRIVEWAY LOCATION
—S—	EXISTING SEWER		FIRE HYDRANT
—W—	PROPOSED WATER		WATER VALVE
—S—	PROPOSED SEWER		REDUCER
	EXIST. MANHOLE		EXIST. VALVE
	PROPOSED MANHOLE	2590	EXISTING CONTOURS
	PROPOSED CLEANOUT	2590	PROPOSED CONTOURS
	GRADE BREAK		CATCH BASIN
	DIRECTION OF FLOW		GRADER DITCH FLOW LINE
G-24.92	GUTTER ELEVATION		STORM DRAIN/CULVERT PIPE
(G-24.92)	EXIST. GUTTER ELEVATION		AIR RELEASE VALVE
P-02.54	PAVEMENT ELEVATION	R/W	RIGHT-OF-WAY
VG-02.21	VALLEY GUTTER ELEVATION	CR	CURB RETURN
B/C	BACK OF CURB		RIP-RAP (NATIVE STONE)
P.U.E.	PUBLIC UTILITY EASEMENT	49.40	TOP OF CURB ELEVATION
L.F.	LINEAL FOOT		PHASE LINE
	SURVEY MONUMENT		
PL	PROPERTY LINE		
FL	FLOW LINE		
CTE	CABLE TELEVISION EASEMENT		

WATER PRESSURE CERTIFICATE

THE WATER SYSTEM SHOWN HEREIN, HAS BEEN DESIGNED TO ADEQUATELY SUPPLY WATER IN SUFFICIENT QUANTITY AND PRESSURE TO MEET LOCAL FIRE PROTECTION REQUIREMENTS.

NOTE: THRUST BLOCKING NOT ALLOWED IN SCOTTSDALE. USE MEGA LUG RESTRAINING JOINTS OR CITY OF SCOTTSDALE APPROVED EQUAL. SEE SHEET 3 FOR RESTRAINED JOINT CALCS.

NATIVE PLANT PERMIT #116529

PHASE 1
CUT 6,520 CY
FILL 1,421 CY

PHASE 2
CUT 30,070 CY
FILL 27,734 CY

OWNER/DEVELOPER

STARWOOD DEVELOPMENT
5090 NORTH 40TH STREET
SUITE #190
PHOENIX, AZ 85018
(602) 952-1515 - TEL.
(602) 952-1880 - FAX

ENGINEER

COE & VAN LOO CONSULTANTS, INC.
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
(602) 264-6831 - TEL.
(602) 264-0928 - FAX

UTILITY COMPANIES

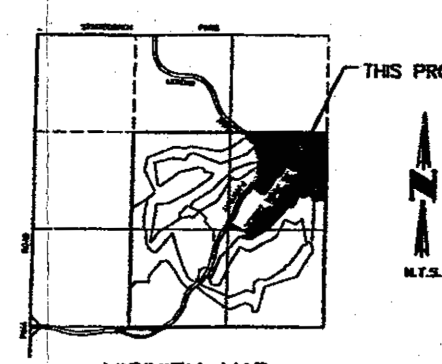
WATER	CITY OF SCOTTSDALE
SEWER	CITY OF SCOTTSDALE
ELECTRIC	ARIZONA PUBLIC SERVICE
TELEPHONE	US WEST
GAS	BLACK MOUNTAIN GAS
FIRE DEPT.	RURAL METRO
CABLE T.V. CO.	TCI CABLE TV
REFUSE DISPOSAL	PRIVATE

SHEET INDEX

1 - COVER SHEET & NOTES
2 - INDEX MAP & DETAILS
2A - QUANTITIES
3-25 - IMPROVEMENT PLANS
26 - STRIPING PLAN
27-34 - GRADING PLANS
35-36 - NAOS PLAN
37-39 - CUT OFF WALLS
40 - CUT OFF WALL DETAILS
41 - BOX DETAILS
42 - BUBBLE UP DETAIL
43 - MISCELLANEOUS DETAILS
44 - SPILLWAY DETAILS
45-47 - STORM DRAIN PROFILES

BENCHMARK

NORTHWEST CORNER SECTION 4, TOWNSHIP 3 NORTH, RANGE 5 EAST, FOUND G.L.O. BRASS CAP.
ELEVATION = 1688.87 CITY OF SCOTTSDALE DATUM



VICINITY MAP

31030

CITY OF SCOTTSDALE

REVIEW & RECOMMENDED APPROVAL BY:

FIRE DEPT.		GRADING & DRAINAGE	
PLANNING	2-24-97	WATER & SEWER	
TRAFFIC	6-25-97	PAVING	

APPROVED BY: [signature] 9-26-97
PROJECT REVIEW SR. ENGINEER DATE

263-1100

LEGEND TRAIL PARCEL E

COE & VAN LOO
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

DESIGNED	TR,BE
DRAWN	JM,NP,TT
CHECKED	JAK
DATE	11/96

REVISIONS | DATE | BY

IMPROVEMENT PLANS

SHEET 1 OF 47

48-0019
PLAN A

GRADING PLANS
FOR
THE CROSSING AT THE BOULDERS
SCOTTSDALE, ARIZONA

A SUBDIVISION LOCATED IN A PORTION OF THE NORTHEAST 1/4 OF SECTION 11, T.5N., R.4E. OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA

SPECIAL NOTES:

THE CONTRACTOR SHALL NOTIFY THE DEVELOPER AT LEAST 48 HOURS IN ADVANCE FOR ANY STAKING OR RESTAKING REQUIRED.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN PERMITS REQUIRED AT HIS OWN EXPENSE.

THE CONTRACTOR WILL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION TO PERMIT THE REVISION OF THESE PLANS IF NECESSARY DUE TO CONFLICT BETWEEN A FACILITY PROPOSED HEREIN AND AN EXISTING FACILITY.

IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO VERIFY THE PRESENCE AND LOCATION OF ANY AND ALL EXISTING OVERHEAD AND/OR UNDERGROUND UTILITIES THAT MAY INTERFERE WITH THE CONSTRUCTION PLANS FOR THIS PROJECT. CONTRACTOR SHALL ADEQUATELY PROTECT AND MAINTAIN SUCH UTILITIES.

THE ENGINEER DOES NOT ASSUME ANY LIABILITY FOR ERRORS OF LINE AND/OR GRADE OR ANY STAKING WHICH HAS BEEN DISTURBED IN ANY WAY, NOR DOES THE ENGINEER ASSUME ANY LIABILITY FOR ERRORS OF LINE AND/OR GRADE OR ANY STAKING THAT HAS BEEN IN PLACE FOR A PERIOD OF 24 HOURS OR MORE WITHOUT THE COMMENCEMENT OF CONSTRUCTION FOR WHICH IT WAS SET.

THE CONTRACTOR SHALL NOTIFY THE DEVELOPERS ENGINEER BEFORE BACKFILLING WATER AND/OR SEWER SERVICES IN ORDER THAT THE ENGINEER MAY VERIFY THE AS-BUILT LOCATION OF THE SERVICE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING ALL STAKES AND CONTROL, AND SHALL TAKE STEPS NECESSARY TO INSURE THAT THE STAKES AND CONTROL ARE NOT DISTURBED OR TAMPERED WITH. IF STAKES ARE DISTURBED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST INCURRED TO RESTAKE.

ANY QUESTIONS RELATIVE TO THE ACCURACY OF IMPROVEMENT INSTALLATION SHALL BE RAISED SUBSEQUENT TO COMPLETION OF THE WORK UNLESS ALL SURVEY STAKES ARE MAINTAINED INTACT. SHOULD SUCH STAKES NOT BE PRESENT AND VERIFIED AS TO THEIR ORIGIN, NO CLAIM FOR ADDITIONAL COMPENSATION FOR CORRECTION SHALL BE PRESENTED TO ANY PARTY AND SUCH WORK SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE.

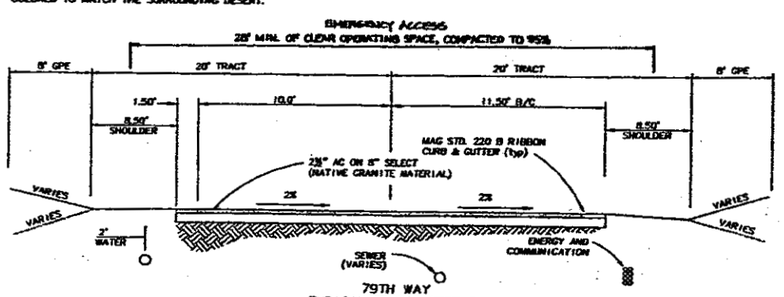
WHENEVER EXCAVATION IS TO BE DONE, CALL THE "BLUE STAKE CENTER", 263-1100, TWO WORKING DAYS BEFORE EXCAVATION IS TO BEGIN. THE CENTER WILL SEE THAT THE LOCATION OF THE UNDERGROUND UTILITY LINES IS IDENTIFIED FOR THE PROJECT. CALL "COLLECT" IF NECESSARY.

ENCROACHMENT PERMITS ARE REQUIRED FOR ALL WORK IN PUBLIC RIGHTS-OF-WAY AND EASEMENTS GRANTED FOR PUBLIC PURPOSES. AN ENCROACHMENT PERMIT WILL BE ISSUED BY THE CITY UPON RECEIPT OF PAYMENT OF A BASE FEE PLUS A FEE FOR INSPECTION SERVICES TO BE PROVIDED BY THE CITY. COPIES OF ALL PERMITS SHALL BE RETAINED ON SITE AND SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE WORK STOPPAGE UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.

ALL EXCAVATION AND GRADING WHICH IS NOT IN THE PUBLIC RIGHTS-OF-WAY OR NOT IN EASEMENTS OWNED FOR PUBLIC USE MUST CONFORM TO CHAPTER 70, EXCAVATION AND GRADING OF THE LATEST EDITION OF THE UNIFORM BUILDING CODE PREPARED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. A PERMIT FOR THIS GRADING MUST BE SECURED FROM THE CITY FOR A FEE ESTABLISHED BY THE UNIFORM BUILDING CODE.

8% SLOPE FOR 5 FEET AWAY FROM WALKS AND CURBS ALONG STREETS SHALL BE PROVIDED.

ALL STRUCTURES RELATED TO DRAINAGE OR IMPROVEMENTS SHALL BE INTEGRALLY COLORED TO MATCH THE SURROUNDING DESERT.



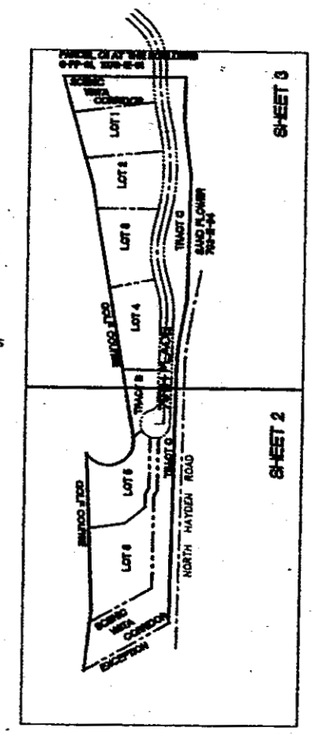
79TH WAY
TYPICAL STREET SECTION
PRIVATE STREET
(N.T.S.)

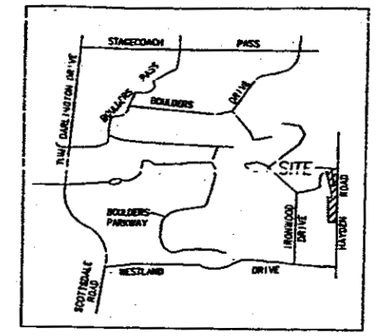
SHEET INDEX

SHEET 1	COVER
SHEET 2-3	GRADING SHEETS

N

INDEX MAP
N.T.S.





VICINITY MAP
N.T.S.

PROJECT DATA

ZONING	R1-18 ESL
# OF LOTS	6

BENCHMARK

INTERSECTION OF BOULDERS PARKWAY AND DESERT BLOOM CIRCLE, EAST
B.C. FLUSH EL. 2349.68 (C.O.S. DATUM)

INTERSECTION OF BOULDERS PARKWAY AND DESERT BLOOM CIRCLE, WEST
B.C. FLUSH EL. 2344.45 (C.O.S. DATUM)

OWNER
BOULDERS JOINT VENTURE
34505 NORTH SCOTTSDALE ROAD
SUITE L6
SCOTTSDALE, ARIZONA 85262
PHONE: (602) 488-0992

DEVELOPER
BOULDERS JOINT VENTURE
34505 NORTH SCOTTSDALE ROAD
SUITE L6
SCOTTSDALE, ARIZONA 85262

ENGINEER
PINNACLE ENGINEERING
8711 E. PINNACLE PEAK ROAD
SUITE F-110
SCOTTSDALE, ARIZONA 85255
ATTN: MICHAEL BRUNGARD
PHONE: (602) 585-8013

UTILITY PROVIDERS

WATER	CITY OF SCOTTSDALE
SEWER	BOULDERS/CAREFREE SEWER CORPORATION
ELECTRICITY	ARIZONA PUBLIC SERVICE
TELEPHONE	U.S. WEST COMMUNICATIONS
CABLE T.V.	COX COMMUNICATIONS
GAS	BLACK MOUNTAIN GAS COMPANY

EARTHWORK QUANTITIES

CUT = 350 C.Y.
FILL = 3009 C.Y.

* EARTHWORK QUANTITIES ARE FOR THE PURPOSE OF PERMITTING ONLY. THE CONTRACTOR SHALL VERIFY QUANTITIES OF EARTHWORK AS THE ENGINEER WILL NOT ACCEPT ANY RESPONSIBILITY FOR THESE AMOUNTS.

NOTE:
DRAINAGE EASEMENTS (D.E.) ARE HEREBY DEDICATED TO THE CITY OF SCOTTSDALE MAINTENANCE OF THE DRAINAGE EASEMENTS SHALL BE THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION OF BOULDERS SCOTTSDALE (THE MASTER ASSOCIATION).
SEE THE FINAL PLAT FOR THE CROSSING AT THE BOULDERS FOR A DESCRIPTION OF ALL PERTINANT EASEMENTS FOR THIS SUBDIVISION.

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

COMMUNITY NUMBER	PANEL NUMBER (PANEL DATE)	SUFFIX	DATE OF FIRM (INDEX DATE)	FIRM ZONE	BASE FLOOD ELEVATION (IN AO ZONE, USE DEPTH)
045012	820 12/3/93	E	9/3/93	X	N/A

ENGINEER'S CERTIFICATION: THE FINISH FLOOR ELEVATION(S) AND/OR FLOOD PROOFING ELEVATION(S) ON THIS PLAN, ARE SUFFICIENTLY HIGH TO PROVIDE PROTECTION FROM FLOODING CAUSED BY A ONE-HUNDRED YEAR STORM, AND ARE IN ACCORDANCE WITH CITY OF SCOTTSDALE REVISED CODE, CHAPTER 37 -- FLOODWAYS & FLOODPLAIN ORDINANCE.

CITY OF SCOTTSDALE
REVIEW & RECOMMENDED APPROVAL BY :

Paving	N/A	Traffic	N/A
G&D	8/8/97	W&S & P	8-22-97
W&S	N/A	Fire	N/A

Engineering Coordination Manager (or designee) — Date: 8-22-97

BUILDING REVIEW

ELECTRICAL	
MECHANICAL	
BUILDING	
PLUMBING	

REVISIONS:

263-1100 BLUE STAKE CENTER

JOB NUMBER 35002

GRADING PLANS FOR THE CROSSING AT THE BOULDERS

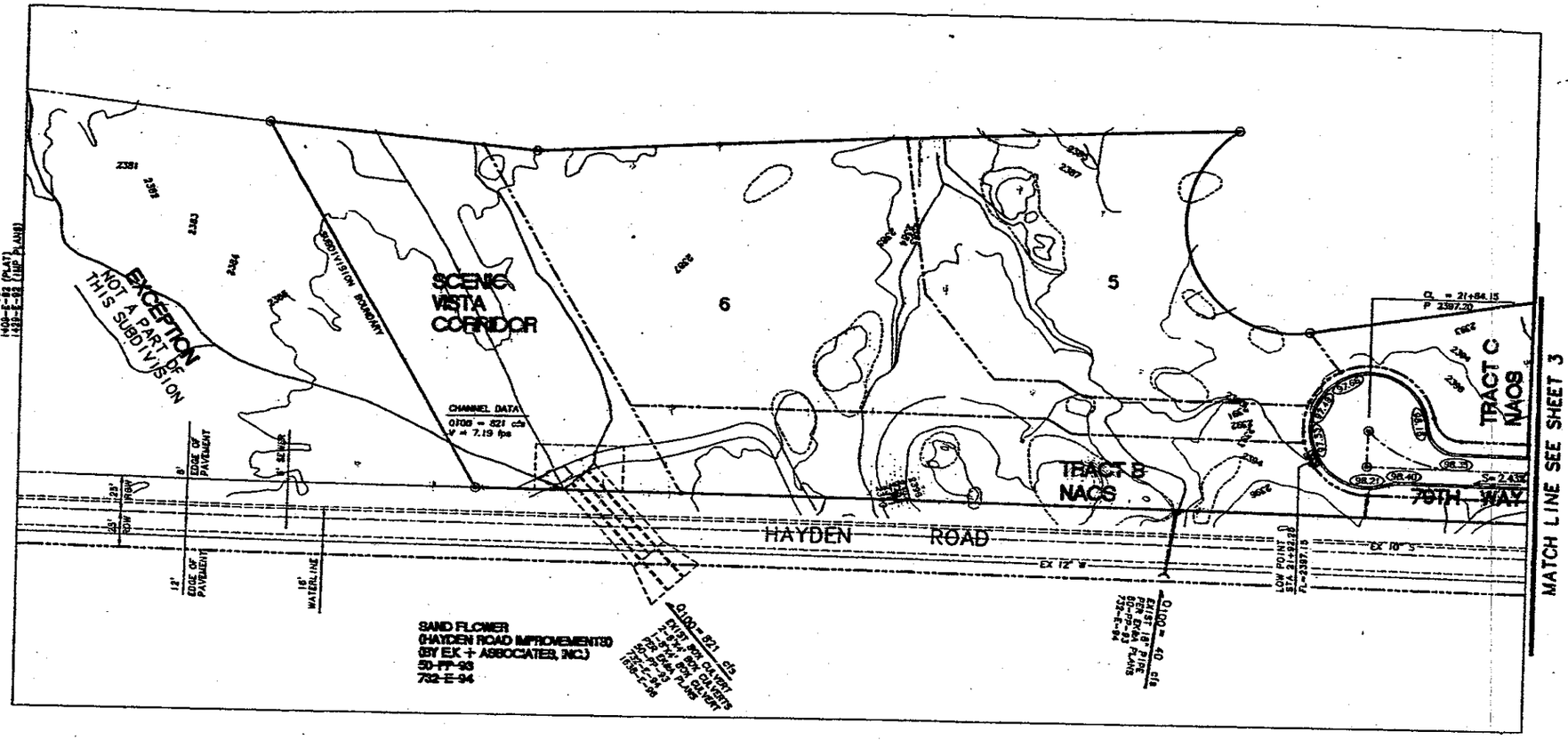
DESIGN	DRAWN	CHECKED	DATE	FILE NAME	SHEET
MAB	CAB	FB	2/97	35002GD	1 OF 4

PINNACLE ENGINEERING
8711 E. PINNACLE PEAK ROAD • SUITE F-110
SCOTTSDALE, ARIZONA 85255 • (602) 585-8013

55-PP-95 401-E-97 72-NP-97 NP #122576

30585

D:\DWGS\35002\35002G02 7-15-97 6:00:18 pm EST

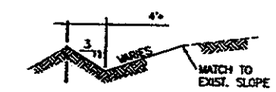


LEGEND

- PROPOSED FLOWLINE
- TW 99.5 / W 88.8 — PROPOSED TOP OF WALL/TOP OF FOOTING ELEVATION
- FG 85.5 — PROPOSED FINISH GRADE ELEVATION
- 2% — PROPOSED STREET CROSS SLOPE
- PROPOSED RETAINING WALL
- PAD LIMITS
- DOWN DRAIN
- LOT LINES
- 85.37 — TOP OF CURB ELEVATION
- EASEMENT LINE (AS SHOWN)

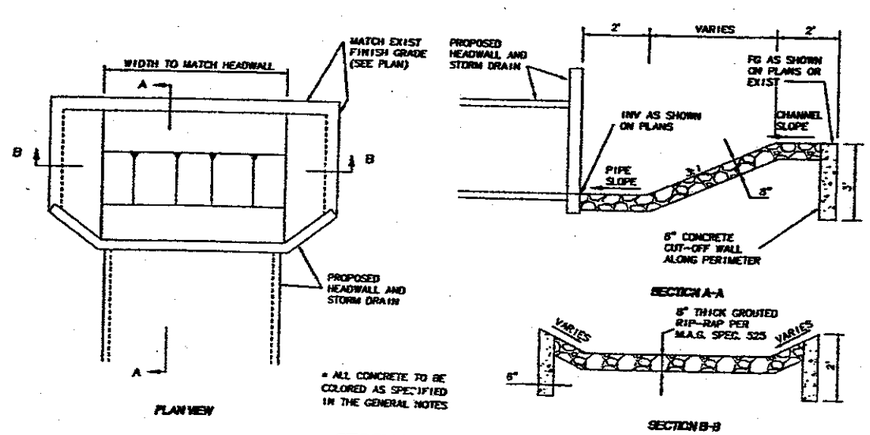
CONSTRUCTION NOTES

1. SEE SWALE DETAIL, THIS SHEET.



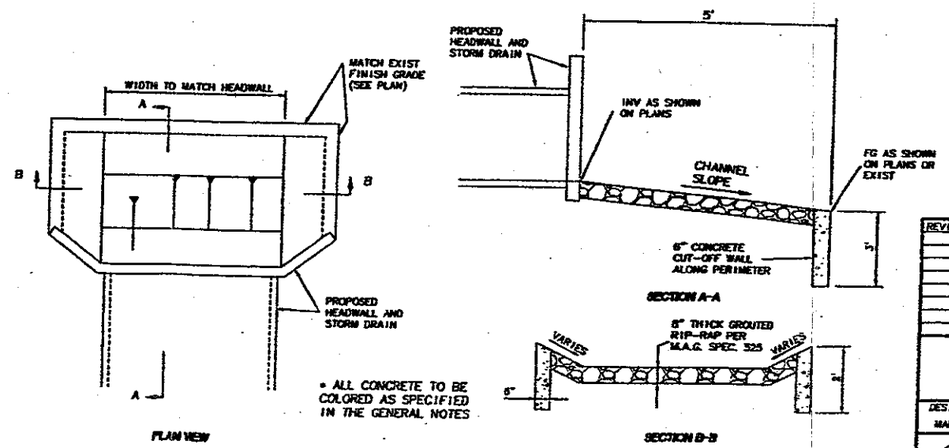
* UNLESS NOTED OTHERWISE ON PLANS

SWALE DETAIL
N.T.S.



* ALL CONCRETE TO BE COLORED AS SPECIFIED IN THE GENERAL NOTES

STORM DRAIN INLET DETAIL
N.T.S.



* ALL CONCRETE TO BE COLORED AS SPECIFIED IN THE GENERAL NOTES

STORM DRAIN OUTLET DETAIL
N.T.S.

SCALE: 1" = 40'
0' 40' 80' 120'

REVISIONS:

JOB NUMBER
NUMBER

GRADING PLANS FOR THE CROSSING AT THE BOULDERS

DESIGN	DRAWN	CHECKED	DATE	FILE NAME	SHEET
MAB	CAB	FB	2/97	35002G02	2 OF 4

PINNACLE ENGINEERING
8711 E. PINNACLE PEAK ROAD • SUITE 2-20
SCOTTSDALE, ARIZONA 85255 • (602) 391-0013

55-PP-95 401-E-97

MATCH LINE SEE SHEET 2

GOLF COURSE

CHANNEL DATA
Q100 = 180 cfs
V100 = 5.92 fps
V2/2G = 0.54
d = 1.90'

LIMITS OF 100 YR HWL

7TH WAY

TRACT "C" NAOS

HAYDEN ROAD

EXISTING DIRT ROAD TO BE REVEGETATED

SAND FLOWER
(HAYDEN ROAD IMPROVEMENTS)
(BY EK + ASSOCIATES, INC.)
50-PP-93
732-E-94

EXIST 18" RCPCP
Q100 = 13.6 cfs
PER EK-94 PLANS
732-E-94
50-PP-93

EXIST 18" RCPCP
Q100 = 12.6 cfs
PER EK-94 PLANS
732-E-94
50-PP-93

18" WATERLINE

VARIES SEWER LINE

CULVERT
STA 14+59.00
12-0"x1'
FL=3391.10
FC=3391.10

BLACK MOUNTAIN ROAD

BOX CULVERT - SEE SHEET 4 OF 4 OF IMPROVEMENT PLANS FOR PLACEMENT AND CONSTRUCTION DETAILS

PROVIDE RIP-RAP PROTECTION

CHANNEL DATA
Q100 = 1204 cfs
V100 = 5.67 fps

Q100 = 1204 cfs

SCENIC VISTA CORRIDOR, PER PARCEL G UNIT I AT THE BOULDERS COMMUNITY. BOOK 347, PAGE 31, M.C.R.

NOTE: SEE SHEET 2 OF 3 FOR RIP-RAP PLACEMENT ON PIPE CULVERTS.

28.52'

0.54' FREEBOARD (V2 / 2G)

100 YEAR W.S. DEPTH = 1.90'

3:1 MAX

MATCH EXIST GROUND

4:1 (TYP)

9.76' | 9' | 9.76'

SIDE SLOPE | BOTTOM | SIDE SLOPE

TYPICAL CHANNEL SECTION
NTS

LEGEND

- PROPOSED FLOWLINE
- TW 22.5 / TF 20.0 — PROPOSED TOP OF WALL/TOP OF FOOTING ELEVATION
- FG 25.5 — PROPOSED FINISH GRADE ELEVATION
- 2% — PROPOSED STREET CROSS SLOPE
- PROPOSED RETAINING WALL
- PAD LIMITS
- DOWN DRAIN
- LOT LINES
- 95.37 — TOP OF CURB ELEVATION
- EASEMENT LINE (AS NOTED)
- HIGH WATER LEVEL (HWL)

CONSTRUCTION NOTES

1. SEE SWALE DETAIL, THIS SHEET.

* UNLESS NOTED OTHERWISE ON PLANS

SWALE DETAIL
N.T.S.

SCALE: 1" = 40'

0' 40' 80' 120'

401-E-97

55-PP-95

REVISIONS:

JOB NUMBER 35002

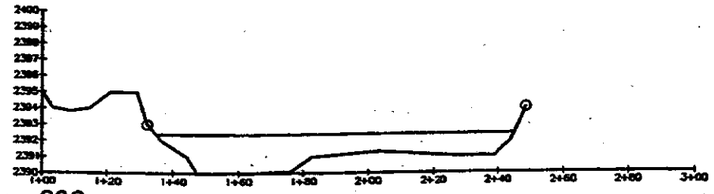
GRADING PLANS FOR THE CROSSING AT THE BOULDERS

DESIGN	DRAWN	CHECKED	DATE	FILE NAME	SHEET
MAB	CAB	FB	02/97	35002003	3 OF 3

PINNACLE ENGINEERING

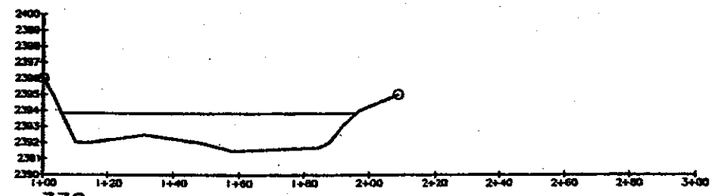
30597

PLOT DATE:



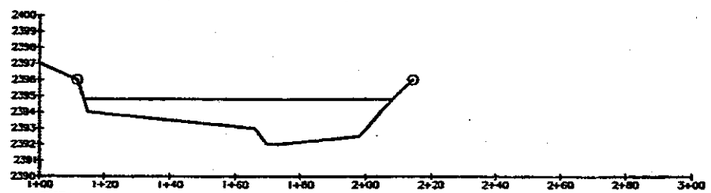
290

Profile 1
Flow Discharge = 1204.00 cfs
Computed Water Surface = 2392.38 ft



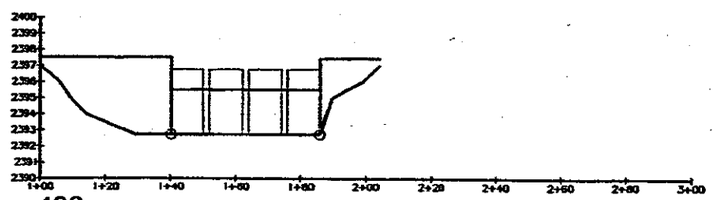
330

Profile 1
Flow Discharge = 1204.00 cfs
Computed Water Surface = 2393.84 ft



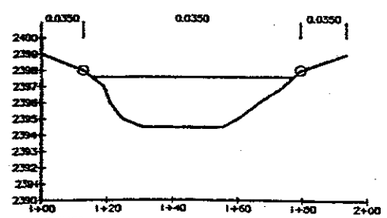
370

Profile 1
Flow Discharge = 1204.00 cfs
Computed Water Surface = 2394.80 ft



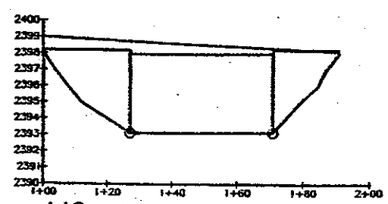
400

Profile 1
Flow Discharge = 1204.00 cfs
Computed Water Surface = 2395.48 ft



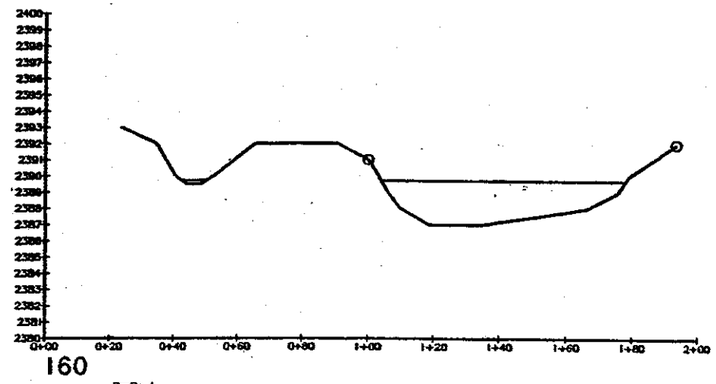
470

Profile 1
Flow Discharge = 1204.00 cfs
Computed Water Surface = 2397.58 ft



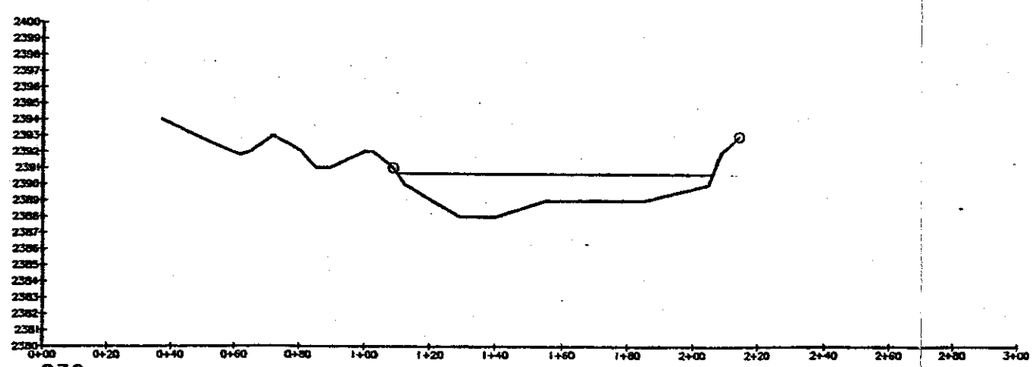
440

Profile 1
Flow Discharge = 1204.00 cfs
Computed Water Surface = 2397.93 ft



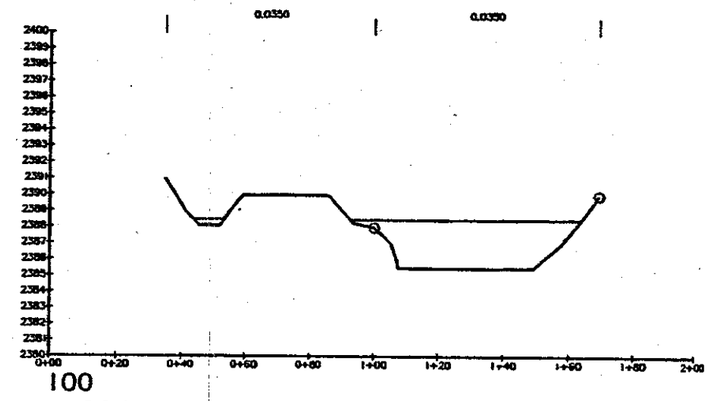
160

Profile 1
Flow Discharge = 1204.00 cfs
Computed Water Surface = 2389.71 ft



230

Profile 1
Flow Discharge = 1204.00 cfs
Computed Water Surface = 2390.65 ft



100

Profile 1
Flow Discharge = 1204.00 cfs
Computed Water Surface = 2388.47 ft

NOTE: SEE FINAL DRAINAGE REPORT FOR ADDITIONAL INFORMATION REGARDING THIS CHANNEL OR ANY OTHER WITHIN THE CROSSING AT THE BOULDERS SUBDIVISION.

REVISIONS:

JOB NUMBER 35002

GRADING PLANS FOR THE CROSSING AT THE BOULDERS

DESIGN	DRAWN	CHECKED	DATE	FILE NAME	SHEET
MAB	MAB	FB	7/97	35002C04	4 OF 4

PINNACLE ENGINEERING

401-E-97

55-PP-95

PAVING, GRADING, DRAINAGE & UTILITY PLAN FOR WINFIELD

PLAT TWO, PHASE 1

A PORTION OF SECTION 11, TOWNSHIP 5 NORTH, RANGE 4 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA

OWNER/DEVELOPER

STONE RIDGE BUILDERS
10201 SOUTH 51ST STREET
SUITE 100
PHOENIX, ARIZONA 85044
(602) 802-9460
CONTACT: MARK HELMER

ENGINEER

GILBERTSON ASSOCIATES, INC.
15974 N. 77TH STREET
SCOTTSDALE, ARIZONA 85260
(602) 607-2244

ZONING

R-4 ESL

BENCHMARK

MARICOPA COUNTY DATUM FOUND BRASS CAP AT THE EAST QUARTER CORNER OF SECTION 2, T5N, R4E.
ELEVATION = 2428.37 (MARICOPA COUNTY DATUM)
ELEVATION = 2428.16 (CITY OF SCOTTSDALE DATUM)

UTILITY PROVIDERS

WATER	CITY OF SCOTTSDALE
SEWER	BOULDERS-CAREFREE SEWER CO.
ELECTRICITY	ARIZONA PUBLIC SERVICE
TELEPHONE	US WEST COMMUNICATIONS
GAS	BLACK MOUNTAIN GAS
CABLE TV	COX COMMUNICATIONS

EARTHWORK

1. CUT	8300 CY
2. COMPACTED FILL	66250 CY
3. ±25% COMPACTION LOSS	14050 CY
4. IMPORTED MATERIAL	62000 CY

NOTE:

REFER TO SALES CENTER/RECREATIONAL FACILITY PLANS (898-E-97) SHEETS C10-C13 FOR STANDARD RETAINING WALL PLANS.

ESTIMATED QUANTITIES

THE QUANTITIES LISTED BELOW ARE ESTIMATED. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION OF THE QUANTITIES OF WORK INVOLVED AND BASE HIS BID ON HIS OWN ESTIMATE.

QUANTITIES

PAVING AND STORM DRAINAGE

1.	A.C. PAVEMENT 2" A.C. ON 6" A.B.C.		10787 SY
2.	ROLL CURB, TYPE C		8280 LF
3.	RIBBON CURB, TYPE B		175 LF
4.	ROLL CURB, TYPE D		440 LF
5.	SURVEY MON. TYPE B		28 EA
6.	BARRICADE REMOVAL		40 LF
7.	36" RGRCP		71 LF
8.	24" RGRCP		277 LF
9.	30" RGRCP		632 LF
10.	LOOSE ROCK RIP RAP		2160 SF
11.	GROUTED ROCK RIP RAP		1580 SF
12.	SIGNING AND STRIPING		1 LS
13.	TYPE "U" HEADWALLS (M.A.G. 501-1/501-2)		2 EA
14.	8" CUT-OFF WALL		325 LF
15.	ROLL TO RIBBON CURB TRANSITIONS		60 LF

SEWER

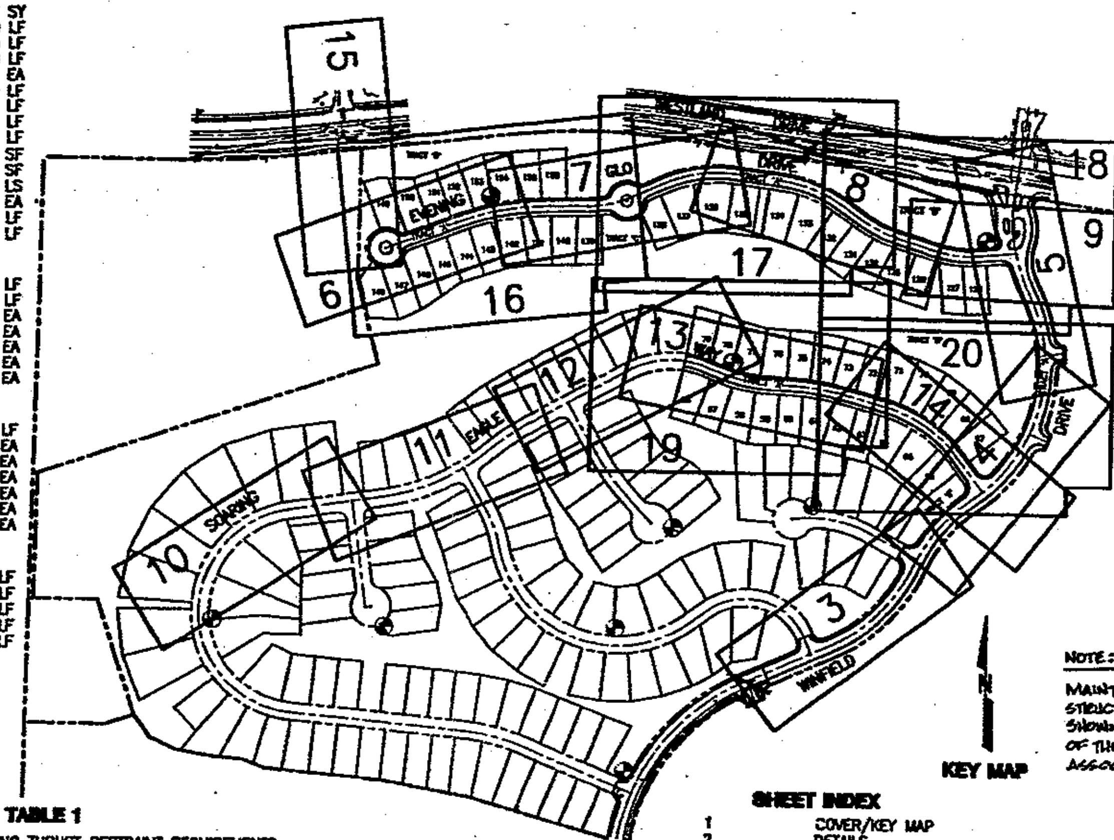
1.	8" PVC SEWERLINE		4113 LF
2.	8" DIP SEWERLINE		124 LF
3.	ADJUST MH RIM		3 EA
4.	4' DIAMETER MANHOLE		20 EA
5.	5' DIAMETER MANHOLE		11 EA
6.	4" SEWER SERVICE	(1545 LF)	55 EA
7.	DROPSEWER CONNECTION		1 EA

WATER

1.	8" DIP WATERLINE		4423 LF
2.	2" CURB STOP AND FLUSHING PIPE		3 EA
3.	8" V.B. & C.		4 EA
4.	FIRE HYDRANT		3 EA
5.	WATER VERTICAL REALIGNMENT		7 EA
6.	1" WATER SERVICE	(1630 LF)	56 EA
7.	ELECTRONIC BALL MARKER		5 EA

CONCRETE RETAINING WALL

1.	2' HIGH (RETAINED HEIGHT)	55 LF
2.	3' HIGH (RETAINED HEIGHT)	70 LF
3.	4' HIGH (RETAINED HEIGHT)	360 LF
4.	5' HIGH (RETAINED HEIGHT)	305 LF
5.	6' HIGH (RETAINED HEIGHT)	480 LF



KEY MAP

NOTE:

MAINTENANCE OF THE DRAINAGE STRUCTURES AND FACILITIES SHOWN HEREIN ARE THE RESPONSIBILITY OF THE WINFIELD OWNERS COMMUNITY ASSOCIATION.

SHEET INDEX

1	COVER/KEY MAP
2	DETAILS
3-9, 13, 14	PAVING AND UTILITY PLANS
10-12, 15	OUTFALL SEWER PLANS
16-21	GRADING PLANS
NOTE:	REFER TO SALES CENTER/RECREATIONAL FACILITY PLANS (898-E-97) SHEETS C10-C13 FOR STANDARD RETAINING WALL PLANS.

GENERAL CONSTRUCTION NOTES
FOR PUBLIC WORKS CONSTRUCTION
REVISED JULY 1991

1. ALL CONSTRUCTION IN THE PUBLIC RIGHT-OF WAY OR IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE (COS) SUPPLEMENTAL STANDARD SPECIFICATIONS AND SUPPLEMENTAL STANDARD DETAILS. IF THERE IS ANY CONFLICT, THE LATTER SHALL GOVERN.
2. THE ENGINEERING DESIGNS ON THESE PLANS ARE ONLY APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
3. APPROVAL OF PLANS IS FOR SIX MONTHS' TIME ONLY. IF AN ENCROACHMENT PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN SIX MONTHS, THE PLANS SHALL BE RESUBMITTED FOR REAPPROVAL.
4. A PUBLIC WORKS INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE RIGHT-OF-WAY AND IN EASEMENTS. NOTIFY INSPECTION SERVICES 24 HOURS PRIOR TO STARTING OF CONSTRUCTION (TELEPHONE 391-5751).
5. WHENEVER EXCAVATION IS TO BE DONE, CALL "BLUE STAKE CENTER", 263-1100, TWO WORKING DAYS BEFORE EXCAVATION IS TO BEGIN. THE CENTER WILL SEE THAT THE LOCATION OF THE UNDERGROUND UTILITY LINES ARE IDENTIFIED FOR THE PROJECT. CALL "COLLECT" IF NECESSARY.
6. ENCROACHMENT PERMITS ARE REQUIRED FOR ALL WORK IN THE PUBLIC RIGHT-OF-WAY AND IN EASEMENTS GRANTED FOR PUBLIC PURPOSES. AN ENCROACHMENT PERMIT WILL BE ISSUED BY THE CITY UPON RECEIPT OF PAYMENT OF A BASE FEE PLUS A FEE FOR INSPECTION SERVICES TO BE PROVIDED BY THE CITY. COPIES OF ALL PERMITS SHALL BE RETAINED ON-SITE AND SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE WORK STOPPAGE UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.
7. ALL EXCAVATION AND GRADING WHICH IS NOT IN THE PUBLIC RIGHTS-OF-WAY OR NOT IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO CHAPTER 70, EXCAVATION AND GRADING, OF THE LATEST EDITION OF THE UNIFORM BUILDING CODE PREPARED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. A PERMIT FOR THIS GRADING MUST BE SECURED FROM THE CITY FOR A FEE ESTABLISHED BY THE UNIFORM BUILDING CODE.
8. SIGNS WILL REQUIRE SEPARATE APPROVALS & PERMITS.

ADDITIONAL REQUIREMENTS TO M.A.G. SPECIFICATIONS

M.A.G. SECTION 301 – SUBGRADE PREPARATION

301.3 RELATIVE COMPACTION

1. SPECIFIED DENSITY SHALL BE ACHIEVED IMMEDIATELY PRIOR TO PLACEMENT OF BASE MATERIAL. MOISTURE CONTENT SHALL BE WITHIN ±2% OF OPTIMUM MOISTURE CONTENT DURING COMPACTION.

M.A.G. SECTION 710 – ASPHALT CONCRETE

710.2.3 MINERAL FILLER AND ANTI-STRIPPING AGENT

1. STRIPPING WILL BE DETERMINED IN ACCORDANCE WITH ASTM D-1075 WITH A MINIMUM INDEX OF RETAINED STRENGTH OF 50 AND A WET BREAKING STRENGTH OF 150 PSI.

710.2.5 JOB MIX FORMULA

MARSHALL DESIGN CRITERIA – ALL ASPHALT CONCRETE

TEST PROPERTY	VALUE	
MINERAL AGGREGATE GRADATION M.A.G. SPEC. 710, TABLE 710	C-3/4	D-1/2
NO. OF BLOWS	75	75
STABILITY, POUND (MINIMUM)	1800	1800
FLOW, 0.01 INCH	8-16	8-16
PERCENT AIR VOIDS	3-5	3-5
PERCENT VOIDS IN MINERAL AGGREGATE	14% MIN.	15% MIN.

A. MIX DESIGN SHALL BE PER CHAPTER 5, MARSHALL METHOD OF MIX DESIGN OF THE ASPHALT INSTITUTE'S MANUAL SERIES NO. 2(MS-2) SIXTH EDITION.

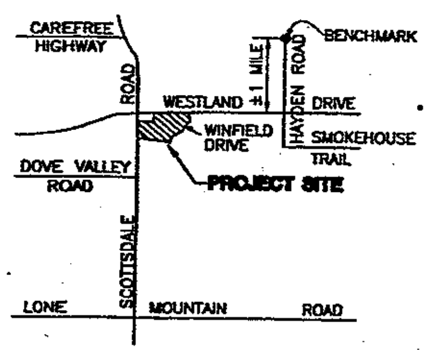
B. RECYCLED ASPHALT CONCRETE WILL NOT BE UTILIZED.

C. ASPHALT CEMENT SHALL BE PG 70-10.*

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING THE MIX DESIGN, OWNER SHALL APPROVE TESTING LABORATORY SELECTED BY CONTRACTOR.

E. PRESERVATIVE SEAL SHALL NOT BE APPLIED.

*ACCORDING TO THE ASPHALT INSTITUTE PUBLICATION PERFORMANCE GRADED ASPHALT BINDER SPECIFICATION AND TESTING, SUPER PAVING SERIES No. 1 (SP-1).



VICINITY MAP
N.T.S.

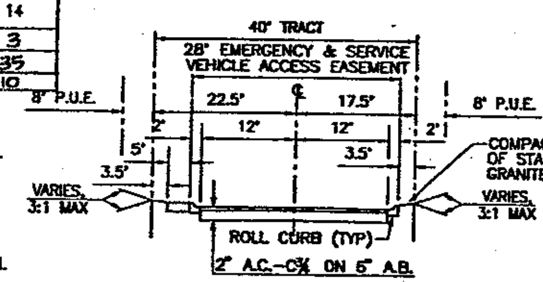
TABLE 1

D.I.P. PIPELINE AND FITTING THRUST RESTRAINT REQUIREMENTS

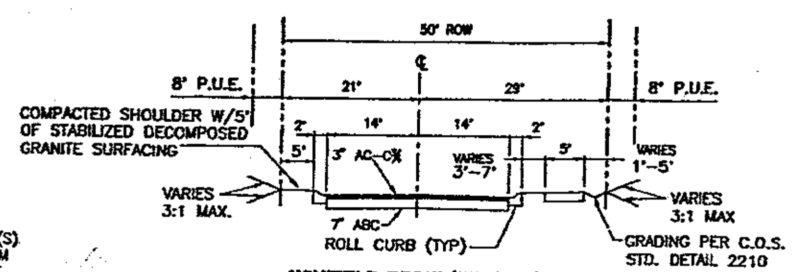
PIPE SIZE (in)	TEST PRESSURE (psig)	MINIMUM RESTRAINT LENGTH (ft): VALVES AND DEAD ENDS (V_L)	TEES (Branch Diameter – in) 6: L_R	6: L_b	8: L_R	8: L_b	12: L_R	12: L_b	VERTICAL OFFSET (45° BENDS ONLY): H_s	L_s	HORIZONTAL BEND: ANGLE	RESTRAIN. LENGTH
8	200	142	18	1	18	1	18	45	59	9	45	14
											11¼	3
											90	35
											22½	10

ASSUMPTIONS:

1. TABLE IS BASED UPON A UNIFIED SOIL CLASSIFICATION TYPE SM AND TRENCH TYPE 5 (PER EBAA IRON).
2. ALL FITTINGS ARE RESTRAINED TO ADJACENT PIPE.
3. PRESSURE = 200 PSI.
4. DEPTH OF BURIAL = 3' FOR 8" PIPE
5. L_R = RESTRAINED LENGTH ALONG RUN.
6. FACTOR OF SAFETY = 1.5.
7. L_b = RESTRAINED LENGTH ALONG BRANCH.
8. H_s = RESTRAINED LENGTH ALONG THE HIGH SIDE.
9. L_s = RESTRAINED LENGTH ALONG THE LOW SIDE.
10. PROVIDE RESTRAINT FOR A DISTANCE (V_L) ON EITHER SIDE OF THE VALVE.
11. FIRE HYDRANTS TO BE FULLY RESTRAINED AT ALL FITTING JOINTS.



TYPICAL STREET SECTION (PRIVATE)
N.T.S.



WINFIELD DRIVE (PRIVATE)
N.T.S.

THE WATER SYSTEM SHOWN HEREIN, HAS BEEN DESIGNED TO ADEQUATELY SUPPLY WATER IN SUFFICIENT QUANTITY AND PRESSURE TO MEET LOCAL FIRE PROTECTION REQUIREMENTS

NATIVE PLANT PERMIT NO. 11-96-09

APPROVAL:

[signature] 12/1/97
MARICOPA COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES — DATE
197319 197320

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

COMMUNITY NUMBER	PANEL # PANEL DATE	SUFFIX	DATE OF FIRM	FIRM ZONE	BASE FLOOD ELEVATION (In AO Zone, Use Depth)
04013	0820 12/03/93	E	9/30/95	X	LESS THAN 1 FT

ENGINEERS CERTIFICATION: THE FINISH FLOOR ELEVATION(S) AND/OR FLOODPROOFING ELEVATION(S) ON THIS PLAN ARE SUFFICIENTLY HIGH TO PROVIDE PROTECTION FROM FLOODING CAUSED BY A 100 YEAR STORM, AND ARE IN ACCORDANCE WITH CITY OF SCOTTSDALE REVISED CODE, CHAPTER 37 – FLOODWAYS AND FLOODPLAINS ORDINANCE.

CALL TWO WORKING DAYS BEFORE YOU DIG
263-1100
BLUE STAKE CENTER

BUILDING REVIEW	
ELECTRICAL	N/A
MECHANICAL	N/A
BUILDING	[signature] 1/23/98
PLUMBING	N/A

CITY OF SCOTTSDALE

REVIEW & RECOMMENDED APPROVAL BY:

FIRE DEPT	[signature] 1-21-98	GRADING & DRAINAGE	[signature] 1-26-98
LANDSCAPING & PLANNING	[signature] 1/21/98	WATER & SEWER	[signature] 1-26-98
TRAFFIC	N/A	PAVING	[signature] 1-26-98

APPROVED BY: [signature] — PROJECT REVIEW SR. ENGINEER — 1-26-98 DATE

GILBERTSON ASSOCIATES, Inc.
Consulting Civil Engineers & Land Surveyors
15974 N. 77th Street, Scottsdale, Arizona 85260 602/607-2244

IMPROVEMENT PLANS

WINFIELD
PLAT TWO
PHASE 1

Date DECEMBER 1, 1997 | Job No. 5480IE | Sheet 1 of 21

71-PP-96 217-DR-96 214-DR-96 1370-E-97

31079

CITY OF SCOTTSDALE

PUBLIC IMPROVEMENTS

COUNCIL
SAM KATHRYN CAMPANA, MAYOR
GREGORY S. BIELLI
MARY MANROSS
ROBERT C. PETTYCREW
DONALD J. PRIOR
DENNIS E. ROBBINS
RICHARD THOMAS

CITY MANAGER
RICHARD A. BOWERS

CITY ATTORNEY
FREDDA BISMAN

CITY CLERK
SONIA ROBERTSON

"AS-BUILT" CERTIFICATION

I HEREBY CERTIFY THAT THE "AS-BUILT" IMPROVEMENTS AS SHOWN HEREON ARE LOCATED AS NOTED, AND THE LOCATIONS ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF

REGISTERED LAND SURVEYOR — DATE 9/20/97

CITY OF SCOTTSDALE REAPPROVAL

REAPPR. #	SHEET #'S REVISED	DESCRIPTION OF REVISIONS	
		UPDATED TOPOGRAPHY, ENCASED PIPE, ADJUST RIM ELEVATIONS	
PAVING	Off S. Held 1-22-98	TRAFFIC	N/A
S & D	N/A	C & R	N/A
W & S	Off S. Held 1-22-98	FIRE	N/A

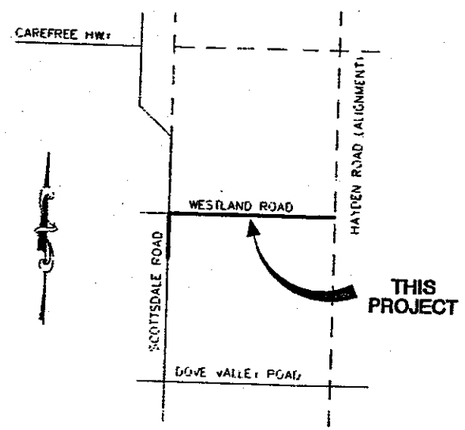
ENGINEERING COORDINATION MANAGER — DATE 1-26-98

Two working days before you dig CALL FOR THE BLUE STAKES
263-1100
Blue Stake Center
CALL COLLECT

ENGINEER

WESTLAND ROAD SEWER PLAN
SCOTTSDALE ROAD TO HAYDEN ROAD

PROJECT NO. V8655/W3705
BID CALL 98057



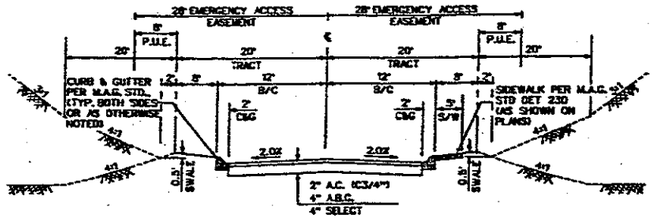
Vicinity Map
N.T.S.

REAPPROVAL T.S. Scott 971432 1/12/98
MARICOPA COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

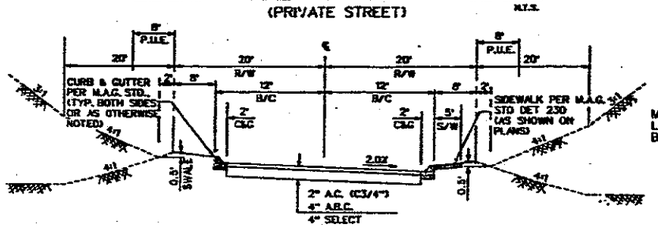
37420

WESTLAND ROAD SEWER-SCOTTSDALE RD. TO HAYDEN RD
PROJECT NO. V8655/W3705 BID CALL 98057

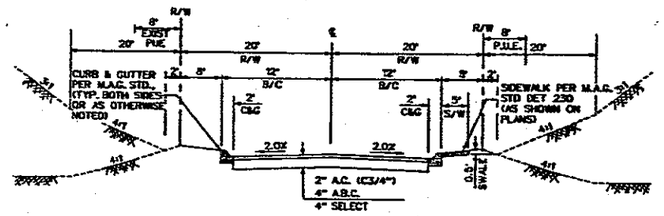
1722 E 95
2345 E 97



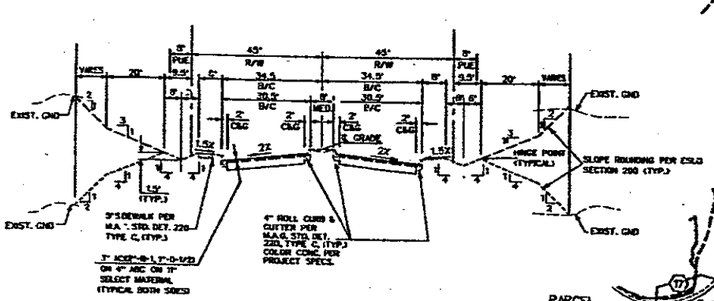
TYPICAL SECTION - INTERIOR STREET
PHASE II
(PRIVATE STREET)
N.T.S.



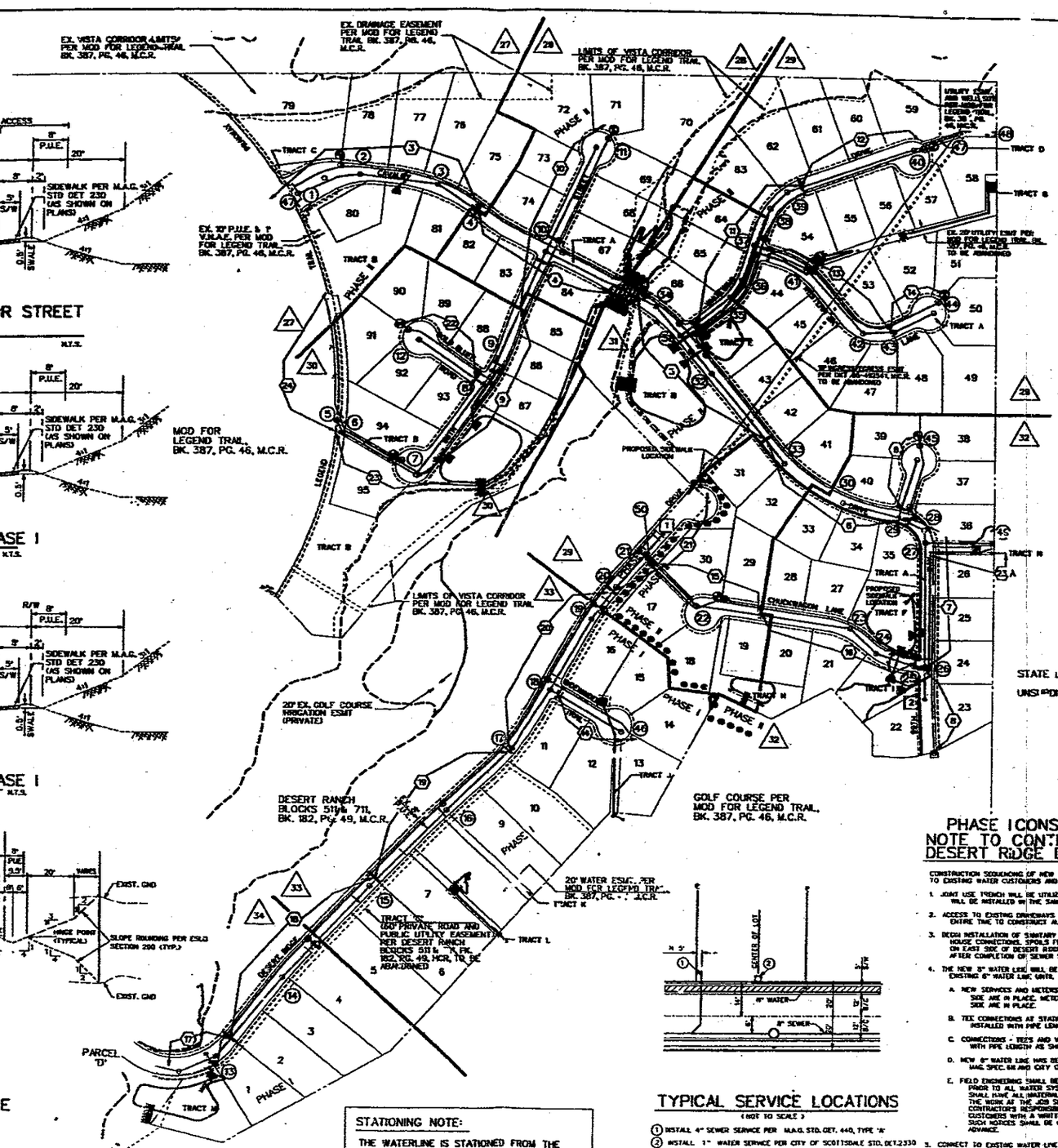
SIDEWINDER TRAIL - PHASE I
(PUBLIC STREET)
N.T.S.

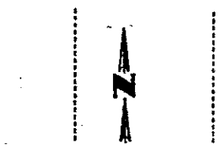


DESERT RIDGE DRIVE - PHASE I
(PUBLIC STREET)
N.T.S.



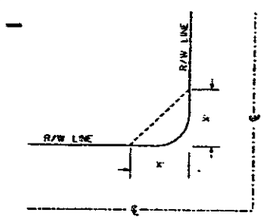
EXISTING
LEGEND TRAIL - ONSITE
WITHOUT SIDEWALK EAST SIDE
TYPICAL SECTION





INDEX MAP

- (1) - INDICATES IMPROVEMENT PLANS
- (2) - INDICATES MANHOLE NUMBER
- (3) - INDICATES CLEANOUT NUMBER
- (4) - INDICATES GRADING PLANS



SITE DISTANCE TRIANGLE
SHEET 17 "CATM"

	X (IN FEET)
MAJOR COLLECTOR	25'
LOCAL COLLECTOR	35'

TYPICAL SERVICE LOCATIONS
(NOT TO SCALE)

1. INSTALL 4" SEWER SERVICE PER M.A.G. STD. DET. 440, TYPE "A"
2. INSTALL 1" WATER SERVICE PER CITY OF SCOTTSDALE STD. DET. 2330 N ON LOW SIDE OF LOT

PHASE I CONSTRUCTION
NOTE TO CONTRACTORS FOR
DESERT RIDGE DRIVE IMPROVEMENTS

CONSTRUCTION SEQUENCING OF NEW WATER LINE TO MAINTAIN WATER SERVICE TO EXISTING WATER CUSTOMERS AND TO KEEP SHUT DOWN TIME TO A MINIMUM

1. JOINT USE TRENCH WILL BE UTILIZED. ALL DRY UTILITIES, AND GAS WILL BE INSTALLED IN THE SAME TRENCH.
2. ACCESS TO EXISTING DRIVEWAYS WILL NEED TO BE MAINTAINED DURING ENTIRE TIME TO CONSTRUCT ALL IMPROVEMENTS.
3. BEGIN INSTALLATION OF SANITARY SEWER LINES - MAIN, MANHOLES AND HOUSE CONNECTIONS. SPOILS FROM SEWER LINE TRENCHING TO BE PLACED ON EAST SIDE OF DESERT RIDGE DRIVE OR AS DIRECTED BY OWNER. AFTER COMPLETION OF SEWER SYSTEM THEN WATER LINE INSTALLATION CAN BEGIN.
4. THE NEW 8" WATER LINE WILL BE INSTALLED BUT NOT CONNECTED TO THE EXISTING 6" WATER LINE UNTIL THE FOLLOWING ITEMS ARE COMPLETED.
   A. NEW SERVICES AND METERS TO THE EXISTING LOTS ON THE WEST SIDE ARE IN PLACE. METERS AND SERVICES TO LOTS ON THE EAST SIDE ARE IN PLACE.
   B. TEE CONNECTIONS AT STATIONS 9+81, 16+48, AND 19+69 ARE INSTALLED WITH PIPE LENGTH AS SHOWN AND CAPPED.
   C. CONNECTIONS - TEES AND VALVES FOR NEW FIRE HYDRANT LOCATIONS WITH PIPE LENGTH AS SHOWN AND CAPPED.
   D. NEW 8" WATER LINE HAS BEEN FLUSHED AND CHLORINATED PER MAG SPEC. 64 AND CITY OF SCOTTSDALE SPECS.
   E. FIELD ENGINEERING SHALL BE CONTACTED @ 391-5757, 48-HOURS PRIOR TO ALL WATER SYSTEM SHUT DOWNS. THE CONTRACTOR SHALL HAVE ALL MATERIALS AND EQUIPMENT NECESSARY TO DO THE WORK AT THE JOB SITE PRIOR TO SHUT DOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL AFFECTED WATER CUSTOMERS WITH A WRITTEN NOTICE OF THE PROPOSED SHUT DOWN. SUCH NOTICES SHALL BE GIVEN A MINIMUM OF 24-HOURS IN ADVANCE.
5. CONNECT TO EXISTING WATER LINE AT STATIONS 0+31 AND 9+71, STATION 0+90 CONNECTS TO THE EXISTING 8" WATER LINE AT THE BEGINNING OF DESERT RIDGE DRIVE IMPROVEMENTS. THE CONNECTION @ STA. 9+81 ENSURES WATER SUPPLY TO EXISTING PARCEL 8C.
6. THE TAKING OF PRECEDENCE OF DESERT RIDGE DRIVE AND OTHER IMPROVEMENTS IS LEFT TO THE DISCRETION OF THE CONTRACTOR. THE EXISTING DRIVEWAYS MUST HAVE ACCESS AT ALL TIMES.

STATIONING NOTE:

THE WATERLINE IS STATIONED FROM THE CENTERLINE STATIONING.

THE SEWER TAPS ARE STATIONED FROM THE NEAREST DOWNSTREAM MANHOLE.

NOTE:
ALL SEWER MAINS TO BE PVC

3031

263-1100
Call Two Full Days Prior To Dig Start
One Call

LEGEND TRAIL PARCEL E

COE & VAN LOO
CONSULTING ENGINEERS
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

REVISIONS	DATE	BY

DESIGNED TR.BE
DRAWN DR.NP.TT
CHECKED DWK
DATE 11/96

IMPROVEMENT PLANS

DENNIS C. LUCAS

SHEET 2 OF 47

48-0019
PLAN A

DATE: Jun 20, 1997
TIME: 10:27:55
FILE: q:\48001\land\mdl\e02.dgn

2214 E 96 47 PP 96

CONSTRUCTION NOTES

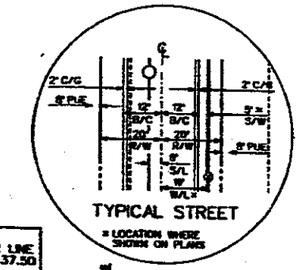
1. SURVEY MARKER - MAG STD DET 120-1 TYPE B
2. ROLL CURB & GUTTER - MAG STD DET 220 TYPE C
3. VERTICAL CURB & GUTTER - MAG STD DET 220 TYPE A
4. FIRE HYDRANT PAVEMENT MARKER - COS STD DET 2383
5. SEWER MANHOLE & COVER FRAME ADJUSTMENT - MAG STD DET 422
6. VALVE & SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT MAG STD DET 270
7. 5' SIDEWALK - MAG STD DET 230
8. SIDEWALK RAMPS -MAG STD DET 234
9. SIDEWALK RAMPS - MAG STD DET 233
10. 6" VALLEY GUTTER - COS STD DET 2240
11. STREET SIGN BASE - COS STD DET 2131 WITH R1-1 (STOP SIGN) PER M.U.T.C.D.
12. 5' CURB TRANSITION - MAG STD DET 221
13. VALLEY GUTTER - COS STD DET 2240 (MODIFIED- SEE PLAN FOR WIDTH)
14. TRANSITION FROM 6" MOUNTABLE TO 4" VERT. CURB THROUGHOUT RETURN
15. DRIVEWAY ENTRANCE - COS STD DET 2235 (22' WIDE)
16. MOUNTABLE CURB & GUTTER - C.O.S. STD. DET. 2221 TYPE "M"
17. SIDEWALK RAMPS - MAG STD DET 232

1. 8" WATER LINE - DUCTILE IRON PIPE (PRESSURE CLASS 350, THICKNESS CLASS 50)
2. 8" VALVE, BOX & COVER - MAG STD DET 391-1-C W/ DEBRIS CATCHER
3. FIRE HYDRANT COMPLETE - MAG STD DET 360
4. 1" WATER SERVICE CONNECTION - COS STD DET 2330
5. X 8" TEE
6. X BEND - AS INDICATED ON PLANS
7. AIR RELEASE VALVE PER C.O.S. STD. DET. 2348
8. REMOVE TAPPED CAP & CONNECT NEW WATERLINE
9. TAPPED CAP W/ FLUSHING PIPE - MAG STD DET 380, TYPE B
10. EXIST. WATER METER & SERVICE TO BE REMOVED AFTER NEW SERVICE HAS BEEN CONNECTED.
11. EXIST. 8" WATER LINE TO BE REMOVED AFTER NEW 8" WATER LINE IS IN SERVICE.
12. 8" VALVE,BOX & COVER - MAG STD DET 391-1-C W/ DEBRIS CATCHER
13. 6" WATER LINE - DUCTILE IRON PIPE (PRESSURE CLASS 350, THICKNESS CLASS 50)

1. 8" SEWER LINE - PVC
2. CLEANOUT MAG STD DET 441
3. 4" SEWER SERVICE TAP - MAG STD DET 440 TYPE A
4. 4" SERVICE CONNECTION TO MANHOLE
5. 4' DIAMETER MANHOLE - MAG STD DET 420
6. 5' DIAMETER MANHOLE - MAG STD DET 420 W/30" COVER
7. REMOVE PLUG & CONNECT NEW 8" SEWER
8. PLUG & STUB PER MAG STD DET 427
9. DROP CONNECTION PER MAG.STD.DET. 426-TYPE "A"
10. DROP CONNECTION PER MAG.STD.DET. 426-TYPE "B"

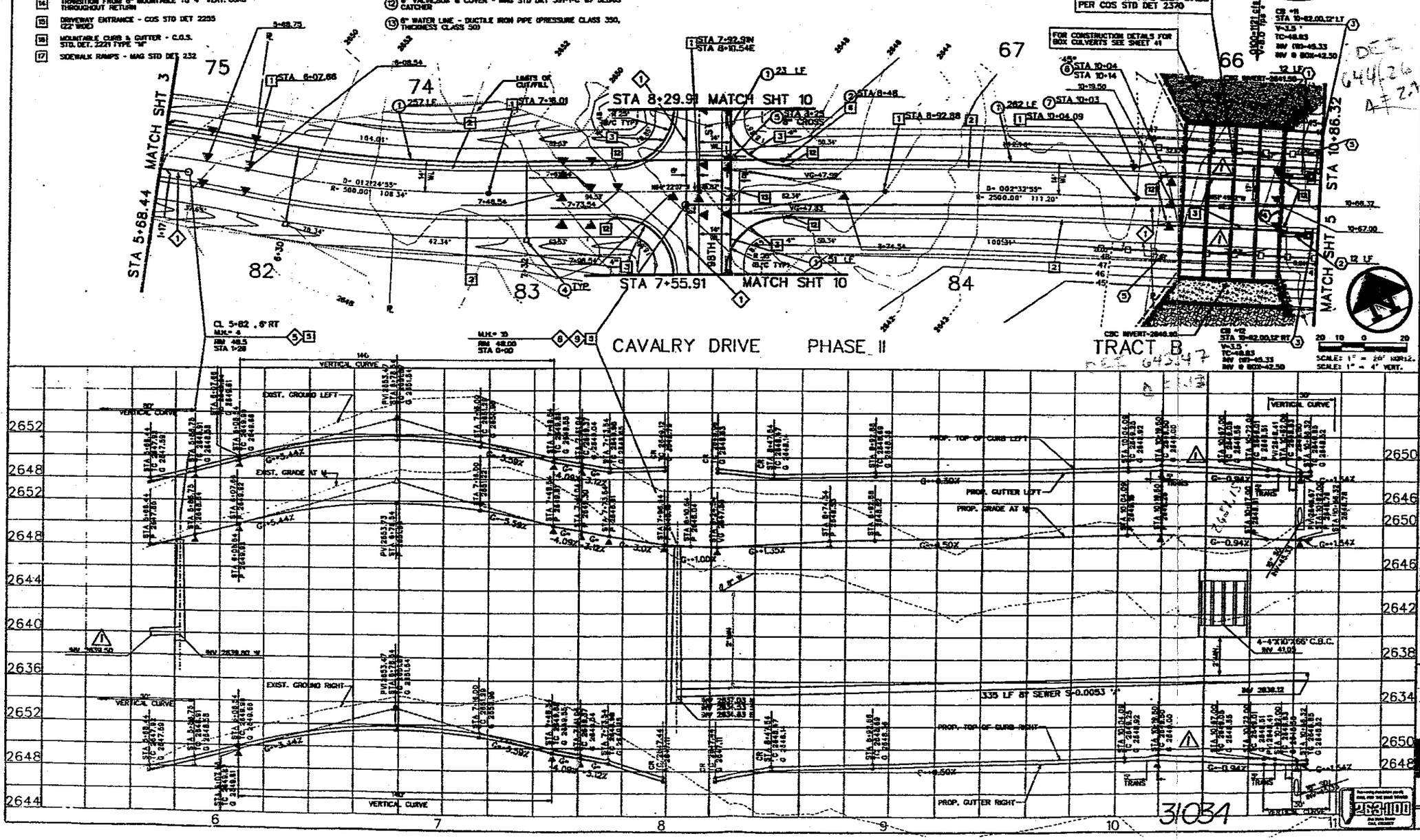
X MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF-LEVELING AND OPERATES ON A FREQUENCY OF 143.7 KHZ UP TO A DEPTH OF 4 FT.

1. INSTALL 18" RGRCP, CL. III S=0.23583 FT/FT, INV CBC-42.50
2. INSTALL 18" RGRCP, CL. III S=0.23583 FT/FT, INV CBC-42.50
3. CONSTRUCT CATCH BASIN PER C.O.P. STD DET P1569-1 (SUMP ONLY) SEE DETAIL SHEET 43
4. STA 10+47.05 CONSTRUCT 4-10'x4' CONCRETE BOX CULVERT WITH MODIFIED INLET/OUTLET WINGS AND CONCRETE OUTLET APRON. SEE DETAIL SHEET 41
5. INSTALL 38 LF (LEFT & RIGHT) OF DECORATIVE HANDRAIL PER DETAIL SHEET 40.



STA 10+04 TO 10+90 LIMITS OF DIPPED WATER LINE MAX. TOP OF PIPE ELEV-37.50 PER COS STD DET 2370

FOR CONSTRUCTION DETAILS FOR BOX CULVERTS SEE SHEET 41



LEGEND TRAIL PARCEL E

COE & VAN LOO

4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

IMPROVEMENT PLANS

REVISIONS	DATE	BY

DESIGNED TRBE
DRAWN MMP,TT
CHECKED JAK
DATE 11/96

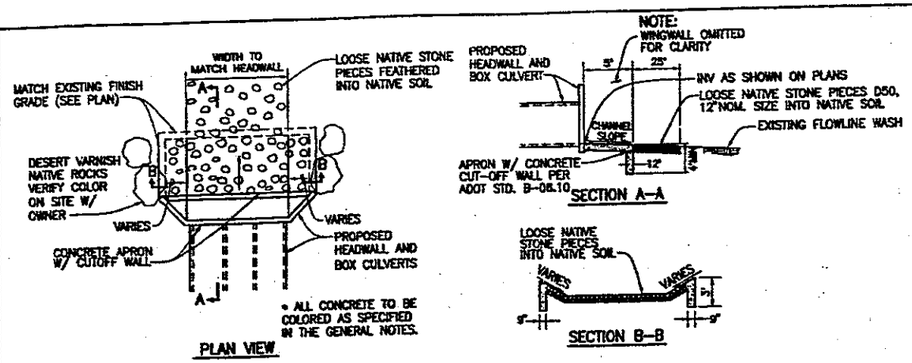
SHEET 4 OF 47

48-0019
PLAN A

DATE: Aug 13 1997
TIME: 10:13
FILE: q:\48001\land\m20d4.dgn

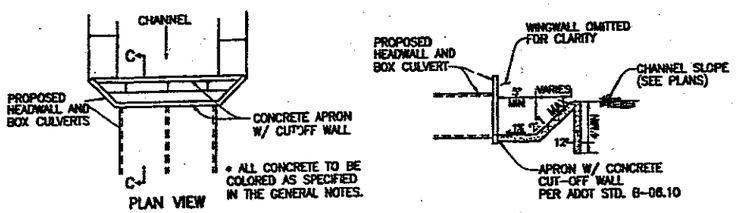
2214 E 66 47 PP 96

31034



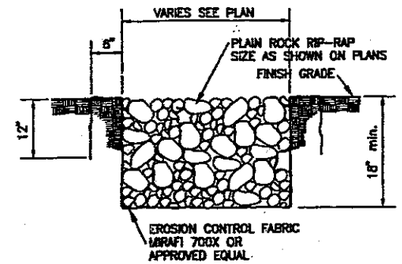
BOX CULVERT OUTLET DETAIL (SEE SHEET 4,5,18, AND 20)

N.T.S.



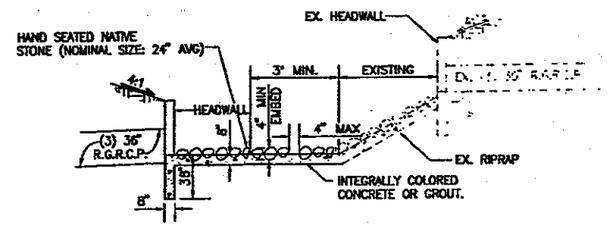
BOX CULVERT INLET DETAIL (SEE SHEET 4 AND 20)

N.T.S.



LOOSE ROCK RIP-RAP WITH FABRIC DETAIL

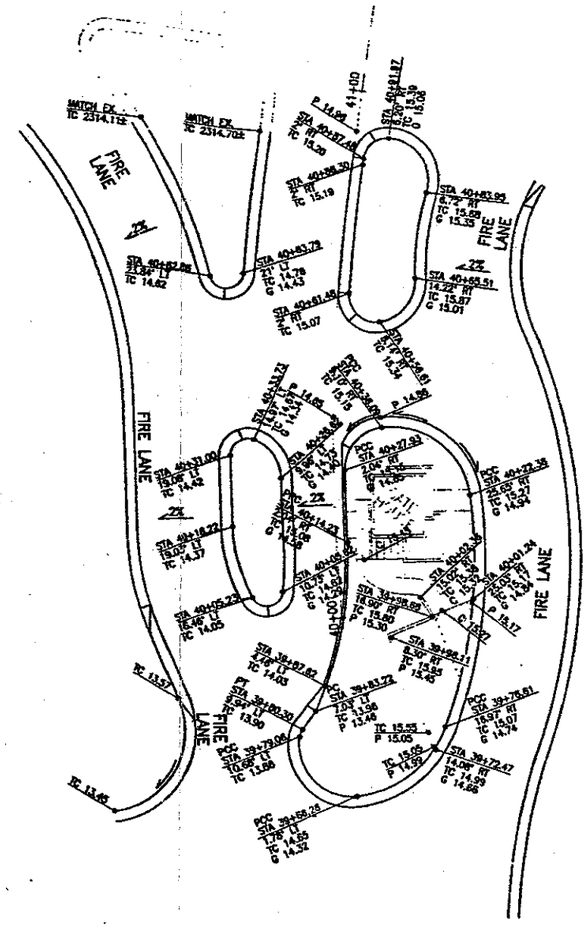
N.T.S.



SEE SHEET 8 & 17

GROUTED RIP-RAP DETAIL

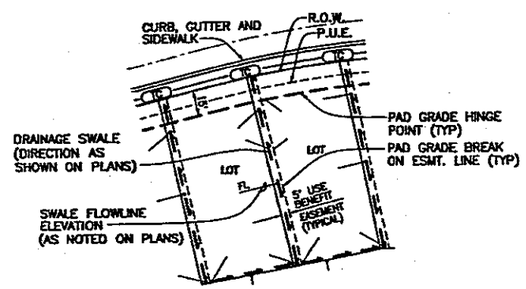
N.T.S.



MEDIAN ISLAND DETAILS
WINFIELD DRIVE

(REFER TO SHEET 5 FOR ADDITIONAL INFORMATION)

N.T.S.



TYPICAL LOT PAD GRADING DETAIL

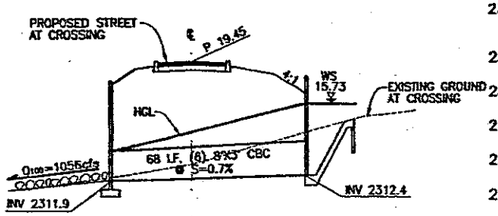
N.T.S.

RIP-RAP GRADATION TABLE

SIZE	% FINER BY WEIGHT
12" & UP	100
9"	85
6"	50
4"	15
2"	5

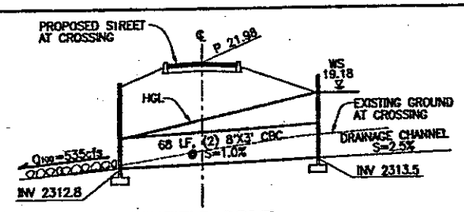
RIP-RAP NOTES

1. The stone should be reasonably well graded throughout the in-place layer thickness.
2. Oversize stone, even in isolated spots, should be removed individually and replaced with proper size stones.
3. Side slopes on which stone is placed by machine or dumped should not be steeper than 2:1.
4. The stone should be placed to form an interlocked, dense, uniform mass of durable, angular stones with no apparent voids or pockets.
5. The stone shall be predominantly angular in shape.
6. All exposed rip-rap shall be native stone treated with a desert varnish (eonite or equivalent).



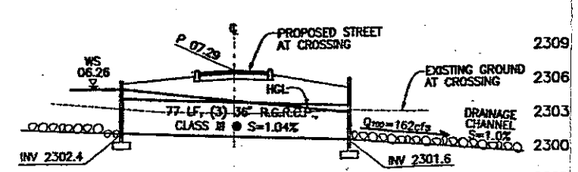
WINFIELD DRIVE
STA 37+87

N.T.S.



WINFIELD DRIVE
STA 36+17

N.T.S.



EVENING GLO DRIVE
STA 209+24

N.T.S.

GILBERTSON ASSOCIATES, INC.
Consulting Civil Engineers & Land Surveyors
13974 N. 77th Street . Scottsdale, Arizona 85260 602/607.1244

DETAILS

WINFIELD
PLAT TWO PHASE 1

Date JANUARY 8, 1998 | Job No. 5460E | Sheet 2 of 21

71-PP-96 217-DR-96 1370-E-97

31080

IMPROVEMENT PLANS
CITY OF SCOTTSDALE
LEGEND TRAIL RECREATION CENTER
PHASE 1 OF PARCEL D OF LEGEND TRAIL AS RECORDED IN BOOK 387, PAGE 46, M.C.R.

LOCATED IN A PORTION OF THE SOUTHEAST QUARTER SECTION 6, THE EAST HALF OF SECTION 7, THE WEST HALF OF SECTION 8, THE SOUTHEAST QUARTER OF SECTION 6, AND THE SOUTHWEST QUARTER OF SECTION 5 TOWNSHIP 5 NORTH, RANGE 5 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

BASIS OF COORDINATES

SOUTHWEST CORNER, SECTION 7, TOWNSHIP 5 NORTH, RANGE 5 EAST.
N: 9999.9127
E: 9999.9587

UTILITY COMPANIES

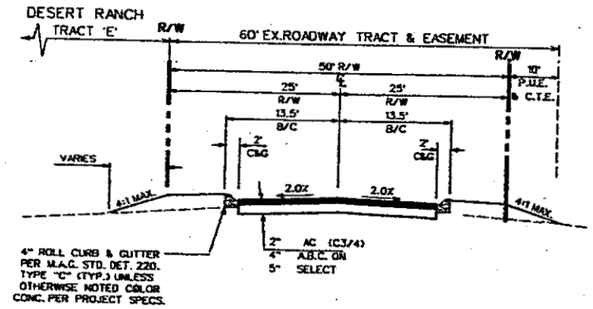
WATER	CITY OF SCOTTSDALE
SEWER	CITY OF SCOTTSDALE
ELECTRIC	ARIZONA PUBLIC SERVICE
TELEPHONE	US WEST
GAS	BLACK MOUNTAIN GAS
FIRE DEPT.	RURAL METRO
CABLE T.V. CO.	TCI AND DCA CABLE TV
REFUSE DISPOSAL	PRIVATE

BENCHMARK

STAGECOACH PASS AND PIMA ROADS.
BRASS CAP IN HANDHOLE
C.O.S. DATUM 2559.155

LEGEND

(10)	SHEET NUMBERS
(6)	MANHOLE NUMBERS
8"W	8" WATER LINE
6"W	6" WATER LINE
8"S	8" SEWER LINE
	FIRE HYDRANTS
O	MANHOLES
●	VALVES



TYPICAL SECTION - DESERT RIDGE

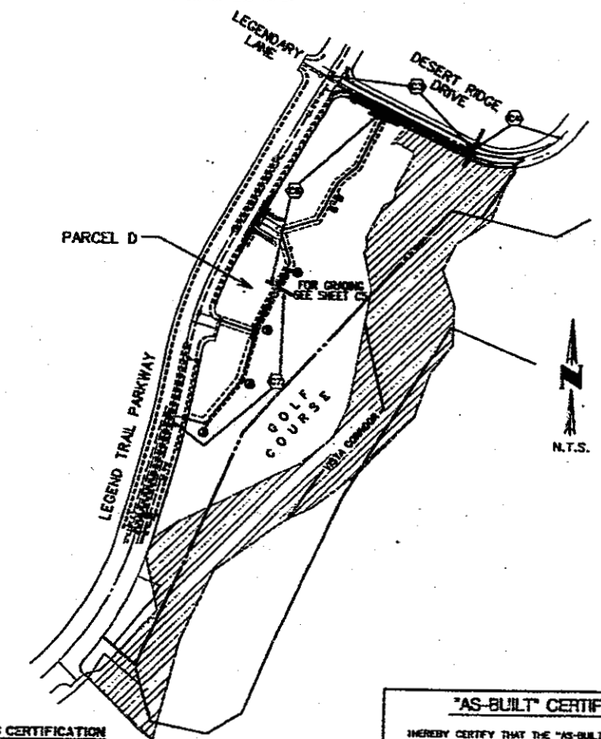
STA. 0+00 TO STA. 15+25.08 N.T.S.

ZONING

C-2 HD

ASSESSOR PARCEL NUMBER

PART OF 216-45-1A



OWNER/DEVELOPER

STARWOOD DEVELOPMENT
5090 N. 40TH STREET, SUITE 190
PHOENIX, ARIZONA 85018
(602) 952-1515 - TEL.
(602) 952-1880 - FAX.

ARCHITECT

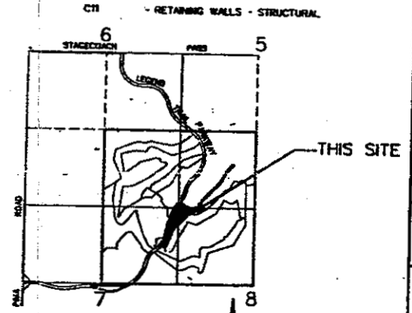
ARCHITECTURE PLUS, LTD
1103 E. MISSOURI AVENUE
PHOENIX, ARIZONA 85014
(602) 264-7500

ENGINEER

COE & VAN LOO CONSULTANTS, INC.
4550 N. 12TH STREET
PHOENIX, ARIZONA 85014
(602) 264-6831 - TELE
(602) 264-0928 - FAX

SHEET INDEX

C1	- COVER SHEET
C2	- NOTE SHEET
C3-C4	- PAVING, WATER & SEWER SHEETS
C5	- ONSITE GRADING
C5A	- CONTROL DAM CONTROL
C6-C7	- ONSITE WATER & SEWER SHEETS
C8	- GRADING DETAILS
C9	- BOX CULVERT DETAILS
C10	- STORM DRAIN DETAILS
C11	- RETAINING WALLS - STRUCTURAL



VICINITY MAP

(NOT TO SCALE)

BUILDING REVIEW

[illegible]	—
[illegible]	—
[illegible]	—
[illegible]	—

32107

MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPT.

APPROVED: [illegible] 3/6/96
DEPT. OF ENVIRONMENTAL SERVICES WATER — DATE

MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPT.

APPROVED: [illegible] 3/6/96
DEPT. OF ENVIRONMENTAL SERVICES SEWER — DATE

ENGINEERS CERTIFICATION

THE FINISH FLOOR ELEVATIONS AND/OR FLOODPROOFING ELEVATIONS ON THIS PLAN ARE SUFFICIENTLY HIGH TO PROVIDE PROTECTION FROM FLOODING CAUSED BY A 100 YEAR STORM, AND ARE IN ACCORDANCE WITH CITY OF SCOTTSDALE REVISED CODE, CHAPTER 37 - FLOODWAYS AND FLOODPLAINS ORDINANCE.

COMMUNITY NUMBER	PANEL NUMBER (PANEL DATE)	SUFFIX	DATE OF FIRM	FIRM ZONE	BASE FLOOD ELEVATION ON AO ZONE, USE DEPTH
045012	850, OF 4350 (4/15/88)	D	12/3/93	D	NONE
	820 OF 4350 (12/3/93)	E	12/3/93	X	NONE

"AS-BUILT" CERTIFICATION.

I HEREBY CERTIFY THAT THE "AS-BUILT" IMPROVEMENTS AS SHOWN HEREON ARE LOCATED AS NOTED, AND THE LOCATIONS ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

LARRY E. SULLIVAN — REGISTERED LAND SURVEYOR — 1-21-97 DATE

AS-BUILT

263-1100

CITY OF SCOTTSDALE

REVIEW & RECOMMENDED APPROVAL BY:

FIRE DEPT.	4-29-96	GRADING & DRAINAGE	4-29-96
PLANNING	4-29-96	WATER & SEWER	4-29-96
TRAFFIC	N/A	PAVING	4-29-96
STRUCTURAL	4/29/96		

APPROVED BY: [signature] — PROJECT REVIEW SR. ENGINEER — 4-29-96 DATE

LEGEND TRAIL RESORTS RECREATION CENTER

COE & VAN LOO

4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

REVISIONS	DATE	BY

DESIGNED JAK
DRAWN NPJM
CHECKED GMH
DATE 12/95

IMPROVEMENT PLANS
PARCEL D - PHASE I

SHEET C1 OF C11

480026

121-DR-95

2277-E-95

DATE:- Feb. 5, 1996
TIME:- 08:42:14
FILE:- q:\480026\eng\irv01c01.dgn

1. ROLL CURB AND GUTTER PER MAG.STD.DET. 220 TYPE "C"
2. SURVEY MARKER PER MAG.STD.DET. 120-1 TYPE "B"
3. ADJUST SEWER MANHOLE FRAME AND COVER PER C.O.S. STD.DET. 2270
4. ADJUST WATER VALVE FRAME AND COVER PER MAG. STD.DET. 391-1-TYPE"C"
5. 6" VALLEY GUTTER PER C.O.S. STD.DET. 2240
6. STREET SIGN BASE PER C.O.S. STD.DET. 2131 WITH R1-1
7. FIRE HYDRANT PAVEMENT MARKER PER C.O.S. STD.DET. 2383
8. DRIVEWAY ENTRANCE PER C.O.S. STD.DET. 2257 TYPE CH-1
9. TACK-COAT BETWEEN EXIST. AND NEW PVMT. TAPER NEW A.C. OVER SAWCUT LINE TO PROVIDE A SMOOTH TRANSITION.
10. REMOVE EXISTING VALLEY GUTTER & APRONS.
11. STA 10+38 TO STA 16+24 REMOVE ALL EXISTING AC PAVEMENT WITHIN DESERT RIDGE DRIVE RIGHT OF WAY.
12. CONSTRUCT 5' TRANSITION-MAG STD DET 221
13. STA 13+25 (19' RT.) EDGE OF PAVEMENT TO CONSTRUCTION CL SAWCUT & REMOVE EXISTING PAVEMENT TO STA 16+20.64 (10'RT.)
14. TRANSITION FROM 4" TO 8" VERTICAL CURB THROUGHOUT RETURN
15. 4" VERTICAL CURB & GUTTER PER M.A.G. STD. DET. 220 TYPE 'A'
16. SIDEWALK RAMPS FOR MAG STD DET 232
17. REMOVE EXISTING SIDEWALK RAMP

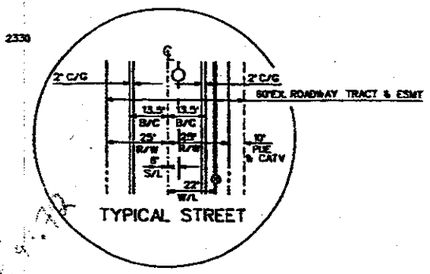
1. 8" WATER LINE C-900 PVC
2. 8" WATER LINE C-900 PVC
3. 8" TAPPING SLEEVE WITH VALVE, BOX AND COVER PER MAG. STD.DET. 391-1 TYPE
4. FIRE HYDRANT COMPLETE PER MAG.STD.DET. 380.
5. 6" DUCTILE IRON CLASS 150 PIPE, VERTICAL REALIGNMENT PER C.O.S. STD . DET. 2370
6. 6" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1-C WITH DEBRIS CATCHER
7. EXISTING 8" WATER LINE TO BE REMOVED FROM STA 10+70 TO STA 15+32.
8. THE EXISTING 6" WATER LINE TO REMAIN OPERATIONAL UNTIL THE NEW LINE IS IN SERVICE.
9. AIR RELEASE VALVE PER CITY OF SCOTTSDALE STD. DET. 2348
10. 8" 45° BENDS
11. 8" TEE
12. 8"x6" REDUCER
13. 6" CURB STOP M.A.G. STD. DET. 390 TYPE 'W' FLUSHING PIPE
14. 6" D.I.P. CLASS 150 WATERLINE
15. 1 1/2" WATER SERVICE PER C.O.S. STD.DET.2330
16. 8" X 6" TEE

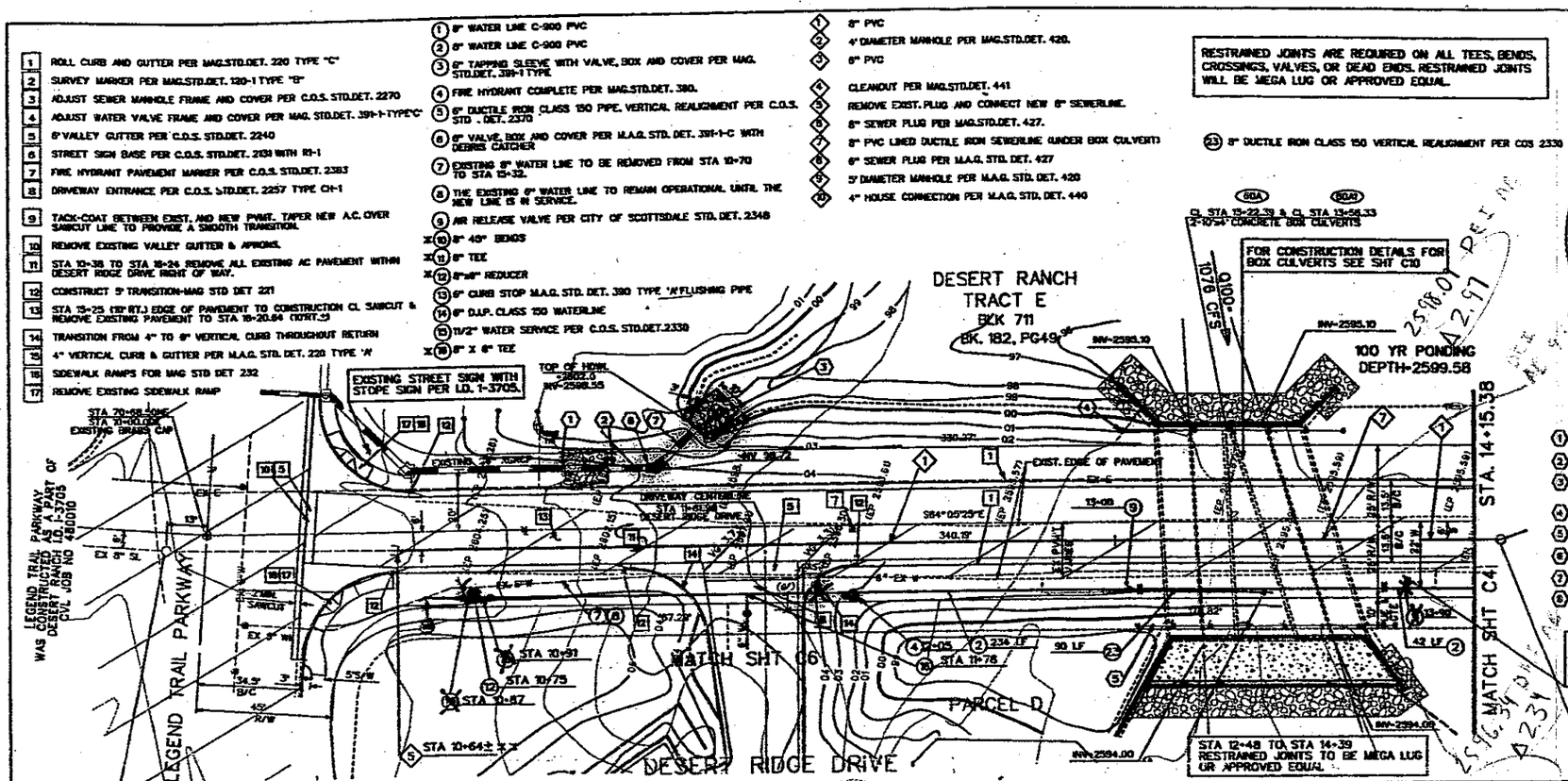
1. 8" PVC
2. 4' DIAMETER MANHOLE PER MAG.STD.DET. 420.
3. 6" PVC
4. CLEANOUT PER MAG.STD.DET. 441
5. REMOVE EXIST. PLUG AND CONNECT NEW 8" SEWERLINE.
6. 8" SEWER PLUG PER MAG.STD.DET. 427.
7. 8" PVC LINED DUCTILE IRON SEWERLINE (UNDER BOX CULVERT)
8. 6" SEWER PLUG PER M.A.G. STD. DET. 427
9. 5' DIAMETER MANHOLE PER M.A.G. STD. DET. 420
10. 4" HOUSE CONNECTION PER M.A.G. STD. DET. 440

RESTRAINED JOINTS ARE REQUIRED ON ALL TEES, BENDS, CROSSINGS, VALVES, OR DEAD ENDS. RESTRAINED JOINTS WILL BE MEGA LUG OR APPROVED EQUAL.

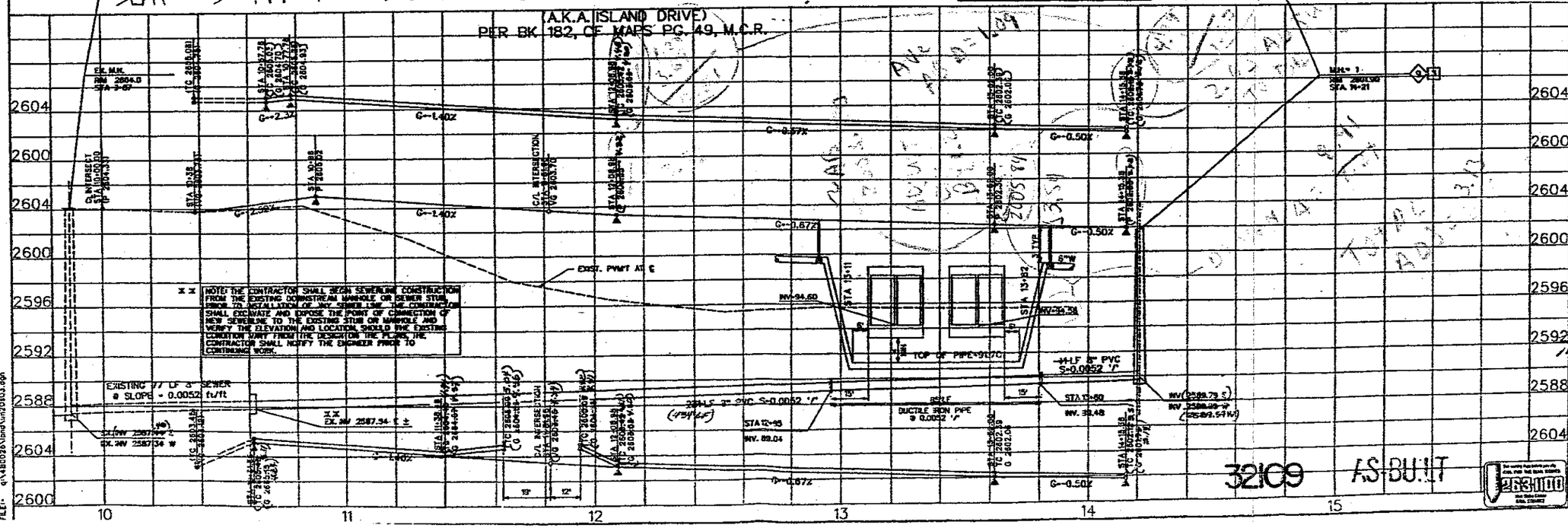
23. 8" DUCTILE IRON CLASS 150 VERTICAL REALIGNMENT PER COS 2330

* MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF LEVELING AND OPERATES ON A FREQUENCY OF 145.7 KHZ UP TO A DEPTH OF 4 FEET AT ALL BENDS, TEES, CROSSES AND VALVES





1. STA 11+19± 20'± LT. REMOVE EXIST. HDWL. & RIP RAP
2. 30 L.F. 24" R.G.R.C.P. CLASS III
3. STA 11+60, 33' LT. MODIFIED CONCRETE HDWL SEE DETAIL SHT C10
4. 72 LF HANDRAIL PER DETAIL ON SHEET C8
5. 84 LF HANDRAIL PER DETAIL ON SHEET C8
6. 45° CONCRETE PIPE COLLAR PER MAG STD DET 505
7. 18 LF 24" R.G.R.C.P. CLASS III
8. 24" MIN. THICKNESS RIP-RAP D50=12"



LEGEND TRAIL RECREATION CENTER

CODE VAN LOO
PLANNING • DESIGN • CONSTRUCTION MANAGEMENT • LANDSCAPE ARCHITECTURE
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

DESERT RIDGE IMPROVEMENT PLANS

REVISIONS	DATE	BY

DESIGNED GKH
DRAWN BRC/MPT
CHECKED GKH
DATE 12/95

121-DR-95

SHEET C3 OF C11

480026

2277-E-95

DATE: Mar. 26, 1996
TIME: 09:03:22
FILE: q:\480026\land\un20903.dgn

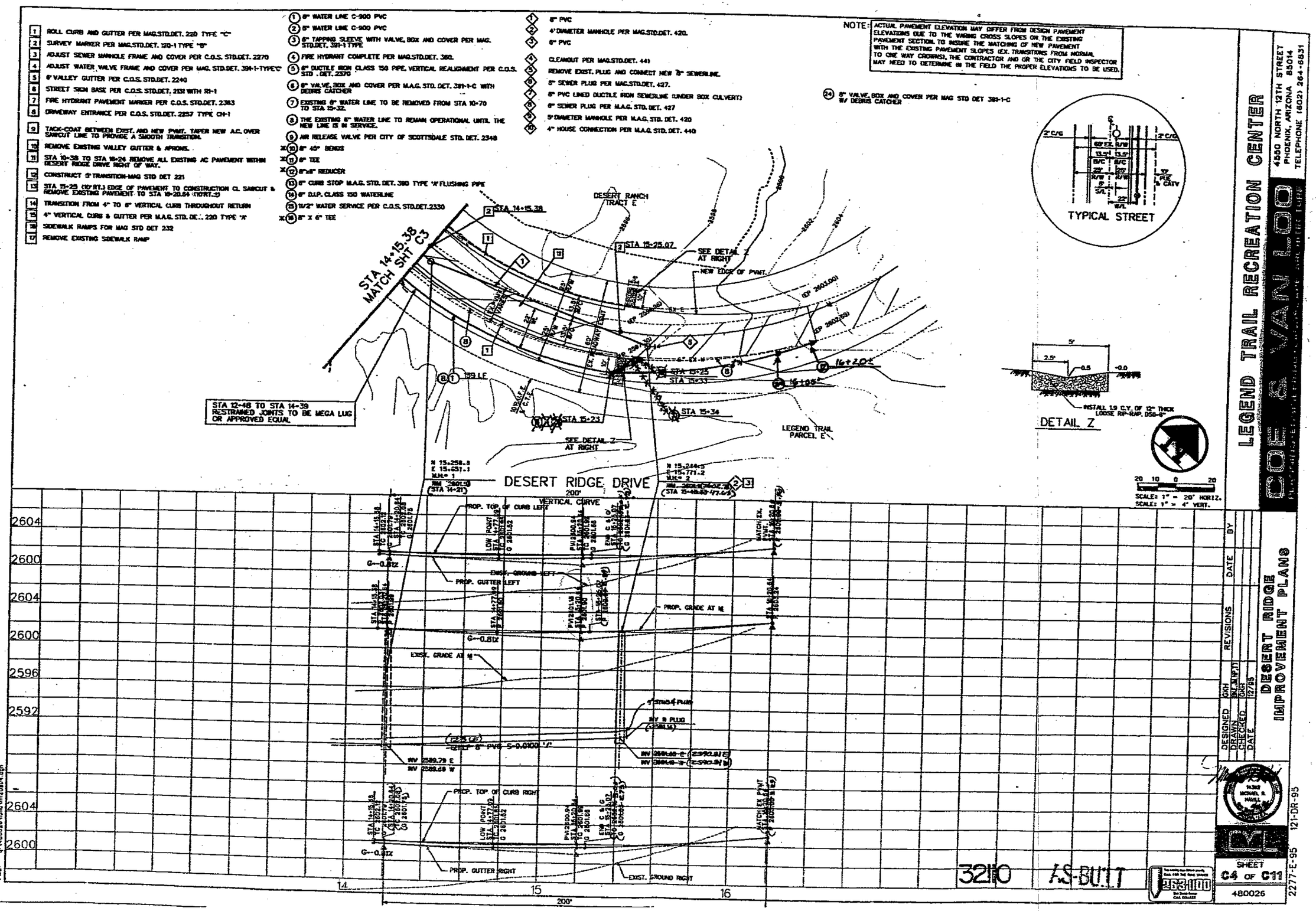
1. ROLL CURB AND GUTTER PER MAG.STD.DET. 220 TYPE "C"
2. SURVEY MARKER PER MAG.STD.DET. 120-1 TYPE "B"
3. ADJUST SEWER MANHOLE FRAME AND COVER PER C.O.S. STD.DET. 2270
4. ADJUST WATER VALVE FRAME AND COVER PER MAG. STD.DET. 391-1-TYPE"C"
5. 6' VALLEY GUTTER PER C.O.S. STD.DET. 2240
6. STREET SIGN BASE PER C.O.S. STD.DET. 2131 WITH R1-1
7. FIRE HYDRANT PAVEMENT MARKER PER C.O.S. STD.DET. 2383
8. DRIVEWAY ENTRANCE PER C.O.S. STD.DET. 2257 TYPE CH-1
9. TACK-COAT BETWEEN EXIST. AND NEW PVMT. TAPER NEW A.C. OVER SAWCUT LINE TO PROVIDE A SMOOTH TRANSITION.
10. REMOVE EXISTING VALLEY GUTTER & APRONS.
11. STA 10+38 TO STA 16+24 REMOVE ALL EXISTING AC PAVEMENT WITHIN DESERT RIDGE DRIVE RIGHT OF WAY.
12. CONSTRUCT 5' TRANSITION-MAG STD DET 221
13. STA 15+25 (10' RT.) EDGE OF PAVEMENT TO CONSTRUCTION CL SAWCUT & REMOVE EXISTING PAVEMENT TO STA 16+20.64 (10'RT.)
14. TRANSITION FROM 4" TO 6" VERTICAL CURB THROUGHOUT RETURN
15. 4" VERTICAL CURB & GUTTER PER M.A.G. STD. DE.. 220 TYPE 'A'
16. SIDEWALK RAMPS FOR MAG STD DET 232
17. REMOVE EXISTING SIDEWALK RAMP

1. 6" WATER LINE C-900 PVC
2. 6" WATER LINE C-900 PVC
3. 6" TAPPING SLEEVE WITH VALVE, BOX AND COVER PER MAG. STD.DET. 391-1 TYPE
4. FIRE HYDRANT COMPLETE PER MAG.STD.DET. 360.
5. 6" DUCTILE IRON CLASS 150 PIPE, VERTICAL REALIGNMENT PER C.O.S. STD . DET. 2370
6. 6" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1-C WITH DEBRIS CATCHER
7. EXISTING 6" WATER LINE TO BE REMOVED FROM STA 10+70 TO STA 15+32.
8. THE EXISTING 6" WATER LINE TO REMAIN OPERATIONAL UNTIL THE NEW LINE IS IN SERVICE.
9. AIR RELEASE VALVE PER CITY OF SCOTTSDALE STD. DET. 2348
10. 6" 45° BENDS
11. 6" TEE
12. 6"x4" REDUCER
13. 6" CURB STOP M.A.G. STD. DET. 380 TYPE 'A' FLUSHING PIPE
14. 6" D.I.P. CLASS 150 WATERLINE
15. 1 1/2" WATER SERVICE PER C.O.S. STD.DET.2330
16. 6" X 6" TEE

1. 8" PVC
2. 4' DIAMETER MANHOLE PER MAG.STD.DET. 420.
3. 8" PVC
4. CLEANOUT PER MAG.STD.DET. 441
5. REMOVE EXIST. PLUG AND CONNECT NEW 8" SEWERLINE.
6. 8" SEWER PLUG PER MAG.STD.DET. 427.
7. 8" PVC LINED DUCTILE IRON SEWERLINE (UNDER BOX CULVERT)
8. 8" SEWER PLUG PER M.A.G. STD. DET. 427
9. 5' DIAMETER MANHOLE PER M.A.G. STD. DET. 420
10. 4" HOUSE CONNECTION PER M.A.G. STD. DET. 440

NOTE: ACTUAL PAVEMENT ELEVATION MAY DIFFER FROM DESIGN PAVEMENT ELEVATIONS DUE TO THE VARING CROSS SLOPES ON THE EXISTING PAVEMENT SECTION. TO INSURE THE MATCHING OF NEW PAVEMENT WITH THE EXISTING PAVEMENT SLOPES (EX. TRANSITIONS FROM NORMAL TO ONE WAY CROWNS), THE CONTRACTOR AND OR THE CITY FIELD INSPECTOR MAY NEED TO DETERMINE IN THE FIELD THE PROPER ELEVATIONS TO BE USED.

24. 8" VALVE, BOX AND COVER PER MAG STD DET 391-1-C W/ DEBRIS CATCHER



32110 AS-BUILT

LEGEND TRAIL RECREATION CENTER

4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

DOBE & VAN LOO
LANDSCAPE ARCHITECTS • PLANNERS

REVISIONS	DATE	BY

DESIGNED GKH
DRAWN BCL/MPYT
CHECKED GKH
DATE 12/95

DESERT RIDGE IMPROVEMENT PLANS

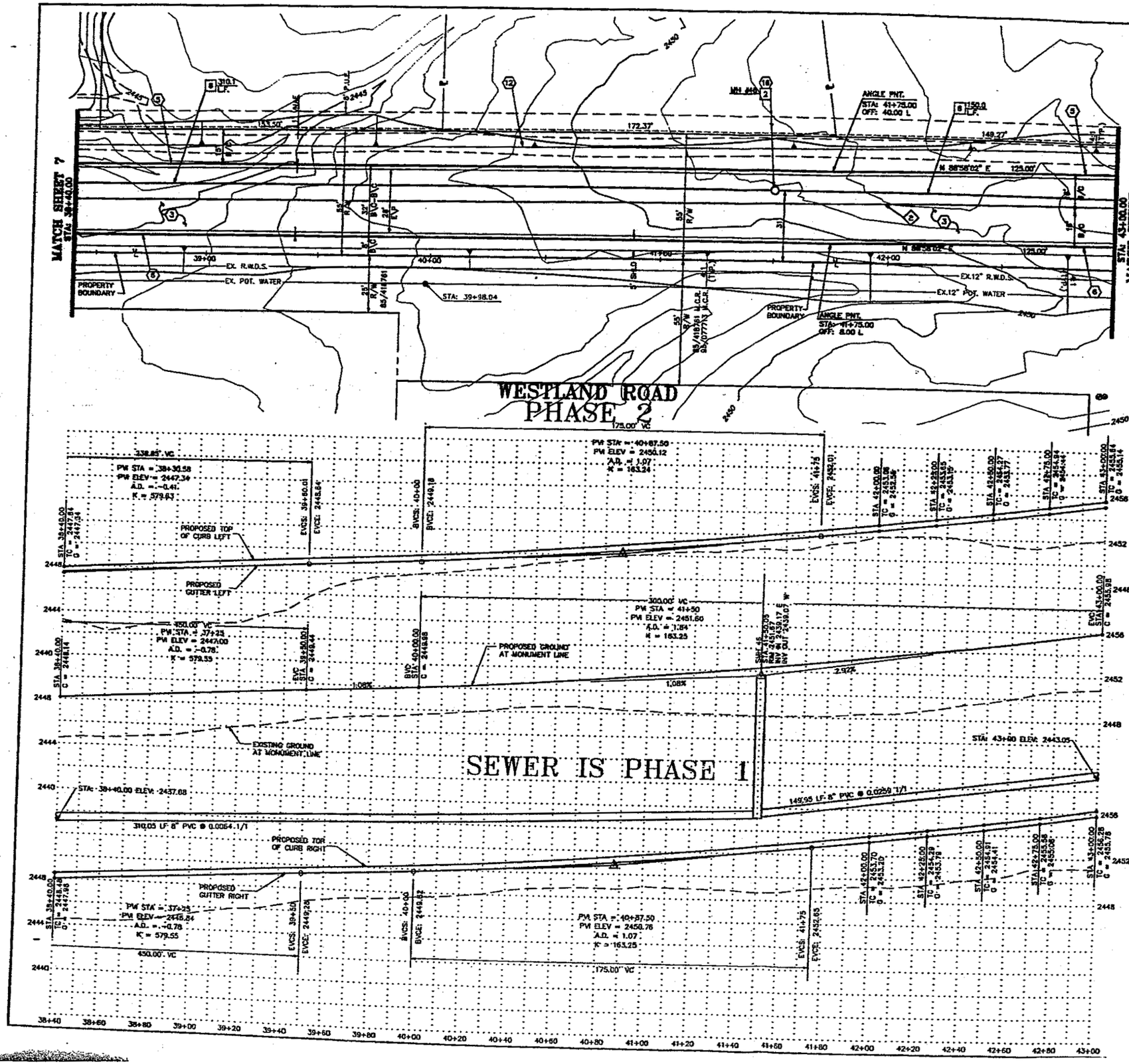
121-DR-95

SHEET C4 OF C11

480026

2277-E-95

DATE:- Mar. 26, 1996
TIME:- 08:04:03
FILE:- q:\480026\long\vm20a04.dgn



PAVING NOTES

3. CONSTRUCT 4" AC (1-1/2" C-3/4 ON 2-1/2" A-2-1/2) OVER 12" ABC PER M.A.G. SPEC. 702 & 710.
5. CONSTRUCT 6" VERTICAL CURB & GUTTER PER M.A.G. STD. DET. 220 "A".
6. CONSTRUCT 6" VERTICAL CURB & GUTTER PER C.O.S. STD. DET. 2220 TYPE "A"
12. CONSTRUCT 8' MEANDERING SIDEWALK PER M.A.G. STD. DET. 230. SEE LANDSCAPE PLANS FOR LOCATION.
16. ADJUST MANHOLE FRAME & COVER PER C.O.S STD. DET. 2270.

SEWER NOTES

2. CONSTRUCT 3' DIA. MANHOLE PER M.A.G. STD. DET. 420 & 424.
6. INSTALL 8" P.V.C. SEWER PIPE.

STRIPING AND SIGNAGE NOTES

2. INSTALL 4" DOUBLE SOLID YELLOW STRIPE STA. 38+40 TO STA. 43+00

GENERAL NOTES:
PAVEMENT MARKING & SIGNING

1. PAVEMENT MARKING & SIGNING SHALL CONFORM TO A.D.O.T. STANDARD DRAWING & SPECIFICATIONS UNLESS OTHERWISE SPECIFIED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
2. PAVEMENT MARKINGS SHALL BE REFLECTORIZED TRAFFIC PAINT.
3. SIGNS SHALL BE INSTALLED ON TELESPAR SIGN POSTS PER CITY OF SCOTTSDALE STANDARD DETAIL 2131.
4. "NO PARKING" SIGNS, R8-3A, SHALL BE INSTALLED OR REINSTALLED APPROXIMATELY EVERY 300', AND 5' FROM EDGE OF PAVEMENT OR BACK OF CURB. BAND TO STREET LIGHT POLES WHEN FEASIBLE.
5. ALL EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED MARKINGS OR ARE OBSOLETE SHALL BE OBLITERATED BY SANDBLASTING OR OTHER METHOD APPROVED BY THE CITY OF SCOTTSDALE. REMOVALS SHALL BE TO THE SATISFACTION OF THE CITY INSPECTOR.

HORZ: 1" = 20'
VERT: 1" = 4'

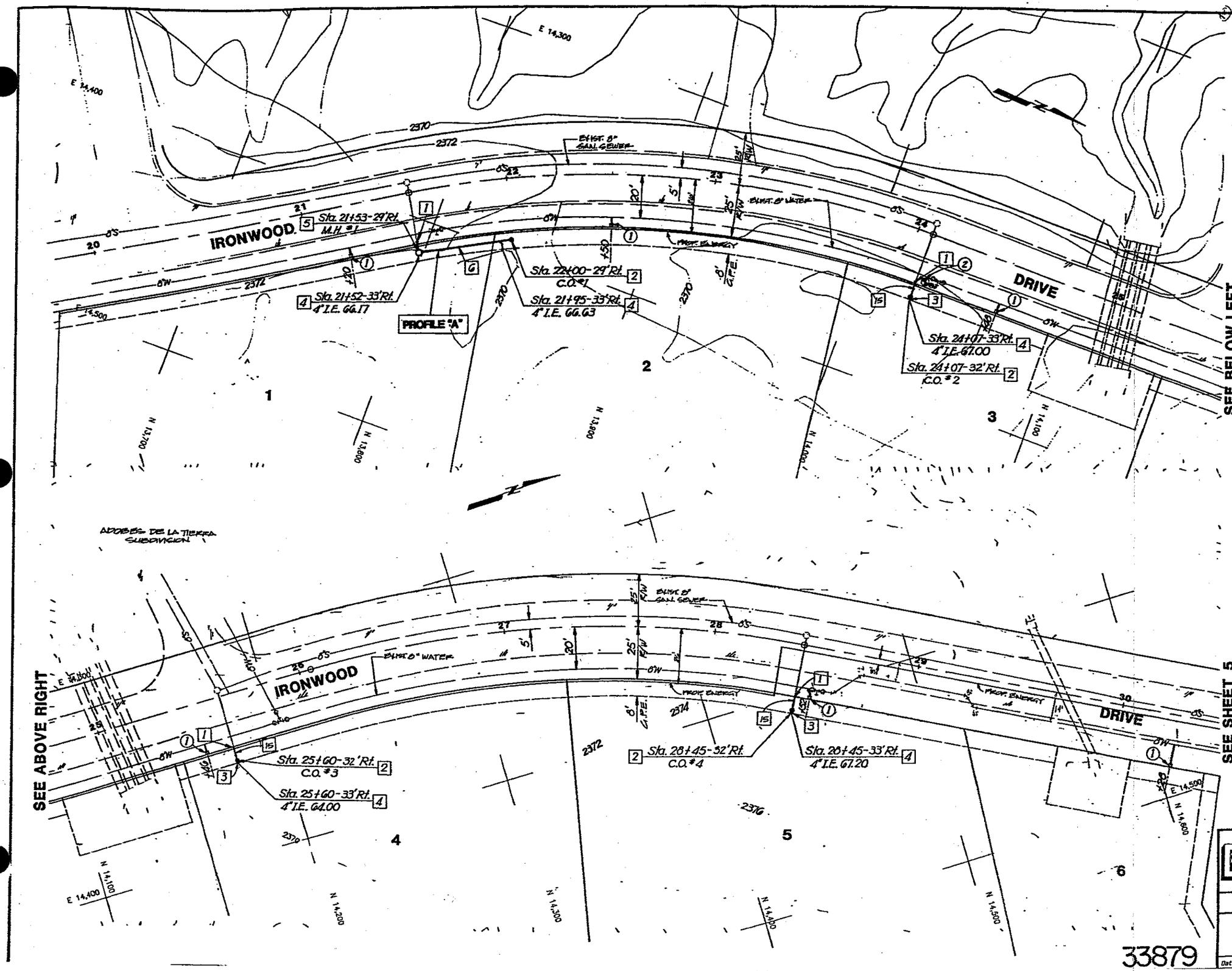
WOOD/PATEL ASSOCIATES
Civil Engineers
Hydrologists
Land Surveyors
(602) 234-1344

32216

BOULDER RIDGE IMPROVEMENT PLAN

DATE	SCALE	SHEET
1-7-97	1" = 20'	8 OF 42
JOB NO.	DESIGN	CHECK GW

42-PP-95 839-E-98
G-ZN-105



CONSTRUCTION NOTES - SEWER:

1. REMOVE EXISTING PLUG AND CONNECT NEW SEWER LINE.
2. CONSTRUCT 8" CLEANOUT PER MAG STD. DETAIL 441.
3. INSTALL 8" X 4" INCREASER PER MAG STD. DETAIL 441.
4. INSTALL 4" SEWER SERVICE LINE. PLUG AND MARK PER MAG STD. DETAIL 440.
5. CONSTRUCT 48" DIA. MANHOLE PER MAG STD. DETAIL 420.
6. INSTALL 8" SEWER LINE. SEE PROFILE ON SHEET 7.
15. [illegible]

CONSTRUCTION NOTES - WATER:

1. CONSTRUCT 1-1/2" WATER SERVICE PER CITY OF SCOTTSDALE STD. DETAIL 2330.
2. INSTALL 6" FIRE HYDRANT, 6" VALVE BOX AND COVER, TYPE "C", 6" 90° BEND, 8" X 6" REDUCER, 5 LF OF 6" D.I.P.-PER MAG STD. DETAILS 360, 380 AND 391 COMPLETE.

SCALE: 1"=20' HORZ.

GILBERTSON ASSOCIATES, INC.
CONSULTING CIVIL ENGINEERS
23733 N. SCOTTSDALE RD., SUITE B
SCOTTSDALE, ARIZONA 85255
(602) 585-6464

IMPROVEMENT PLANS

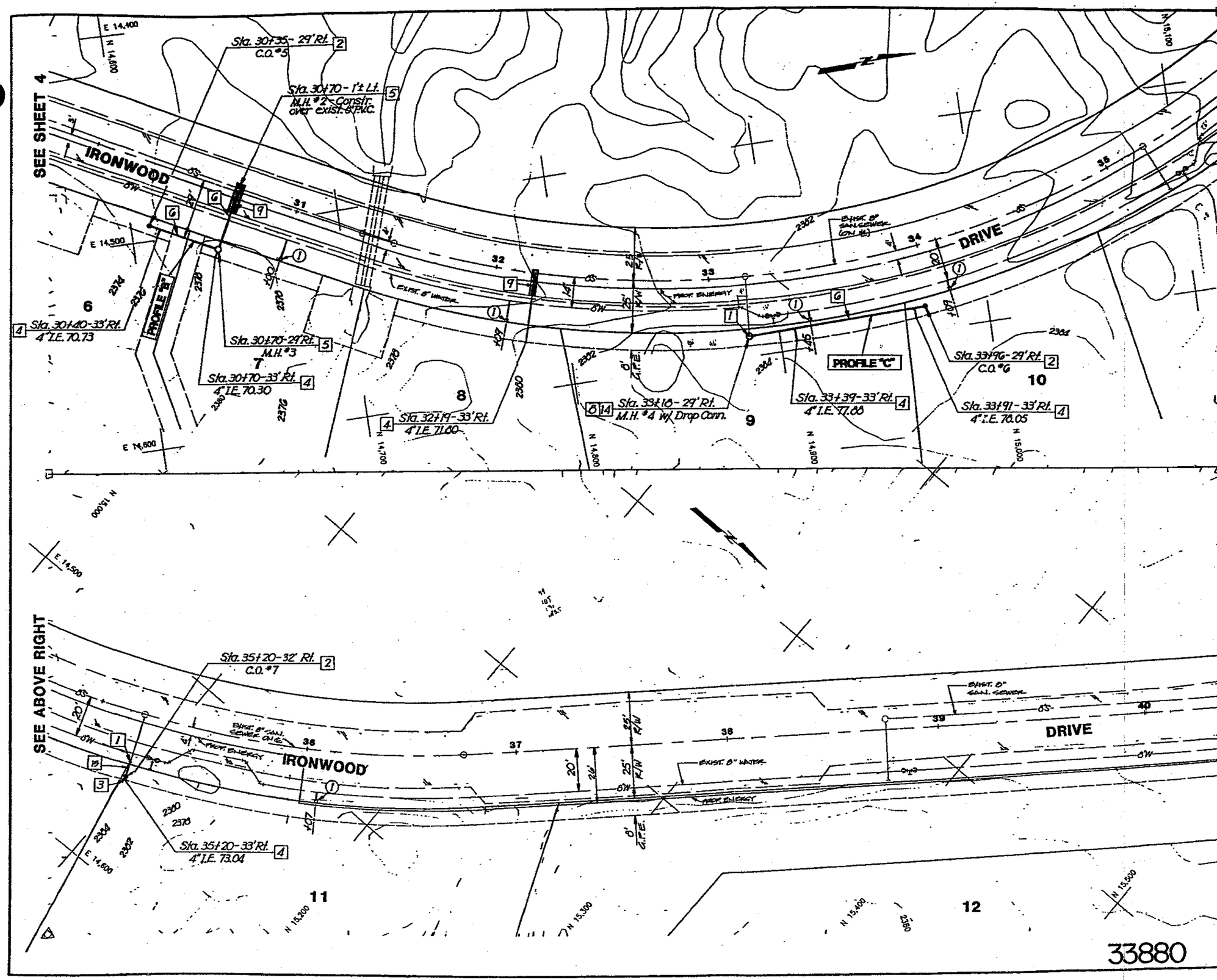
PARCEL "Q", UNIT ONE

AT THE BOULDERS COMMUNITY

Date OCT. 1981 | Job No. 48020 | Sheet 4 of 10

33879

6-PP-91 1078-E-91



SEE BELOW LEFT

CONSTRUCTION NOTES - SEWER:

1. REMOVE EXISTING PLUG AND CONNECT NEW SEWER LINE.
2. CONSTRUCT 8" CLEANOUT PER MAG STD. DETAIL 441.
3. INSTALL 8" X 4" INCREASER PER MAG STD. DETAIL 441.
4. INSTALL 4" SEWER SERVICE LINE. PLUG AND MARK PER MAG STD. DETAIL 440.
5. CONSTRUCT 48" DIA. MANHOLE PER MAG STD. DETAIL 420.
6. INSTALL 8" SEWER LINE. SEE PROFILE ON SHEET 7.
7. CONSTRUCT DROP SEWER CONNECTION PER MAG STD. DETAIL 426. TYPE "B"
8. SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT CONCRETE PAVEMENT PER CITY OF SCOTTSDALE STD. DETAIL NO. 2200.
14. CONSTRUCT 60" DIA. MANHOLE PER MAG. STD. DET. 420. W/30" RIM AND COVER.
15. EXTEND 8" SEWER LINE AT EXISTING SLOPE TO PROPOSED CLEANOUT.

CONSTRUCTION NOTES - WATER:

1. CONSTRUCT 1-1/2" WATER SERVICE PER CITY OF SCOTTSDALE STD. DETAIL 2330.

SEE SHEET 6

SCALE: 1"=20' HORZ.

GILBERTSON ASSOCIATES, INC.
CONSULTING CIVIL ENGINEERS
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SCOTTSDALE, ARIZONA 85255
(602) 585-5464

IMPROVEMENT PLANS

PARCEL "Q", UNIT ONE
AT THE BOULDERS COMMUNITY

Date OCT. 1991 | Job No. 49020 | Sheet 5 of 10

1078-91 6-PP-91

OWNER

BOULDERS JOINT VENTURE
11411 N. TATUM BOULEVARD
PHOENIX, ARIZONA 85028
602/258-9656

DEVELOPER

BOULDERS JOINT VENTURE
11411 N. TATUM BOULEVARD
PHOENIX, ARIZONA 85028
602/258-9656

ENGINEER

GILBERTSON ASSOCIATES, INC.
23733 N. SCOTTSDALE ROAD, SUITE B
SCOTTSDALE, ARIZONA 85255
602/585-8464

PROJECT INFO

EXISTING ZONING	R1-18
GROSS PLAT AREA	22.8721 ACRES
NUMBER OF LOTS	22
AVG. LOT AREA	45286.70 sq ft/1.0396 AC
MIN. LOT AREA	25836.17 sq ft/.5931 AC

UTILITY PROVIDERS

WATER	CITY OF SCOTTSDALE
SEWER CORPORATION	BOULDERS/CAREFREE SEWER
ELECTRICITY	ARIZONA PUBLIC SERVICE
TELEPHONE	USWEST COMMUNICATIONS
GAS	BLACK MOUNTAIN GAS COMPANY
CABLE T.V.	UNITED ARTISTS CABLE, INC.

BENCHMARK

MARICOPA COUNTY DATUM FOUND BRASS CAP AT E. 1/4 COR. SECTION 2, T.5N., R.4E., OF THE G. & S. R. B. & M.
ELEVATION 2428.37
C.O.S. DATUM 2428.16

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

COMMUNITY NUMBER	PANEL NUMBER	SUFFIX	DATE OF FIRM	FIRM ZONE	BASE FLOOD ELEVATION (IN AO ZONE, USE DEPTH)
045017	0820	,	4/15/88	D	N/A

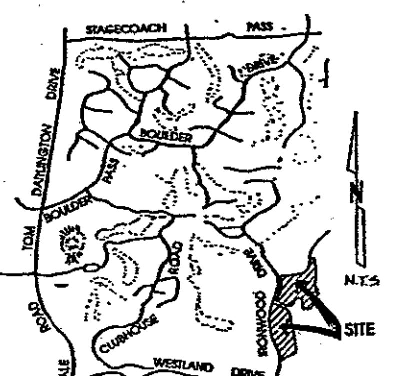
ADDITIONAL FLOOD HAZARD MAP INFORMATION
As required for areas currently under study

DESCRIPTION OF MAP SOURCE OF MAP	DATE OF MAP	FLOOD ZONE	BASE FLOOD ELEVATION (IN AO ZONE, USE DEPTH)
N/A	N/A	N/A	N/A

ENGINEERS CERTIFICATION: THE FINISH FLOOR ELEVATION(S) AND/OR FLOODPROOFING ELEVATION(S) ON THIS PLAN, ARE SUFFICIENTLY HIGH TO PROVIDE PROTECTION FROM FLOODING CAUSED BY A ONE-HUNDRED YEAR STORM, AND ARE IN ACCORDANCE WITH CITY OF SCOTTSDALE, "FLOODWAYS & FLOODPLAIN" ORDINANCE (CHAPTER 37, S.R.C.)

PLEASE NOTE:

FROM THE CODE OF FEDERAL RULES 44CFR 65.2. CERTIFICATION OF DATA IS A STATEMENT THAT THE DATA IS ACCURATE TO THE BEST OF THE CERTIFIER'S KNOWLEDGE. CERTIFICATION OF ANALYSES HAVE BEEN PERFORMED CORRECTLY AND IN ACCORDANCE WITH SOUND ENGINEERING PRACTICES. CERTIFICATION OF STRUCTURAL WORKS IS A STATEMENT THAT THE WORKS ARE DESIGNED IN ACCORDANCE WITH SOUND ENGINEERING PRACTICES TO PROVIDE PROTECTION FROM THE BASE FLOOD. CERTIFICATION OF "AS BUILT" CONDITIONS IS A STATEMENT THAT THE STRUCTURE(S) HAS BEEN BUILT ACCORDING TO THE PLANS BEING CERTIFIED, IS IN PLACE, AND IS FULLY FUNCTIONING.



VICINITY MAP
NTS

IMPROVEMENT PLANS FOR
PARCEL 'Q', UNIT ONE AT THE BOULDERS COMMUNITY

BEING A PORTION OF THE SOUTHEAST 1/4 OF SECTION 2 AND THE NORTHEAST 1/4 OF SECTION 11, T.5N., R.4E., OF THE G.&S.R.B.&M., MARICOPA COUNTY, ARIZONA

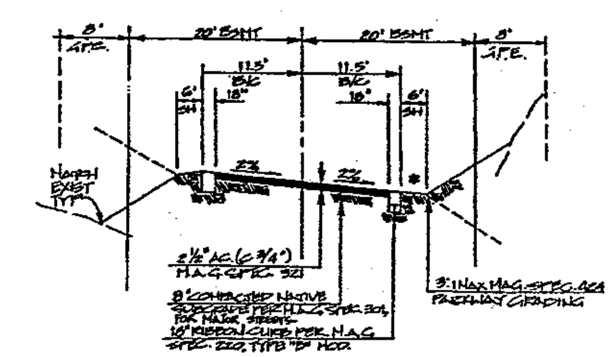
SHEET INDEX

SHEET 1	COVER SHEET
SHEETS 2 THRU 7	PLAN SHEETS
SHEET 8	DETAIL SHEET
SHEET 9	SITE GRADING SHEET
SHEET 10	SEWER PROFILE SHEET

LEGEND

A.C. PAVEMENT ON NATIVE MATERIAL
EXIST. WATERLINE
EXIST. SAN. SEWER
EXIST. ELEC.
EXIST. TELCO & ELEC.
PROP. WATERLINE
PROP. WATER SERVICE
PROP. FIRE HYD. W/WATER VALVE
PROP. WATER VALVE
PROP. W...R METER
PROP. FORCE MAIN
PROP. SAN. SEWER
PROP. MANHOLE
PROP. CLEANOUT
TELCO & ELEC.
PROP. NATURAL GAS
8"/13" G.P.E.
G.P.E.
N.V.A.E.
1' N.V.A.E.

THE WATER SYSTEM SHOWN HEREIN, HAS BEEN DESIGNED TO ADEQUATELY SUPPLY WATER IN SUFFICIENT QUANTITY AND PRESSURE TO MEET LOCAL FIRE PROTECTION REQUIREMENTS.

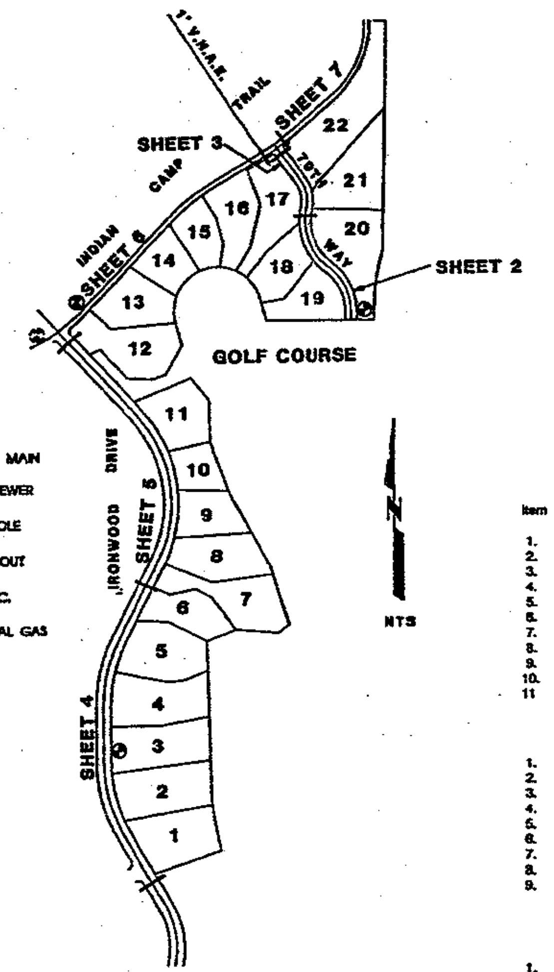


LOCAL RESIDENTIAL STREET SECTION

PRIVATE

NTS

SHOULDER CROSS SLOPE TO ACCOMMODATE EXISTING DRAINAGE PATTERN.



KEY MAP

ESTIMATED QUANTITIES

For Estimating Only! Engineer Makes No Guarantee of Accuracy

PAVING

Item	Description	Unit	Total Quantity
1.	2-1/2" A.C. PAVEMENT OVER 8" NATIVE MATERIAL	SY	1,433
2.	18" RIBBON CURB, MAG DTL. 220-B MOD.	LF	1,303
3.	SURVEY MARKER, MAG DTL. 120-1-B	EA	6
4.	18" R.G.R.C.P. (CLASS IV)	LF	209
5.	"U" TYPE HEADWALL, MAG DTL. 501-1	EA	4
6.	BARRICADE, MAG DTL. 130-B	LF	24
7.	GROUTED RIPRAP	SF	100
8.	ADJUST. M.H. RING, MAG DTL. 422	EA	1
9.	ADJUST. C.O. RING, MAG DTL. 270	EA	1
10.	REMOVE EXIST. A.C. PAVEMENT	SY	16
11	REMOVE EXIST. CURB	LF	70

WATER

Item	Description	Unit	Total Quantity
1.	8" WATERLINE	LF	1,776
2.	8" V. B. & C., MAG DTL. 391-1-C	EA	4
3.	8" TAPPING SLEEVE W/ 8" V.B. & C.	EA	1
4.	6" FIRE HYDRANT, COMPLETE	EA	3
5.	6" V. B. & C., MAG DTL. 391-1-C	EA	3
6.	2" I. P. CORP STOP, MAG DTL. 350	EA	2
7.	1-1/2" WATER SERVICE	EA	22
8.	WATER LINE VERT. REALIGNMENT	EA	2
9.	REMOVE AND REPLACE GROUTED RIPRAP	SF	50

SEWER

Item	Description	Unit	Total Quantity
1.	8" SAN. SEWER	LF	1,027
2.	48" DIA. MANHOLE, MAG DTL. 420	EA	7
3.	60" DIA. MANHOLE, MAG DTL. 420	EA	1
4.	8" CLEANOUT (GRAVITY)	EA	8
5.	CLEANOUT (FORCE MAIN)	EA	2
6.	1-1/4" FORCE MAIN	LF	725
7.	HOUSE SERVICE (FORCE MAIN) (6 EA.)	LF	112
8.	4" HOUSE SERVICE (GRAVITY) (16 EA.)	LF	125
9.	DROP SEWER CONN., MAG DTL. 426, TYPE "B"	EA	1
10.	PAVEMENT REMOVAL & REPLACEMENT	SY	28
11.	REMOVE AND REPLACE GROUTED RIPRAP	SF	114

APPROVALS:

Joseph E. Jason, P.E. 12-16-91
MARICOPA COUNTY HEALTH DEPARTMENT

[signature]
BOULDERS CAREFREE SEWER CORPORATION

Two working days before you dig, CALL FOR THE BLUE STAKES, Blue Stake Center, CALL COLLECT

GENERAL CONSTRUCTION NOTES
FOR PUBLIC WORKS CONSTRUCTION

REVISED JULY 1991

1. ALL CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE (COS) SUPPLEMENTAL STANDARD SPECIFICATIONS AND SUPPLEMENTAL STANDARD DETAILS. IF THERE IS ANY CONFLICT, THE LATTER SHALL GOVERN.
2. THE ENGINEERING DESIGNS ON THESE PLANS ARE ONLY APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
3. APPROVAL OF PLANS IS FOR SIX MONTHS' TIME ONLY. IF AN ENCROACHMENT PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN SIX MONTHS, THE PLANS SHALL BE RESUBMITTED FOR REAPPROVAL.
4. A PUBLIC WORKS INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE RIGHT-OF-WAY AND IN EASEMENTS. NOTIFY INSPECTION SERVICES 24 HOURS PRIOR TO STARTING OF CONSTRUCTION (TELEPHONE 391-5781).
5. WHENEVER EXCAVATION IS TO BE DONE, CALL "BLUE STAKE CENTER", 263-1100, TWO WORKING DAYS BEFORE EXCAVATION IS TO BEGIN. THE CENTER WILL SEE THAT THE LOCATION OF THE UNDERGROUND UTILITY LINES ARE IDENTIFIED FOR THE PROJECT. CALL "COLLECT" IF NECESSARY.
6. ENCROACHMENT PERMITS ARE REQUIRED FOR ALL WORK IN THE PUBLIC RIGHT-OF-WAY AND IN EASEMENTS GRANTED FOR PUBLIC PURPOSES. AN ENCROACHMENT PERMIT WILL BE ISSUED BY THE CITY UPON RECEIPT OF PAYMENT OF A BASE FEE PLUS A FEE FOR INSPECTION SERVICES TO BE PROVIDED BY THE CITY. COPIES OF ALL PERMITS SHALL BE RETAINED ON-SITE AND SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE WORK STOPPAGE UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.
7. ALL EXCAVATION AND GRADING WHICH IS NOT IN THE PUBLIC RIGHTS-OF-WAY OR NOT IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO CHAPTER 70, EXCAVATION AND GRADING, OF THE LATEST EDITION OF THE UNIFORM BUILDING CODE PREPARED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. A PERMIT FOR THIS GRADING MUST BE SECURED FROM THE CITY FOR A FEE ESTABLISHED BY THE UNIFORM BUILDING CODE.

ADDITIONAL REQUIREMENTS TO M.A.G. SPECIFICATIONS

M.A.G. SECTION 301 - SUBGRADE PREPARATION

301.3 RELATIVE COMPACTION

1. SPECIFIED DENSITY SHALL BE ACHIEVED IMMEDIATELY PRIOR TO PLACEMENT OF BASE MATERIAL. MOISTURE CONTENT SHALL BE WITHIN ±2% OF OPTIMUM MOISTURE CONTENT DURING COMPACTION.

M.A.G. SECTION 710 - ASPHALT CONCRETE

710.2.3 MINERAL FILLER AND ANTI-STRIPPING AGENT

1. STRIPPING WILL BE DETERMINED IN ACCORDANCE WITH ASTM D-1075 WITH A MINIMUM INDEX OR RETAINED STRENGTH OF 50 AND A WET BREAKING STRENGTH OF 150 PSI.

710.2.5 JOB MIX FORMULA

MARSHALL DESIGN CRITERIA - ALL ASPHALT CONCRETE

TEST PROPERTY	VALUE	
MINERAL AGGREGATE GRADATION M.A.G. SPEC. 710, TABLE 710	C-¾	D-½
NO. OF BLOWS	75	75
STABILITY, POUND (MINIMUM)	1800	1800
FLOW, 0.01 INCH	8 - 1?	8 - 16
PERCENT AIR VOIDS	3 - 5	4 - 6
PERCENT VOIDS IN MINERAL AGGREGATE	14% MIN.	15% MIN.

A. MIX DESIGN SHALL BE PER CHAPTER III, MARSHALL METHOD OF MIX DESIGN OF THE ASPHALT INSTITUTE'S MANUAL SERIES NO. 2(MS-2) CURRENT EDITION.

B. RECYCLED ASPHALT CONCRETE WILL NOT BE UTILIZED.

C. ASPHALT CEMENT SHALL BE AC-20 OR AC-40.*

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING THE MIX DESIGN. OWNER SHALL APPROVE TESTING LABORATORY SELECTED BY CONTRACTOR.

E. WHEN ASPHALT CONCRETE WITH MINERAL AGGREGATE GRADATION D ½" IS CONSTRUCTED PRESERVATIVE SEAL SHALL NOT BE APPLIED.

* AC-20 SHALL BE USED IF PAVING IS CONSTRUCTED BETWEEN NOVEMBER 1 AND APRIL 30. AC-40 SHALL BE USED IF PAVING IS CONSTRUCTED BETWEEN MAY 1 AND OCTOBER 31.

33876

[Seal: Registered Professional Engineer (Civil), Certificate No. 24443, GORDON W.R. WARK, ARIZONA, U.S.A.]

CITY OF SCOTTSDALE			
REVIEW & RECOMMENDED APPROVAL BY:			
FIRE DEPT.	[signature] 2-7-92	GRADING & DRAINAGE	A.M. 2-6-92
LANDSCAPE & PLANNING	[signature]	WATER & SEWER	A.M. 2-6-92
TRAFFIC	—	PAVING	A.M. 2-6-92
APPROVED BY: D.G. Gal		DATE 2/7/92	
PROJECT REVIEW SR. ENGINEER			

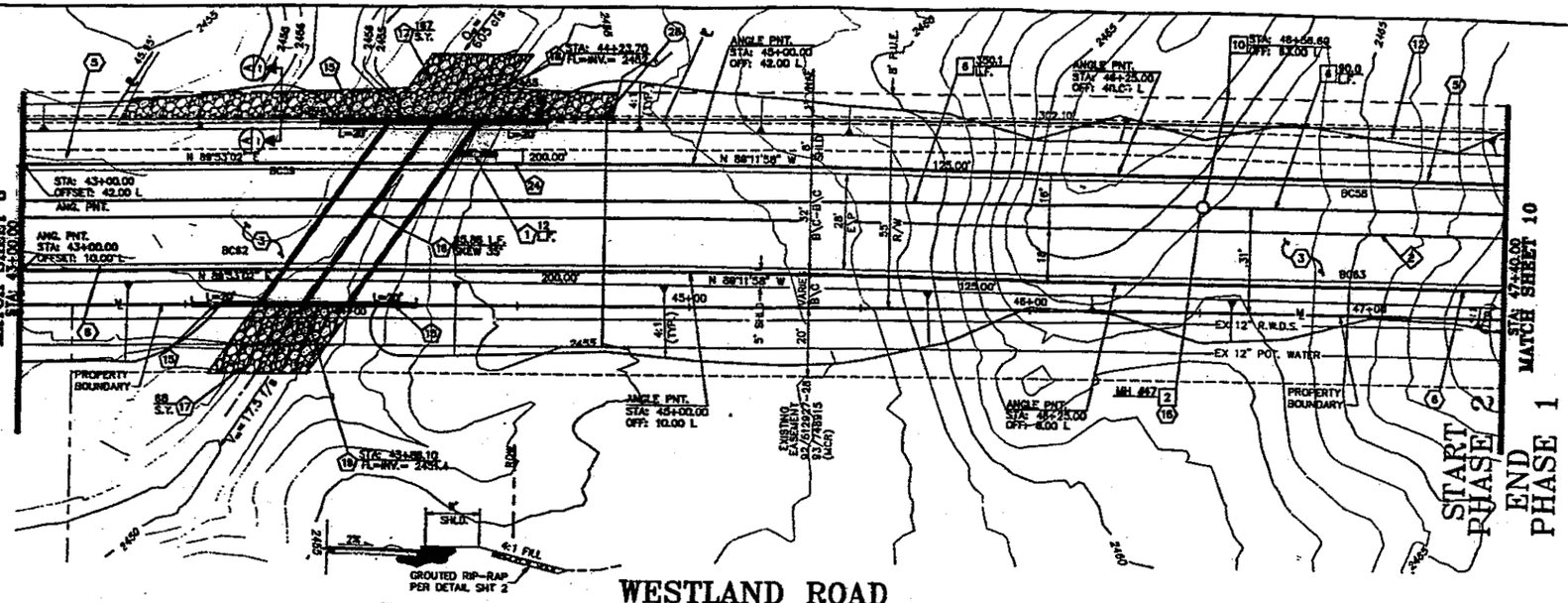
GILBERTSON ASSOCIATES, INC.
CONSULTING CIVIL ENGINEERS
23733 N. SCOTTSDALE RD., SUITE B
SCOTTSDALE, ARIZONA 85255
(602) 585-6464

COVER SHEET

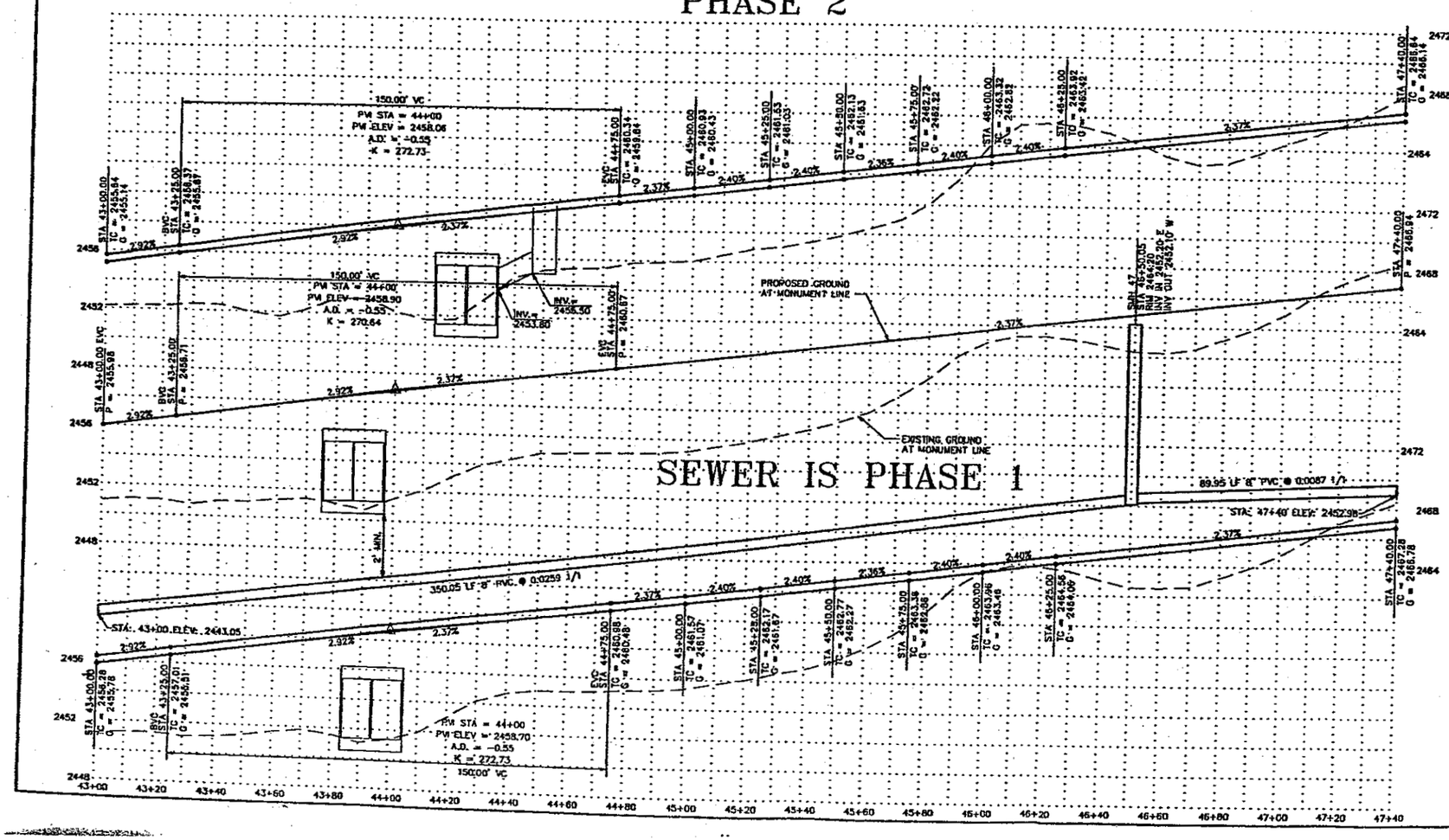
PARCEL "Q", UNIT ONE AT THE BOULDERS COMMUNITY

Date SEPT 1991	Job No. 49020	Sheet 1 of 10

1078-E-91 6-PP-91



WESTLAND ROAD
PHASE 2



PAVING NOTES

(3) CONSTRUCT 4" AC (1-1/2" C-3/4 ON 2-1/2" A-2-1/2) OVER 12" ABC PER M.A.G. SPEC. 732 & 710.

(3) CONSTRUCT 6" VERTICAL CURB & GUTTER PER M.A.G. STD. DET. 220 "A".

(9) CONSTRUCT 6" VERTICAL CURB & GUTTER PER C.O.S. STD. DET. 2220 TYPE "A"

(12) CONSTRUCT 6' MEANDERING SIDEWALK PER M.A.G. STD. DET. 230. SEE LANDSCAPE PLANS FOR LOCATION.

(16) ADJUST MANHOLE FRAME & COVER PER C.O.S STD. DET. 2270.

POTABLE WATER NOTES

(28) INSTALL 2" WATER SERVICE PER C.O.S. STD. DTL. 2330 FOR L.S. PURPOSES. CONTRACTOR SHALL VERIFY LOCATION OF EXIST. RWDS AND POTABLE WATER LINE.

SEWER NOTES

[2] CONSTRUCT 5' DIA. MANHOLE PER M.A.G. STD. DET. 420 & 424.

[6] INSTALL 8" P.V.C. SEWER PIPE.

[10] INSTALL 4" SEWER TAP PER M.A.G. STD. DET. 440 (TYP.)

STORM DRAIN NOTES

(1) INSTALL 18" R.G.R.C.P. CLASS IV STORM DRAIN PIPE

(15) CONSTRUCT HANDRAIL PER C.O.S. STD. DET. 2508

(16) CONSTRUCT 10'x4' DOUBLE BARREL BOX CULVERT PER A.D.O.T. STD. DWG. No. B-02.10, SKEW 35°

(17) CONSTRUCT NATIVE STONE RIP-RAP EROSION PROTECTION. GROUT TO BE INTEGRALLY COLORED TO MATCH EXISTING CONDITIONS. SEE DETAIL SHEET 2.

(18) CONSTRUCT INLET WINGWALL PER A.D.O.T. STD. DET. B-08.20

(19) CONSTRUCT OUTLET WINGWALL PER A.D.O.T. STD. DET. B-08.20

(24) CONSTRUCT 6' CURB OPENING CATCH BASIN, TYPE "C", PER M.A.G. STD. DET. 532

STRIPING AND SIGNAGE NOTES

(2) INSTALL 4" DOUBLE SOLID YELLOW STRIPE STA. 43+00 TO STA. 47+40

GENERAL NOTES: PAVEMENT MARKING & SIGNING

1. PAVEMENT MARKING & SIGNING SHALL CONFORM TO A.D.O.T. STANDARD DRAWING & SPECIFICATIONS UNLESS OTHERWISE SPECIFIED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
2. PAVEMENT MARKINGS SHALL BE REFLECTORIZED TRAFFIC PAINT.
3. SIGNS SHALL BE INSTALLED ON TELESPAR SIGN POSTS PER CITY OF SCOTTSDALE STANDARD DETAIL 2131.
4. "NO PARKING" SIGNS, R8-3A, SHALL BE INSTALLED OR REINSTALLED APPROXIMATELY EVERY 300', AND 5' FROM EDGE OF PAVEMENT OR BACK OF CURB. BAND TO STREET LIGHT POLES WHEN FEASIBLE.
5. ALL EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED MARKINGS OR ARE OBSOLETE SHALL BE OBLITERATED BY SANDBLASTING OR OTHER METHOD APPROVED BY THE CITY OF SCOTTSDALE. REMOVALS SHALL BE TO THE SATISFACTION OF THE CITY INSPECTOR.

32217

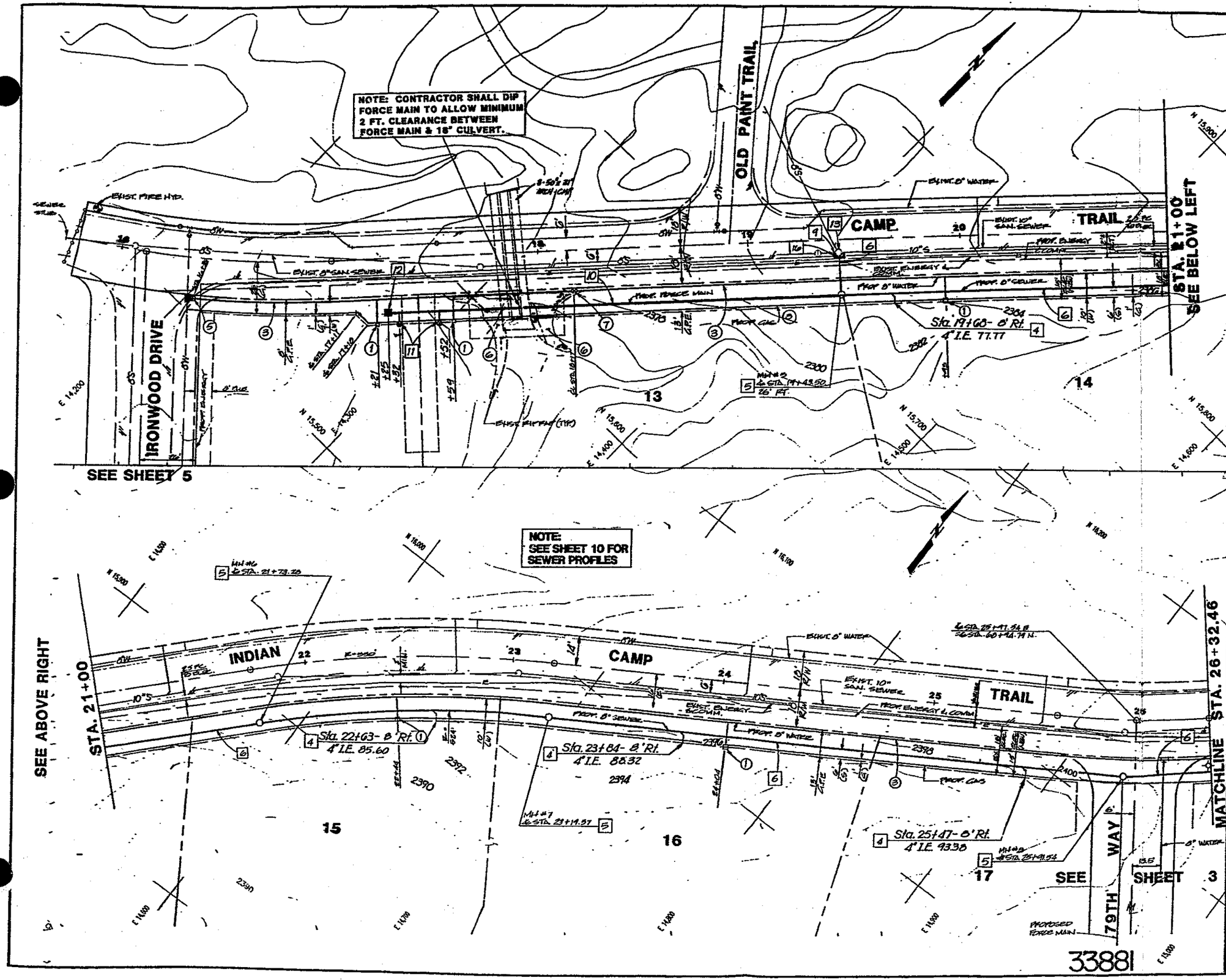
HORZ: 1" = 20'
VERT: 1" = 4'

WOOD/PATEL ASSOCIATES
Civil Engineers
Hydrologists
Land Surveyors
(602) 234-1344

BOULDER RIDGE IMPROVEMENT PLAN

DATE	SCALE	SHEET
1-7-97	1" = 20'	9 OF 42
JOB NO.	DESIGN JRB	CHECK DWW
95357	DRAWN RW	FILE 32217P9

9-ZN-95 42-PP-95 639-E-98



CONSTRUCTION NOTES - SEWER:

4. INSTALL 4" SEWER SERVICE LINE. PLUG AND MARK PER MAG STD. DETAIL 440.
5. CONSTRUCT 48" DIA. MANHOLE PER MAG STD. DETAIL 420.
6. INSTALL 8" SEWER LINE. SEE PROFILE ON SHEET 10.
9. SAWCUT, REMOVE AND REPLACE EXISTING ASPHALT CONCRETE PAVEMENT PER CITY OF SCOTTSDALE STD. DETAIL NO. 2200.
10. INSTALL 1-1/4" SEWER FORCE MAIN WITH 36" MIN. COVER.
11. CONSTRUCT SEWER SERVICE PER DETAIL ON SHEET 8.
12. CONSTRUCT FORCE MAIN CLEAN OUT PER DETAIL ON SHEET 8.
13. CONNECT 8" SEWER LINE TO EXISTING MANHOLE.
16. SAWCUT, REMOVE AND REPLACE EXISTING RIBBON CURB PER MAG 220, TYPE "A".

CONSTRUCTION NOTES - WATER:

1. CONSTRUCT 1-1/2" WATER SERVICE PER CITY OF SCOTTSDALE STD. DETAIL 2330.
3. CONSTRUCT 8" WATER LINE.
5. 8" TAPPING SLEEVE W/ 8" V. B. & C. MAG. STD. DET. 391-1-C.
6. REMOVE & REPLACE DAMAGED FIR-FAT "IN KIND".
7. INSTALL 8" VALVE, BOX & COVER, MAG. STD. DET. 391-1-C.
8. INSTALL 6" FIRE HYDRANT, 8"X6" TEE, 6" VALVE BOX & COVER (TYPE 2), 6"-90° BEND, AND 3 L.F. OF 6" D.I.P. PER MAG STD. DETAIL 360, 380 AND 391 COMPLETE.

4-26-92 REVISED TO REFLECT ACTUAL SEPARATION BETWEEN UTILITIES.

SCALE: 1"=20' HORZ.

GILBERTSON ASSOCIATES, INC.
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SCOTTSDALE, ARIZONA 85255
(602) 585-6454

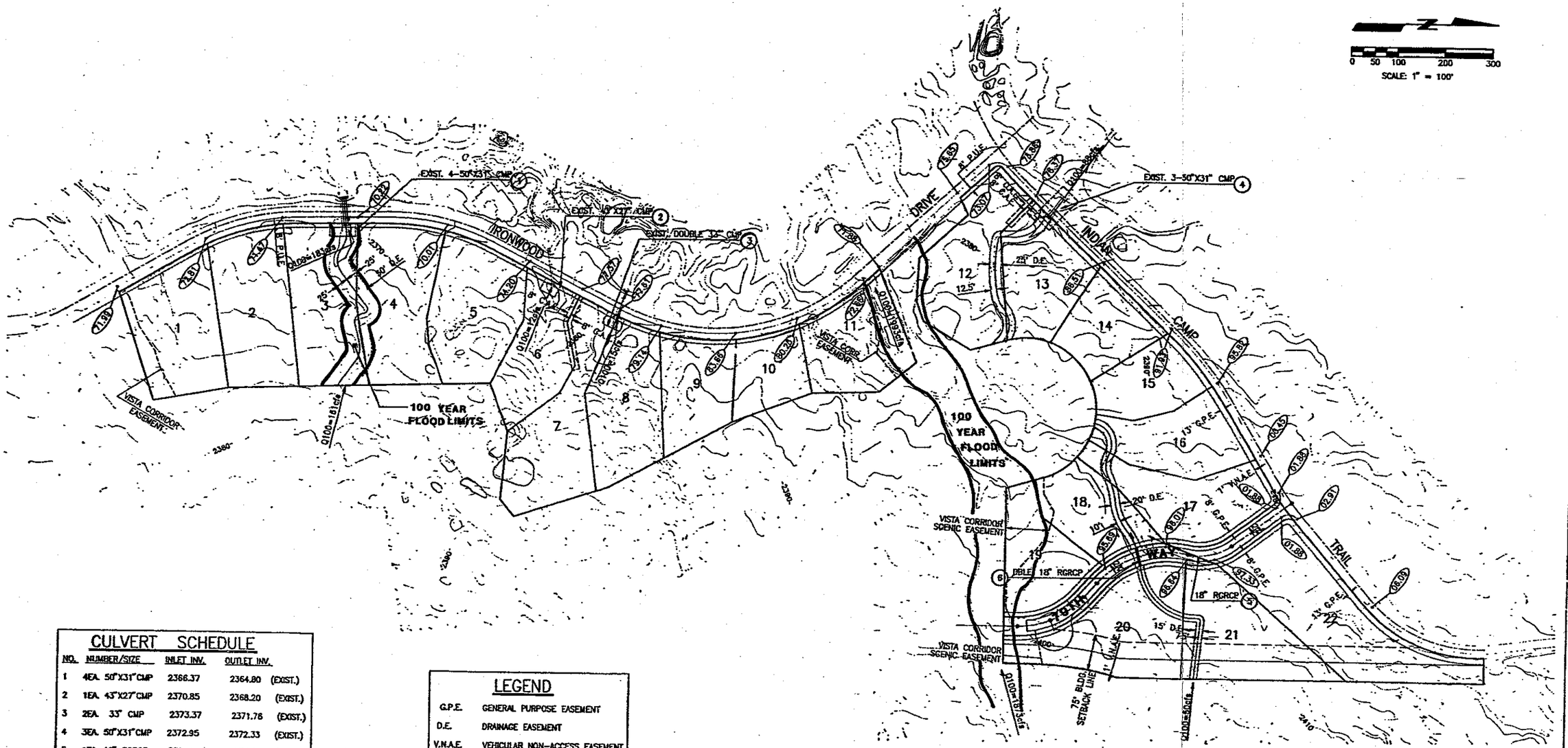
IMPROVEMENT PLANS

PARCEL "Q", UNIT ONE

AT THE BOULDERS COMMUNITY

Date OCT. 1991 | Job No. 49020 | Sheet 8 of 10

1078-E-91 6-PP-91



CULVERT SCHEDULE

NO.	NUMBER/SIZE	INLET INV.	OUTLET INV.	
1	4EA. 50"X31" CMP	2366.37	2364.80	(EXIST.)
2	1EA. 43"X27" CMP	2370.85	2368.20	(EXIST.)
3	2EA. 33" CMP	2373.37	2371.78	(EXIST.)
4	3EA. 50"X31" CMP	2372.95	2372.33	(EXIST.)
5	1EA. 18" RGRCP	2394.15	2392.90	(PROP.)
6	2EA. 18" RGRCP	2393.32	2392.90	(PROP.)

LEGEND

G.P.E.	GENERAL PURPOSE EASEMENT
D.E.	DRAINAGE EASEMENT
V.N.A.E.	VEHICULAR NON-ACCESS EASEMENT
83.66	CURB ELEVATION
2%	STREET CROSS SLOPE
	100YR HIGH WATER LINE

GILBERTSON ASSOCIATES, INC.
CONSULTING CIVIL ENGINEERS AND SURVEYORS
23733 N. SCOTTSDALE RD., SUITE B
SCOTTSDALE, ARIZONA 85255
(602) 585-6464

GRADING PLAN

PARCEL "Q", UNIT ONE
AT THE BOULDERS COMMUNITY

DATE: JAN 1992 | JOB NO. 49020 | SHEET 9 OF 10

33884

1078-E-91

IMPROVEMENT PLANS
FOR
LEGEND TRAIL PARCEL A
SCOTTSDALE, ARIZONA
LOCATED IN A PART OF THE SOUTHWEST QUARTER OF SECTION 5 AND A PART OF THE NORTHWEST QUARTER OF SECTION 8, TOWNSHIP 5 NORTH, RANGE 5 EAST, OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA

ZONING

R1-10 ESL
(HD)

ENGINEERS NOTES

NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL CREATE, NOR S' ALL BE CONSTRUED TO CREATE, ANY CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR ANY SUBCONTRACTOR.

THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OR FOR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK, AND WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

A THOROUGH ATTEMPT HAS BEEN MAKE TO SHOW THE LOCATIONS OF ALL UNDERGROUND OBSTRUCTIONS AND UTILITY LINES IN THE WORK AREA. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO OBSTRUCTIONS AND UTILITY LINES ENCOUNTERED DURING CONSTRUCTION AND SHALL DETERMINE THE EXACT LOCATION OF UTILITIES IN THE AREA.

ALL EARTHWORK CONSTRUCTION SHALL CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS STANDARD DETAILS AND/OR SPECIFICATIONS INCLUDING ANY SUPPLEMENTS THERETO AND THE SOILS REPORT PREPARED BY:

CONSTRUCTION INSPECTION & TESTING

JOB #96-6171

DATA FOR EARTHWORK CALCULATIONS IS PROVIDED IN THE SOILS REPORT AND (IF APPLICABLE) ANY SUPPLEMENTS THERETO.

THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING EARTHWORK QUANTITIES OR THAT THE EARTHWORK FOR THIS PROJECT WILL BALANCE DUE TO THE VARYING FIELD CONDITIONS, CHANGING SOIL TYPES, ALLOWABLE CONSTRUCTION TOLERANCES AND CONSTRUCTION METHODS THAT ARE BEYOND THE CONTROL OF THE ENGINEER.

THE CONTRACTOR SHALL BEGIN ALL GRAVITY DRAIN LINE CONSTRUCTION FROM THE MOST DOWNSTREAM MANHOLE OR STUB. PRIOR TO INSTALLATION, THE CONTRACTOR SHALL EXCAVATE, EXPOSE AND VERIFY THE LOCATION AND ELEVATION OF CONNECTION. SHOULD THE EXISTING CONDITION VARY FROM THE DESIGN PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.

ALL DRAINAGE CONDUIT SHOWN ON THESE PLANS ARE DESIGNED FOR STANDARD HIGHWAY LOADINGS TO THE FINISH GRADE CONDITION. CONSTRUCTION CONDITIONS OR ACTIVITIES ABOVE OR NEAR CONDUITS MAY PLACE LOADS IN EXCESS OF FINAL DESIGN CONDITION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ANALYZE THE INTERIM CONDITION AND TO PROTECT THE INTEGRITY OF THE CONDUIT THROUGH THE COMPLETION OF CONSTRUCTION.

PRIOR TO BIDDING THE WORK, THE CONTRACTOR SHALL THOROUGHLY SATISFY HIMSELF AS TO THE ACTUAL CONDITIONS AND EARTHWORK QUANTITIES, IF ANY. NO CLAIM SHALL BE MADE AGAINST THE OWNER/DEVELOPER OR ENGINEER FOR ANY EXCESS OR DEFICIENCY THEREIN, ACTUAL OR RELATIVE.

THE CONTRACTOR SHALL MAKE NO CLAIM AGAINST THE OWNER/DEVELOER OR THE ENGINEER REGARDING ALLEGED INACCURACY OF CONSTRUCTION STAKES SET BY THE ENGINEER UNLESS ALL SURVEY STAKES SET BY THE ENGINEER ARE MAINTAINED INTACT AND CAN BE VERIFIED AS TO THEIR ORIGIN. IF, IN THE OPINION OF THE ENGINEER, THE STAKES ARE NOT MAINTAINED INTACT AND CANNOT BE VERIFIED AS TO THEIR ORIGIN, ANY REMEDIAL WORK REQUIRED TO CORRECT ANY ITEM OR IMPROPER CONSTRUCTION WORK IN THIS DEVELOPMENT SHALL BE PERFORMED AT THE SOLE EXPENSE OF THE RESPONSIBLE CONTRACTOR OR SUBCONTRACTOR.

ALL COMPACTION IN STREETS TO BE TYPE I OR PER M.A.G. SPECS. SECTION 601.

ALL SEWER SERVICES WILL BE STATIONED FROM THE NEAREST DOWNSTREAM MANHOLE. EACH NEAREST DOWNSTREAM MANHOLE WILL BE DESIGNATED AS STATION 0+00.

GENERAL CONSTRUCTION NOTES FOR PUBLIC WORKS CONSTRUCTION

1. ALL CONSTRUCTION IN THE PUBLIC RIGHTS-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE (C.O.S.) SUPPLEMENTAL STANDARD SPECIFICATIONS AND SUPPLEMENTAL STANDARD DETAILS. IF THERE IS A CONFLICT, THE LATTER SHALL GOVERN.
2. THE ENGINEERING DESIGNS ON THESE PLANS ARE ONLY APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
3. APPROVAL OF PLANS IS VALID FOR SIX (6) MONTHS. IF AN ENCROACHMENT PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN SIX MONTHS, THE PLANS SHALL BE RESUBMITTED TO THE CITY FOR REAPPROVAL.
4. A PUBLIC WORKS INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE RIGHTS-OF-WAY AND IN EASEMENTS. NOTIFY INSPECTION SERVICES 24 HOURS PRIOR TO STARTING OF CONSTRUCTION (TELEPHONE 391-5750).
5. WHENEVER EXCAVATION IS TO BE DONE, CALL THE "BLUE STAKE CENTER," 263-1100, TWO (2) WORKING DAYS BEFORE EXCAVATION IS TO BEGIN. THE CENTER WILL SEE THAT THE LOCATION OF THE UNDERGROUND UTILITY LINES IS IDENTIFIED FOR THE PROJECT. CALL "COLLECT" IF NECESSARY.
6. ENCROACHMENT PERMITS ARE REQUIRED FOR ALL WORK IN PUBLIC RIGHTS-OF-WAY AND EASEMENTS GRANTED FOR PUBLIC PURPOSES. AN ENCROACHMENT PERMIT WILL BE ISSUED BY THE CITY UPON RECEIPT OF PAYMENT OF A BASE FEE PLUS A FEE FOR INSPECTION SERVICES TO BE PROVIDED BY THE CITY. COPIES OF ALL PERMITS SHALL BE RETAINED ON-SITE AND SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE WORK STOPPAGE UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.
7. ALL EXCAVATION AND GRADING WHICH IS NOT IN THE PUBLIC RIGHTS-OF-WAY OR NOT IN THE EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO CHAPTER 70, EXCAVATING AND GRADING, OF THE LATEST EDITION OF THE UNIFORM BUILDING CODE PREPARED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. A PERMIT OF THIS GRADING MUST BE SECURED FROM THE CITY FOR A FEE ESTABLISHED BY THE UNIFORM BUILDING CODE.

STORM SEWER NOTES

1. ALL STATION AND OFFSET CALL-OFFS FOR CATCH BASINS ARE TO THE CENTERLINE OF THE PROPOSED CATCH BASIN SUMP. SEE INDIVIDUAL CATCH BASIN DETAILS FOR STANDARD LOCATIONS.
2. ALL CENTERLINE STATION AND OFFSET CALL-OFFS FOR OUTLET HEADWALLS ARE TO REPRESENT THE CENTER OF THE HEADWALL ON THE OUTLET SIDE.
3. ALL PEDESTRIAN RAILS ARE TO BE PAINTED PER ADOT SPECIFICATIONS. THE DESIRED COLOR WILL BE SPECIFIED AT TIME OF CONSTRUCTION BY THE DEVELOPER.
4. ALL EXPOSED CONCRETE FACES OF THE PROPOSED STORM DRAIN STRUCTURES AND BOX CULVERTS SHALL BE COLORED CONCRETE. THE DESIRED COLOR WILL BE SPECIFIED AT TIME OF CONSTRUCTION BY THE DEVELOPER.
5. RIP-RAP USED SHALL BE ONLY NATIVE STONE.

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DATE - Dec. 02, 1997
TIME - 17:36:17

CITY OF SCOTTSDALE GRADING & WALL NOTES TO CONTRACTORS

1. ALL GRADING WITHIN THE N.A.O.S. AREAS SHALL CONFORM TO CITY OF SCOTTSDALE GUIDELINES AND POLICIES FOR ENVIRONMENTALLY SENSITIVE LANDS - SECTION 200.
2. CUT & FILL SLOPE SHALL BE ROUNDED TO BLEND INTO THE EXISTING NATURAL GRADE.
3. ROCK FEATURES DISTURBED BY CONSTRUCTION AND RIP-RAP SHALL BE TREATED WITH A DESERT VARNISH (EONITE OR EQUIVALENT).
4. ALL DRAINAGE STRUCTURES SHALL BE INTEGRALLY COLORED (TAUPE) TO BLEND WITH THE SURROUNDING DESERT.
5. BOULDER DISPLACED BY CONSTRUCTION SHALL BE PLACED AT THE TOE OF FILL SLOPES OR AT GRADE TRANSITIONS AT THE FRONT OF LOTS.
6. WALLS, OTHER THAN RETAINING WALLS, ADJACENT TO VISTA CORRIDORS SHALL BE CONSTRUCTED PER CASE 74-ZN-92. "SOLID OPAQUE WALLS, OTHER THAN RETAINING WALLS, SHALL BE SET BACK 4' FROM THE APPROVED VISTA CORRIDOR. FOR EVERY FOOT OF HEIGHT OVER 3'; NOT TO EXCEED A HEIGHT OF 6'.
7. THE FINISH MATERIAL AND COLOR OF RETAINING WALLS TO MATCH THE SURROUNDING NATURAL STONE, ROCK, OR SOIL COLOR.
8. WHERE GROUTED, THE RIP-RAP SHALL BE HAND PLACED IN A RANDOM, 2ND REQUEST NATURALLY, APPEALING MANNER.
9. FILLS ADJACENT TO WASHES SHALL BE LIMITED AS MUCH AS POSSIBLE & SHALL BE PROTECTED WITH BOULDERS DISPLACED DURING CONSTRUCTION.

COMMUNITY NUMBER	PANEL NUMBER (PANEL DATE)	SUFFIX FIRM	DATE OF FIRM	ZONE	BASE FLOOD ELEVATION (IN AO ZONE, USE DEPTH)
045012	850	D	9-30-95	D	NONE
	4-15-88	E	12-3-93	X	

NOTE:

USE MEGA LUG RESTRAINING JOINTS OR C.O.S. APPROVED EQUAL AT ALL DEFLECTIONS, BENDS, TEES, CROSSES, VALVES AND DEAD-END LINES.

SIGNAGE TO BE OBTAINED UNDER SEPARATE PERMIT.

PRE-ENGINEERED LOTS WITH STANDARD HOUSE PLANS.

WATER PRESSURE CERTIFICATE

THE WATER SYSTEM SHOWN HEREIN, HAS BEEN DESIGNED TO ADEQUATELY SUPPLY WATER IN SUFFICIENT QUANTITY AND PRESSURE TO MEET LOCAL FIRE PROTECTION REQUIREMENTS. PER MASTER WATER PLAN PREPARED BY COE & VAN LOO.

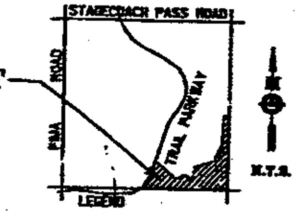
MAINTENANCE RESPONSIBILITY NOTE

THE HOMEOWNER ASSOCIATION IS RESPONSIBLE FOR MAINTENANCE OF ALL DRAINAGE EASEMENTS AND FACILITIES.

BACKFLOW PREVENTAL NOTE

FINISH FLOOR BELOW THE UPSTREAM MANHOLE RIM ELEVATION WILL REQUIRE A BACKFLOW PREVENTION DEVICE TO BE INSTALLED ON THE SEWER SERVICE.

THIS PROJECT



VICINITY MAP

OWNER

STARWOOD DEVELOPMENT
5090 NORTH 40TH STREET, SUITE 190
PHOENIX, ARIZONA 85018
(602) 952-1515 - TEL.
(602) 952-1880 - FAX.

ENGINEER

CARTER & BURGESS
4041 N. CENTRAL AVE. STE 650
PHOENIX, ARIZONA 85012
(602) 263-5309 - TEL.
(602) 263-8373 - FAX.

BENCHMARK

NORTHWEST CORNER SECTION 4, TOWNSHIP 3 NORTH, RANGE 5 EAST, FOUND G.L.O. BRASS CAP.
ELEVATION = 1688.87 CITY OF SCOTTSDALE DATUM

SHEET INDEX:

1	COVER SHEET
2	INDEX MAP
2A	QUANTITIY & DETAILS
3-31	IMPROVEMENT PLANS
32-39	GRADING PLANS
40	GRADING DETAILS
41-43	NAOS EXHIBIT
44	RETAINING WALL PLAN
45-50	STORM DRAIN PLANS

UTILITY COMPANIES

WATER	CITY OF SCOTTSDALE
SEWER	CITY OF SCOTTSDALE
ELECTRIC	ARIZONA PUBLIC SERVICE
TELEPHONE	US WEST
GAS	BLACK MOUNTAIN GAS
FIRE DEPT.	RURAL METRO
CABLE T.V. CO.	TCI CABLE TV
REFUSE DISPOSAL	PRIVATE

ASSESSORS PARCEL NUMBER

216-45, 216-46, & 216-36

MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPT.

APPROVED: [signature] 12/3/97
DEPT. OF ENVIRONMENTAL SERVICES (WATER & WASTEWATER) DATE
970962, 970963

FOR STORM DRAINAGE DESIGN ONLY

34965

BUILDING REVIEW

ELECTRICAL	—
MECHANICAL	—
BUILDING	[signature] 1/13/98
PLUMBING	—

CITY OF SCOTTSDALE

REVIEW & RECOMMENDED APPROVAL BY:

FIRE DEPT.	D. Davis 12-26-97	GRADING & DRAINAGE	Saeed Mohaja 12-22-97
[redacted] & PLANNING	[signature] 12-22-97	WATER & SEWER	Saeed Mohaja 12-22-97
[redacted]	—	PAVING	Saeed Mohaja 12-22-97

APPROVED BY: [signature] 1-12-98

Carter & Burgess
4041 NORTH CENTRAL AVE, SUITE 650 • PHOENIX, ARIZONA 85012
(602) 263-5309 FAX (602) 263-8373

REVISIONS

NO.	DATE	BY

LEGEND TRAIL PARCEL A
IMPROVEMENT PLANS

SHEET 1 OF 51

JOB NUMBER

NATIVE PLANT PERMIT # 1B4397

1603 E 97 54 PP 98 816 DR 98

PHASE I

GRADING - LOTS 1-15, 133-155
PAVING - LOTS 1-15, 133-155
WATER - LOTS 1-15, 133-155
SEWER - TO LOT 132 (ALONG PRESERVE WAY), THEN TO LOT 21 (ALONG SEVEN PALMS), THEN ALONG SOUTH PROPERTY LINE BACK TO PRESERVE WAY.

PHASE II

GRADING - FROM LOT 133 TO PARCEL E
PAVING - FROM LOT 133 TO PARCEL E
WATER - FROM LOT 133 TO PARCEL E
SEWER - FROM LOT 133 TO PARCEL E

PHASE III

GRADING - ALL OF SEVEN PALMS DRIVE & 99TH PLACE
PAVING - ALL OF SEVEN PALMS DRIVE & 99TH PLACE
WATER - ALL OF SEVEN PALMS DRIVE & 99TH PLACE
SEWER - THE REST OF SEVEN PALMS DRIVE & ALL OF 99TH PLACE

PHASE IV

GRADING - 99TH ST & PEREGRINE PLACE
PAVING - 99TH ST & PEREGRINE PLACE
WATER - 99TH ST & PEREGRINE PLACE
SEWER - 99TH ST & PEREGRINE PLACE

LEGEND

- WATER VALVE
- FIRE HYDRANT
- AIR RELEASE VALVE
- REDUCER
- PLUG
- BRASS CAP
- BRASS CAP IN HANDHOLE
- STREET SIGN BASE
- STREET LIGHT
- D/W DRIVEWAY
- FIRE HYDRANT MARKER
- GRADE BREAK
- MANHOLE
- CLEANOUT
- TC TOP OF CURB
- G GUTTER ELEVATION
- P PAVEMENT ELEVATION
- VG VALLEY GUTTER ELEVATION
- SD STORM DRAIN MANHOLE
- CR CURB RETURN
- EXISTING CONTOURS
- PROPOSED CONTOURS
- NAOS NATURAL AREA OPEN SPACE
- DE DRAINAGE EASEMENT
- 65.0 FINISH GRADE
- TRW FINISH GRADE AT TOP OF RETAINING WALL
- BRW FINISH GRADE AT BOTTOM OF RETAINING WALL
- RETAINING WALL
- FF FINISH FLOOR
- REGRADED/REVEGETATED NAOS AREA
- PAD LIMIT
- WSE WATER SURFACE ELEVATION
- (2) HEC-2 CROSS-SECTION LOCATION AND NUMBER
- STORM DRAIN PIPE
- S/W SIDEWALK
- B/C BACK OF CURB
- NG NATURAL GROUND
- P.U.E. PUBLIC UTILITY EASEMENT
- EXIST. VALVE
- EXIST. FIRE HYDRANT
- EXIST. SEWER MANHOLE
- INV INVERT
- LE LANDSCAPE EASEMENT
- LF LINEAL FOOT
- C CONCRETE
- MONUMENT LINE
- CENTER LINE
- EXISTING WATER
- EXISTING SEWER
- PROPOSED WATER
- PROPOSED SEWER
- PROPERTY LINE
- FLOW LINE
- CTE CABLE TELEVISION EASEMENT
- SWALE LINE
- (00.00) TOP OF CURB ELEVATION
- PHASE LINE
- RIP-RAP
- STORM DRAIN PIPE

STATIONING NOTE:

THE WATERLINE IS STATIONED FROM THE CENTERLINE STATIONING. THE SEWER MANHOLES & TAPS ARE STATIONED FROM THE DOWNSTREAM MANHOLE.

NOTE:

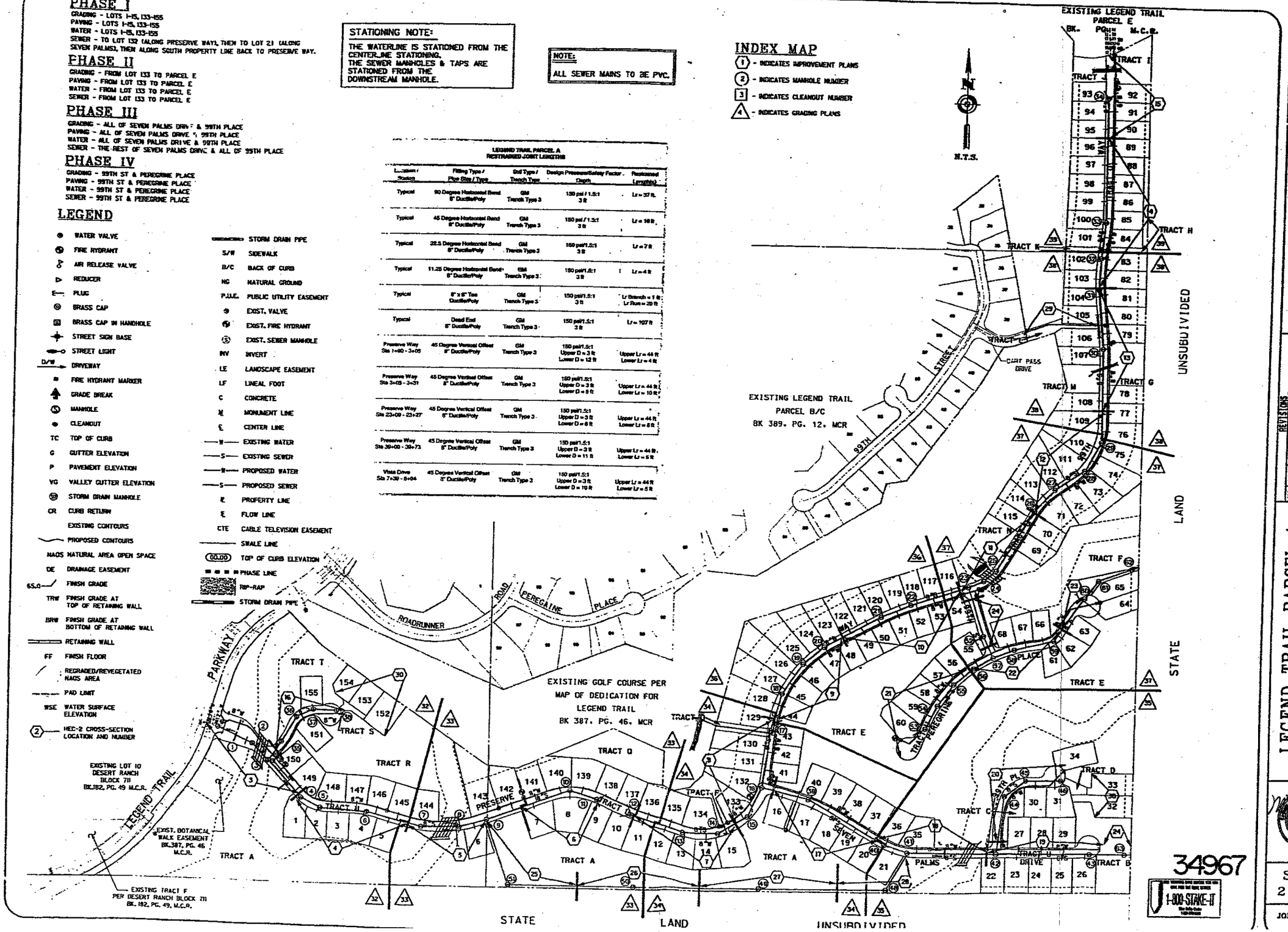
ALL SEWER MAINS TO BE PVC.

LEGEND TRAIL PARCEL A
RESTRAINED JOINT LENGTHS

Location / Station	Fitting Type / Pipe Size / Type	Std Type / Trench Type	Design Pressure/Safety Factor / Depth	Restrained Length(s)
Typical	90 Degree Horizontal Bend 8" Ductile/Poly	GM Trench Type 3	150 psi / 1.5:1 3 ft	Lr = 37 ft
Typical	45 Degree Horizontal Bend 8" Ductile/Poly	GM Trench Type 3	150 psi / 1.5:1 3 ft	Lr = 18 ft
Typical	22.5 Degree Horizontal Bend 8" Ductile/Poly	GM Trench Type 3	150 psi/1.5:1 3 ft	Lr = 7 ft
Typical	11.25 Degree Horizontal Bend 8" Ductile/Poly	GM Trench Type 3	150 psi/1.5:1 3 ft	Lr = 4 ft
Typical	8" x 8" Tee Ductile/Poly	GM Trench Type 3	150 psi/1.5:1 3 ft	Lr Branch = 1 ft Lr Run = 20 ft
Typical	Dead End 8" Ductile/Poly	GM Trench Type 3	150 psi/1.5:1 3 ft	Lr = 107 ft
Preserve Way Sta 1+90 - 3+05	45 Degree Vertical Offset 8" Ductile/Poly	GM Trench Type 3	150 psi/1.5:1 Upper D = 3 ft Lower D = 12 ft	Upper Lr = 44 ft Lower Lr = 4 ft
Preserve Way Sta 3+05 - 3+31	45 Degree Vertical Offset 8" Ductile/Poly	GM Trench Type 3	150 psi/1.5:1 Upper D = 3 ft Lower D = 9 ft	Upper Lr = 44 ft Lower Lr = 10 ft
Preserve Way Sta 23+09 - 23+27	45 Degree Vertical Offset 8" Ductile/Poly	GM Trench Type 3	150 psi/1.5:1 Upper D = 3 ft Lower D = 6 ft	Upper Lr = 44 ft Lower Lr = 6 ft
Preserve Way Sta 39+00 - 39+73	45 Degree Vertical Offset 8" Ductile/Poly	GM Trench Type 3	150 psi/1.5:1 Upper D = 3 ft Lower D = 11 ft	Upper Lr = 44 ft Lower Lr = 5 ft
Vista Drive Sta 7+39 - 8+04	45 Degree Vertical Offset 8" Ductile/Poly	GM Trench Type 3	150 psi/1.5:1 Upper D = 3 ft Lower D = 10 ft	Upper Lr = 44 ft Lower Lr = 5 ft

INDEX MAP

- (1) - INDICATES IMPROVEMENT PLANS
- (2) - INDICATES MANHOLE NUMBER
- [3] - INDICATES CLEANOUT NUMBER
- △4 - INDICATES GRADING PLANS



34967

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DATE - Dec 02, 1997
TIME - 11:38:38

Carter Burgess
4041 NORTH CENTRAL AVE., SUITE 650 - PHOENIX, ARIZONA 85012
(602) 265-1300 FAX (602) 265-6073

NO.	DATE	REVISIONS	BY

LEGEND TRAIL PARCEL A
IMPROVEMENT PLANS

SHEET 2 OF 51

JOB NUMBER 97P003

1602 E 97 54 PP 98 216 DR 98 NATIVE PLANT PERMIT • 1249897

CONSTRUCTION NOTES

1. SURVEY MARKER - MAG.STD.DET. 120-1 TYPE B.
2. ROLL CURB & GUTTER - MAG.STD.DET. 220 TYPE C.
3. VERTICAL CURB - MAG STD DET 220 TYPE 'A'
4. FIRE HYDRANT PAVEMENT MARKER - COS.STD.DET. 2363.
5. SEWER MANHOLE & COVER FRAME ADJUSTMENT - MAG.STD.DET. 422.
6. VALVE & SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT - MAG.STD.DET. 210.
7. 5' SIDEWALK - MAG.STD.DET. 230.
8. SIDEWALK RAMPS - MAG.STD.DET. 234.
9. 8' VALLEY GUTTER-COS.STD.DET.2240 (MODIFIED).
10. 6' VALLEY GUTTER - COS.STD.DET. 2240.
11. STREET SIGN BASE - COS.STD.DET. 2031 WITH 18-. (STOP SIGNS PER M.U.T.C.D.
12. 5' CURB TRANSITION - MAG.STD.DET. 221.
13. DRIVEWAY ENTRANCE - COS.STD.DET. 2255 (20' WIDE).
14. SIDEWALK RAMPS - MAG STD DET. 235 232
15. CONCRETE PAVERS - COS STD DET 2238 (MODIFIED)
16. MOUNTABLE CURB - COS STD DET 2221 TYPE 'J'
17. 20' VALLEY GUTTER - COS STD DET 2240 (MODIFIED)
18. INSTALL SCH. 40 PVC SLEEVE - FOR IRRIGATION PURPOSES SEE PLAN FOR SIZE & LF
19. BARRICADE - MAG STD DET 130 TYPE 'B'
20. FIRE LANE SIGN - COS FIG.10-3

1. 8" WATER LINE - DUCTILE IRON PIPE (PRESSURE CLASS 350, THICKNESS CLASS 50).
2. 8" VALVE, BOX & COVER - MAG.STD.DET. 391-1-C W/DEBRIS CATCHER.
3. FIRE HYDRANT COMPLETE - MAG. STD. DET. 360.
4. 1" WATER SERVICE CONNECTION - C.O.S. STD. DET. 2330.
5. 8" TEE.
6. BEND - AS INDICATED ON PLANS.
7. TAPPED CAP W/FLUSHING PIPE - MAG.STD.DET. 390, TYPE B.
8. AIR RELEASE VALVE - C.O.S. STD. DET. 2348
9. 1" IRRIGATION SERVICE CONNECTION - COS STD. DET. 2330.

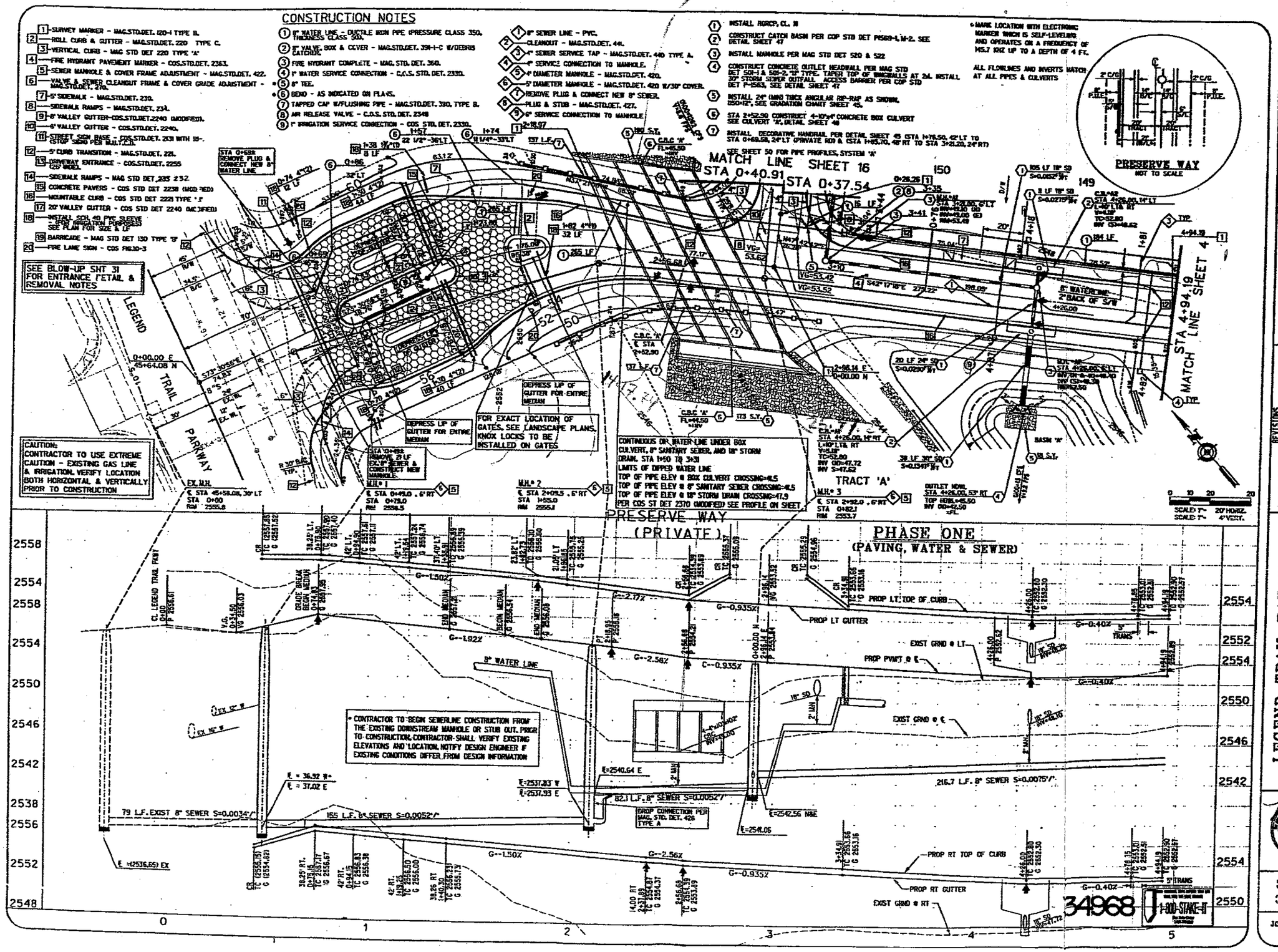
1. 8" SEWER LINE - PVC.
2. CLEANOUT - MAG.STD.DET. 441.
3. 4" SEWER SERVICE TAP - MAG.STD.DET. 440 TYPE A.
4. 4" SERVICE CONNECTION TO MANHOLE.
5. 4' DIAMETER MANHOLE - MAG.STD.DET. 420.
6. 5' DIAMETER MANHOLE - MAG.STD.DET. 420 W/30" COVER.
7. REMOVE PLUG & CONNECT NEW 8" SEWER.
8. PLUG & STUB - MAG.STD.DET. 427.
9. 6" SERVICE CONNECTION TO MANHOLE.

1. INSTALL RGRCP, CL. III
2. CONSTRUCT CATCH BASIN PER COP STD DET P1569-1, M-2. SEE DETAIL SHEET 47
3. INSTALL MANHOLE PER MAG STD DET 520 & 522
4. CONSTRUCT CONCRETE OUTLET HEADWALL PER MAG STD DET 501-1 & 501-2, "B" TYPE. TAPER TOP OF WINGWALLS AT 2:1. INSTALL 30" STORM SEWER OUTFALL. ACCESS BARRIER PER COP STD DET P-2563, SEE DETAIL SHEET 47
5. INSTALL 24" (MIN) THICK ANGULAR RIP-RAP AS SHOWN, D50=12", SEE GRADATION CHART SHEET 45.
6. STA 2+52.90 CONSTRUCT 4-10'x4' CONCRETE BOX CULVERT SEE CULVERT 'A', DETAIL SHEET 48
7. INSTALL DECORATIVE HANDRAIL PER DETAIL SHEET 45 (STA 1+76.50, 42' LT TO STA 0+69.58, 24' LT (PRIVATE RD) & (STA 1+85.70, 48' RT TO STA 3+21.20, 24' RT)

SEE SHEET 50 FOR PIPE PROFILES, SYSTEM 'A'

* MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF-LEVELING AND OPERATES ON A FREQUENCY OF 145.7 KHZ UP TO A DEPTH OF 4 FT.

ALL FLOWLINES AND INVERTS MATCH AT ALL PIPES & CULVERTS



Carter & Burgess
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(602) 257-1699 FAX (602) 257-0071

NO.	DATE	BY	REVISIONS

LEGEND TRAIL PARCEL A
IMPROVEMENT PLANS

SHEET 3 OF 51

JOB NUMBER 97P003

1503 E 07 04 PP 98 S10 DR 98 NATIVE PLANT PERMIT • 1243977

CONSTRUCTION NOTES

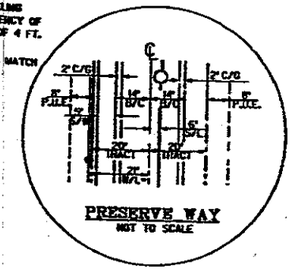
1. SURVEY MARKER - MAG.STD.DET. 120-1 TYPE B.
2. ROLL CURB & GUTTER - MAG.STD.DET. 220 TYPE C.
3. VERTICAL CURB - MAG STD DET 220 TYPE 'A'
4. FIRE HYDRANT PAVEMENT MARKER - COS.STD.DET. 2363.
5. SEWER MANHOLE & COVER FRAME ADJUSTMENT - MAG.STD.DET. 422.
6. VALVE & SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT - MAG.STD.DET. 270.
7. 5' SIDEWALK - MAG.STD.DET. 230.
8. SIDEWALK RAMPS - MAG.STD.DET. 234.
9. 8' VALLEY GUTTER-COS.STD.DET.2240 (MODIFIED).
10. 6' VALLEY GUTTER - COS.STD.DET. 2240.
11. STREET SIGN BASE - COS.STD.DET. 2131 WITH R1-1 (STOP) SIGN PER M.U.T.C.D.
12. 5' CURB TRANSITION - MAG.STD.DET. 221.
13. DRIVEWAY ENTRANCE - COS.STD.DET. 2255 (26' WIDE).
14. SIDEWALK RAMPS - MAG STD DET 233
15. CONCRETE PAVERS - COS STD DET 2238 (MODIFIED)
16. MOUNTABLE CURB - COS STD DET 2221 TYPE 'M'
17. 20' VALLEY GUTTER - COS STD DET 2240 (MODIFIED)
18. INSTALL SCH. 40 PVC SLEEVE - (FOR IRRIGATION PURPOSES) SEE PLAN FOR SIZE & LF
19. BARRICADE - MAG STD DET 130 TYPE 'B'
20. FIRE LANE SIGN - COS FIG.10-3

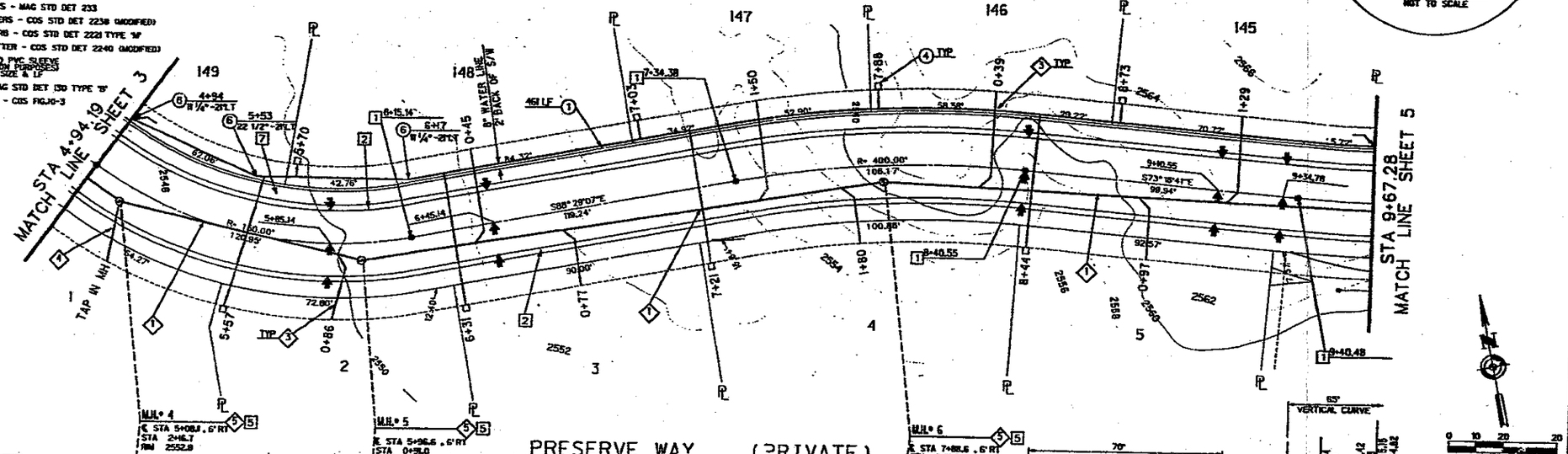
1. 8" WATER LINE - DUCTILE IRON PIPE (PRESSURE CLASS 350, THICKNESS CLASS 50).
2. 8" VALVE, BOX & COVER - MAG.STD.DET. 391-1-C W/DEBRIS CATCHER.
3. FIRE HYDRANT COMPLETE - MAG. STD. DET. 360.
4. 1" WATER SERVICE CONNECTION - C.O.S. STD. DET. 2330.
5. 8" TEE.
6. BEND - AS INDICATED ON PLANS.
7. TAPPED CAP W/FLUSHING PIPE - MAG.STD.DET. 390, TYPE B.
8. AIR RELEASE VALVE - C.O.S. STD. DET. 2348
9. 1" IRRIGATION SERVICE CONNECTION - COS STD. DET. 2330.

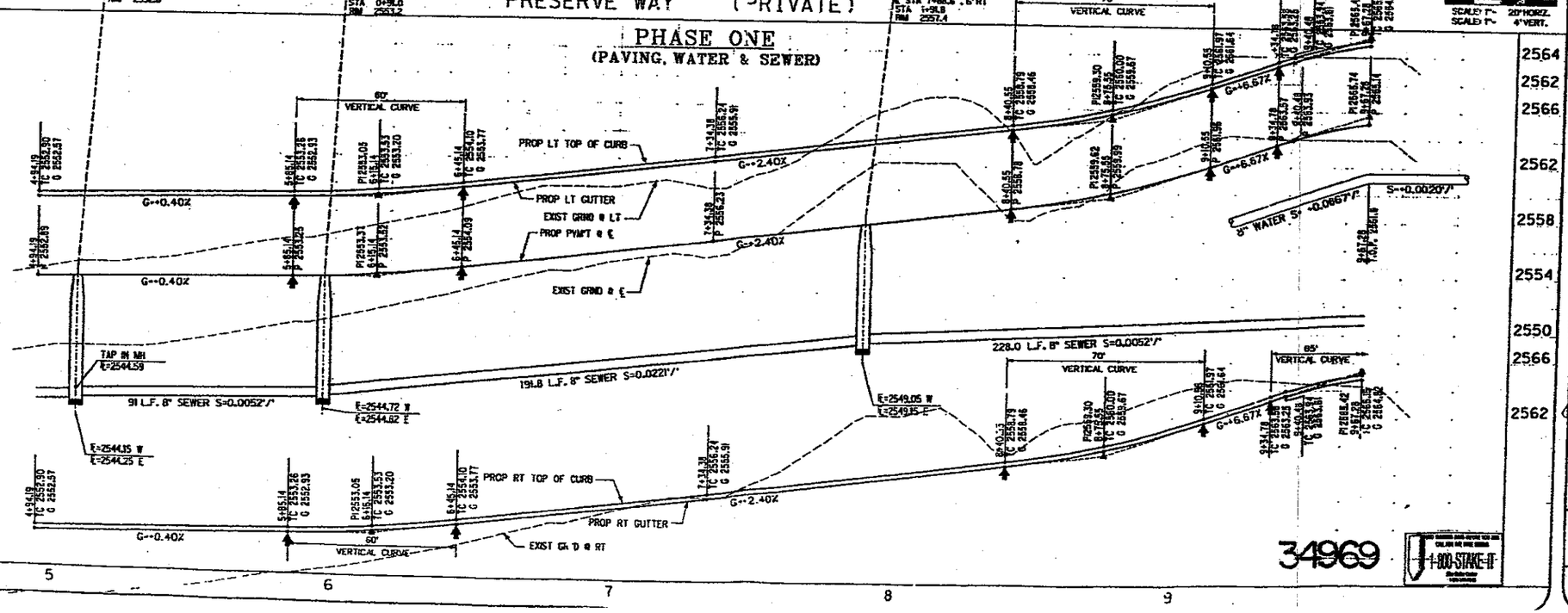
1. 8" SEWER LINE - PVC.
2. CLEANOUT - MAG.STD.DET. 441.
3. 4" SEWER SERVICE TAP - MAG.STD.DET. 440 TYPE A.
4. 4" SERVICE CONNECTION TO MANHOLE.
5. 4' DIAMETER MANHOLE - MAG.STD.DET. 420.
6. 5' DIAMETER MANHOLE - MAG.STD.DET. 420 W/30" COVER.
7. REMOVE PLUG & CONNECT NEW 8" SEWER.
8. PLUG & STUB - MAG.STD.DET. 427.
9. 6" SERVICE CONNECTION TO MANHOLE

*MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF-LEVELING AND OPERATES ON A FREQUENCY OF 145.7 KHZ UP TO A DEPTH OF 4 FT.

ALL FLOWLINES AND INVERTS MATCH AT ALL PIPES & CULVERTS







34969

1-800-STAKE-IT

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REVISIONS

NO.	DATE	BY

LEGEND TRAIL PARCEL A
IMPROVEMENT PLANS

NATIVE PLANT PERMIT • 1243987

SHEET 4 OF 51

JOB NUMBER 97P003

1502 B 97 64 PP 98 SID DR 98

CONSTRUCTION NOTES

1. SURVEY MARKER - MAG.STD.DET. 120-1 TYPE B.
2. ROLL CURB & GUTTER - MAG.STD.DET. 220 TYPE C.
3. VERTICAL CURB - MAG STD DET 220 TYPE 'A'
4. FIRE HYDRANT PAVEMENT MARKER - COS.STD.DET. 2363.
5. SEWER MANHOLE & COVER FRAME ADJUSTMENT - MAG.STD.DET. 422.
6. VALVE & SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT - MAG.STD.DET. 270.
7. 5' SIDEWALK - MAG.STD.DET. 230.
8. SIDEWALK RAMPS - MAG.STD.DET. 234.
9. 8" VALLEY GUTTER-COS.STD.DET.2240 (MODIFIED).
10. 6" VALLEY GUTTER - COS.STD.DET. 2240.
11. STREET SIGN BASE - COS.STD.DET. 2131 WITH R6-1 (STOP SIGN) PER M.U.T.C.D.
12. 5' CURB TRANSITION - MAG.STD.DET. 221.
13. DRIVEWAY ENTRANCE - COS.STD.DET. 2255 (25' WIDE).
14. SIDEWALK RAMPS - MAG STD DET 233
15. CONCRETE PAVERS - COS STD DET 2231 (MODIFIED)
16. MOUNTABLE CURB - COS STD DET 2221 TYPE 'M'
17. 20' VALLEY GUTTER - COS STD DET 2240 (MODIFIED)
18. INSTALL SCH. 40 PVC SLEEVE - (FOR IRRIGATION PURPOSES) SEE PLAN FOR SIZE & LF
19. BARRICADE - MAG STD DET 130 TYPE 'B'
20. FIRE LANE SIGN - COS FIG.10-3

1. 8" WATER LINE - DUCTILE IRON PIPE (PRESSURE CLASS 350, THICKNESS CLASS 50).
2. 8" VALVE BOX & COVER - MAG.STD.DET. 391-1-C W/DEBRIS CATCHER.
3. FIRE HYDRANT COMPLETE - MAG. STD. DET. 360.
4. 1" WATER SERVICE CONNECTION - C.O.S. STD. D.T. 2330.
5. 8" TEE.
6. BEND - AS INDICATED ON PLANS.
7. TAPPED CAP W/FLUSHING PIPE - MAG.STD.DET. 390, TYPE B.
8. AIR RELEASE VALVE - C.O.S. STD. DET. 2348
9. 1" IRRIGATION SERVICE CONNECTION - COS STD. DET. 2330.

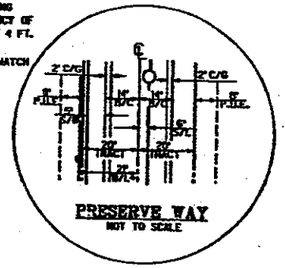
1. 6" SEWER LINE - PVC.
2. CLEANOUT - MAG.STD.DET. 418.
3. 4" SEWER SERVICE TAP - MAG.STD.DET. 440 TYPE A.
4. 4" SERVICE CONNECTION TO MANHOLE.
5. 4' DIAMETER MANHOLE - MAG.STD.DET. 420.
6. 5' DIAMETER MANHOLE - MAG.STD.DET. 420 W/30" COVER.
7. REMOVE PLUG & CONNECT NEW 8" SEWER.
8. PLUG & STUB - MAG.STD.DET. 427.
9. 6" SERVICE CONNECTION TO MANHOLE

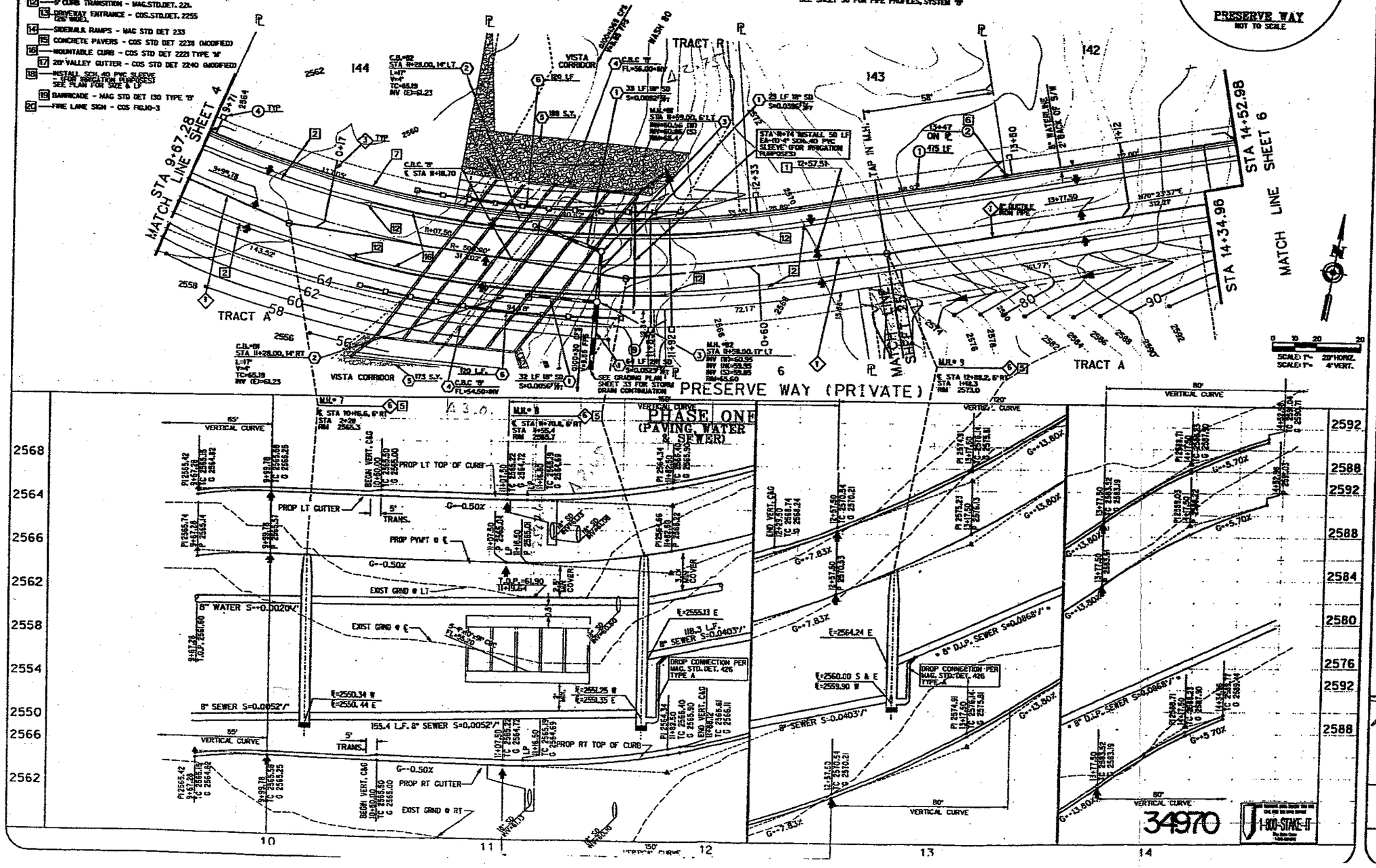
1. INSTALL RCP, CL. III
2. CONSTRUCT CATCH BASIN PER COP STD DET P1569-1, M-1. SEE DETAIL SHEET 47
3. INSTALL MANHOLE PER MAG STD DET 520 & 522
4. STA 11+22.00 CONSTRUCT 5'-10"x4'-5" CONCRETE BOX CULVERT SEE CULVERT 'D' DETAIL SHEET 48
5. INSTALL 24" (MIN) THICK ANGULAR RIP-RAP AS SHOWN. D50=12". SEE GRADATION CHART SHEET 45.
6. INSTALL DECORATIVE HANDRAIL PER DETAIL SHEET 45 (STA 10+70.30, 24' LT TO STA 12+56.30, 24' LT) & (STA 10+54.60, 24' RT TO STA 10+69.10, 24' RT)

SEE SHEET 50 FOR PIPE PROFILES, SYSTEM 'B'

*MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF-LEVELING AND OPERATES ON A FREQUENCY OF 145.7 HRZ UP TO A DEPTH OF 4 FT.

ALL FLOWLINES AND INVERTS MATCH AT ALL PIPES & CULVERTS





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NO.	DATE	REVISIONS	BY

LEGEND TRAIL PARCEL A
IMPROVEMENT PLANS

NATIVE PLANT PERMIT • 1245997

SHEET 5 OF 51

JOB NUMBER 97P003

1502 2 97 04 PP 98 R16 DR 98

FILE - J:\Nov97\0021\mp20rd5.dgn
DATE - Dec. 02, 1997
TIME - 17:59:43

CONSTRUCTION NOTES

1. SURVEY MARKER - MAG.STD.DET. 120-1 TYPE B.
2. ROLL CURB & GUTTER - MAG.STD.DET. 220 TYPE C.
3. VERTICAL CURB - MAG STD DET 220 TYPE 'A'
4. FIRE HYDRANT PAVEMENT MARKER - COS.STD.DET. 2363.
5. SEWER MANHOLE & COVER FRAME ADJUSTMENT - MAG.STD.DET. 422.
6. VALVE & SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT - MAG.STD.DET. 270.
7. 5' SIDEWALK - MAG.STD.DET. 230.
8. SIDEWALK RAMPS - MAG.STD.DET. 234.
9. 8" VALLEY GUTTER-COS.STD.DET.-2240 (MODIFIED).
10. 6" VALLEY GUTTER - COS.STD.DET. 2240.
11. STREET SIGN BASE - COS.STD.DET. 2131 WITH R1-1 (STOP SIGN PER MUTCD).
12. 5' CURB TRANSITION - MAG.STD.DET. 221.
13. DRIVEWAY ENTRANCE - COS.STD.DET. 2255 (COS INDEX).
14. SIDEWALK RAMPS - MAG STD DET 235
15. CONCRETE PAVERS - COS STD DET 2238 (MODIFIED)
16. MOUNTABLE CURB - COS STD DET 2221 TYPE 'M'
17. 20' VALLEY GUTTER - COS STD DET 2240 (MODIFIED)
18. INSTALL SCH. 40 PVC SLEEVE - (FOR IRRIGATION PURPOSES) SEE PLAN FOR SIZE & LF.
19. BARRICADE - MAG STD DET 130 TYPE 'B'
20. FIRE LANE SIGN - COS FR.10-3

1. 8" WATER LINE - DUCTILE IRON PIPE (PRESSURE CLASS 350, THICKNESS CLASS 50).
2. 8" VALVE BOX & COVER - MAG.STD.DET. 391-1-C W/DEBRIS CATCHER.
3. FIRE HYDRANT COMPLETE - MAG. STD. DET. 360.
4. 1" WATER SERVICE CONNECTION - C.O.S. STD. DET. 2330.
5. 8" TEE.
6. BEND - AS INDICATED ON PLANS.
7. TAPPED CAP W/FLUSHING PIPE - MAG.STD.DET. 390, TYPE B.
8. AIR RELEASE VALVE - C.O.S. STD. DET. 2340
9. 1" IRRIGATION SERVICE CONNECTION - COS STD. DET. 2330.

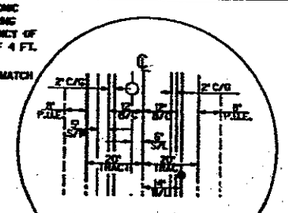
1. 8" SEWER LINE - PVC.
2. CLEANOUT - MAG.STD.DET. 440.
3. 4" SEWER SERVICE TAP - MAG.STD.DET. 440 TYPE A.
4. 4" SERVICE CONNECTION TO MANHOLE.
5. 4' DIAMETER MANHOLE - MAG.STD.DET. 420.
6. 5' DIAMETER MANHOLE - MAG.STD.DET. 420 W/30" COVER.
7. REMOVE PLUG & CONNECT NEW 8" SEWER.
8. PLUG & STUB - MAG.STD.DET. 427.
9. 6" SERVICE CONNECTION TO MANHOLE

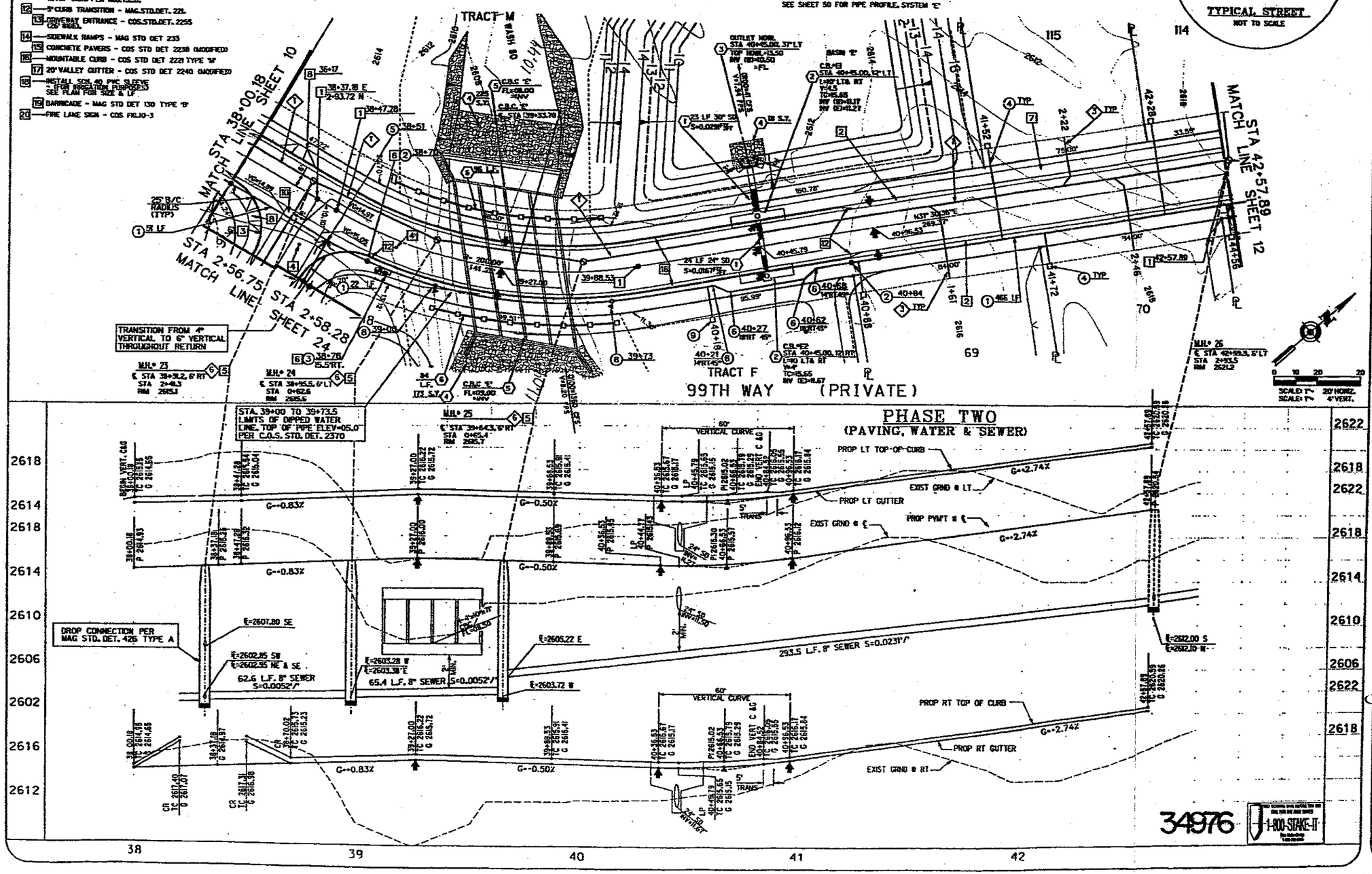
1. INSTALL RGHCP, CL. III
2. CONSTRUCT CATCH BASIN PER COP STD DET P1569-1, M-2. SEE DETAIL SHEET 47
3. CONSTRUCT CONCRETE OUTLET HEADWALL PER MAG STD DET 501-1 & 501-2. "U" TYPE. TAPER TOP OF WINGWALLS AT 2:1 (TYP) INSTALL 30" STORM SEWER OUTFALL ACCESS BARRIER PER COP STD DET P-1563. SEE DETAIL SHEET 47
4. INSTALL 24" QUAD THICK ANGULAR RIP-RAP AS SHOWN. D50=12", SEE GRADATION CHART SHEET 45.
5. STA 39+33.70 CONSTRUCT 4-10'x4'x77' CONCRETE BOX CULVERT SEE CULVERT 'E' DETAIL SHEET 48
6. INSTALL DECORATIVE HANDRAIL PER DETAIL SHEET 45 (STA 38+65.00, 24' LT TO STA 39+74.10, 24' LT) & (STA 39+01.90, 24' RT TO STA 39+76.90, 24' RT)

SEE SHEET 50 FOR PIPE PROFILE, SYSTEM 'E'

• MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF-LEVELING AND OPERATES ON A FREQUENCY OF 145.7 KHZ UP TO A DEPTH OF 4 FT.

ALL FLOWLINES AND INVERTS MATCH AT ALL PIPES & CULVERTS





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NO.	DATE	REVISIONS	BY

LEGEND TRAIL PARCEL A
IMPROVEMENT PLANS

NATIVE PLANT PERMIT - 184997

SHEET 11 OF 51

JOB NUMBER 97P003

FILE - H:\land\97p003\km20all.dgn
DATE - Dec 02, 1997
TIME - 18:26:06

CONSTRUCTION NOTES

1. SURVEY MARKER - MAG.STD.DET. 120-1 TYPE B.
2. ROLL CURB & GUTTER - MAG.STD.DET. 220 TYPE C.
3. VERTICAL CURB - MAG STD DET 220 TYPE 'A'
4. FIRE HYDRANT PAVEMENT MARKER - COS.STD.DET. 2363.
5. SEWER MANHOLE & COVER FRAME ADJUSTMENT - MAG.STD.DET. 422.
6. VALVE & SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT - MAG.STD.DET. 270.
7. 5' SIDEWALK - MAG.STD.DET. 230.
8. SIDEWALK RAMPS - MAG.STD.DET. 234.
9. 8' VALLEY GUTTER-COS.STD.DET.2240 (MODIFIED).
10. 6' VALLEY GUTTER - COS.STD.DET. 2240.
11. STREET SIGN BASE - COS.STD.DET. 2131 WITH R1-1 (STOP SIGN PER MUTCD).
12. 5' CURB TRANSITION - MAG.STD.DET. 221.
13. DRIVEWAY ENTRANCE - COS.STD.DET. 2255 (26' WIDE).
14. SIDEWALK RAMPS - MAG STD DET 233
15. CONCRETE PAVERS - COS STD DET 2238 (MODIFIED)
16. MOUNTABLE CURB - COS STD DET 2223 TYPE 'M'
17. 20' VALLEY GUTTER - COS STD DET 2240 (MODIFIED)
18. INSTALL SCH. 40 PVC SLEEVE - (FOR IRRIGATION PURPOSES) SEE PLAN FOR SIZE & LF
19. BARRICADE - MAG STD DET 130 TYPE 'B'
20. FIRE LANE SIGN - COS FIG.10-3

1. 8" WATER LINE - DUCTILE IRON PIPE (PRESSURE CLASS 350, THICKNESS CLASS 50).
2. 8" VALVE BOX & COVER - MAG.STD.DET. 391-1-C W/DEBRIS CATCHER.
3. FIRE HYDRANT COMPLETE - MAG. STD. DET. 360.
4. 1" WATER SERVICE CONNECTION - C.O.S. STD. DET. 2330.
5. 8" TEE.
6. BEND - AS INDICATED ON PLANS.
7. TAPPED CAP W/FLUSHING PIPE - MAG.STD.DET. 390, TYPE B.
8. AIR RELEASE VALVE - C.O.S. STD. DET. 2348
9. 1" IRRIGATION SERVICE CONNECTION - COS STD. DET. 2330.

1. 8" SEWER LINE - PVC.
2. CLEANOUT - MAG.STD.DET. 418.
3. 4" SEWER SERVICE TAP - MAG.STD.DET. 440 TYPE A.
4. 4" SERVICE CONNECTION TO MANHOLE.
5. 4' DIAMETER MANHOLE - MAG.STD.DET. 420.
6. 5' DIAMETER MANHOLE - MAG.STD.DET. 420 W/30" COVER.
7. REMOVE PLUG & CONNECT NEW 8" SEWER.
8. PLUG & STUB - MAG.STD.DET. 427.
9. 6" SERVICE CONNECTION TO MANHOLE

1. INSTALL RCRCP, CL. III
2. CONSTRUCT CATCH BASIN TYPE "P" PER MAG STD DET 535 WITH CONC APRON PER ADOT STD. DET. C-8.08 SEE SHEET 47.

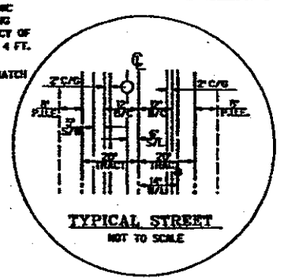
* MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF-LEVELING AND OPERATES ON A FREQUENCY OF 145.7 KHZ UP TO A DEPTH OF 4 FT.

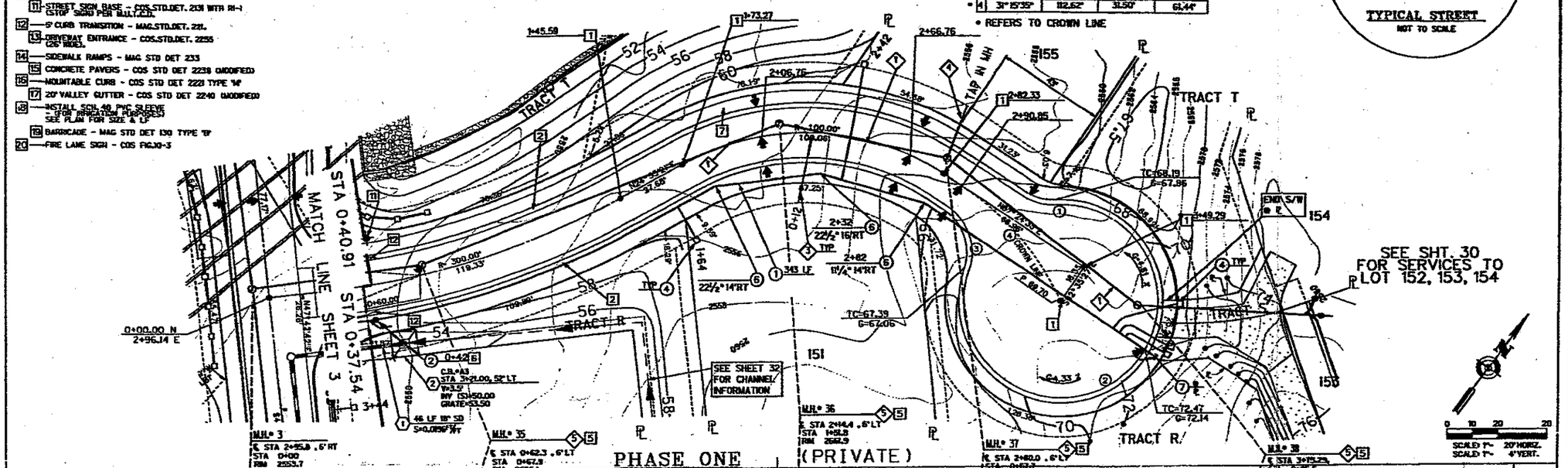
ALL FLOWLINES AND INVERTS MATCH AT ALL PIPES & CULVERTS

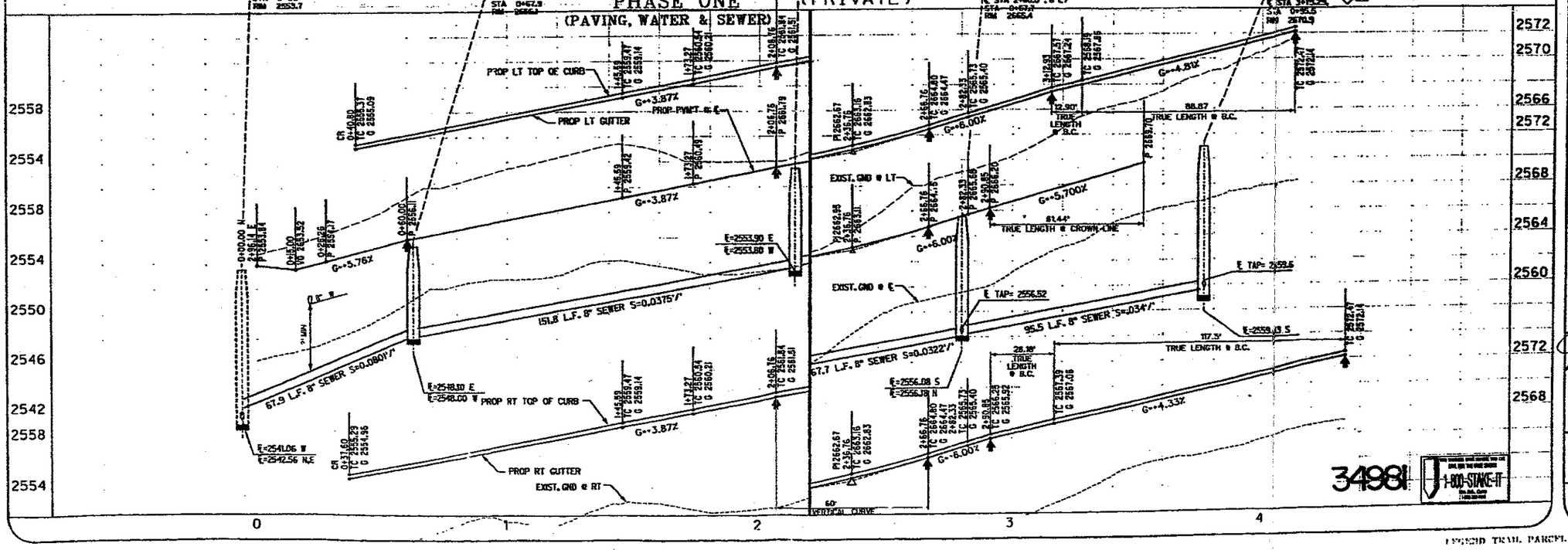
B/C CURVE DATA

	DELTA	RADIUS	TANGENT	LENGTH
1	36°56'57"	20.00'	6.68'	12.90'
2	231°57'26"	40.50'		206.37'
3	75°00'30"	20.00'	15.35'	26.18'
* 4	31°15'35"	112.62'	31.50'	61.44'

* REFERS TO CROWN LINE







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REVISIONS

NO.	DATE	BY

LEGEND TRAIL PARCEL A
IMPROVEMENT PLANS

SHEET 16 OF 51

JOB NUMBER 97P003

1602 E 97 54 PP 96 216 DR 96 NATIVE PLANT PERMIT • 124597

34981

1-800-STAKE-IT

CONSTRUCTION NOTES

1. SURVEY MARKER - MAG.STD.DET. 120-1 TYPE B.
2. ROLL CURB & GUTTER - MAG.STD.DET. 220 TYPE C.
3. VERTICAL CURB - MAG STD DET 220 TYPE 'A'
4. FIRE HYDRANT PAVEMENT MARKER - COS.STD.DET. 2363.
5. SEWER MANHOLE & COVER FRAME ADJUSTMENT - MAG.STD.DET. 422.
6. VALVE & SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT - MAG.STD.DET. 270.
7. 5' SIDEWALK - MAG.STD.DET. 230.
8. SIDEWALK RAMPS - MAG.STD.DET. 234.
9. 6' VALLEY GUTTER-COS.STD.DET.2240 (MODIFIED).
10. 6' VALLEY GUTTER - COS.STD.DET. 2240.
11. STREET SIGN BASE - COS.STD.DET. 2131 WITH R1-1 STOP SIGNS PER M.U.T.C.D.
12. 5' CURB TRANSITION - MAG.STD.DET. 221.
13. DRIVEWAY ENTRANCE - COS.STD.DET. 2255 (AS REQ.).
14. SIDEWALK RAMPS - MAG STD DET 233
15. CONCRETE PAVERS - COS STD DET 2238 (MODIFIED)
16. MOUNTABLE CURB - COS STD DET 2221 TYPE 'M'
17. 20' VALLEY GUTTER - COS STD DET 2240 (MODIFIED)
18. INSTALL SCH. 40 PVC SLEEVE - (FOR IRRIGATION PURPOSES) SEE PLAN FOR SIZE & LF
19. BARRICADE - MAG STD DET 130 TYPE 'B'
20. FIRE LANE SIGN - COS FIG.10-3

1. 8" WATER LINE - DUCTILE IRON PIPE (PRESSURE CLASS 350, THICKNESS CLASS 50).
2. 8" VALVE, BOX & COVER - MAG.STD.DET. 391-1-C W/DEBRIS CATCHER.
3. FIRE HYDRANT COMPLETE - MAG. STD. DET. 360.
4. 1" WATER SERVICE CONNECTION - C.O.S. STD. DET. 2330.
5. 8" TEE.
6. BEND - AS INDICATED ON PLANS.
7. TAPPED CAP W/FLUSHING PIPE - MAG.STD.DET. 390. TYPE B.
8. AIR RELEASE VALVE - C.O.S. STD. DET. 2348
9. 1" IRRIGATION SERVICE CONNECTION - COS STD. DET. 2330.

1. 8" SEWER LINE - PVC.
2. CLEANOUT - MAG.STD.DET. 440.
3. 4" SEWER SERVICE TAP - MAG.STD.DET. 440 TYPE A.
4. 4" SERVICE CONNECTION TO MANHOLE.
5. 4' DIAMETER MANHOLE - MAG.STD.DET. 420.
6. 5' DIAMETER MANHOLE - MAG.STD.DET. 420 W/30" COVER.
7. REMOVE PLUG & CONNECT NEW 8" SEWER.
8. PLUG & STUB - MAG.STD.DET. 427.
9. 6" SERVICE CONNECTION TO MANHOLE

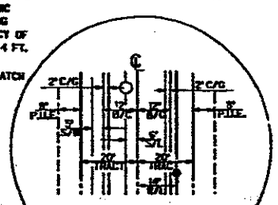
1. INSTALL RCP(CP), CL. III
2. CONSTRUCT CATCH BASIN PER COP STD DET P1569-1, M-1. SEE DETAIL SHEET 47
3. CONSTRUCT CONCRETE OUTLET HEADWALL PER MAG STD DET 501-1 & 501-2, "U" TYPE, TAPER TOP OF WINGWALLS AT 2:1(TYP.). TOP OF WEST WINGWALL TO MATCH TOP OF GRATE, ELEV=93.0. OF CATCH BASIN. INSTALL 36" STORM SEWER OUTFALL ACCESS BARRIER PER COP STD DET P-1563. SEE DETAIL SHEET 47
4. CONSTRUCT CATCH BASIN TYPE "F" PER MAG STD DET 535, ADJACENT TO END OF OUTLET HEADWALL. SEE DETAIL SHEET 46
5. INSTALL 24" CMP THICK ANGULAR RIP-RAP AS SHOWN, D50=12", SEE GRADATION CHART, SHEET 45.
6. STA 8+95.00 CONSTRUCT 3-10'x4'x90° CONCRETE BOX CULVERT SEE CULVERT "1", DETAIL SHEET 45
7. INSTALL DECORATIVE HANDRAIL PER DETAIL SHEET 45 (STA 8+72.50, 24' LT TO STA 9+56.00, 24' LT) & (STA 7+15.80, 24' RT TO STA 8+03.80, 24' RT)

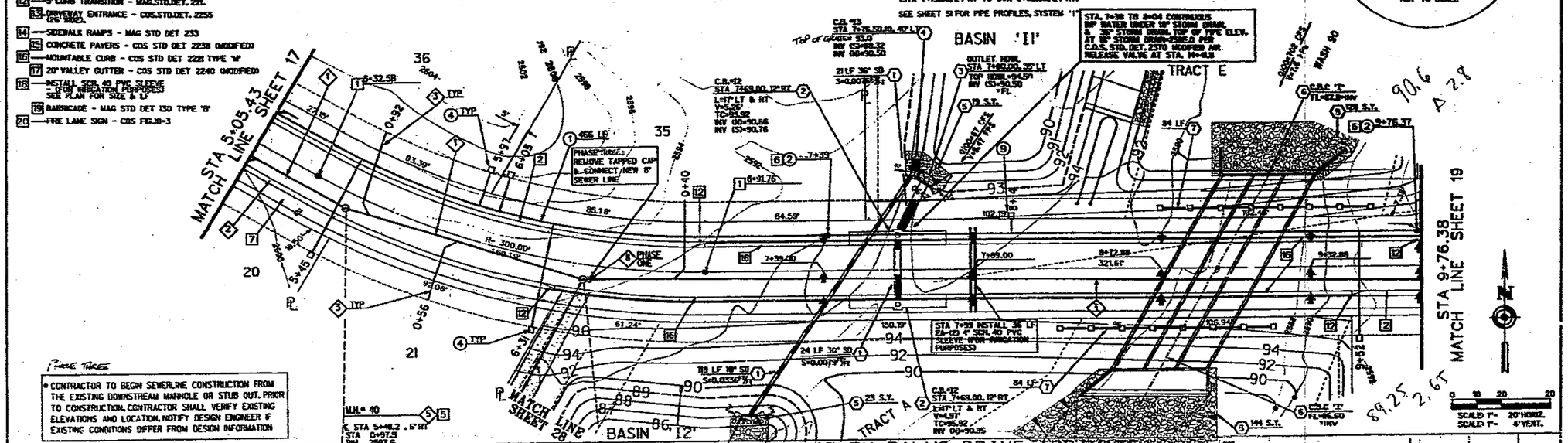
SEE SHEET 51 FOR PIPE PROFILES, SYSTEM "1"

* MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF-LEVELING AND OPERATES ON A FREQUENCY OF 145.7 KHZ UP TO A DEPTH OF 4 FT.

ALL FLOWLINES AND INVERTS MATCH AT ALL PIPES & CULVERTS

1. CONSTRUCT CONCRETE OUTLET HEADWALL PER MAG STD DET 501-1 & 501-2, "U" TYPE, TAPER TOP OF WINGWALLS AT 2:1 (TYP.). INSTALL 18" STORM DRAIN OUTFALL ACCESS BARRIER PER COP STD DET P-1563. SEE DETAIL SHEET 47





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NO.	DATE	BY	REVISIONS

LEGEND TRAIL PARCEL A

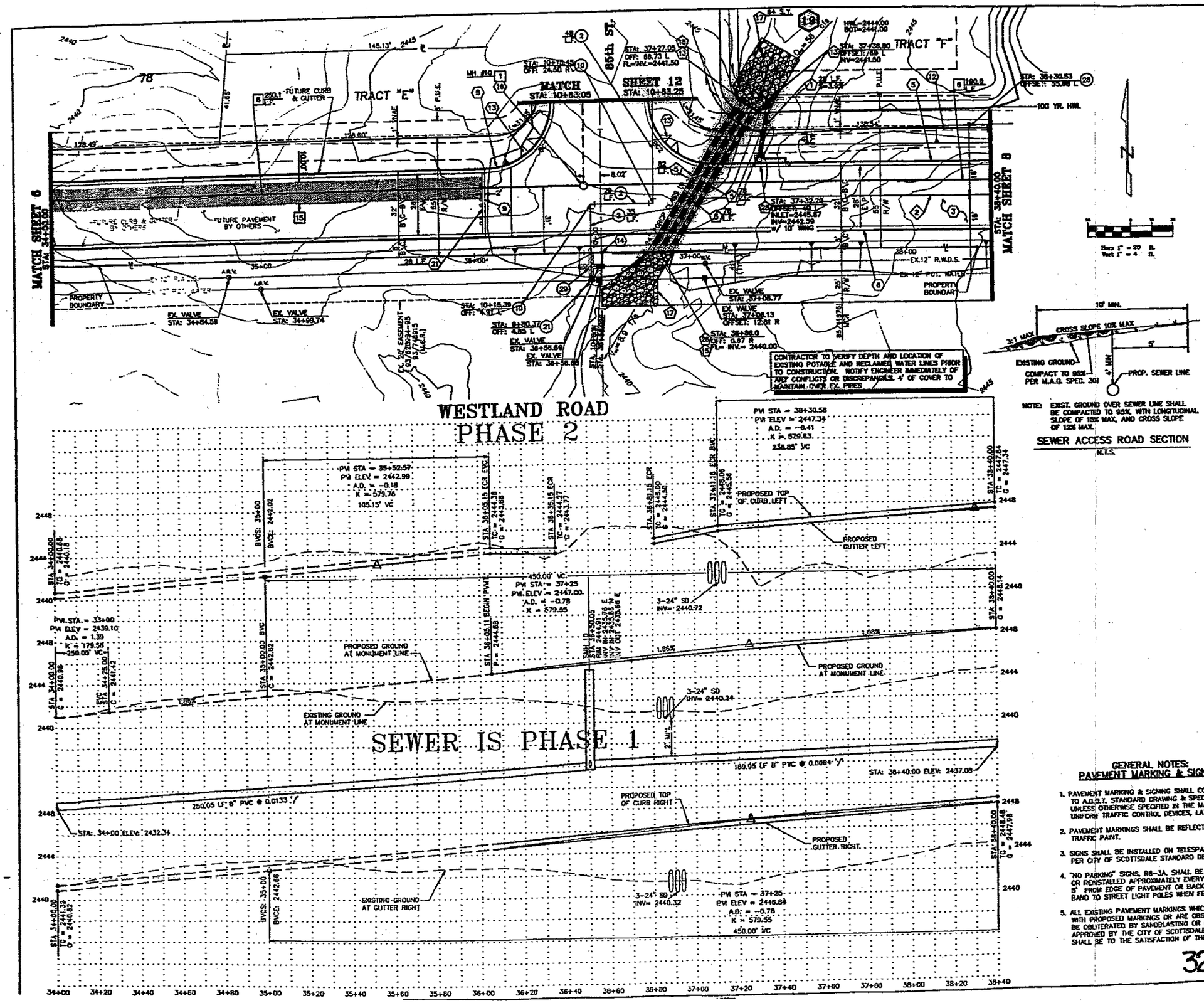
IMPROVEMENT PLANS

SHEET 18 OF 51

JOB NUMBER 97P005

NATIVE PLANT PERMIT • 184897

1502 R 97 84 PP 96 816 DR 96



CURVE	RADIUS	LENGTH	TANGENT	DELTA
BC1	30.00'	47.07'	29.94'	89°53'38"
BC2	30.00'	47.18'	30.06'	90°06'22"

PAVING NOTES

(3) CONSTRUCT 4" AC (1-1/2" D-3/4 ON 2-1/2" A-2-1/2) OVER 12" ABC PER M.A.G. SPEC. 702 & 710.

(5) CONSTRUCT 6" VERTICAL CURB & GUTTER PER M.A.G. STD. DET. 220 "A".

(6) CONSTRUCT 6" VERTICAL CURB & GUTTER PER C.O.S. STD. DET. 2220 TYPE "A"

(9) CONSTRUCT THICKENED EDGE PAVEMENT PER M.A.G. STD. DET. 201 TYPE "A".

(12) CONSTRUCT 6' MEANDERING SIDEWALK PER M.A.G. STD. DET. 230. SEE LANDSCAPE PLANS FOR LOCATION.

(13) CONSTRUCT SIDEWALK RAMP PER M.A.G. STD. DET. 231 TYPE "A".

(14) INSTALL SURVEY MARKER PER M.A.G. STD. DET. 120-1 "A"

(16) ADJUST MANHOLE FRAME & COVER PER C.O.S STD. DET. 2270.

(21) INSTALL BARRICADE PER M.A.G. STD. DET. 130-8 INSTALL 2-TYPE 4 OBJECT MARKERS PER A.D.O.T. 4-11-3.01. BARRICADE SHALL BE 28' IN LENGTH AND CONTINUOUS

SEWER NOTES

[1] CONSTRUCT 4' DIA. MANHOLE PER M.A.G. STD. DET. 420 & 424.

[6] INSTALL 8" P.V.C. SEWER PIPE.

[15] 10' WIDE GRADED ACCESS ROAD PER DETAIL THIS SHEET

POTABLE WATER NOTES

(2) INSTALL 8" D.I.P. PRESSURE CLASS 350 WATER LINE.

(3) INSTALL 8" V.B.& C. PER M.A.G. STD. DET. 391-1 TYPE "C"

(10) INSTALL 8" 90° BEND COMPLETE W/ ELECTRONIC MARKER PER C.O.S. SUPPLEMENTAL SPEC. 610.

(21) INSTALL 8" T.S.V.B. & C. PER M.A.G. STD. DET 340.

(28) INSTALL 2" WATER SERVICE PER C.O.S. STD. DTL. 2330 FOR L.S. PURPOSES. CONTRACTOR SHALL VERIFY LOCATION OF EXIST. RWDS AND POTABLE WATER LINE.

(29) CONTRACTOR TO VERIFY LOCATION AND INVERT OF EXISTING 12" R.W.D.S. PIPE. ENCASE EXIST. 12" R.W.D.S. PIPE AND PROPOSED WATER LINE PER M.A.G. STD. DET. 404 6'MIN.(CLEAR) BEYOND CROSSING.

STORM DRAIN NOTES

(1) INSTALL 18" R.G.R.C.P. CLASS IV STORM DRAIN PIPE

(2) INSTALL 24" R.G.R.C.P. CLASS IV STORM DRAIN PIPE

(13) INSTALL "U" TYPE HEADWALL PER M.A.G. STD. DET. 301-1.

(15) CONSTRUCT HANDRAIL PER C.O.S. STD. DET. 2508

(17) CONSTRUCT NATIVE STONE RIP-RAP EROSION PROTECTION. GROUT TO BE INTEGRALLY COLORED TO MATCH EXISTING CONDITIONS. SEE DETAIL SHEET 2.

(22) CONSTRUCT CATCH BASIN PER C.O.P. STD. DTL. P1569-2 ON SHT. 2. WING SIZE PER PLAN.

(28) CONSTRUCT HEADWALL PER M.A.G. STD. DET. 501-1, STRAIGHT TYPE. STA. 36+25.01 TO STA. 38+40

SIGNAGE AND STRIPING NOTES

(2) INSTALL 4" DOUBLE SOLID YELLOW STRIPE

NOTE: EXIST. GROUND OVER SEWER LINE SHALL BE COMPACTED TO 95%, WITH LONGITUDINAL SLOPE OF 15% MAX. AND CROSS SLOPE OF 12% MAX.

SEWER ACCESS ROAD SECTION

N.T.S.

GENERAL NOTES:
PAVEMENT MARKING & SIGNING

1. PAVEMENT MARKING & SIGNING SHALL CONFORM TO A.D.O.T. STANDARD DRAWING & SPECIFICATIONS UNLESS OTHERWISE SPECIFIED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
2. PAVEMENT MARKINGS SHALL BE REFLECTORIZED TRAFFIC PAINT.
3. SIGNS SHALL BE INSTALLED ON TELESPAR SIGN POSTS PER CITY OF SCOTTSDALE STANDARD DETAIL 2131.
4. "NO PARKING" SIGNS, R8-3A, SHALL BE INSTALLED OR REINSTALLED APPROXIMATELY EVERY 300', AND 5' FROM EDGE OF PAVEMENT OR BACK OF CURB. BAND TO STREET LIGHT POLES WHEN FEASIBLE.
5. ALL EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED MARKINGS OR ARE OBSOLETE SHALL BE OBLITERATED BY SANDBLASTING OR OTHER METHOD APPROVED BY THE CITY OF SCOTTSDALE. REMOVALS SHALL BE TO THE SATISFACTION OF THE CITY INSPECTOR.

32215

HORZ: 1" = 20'
VERT: 1" = 4'

WOOD/PATEL ASSOCIATES
Civil Engineers
Hydrologists
Land Surveyors
(602) 234-1344

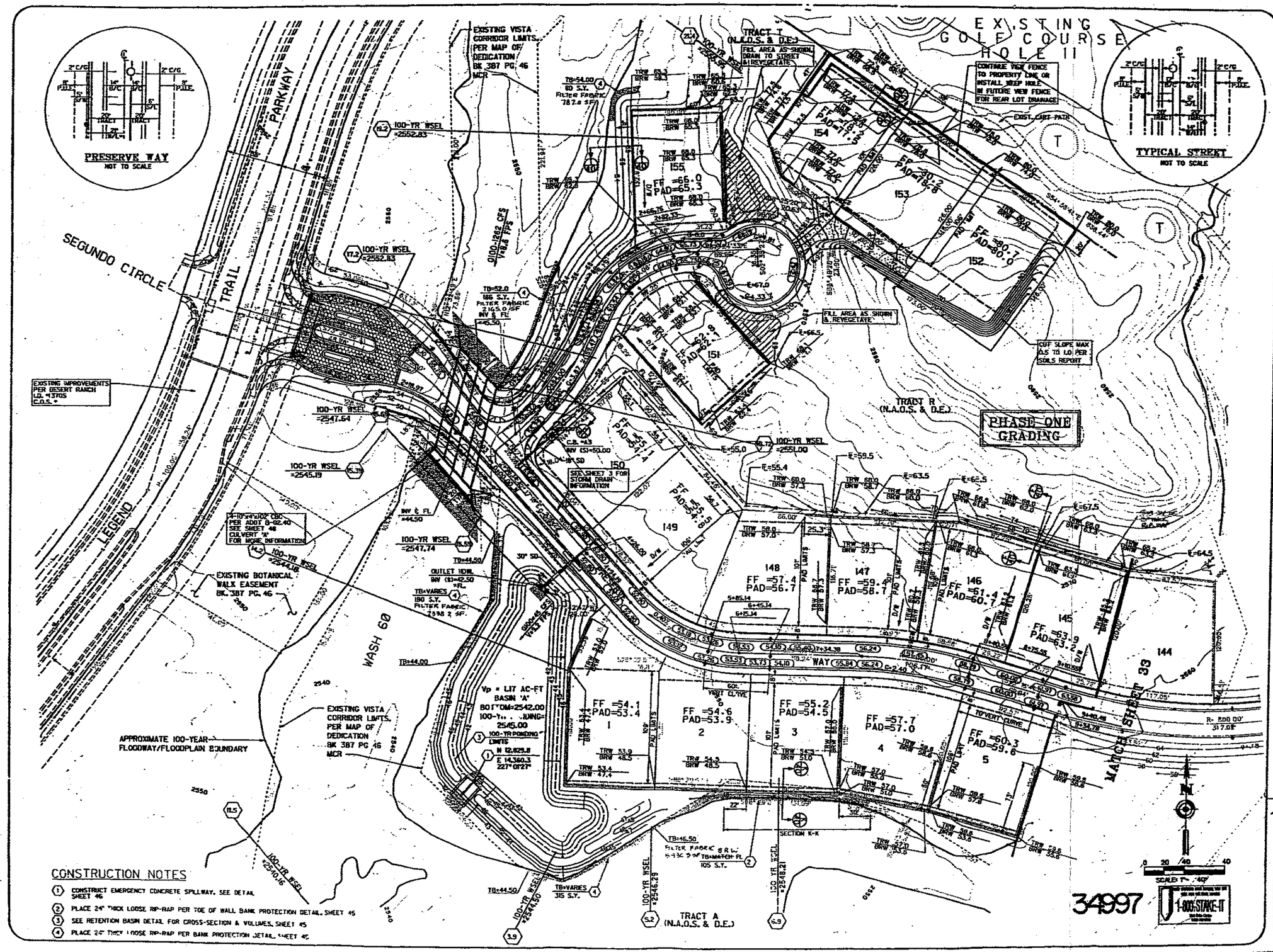
24443 GORDON W. R. WARNER ARIZONA, U.S.A.

BOULDER RIDGE IMPROVEMENT PLAN

DATE	SCALE	SHEET
1-7-97	1" = 20'	7 OF 42
JOB NO. 95357	DESIGN JRB	CHECK GVW
	DRAWN MAF	FILE 11X17

42-PP-95 638-E-96

G-ZN-95



CONSTRUCTION NOTES

1. CONSTRUCT EMERGENCY CONCRETE SPILLWAY. SEE DETAIL SHEET 46
2. PLACE 24" THICK LOOSE RIP-RAP PER TOE OF WALL BANK PROTECTION DETAIL, SHEET 45
3. SEE RETENTION BASIN DETAIL FOR CROSS-SECTION & VOLUMES, SHEET 45
4. PLACE 24" THICK LOOSE RIP-RAP PER BANK PROTECTION DETAIL, SHEET 45

Carter :: Burgess
441 NORTH CENTRAL AVE, SUITE 600 - PHOENIX, ARIZONA 85013
(602) 955-5300 FAX (602) 955-6073

NO.	DATE	REVISIONS	BY

LEGEND TRAIL PARCEL A

GRADING & DRAINAGE PLANS

SHEET 32 OF 51

JOB NUMBER 97P003

1502 E 97 64 FP 96 816 DR 96 NATIVE PLANT PERMIT • 184997

FILE - J:\Work\97p003\p640a32.dgn
DATE - Dec 02, 1997
TIME - 15:01:49

INFRASTRUCTURE IMPROVEMENT PLANS
FOR
BOULDER RIDGE
A PORTION OF THE NE 1/4 OF SEC.12, T5N,R4E OF THE GILA & SALT RIVER MERIDIAN MARICOPA COUNTY, ARIZONA

GENERAL NOTES

CITY OF SCOTTSDALE
GENERAL CONSTRUCTION NOTES
FOR PUBLIC WORKS CONSTRUCTION

1. ALL CONSTRUCTION IN THE PUBLIC RIGHTS-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE (COS) SUPPLEMENTAL STANDARD SPECIFICATIONS AND SUPPLEMENTAL STANDARD DETAILS. IF THERE IS A CONFLICT, THE LATTER SHALL GOVERN.
2. THE ENGINEERING DESIGNS ON THESE PLANS ARE ONLY APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
3. APPROVAL OF PLANS IS VALID FOR SIX (6) MONTHS. IF AN ENCROACHMENT PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN SIX MONTHS, THE PLANS SHALL BE RESUBMITTED TO THE CITY FOR RE-APPROVAL.
4. A PUBLIC WORKS INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE RIGHTS-OF-WAY AND IN EASEMENTS. NOTIFY INSPECTION SERVICES 24 HOURS PRIOR TO STARTING OF CONSTRUCTION (TELEPHONE 391-5750).
5. WHENEVER EXCAVATION IS TO BE DONE, CALL THE "BLUE STAKE CENTER", 263-1100, TWO WORKING DAYS BEFORE EXCAVATION IS TO BEGIN. THE CENTER WILL SEE THAT THE LOCATION OF THE UNDERGROUND UTILITY LINES IS IDENTIFIED FOR THE PROJECT. CALL "COLLECT" IF NECESSARY.
6. ENCROACHMENT PERMITS ARE REQUIRED FOR ALL WORK IN PUBLIC RIGHTS-OF-WAY AND EASEMENTS GRANTED FOR PUBLIC PURPOSES. AN ENCROACHMENT PERMIT WILL BE ISSUED BY THE CITY UPON RECEIPT OF PAYMENT OF A BASE FEE PLUS A FEE FOR INSPECTION SERVICES TO BE PROVIDED BY THE CITY. COPIES OF ALL PERMITS SHALL BE RETAINED ONSITE AND SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE WORK STOPPAGE UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.
7. ALL EXCAVATION AND GRADING WHICH IS NOT IN THE PUBLIC RIGHTS-OF-WAY OR NOT IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO CHAPTER 70, EXCAVATION AND GRADING, OF THE LATEST EDITION OF THE UNIFORM BUILDING CODE PREPARED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. A PERMIT FOR THIS GRADING MUST BE SECURED FROM THE CITY FOR A FEE ESTABLISHED BY THE UNIFORM BUILDING CODE.

ENGINEERS NOTES

1. MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION INCLUDING LATEST REVISION AND CURRENT SUPPLEMENTALS THEREOF PER THE LOCAL TOWN OR CITY) ARE INCORPORATED INTO THESE PLANS IN THEIR ENTIRETY.
2. ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THESE PLANS SHALL BE IN ACCORDANCE WITH THE MAG STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTS THEREOF PER THE LOCAL TOWN OR CITY UNLESS SPECIFIED OTHERWISE IN THESE PLANS OR ELSEWHERE. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH ALL REQUIRED STANDARD SPECIFICATIONS, DETAILS AND SUPPLEMENTS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THESE PLANS.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL METHODS, SEQUENCING, AND SAFETY USED DURING CONSTRUCTION UNLESS SPECIFICALLY ADDRESSED.
4. THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THESE PLANS.
5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THESE PLANS.
6. THE QUANTITIES AND SITE CONDITIONS DEPICTED IN THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE SUBJECT TO ERROR AND OMISSION. CONTRACTORS SHALL SATISFY THEMSELVES AS TO ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THESE PLANS.
7. A REASONABLE EFFORT HAS BEEN MADE TO SHOW THE LOCATIONS OF EXISTING UNDERGROUND FACILITIES AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND/OR FACILITIES CAUSED DURING THEIR CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL CALL FOR BLUE STAKE (263-1100) PRIOR TO ANY EXCAVATION.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF CONSTRUCTION AFFECTING UTILITIES AND THE COORDINATION OF ANY NECESSARY UTILITY RELOCATION WORK.
9. ALL GRADING, PAVING, EXCAVATION, TRENCHING, PIPE BEDDING, AND BACKFILL SHALL COMPLY WITH THE RECOMMENDATIONS SET FORTH IN THE SOILS (GEOTECHNICAL) REPORT FOR THIS PROJECT IN ADDITION TO THE REFERENCED REQUIRED SPECIFICATIONS AND DETAILS.
10. THE CONTRACTOR IS TO VERIFY THE LOCATION AND THE ELEVATIONS OF ALL EXISTING UTILITIES AT POINTS OF TIE-IN PRIOR TO COMMENCING ANY NEW CONSTRUCTION. SHOULD ANY LOCATION OR ELEVATION DIFFER FROM THAT SHOWN ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S AGENT.
11. ALL EXPOSED CONCRETE TO BE COLORED SAN DIEGO BUFF APPLIED AT A RATE OF 2 LBS. PER CUBIC YARD.
12. ALL WATER MAIN FITTINGS TO INCORPORATE MEG-A-LUG OR EQUIVALENT JOINT RESTRAINT PER DETAIL ON SHEET 2.
13. ALL UNDERGROUND PRESSURIZED PIPE 12" IN DIAMETER OR LARGER SHALL BE INSTALLED WITH ELECTRONIC MARKER TAPE OVER TOP OF PIPE PER C.O.S. DESIGN CRITERIA SECT. 4-102. "G"
14. ALL WATER VALVES SHALL BE INSTALLED COMPLETE WITH DEBRIS CAP PER — C.O.S. DESIGN CRITERIA. SECT. 4-102 "B".

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

COMMUNITY NUMBER	PANEL NUMBER AND DATE	SUFFIX	DATE OF FIRM	FIRM ZONE	BASE FLOOD ELEVATION (IN AO ZONE, USE DEPTH)
045012	0820 12-3-93	E	9-30-95	X	-

ESTIMATED QUANTITIES

PAVING	PHASE 1	PHASE 2	PHASE 3	PHASE 4	
4" A.C. OVER 12" A.B.C	3210	3729			S.Y.
2" A.C. OVER 6" A.B.C.	6344	6278	3487	4443	S.Y.
6" V.C. & G.	789	1116			L.F.
18" RIBBON CURB	4385	4710	2889	3395	L.F.
6" VERTICAL C & G C.O.S. DTL. 2220 "A"	813	695			L.F.
4" R.C. & G. TYPE "D"	210	283			L.F.
THICKENED EDGE PVMT	328	32			L.F.
5' CURB TRANSITION	10	10			L.F.
6' SIDEWALK	591	962			S.Y.
SIDEWALK RAMP	2	2			EA.
SURVEY MARKER – M.A.G. 120-1 "A"	3	4		1	EA.
SURVEY MARKER – M.A.G. 120-1 "B"	15	12	8	9	EA.
ADJUST MANHOLE FRAME & COVER	17	16	10	8	EA.
ADJUST FRAME & COVER	9	1	1		EA.
PVMT. MARKER FOR FIRE HYDRANT	2	3	1	2	EA.
BARRICADE	1	1			EA.
SAWCUT, REMOVE & REPLACE EX. PVMT	69				S.Y.
STOP SIGN	3	5		1	EA.
SIGN POST	3	5		1	EA.
TRAFFIC SIGNAL CONDUIT	48				L.F.
TRAFFIC SIGNAL PULL BOX	2				EA.

SEWER	PHASE 1	PHASE 2	PHASE 3	PHASE 4	
4' M.H.	9	13	7	6	EA.
5' M.H.	11	1	3	2	EA.
4' M.H. /W WATERTIGHT FRAME & COVER	5		2		EA.
5' M.H. /W WATERTIGHT FRAME & COVER	2				EA.
8" P.V.C. SEWER PIPE	3853	1973	1027	1384	L.F.
8" D.I.P. SEWER PIPE	1761		1174	619	L.F.
CONCRETE ENCASEMENT	1				EA.
4" SEWER TAP	18	20	[illegible]	[illegible]	EA.
ADJUST MANHOLE	6		2	1	EA.
8" SEWER PLUG				1	EA.

POTABLE WATER	PHASE 1	PHASE 2	PHASE 3	PHASE 4	
8" D.I.P.	1575	1125	800	1518	L.F.
8" V.B. &C.	3	5		9	EA.
6" FIRE HYDRANT COMPLETE	2	2		2	EA.
6" x 2" CURB STOP W/ FLUSHING PIPE	2	2	2	1	EA.
6" D.I.P.	673	1431	1263	783	L.F.
6" V.B. &C.	6	10	6	5	EA.
1" WATER SERVICE	30	20	[illegible]	20	EA.
AIR/VACUUM RELEASE VALVE	6	6	4	8	EA.
8" T.S.V.B.& C.	1	2			EA.
ELECTRONIC MARKER	5	8	4	8	EA.
VERTICAL REALIGNMENT	1	3	2	4	EA.
8" x 2" CURB STOP W/ FLUSHING PIPE	1			1	EA.
1" WATER SERVICE FOR LANDSCAPE	1				EA.
2" WATER SERVICE FOR LANDSCAPE	1	2	1		EA.

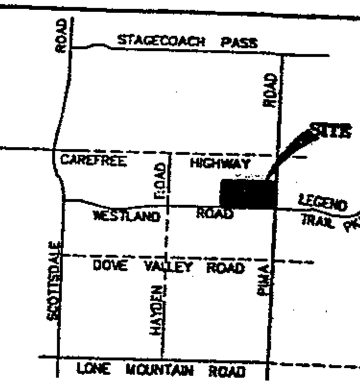
STORM DRAIN	PHASE 1	PHASE 2	PHASE 3	PHASE 4	
18" RGRCP CLASS IV	33	37			L.F.
24" RGRCP CLASS IV		312	202	66	L.F.
18" RGRCP CLASS V	120			72	L.F.
24" RGRCP CLASS V			125		L.F.
21" RGRCP CLASS IV		116			L.F.
30" RGRCP CLASS IV			59	125	L.F.
48" RGRCP CLASS IV	473				L.F.
"U" TYPE HEADWALL	8	5	9	10	EA.
STRAIGT TYPE HEADWALL		1			EA.
CATCH BASIN (10' WING)		1			EA.
CONCRETE PIPE COLLAR	3				EA.
RIP-RAP GROUTED	437	384	254	205	S.Y.
HANDRAIL	4	10	9	8	EA.
BOX CULVERT – DBL. BARREL 10' x 4'		66			L.F.
INLET\OUTLET WING PER A.D.O.T. STD. DWG. NO. B-08.20		140			L.F.
CATCH BASIN PER M.A.G. DET. 532		1			EA.

OWNER/DEVELOPER

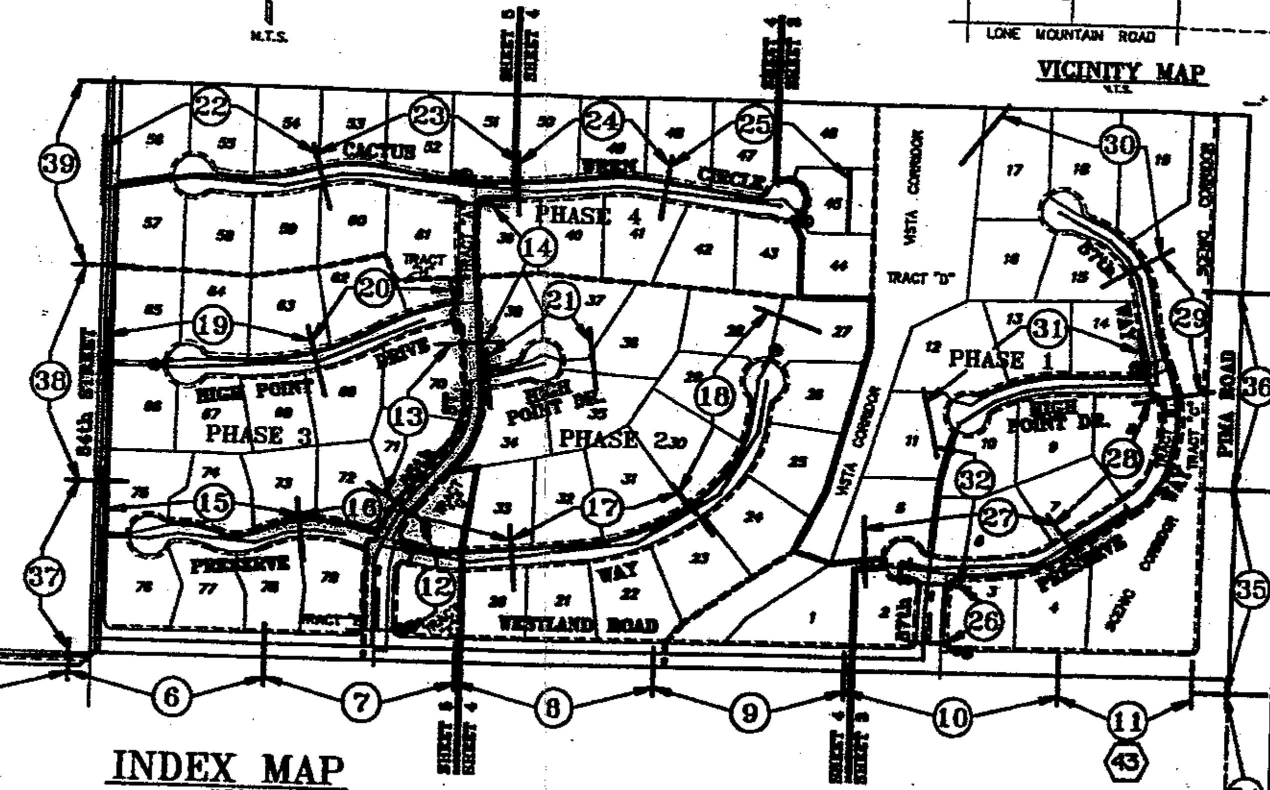
PARKVIEW DEVELOPMENT
7150 E. CAMELBACK RD. SUITE 300
SCOTTSDALE, AZ. 85251
CONTACT: MR. BLAKE PARKER
PHONE: (602) 423-7701
FAX: (602) 423-7099

ENGINEER

WOOD/PATEL ASSOCIATES
1550 E. MISSOURI, STE. 203
PHOENIX, ARIZONA 85014
CONTACT: MR. GORDON WARK, P.E.
(602) 234-1344
(FAX) 234-1322



VICINITY MAP
N.T.S.



INDEX MAP
N.T.S.

GENERAL NOTES:

1. SEWER MANHOLES OUTSIDE OF PAVED AREAS WILL BE BUILT WATERTIGHT AND THE CONTRACTOR/DEVELOPER WILL PROTECT THE SYSTEM FROM ALL INFILTRATION.
2. NO RETAINING WALLS ARE INCLUDED IN THIS PERMIT.
3. REFERENCE LANDSCAPE PLANS FOR ALL IRRIGATION SLEEVE CROSSINGS.
4. MAINTENANCE OF DRAINAGE FACILITIES AND EASEMENTS WILL BE THE BOULDER RIDGE HOMEOWNERS ASSOCIATION RESPONSIBILITY.
5. ALL RIP-RAP SHALL BE NATIVE STONE INDIGENOUS TO THIS SITE.
6. ALL CONCRETE HEADWALLS AND WINGWALLS SHALL BE INTEGRALLY COLORED TO MATCH THE SURROUNDING TERRAIN.

UTILITY NOTES

1. THESE PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES AND THE WORK CONTAINED IN THESE PLANS HAS BEEN APPROVED BY THESE COMPANIES WITHIN THEIR AREA OF INTEREST. THE SIZE AND LOCATIONS, AS SHOWN, OF THE GAS, TELEPHONE AND POWER LINES, AND CONNECTIONS AGREE WITH THE INFORMATION CONTAINED IN THE UTILITY COMPANY'S RECORDS. WHERE THE WORK TO BE DONE CONFLICTS WITH ANY OF THESE UTILITIES, THE CONFLICTS SHALL BE RESOLVED AS SPECIFIED. CONFLICTS ARISING DURING THE COURSE OF CONSTRUCTION FROM UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE INTERESTED UTILITY COMPANY AND BE RESOLVED BY THEM AND THE DESIGN ENGINEER.
2. THE CITY WILL NOT PARTICIPATE IN THE COST OF CONSTRUCTION OR UTILITY RELOCATION.

UTILITY	UTILITY COMPANY
WATER	– CITY OF SCOTTSDALE
SEWER	– CITY OF SCOTTSDALE
POWER	– ARIZONA PUBLIC SERVICE LARRY KRUEGER ______ DATE COMPANY REPRESENTATIVE CONTACTED
TELEPHONE	– U.S. WEST COMMUNICATIONS CURT SAYERS ______ DATE COMPANY REPRESENTATIVE CONTACTED
GAS	– SOUTHWEST GAS COMPANY ELTON BUELL ______ DATE COMPANY REPRESENTATIVE CONTACTED
CATV	– TCI CABLE T.V. BRENDA HUNT ______ DATE COMPANY REPRESENTATIVE CONTACTED

SHEET INDEX

1	COVER SHEET
2	DETAILS
3-5	GRADING PLANS
6-32	PLAN & PROFILES
33-36	PIMA ROAD
37-39	84TH STREET
40-42	OFF-SITE SEWER
43	OFF-SITE PAVING

CITY OF SCOTTSDALE REAPPROVAL

Reappr #	Sheet #'s Revised	Description of Revision(s)	
⚠1	ADDED SHEET 43	ADDED PLAN SHEET TO INCORPORATE EASTBOUND TAPER ON WESTLAND ROAD AT PIMA	
Paving		Traffic	
G & D		IS & P	
W & S		Fire	

Engineering Coordination Manager (or designee) ______ Date ______

PROTECTED PLANT PERMIT # ______

EARTHWORK QUANTITIES

FILL (RAW)	17,150 C.Y.
CUT (RAW)	21,550 C.Y.

32209

Two working days before you dig. CALL FOR THE BLUE STAKES 263-1100 Blue Stake Center CALL COLLECT

LEGEND

- ROADWAY CENTERLINE
- PROPOSED RIGHT OF WAY
- VERTICAL CURB & GUTTER
- ROLL CURB & GUTTER
- SANITARY SEWER PIPE & MANHOLE
- POTABLE WATER PIPE & VALVE
- STORM DRAIN PIPE
- FIRE HYDRANT
- AIR RELEASE VALVE
- PAVING CONSTRUCTION NOTE
- STORM DRAIN CONSTRUCTION NOTE
- SANITARY SEWER CONSTRUCTION NOTE
- POTABLE WATER CONSTRUCTION NOTE
- STRIPING & SIGNING CONSTRUCTION NOTE
- (00.00) PROPOSED B/C ELEVATION (RIBBON & VERTICAL CURB)

BENCHMARKS

BRASS CAP IN POTHOLE AT THE INTERSECTION OF CAREFREE HIGHWAY AND PIMA ROAD
ELEVATION = 2500.02
C.O.S. DATUM

APPROVAL:

T. S. [signature] 1/13/97
MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPARTMENT DATE
MC96404

AUG 25 1998
FILE COPY

CITY OF SCOTTSDALE
REVIEW & RECOMMENDED APPROVAL BY:

Paving	[signature] 8-26-97	Traffic	[signature] 8-28-97
G & D	[signature] 8-26-97	IS & P	[signature] 8-26-97
W & S	[signature] 8-26-97	Fire	[signature] 8-26-97

[signature] Engineering Coordination Manager (or designee) 8-26-97 Date

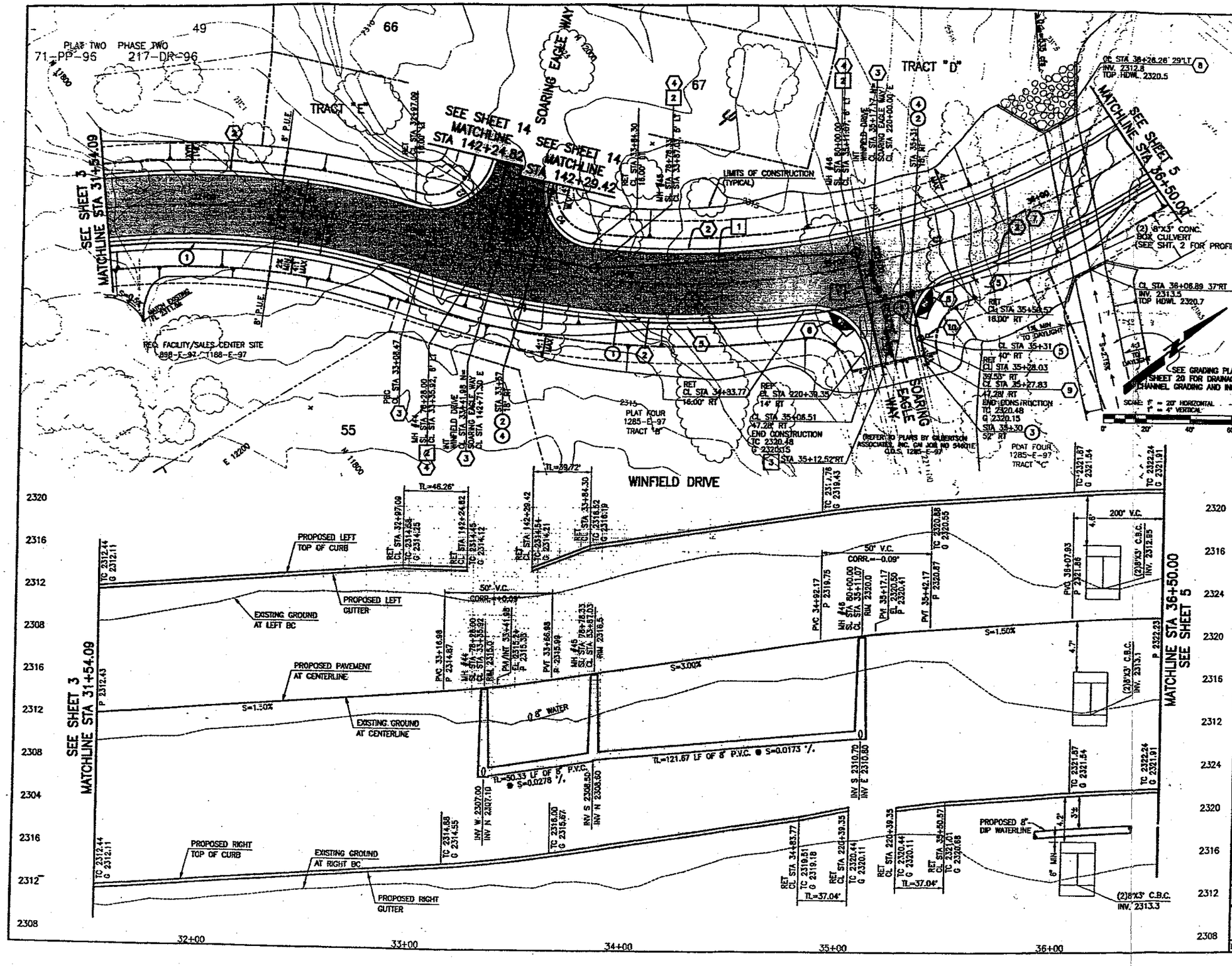
WOOD/PATEL ASSOCIATES
Civil Engineers
Hydrologists
Land Surveyors
(602) 234-1344

Registered Professional Engineer Certificate No. 24443 GORDON W.E. WARK ARIZONA, U.S.A.

BOULDER RIDGE IMPROVEMENT PLAN

DATE	SCALE	SHEET
1-7-97	N.T.S.	1 OF 42
JOB NO. 95357	DESIGN JRS DRAWN JRS	CHECK GVV FILE 95/357CVR

5-ZN-95 42-PP-95 639-E-96 4333-98



GILBERTSON ASSOCIATES, INC.
Consulting Civil Engineers & Land Surveyors
13974 N. 77th Street · Scottsdale, Arizona 85260 602/607-2244

CONSTRUCTION NOTES

PAVING

1. CONSTRUCT A.C. PAVEMENT PER TYPICAL SECTION ON SHEET 1.
2. CONSTRUCT ROLL CURB AND GUTTER PER M.A.G. STD. DETAIL 220, TYPE C.
3. INSTALL SURVEY MONUMENT PER M.A.G. STD. DETAIL 120-1, TYPE B.
4. ADJUST MANHOLE FRAME TO GRADE PER C.O.S. STD. DETAIL 2270.
5. CONSTRUCT 5' WIDE MEANDERING SIDEWALK PER M.A.G. STANDARD DETAIL 230.
6. CONSTRUCT SIDEWALK RAMP PER M.A.G. STD. DETAIL 232, TYPE 'B'.
7. INSTALL 68 LF OF (2) 8'X3' CBC @S=1.0% WITH WINGWALLS PER A.D.O.T. STD DETAIL B-04.50
8. INSTALL BOX CULVERT OUTLET SPILLWAY PER DETAIL ON SHEET 2.
9. INSTALL BARRICADE PER M.A.G. STD. DETAIL 130, TO THE LIMITS SHOWN.
10. INSTALL R1-1 PER C.O.S. STD. DTL. 2331 AND M.U.T.C.D.

WATER

1. INSTALL 8" DIP WATER LINE.
2. INSTALL 8" TEE.
3. INSTALL TEMPORARY 8" PLUG.
4. INSTALL ELECTRONIC BALL MARKER PER C.O.P. SUPPLEMENTAL SPEC. 610.4 OR APPROVED EQUAL.
5. INSTALL 8" V., B., & C. PER M.A.G. STD. DETAIL 391-1, TYPE "C"

SEWER

1. INSTALL 8" PVC SEWER LINE.
2. CONSTRUCT 4' DIAMETER MANHOLE PER M.A.G. STD. DETAIL 420 & 424.
3. INSTALL 8" PLUG PER M.A.G. STD. DETAIL 427.

CURVE	ARC	DELTA	RADIUS
C1	205.62	31°23'00"	375.00
C2	547.01	83°34'38"	375.00
C3	48.26	93°00'01"	28.50
C4	39.72	96°50'51"	23.50
C5	37.04	84°53'50"	25.00
C6	37.04	84°53'50"	25.00

IMPROVEMENT PLANS

WINFIELD
PLAT TWO, PHASE 1

Date JANUARY 8, 1998 | Job No. 54801E | Sheet 4 of 21

71-PP-96 217-DR-96 214-E-96 1370-E-97

DRAWING NAME: J:\DESIGN\DWG\54801E\PLAT TWO\0154.DWG
MACHINE NUMBER: 1-6-98
DATE PLOTTED:

31082

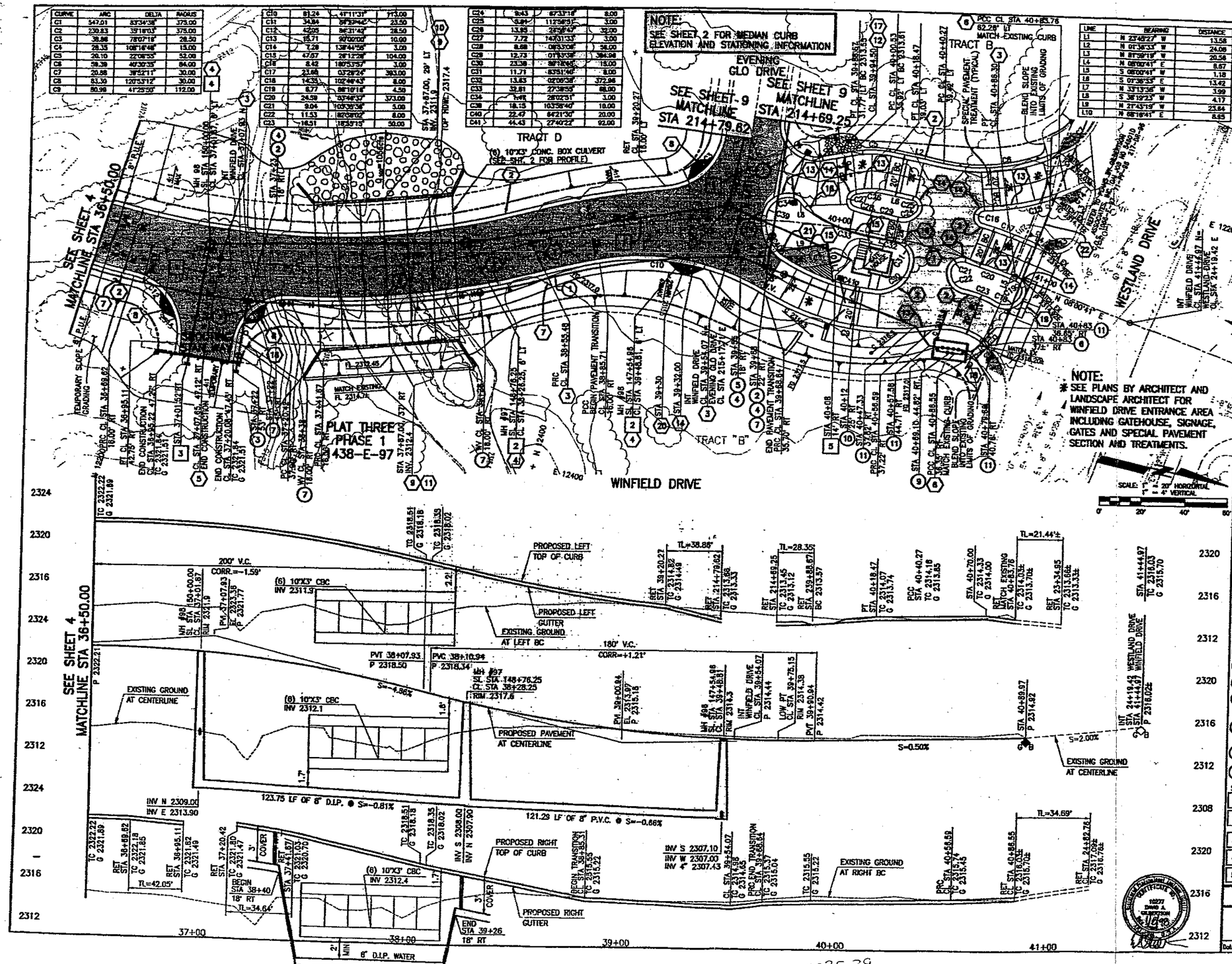
CURVE	ARC	DELTA	RADIUS
C1	547.01	83°34'38"	375.00
C2	230.83	35°18'03"	375.00
C3	38.88	78°07'18"	28.50
C4	28.35	108°16'48"	15.00
C5	20.10	22°08'53"	52.00
C6	59.39	40°30'35"	84.00
C7	20.88	39°52'11"	30.00
C8	63.30	120°53'12"	30.00
C9	80.99	41°29'50"	112.00
C10	81.24	41°11'31"	113.00
C11	34.84	89°39'42"	23.50
C12	42.05	86°31'42"	28.50
C13	15.71	90°00'00"	10.00
C14	7.28	138°44'55"	3.00
C15	47.87	26°12'28"	104.00
C16	8.42	180°53'57"	3.00
C17	23.66	03°28'24"	393.00
C18	14.33	102°46'43"	8.00
C19	6.77	86°10'16"	4.50
C20	24.59	03°46'37"	373.00
C21	9.04	105°39'36"	5.00
C22	11.53	82°59'02"	8.00
C23	18.51	185°39'15"	50.00
C24	9.43	67°33'16"	8.00
C25	5.91	112°58'51"	3.00
C26	13.95	26°08'47"	32.00
C27	7.72	142°31'33"	3.00
C28	8.68	08°33'06"	58.00
C29	12.73	01°33'38"	384.94
C30	23.38	89°18'45"	15.00
C31	11.71	83°51'46"	8.00
C32	13.83	02°05'38"	372.96
C33	32.81	27°38'55"	68.00
C34	1.42	26°02'51"	3.00
C38	18.15	103°56'40"	10.00
C40	22.47	64°21'30"	20.00
C41	44.43	274°02'22"	92.00

LINE	BEARING	DISTANCE
L1	N 23°45'27" W	13.58
L2	N 01°38'33" W	24.06
L3	N 81°39'19" W	20.56
L4	N 08°00'41" E	8.67
L5	S 08°00'41" W	1.18
L6	S 07°38'53" E	13.42
L7	N 33°13'36" W	3.99
L8	S 36°19'23" W	4.17
L9	N 27°43'19" W	23.84
L10	N 08°16'41" E	8.65

NOTE:
SEE SHEET 2 FOR MEDIAN CURB ELEVATION AND STATIONING INFORMATION

NOTE:
* SEE PLANS BY ARCHITECT AND LANDSCAPE ARCHITECT FOR WINFIELD DRIVE ENTRANCE AREA INCLUDING GATEHOUSE, SIGNAGE, GATES AND SPECIAL PAVEMENT SECTION AND TREATMENTS.

SCALE: 1" = 20' HORIZONTAL, 1" = 4' VERTICAL



GILBERTSON ASSOCIATES, INC.
Consulting Civil Engineers & Land Surveyors
15974 N. 77th Street - Scottsdale, Arizona 85260 602/607-2244

CONSTRUCTION NOTES

PAVING

1. CONSTRUCT A.C. PAVEMENT PER TYPICAL SECTION ON SHEET 1.
2. CONSTRUCT ROLL CURB AND GUTTER PER M.A.G. STD. DETAIL 220, TYPE 'C'.
3. INSTALL SURVEY MONUMENT PER M.A.G. STD. DETAIL 120-1, TYPE 'B'.
4. ADJUST MANHOLE FRAME TO GRADE PER C.O.S. STD. DETAIL 2270.
5. CONSTRUCT BARRICADE PER M.A.G. STD. DETAIL 130, TYPE B TO THE LIMITS SHOWN.
6. CONSTRUCT TRANSITION FROM VERTICAL CURB & GUTTER TO ROLL CURB PER M.A.G. STD. DETAIL 221.
7. CONSTRUCT 5' WIDE MEANDERING SIDEWALK PER M.A.G. STD. DETAIL 230.
8. CONSTRUCT SIDEWALK RAMP PER M.A.G. STD. DETAIL 232, TYPE 'B'.
9. INSTALL 68 LF OF (6) 10"X3" C.B.C. AT S=0.7% W/ HEWINGWALLS PER ADOT STD. B-04.50.
10. CONSTRUCT BOX CULVERT OUTLET SPILLWAY PER DETAIL ON SHEET 2.
11. CONSTRUCT BOX CULVERT INLET DROP STRUCTURE PER DETAIL ON SHEET 2.
12. CONSTRUCT 12 LF OF RIBBON CURB W/ 5' ROLL CURB TO RIBBON CURB TRANSITIONS AT EACH END PER M.A.G. STD. DETAIL 221.
13. CONSTRUCT ROLL CURB AND GUTTER PER M.A.G. STD. DETAIL 220, TYPE 'D'.
14. CONSTRUCT 5' LONG TRANSITION FROM ROLL CURB & GUTTER TYPE 'C' TO TYPE 'D'.
15. CONTRUCT SINGLE CURB PER STD. DETAIL 222, TYPE 'A'.
16. CONSTRUCT 5' LONG TRANSITION FROM ROLL CURB (AS NOTED) TO SINGLE CURB, TYPE 'A'.
17. INSTALL LOOSE ROCK RIP-RAP PER DETAIL ON SHEET 2.
18. INSTALL R1-1 PER C.O.S. STD. DETAIL 2131 AND M.U.T.C.D.
19. SAWCUT & REMOVE APPROX 90 S.F. OF EXISTING PAVEMENT SECTION AND REPLACE TO THE LIMITS SHOWN PER C.O.S. STD. DETAIL 2200.
20. CONSTRUCT SIDEWALK RAMP PER M.A.G. STD. DETAIL 233 TYPE "C".
21. INSTALL CURB TERMINATION PER M.A.G. STD. DETAIL 222.
22. REMOVE EXISTING BARRICADE.

WATER

1. INSTALL 8" DIP WATER LINE.
2. INSTALL 8" TEE.
3. INSTALL 8" X 2" FLUSHING DEVICE PER M.A.G. STD. DETAIL 390-B.
4. INSTALL ELECTRONIC BALL MARKER PER C.O.S. SUPPLEMENTAL SPEC. 610.4 OR APPROVED EQUAL.
5. INSTALL 8" 22½° BEND.
6. REMOVE 8" PLUG AND CONNECT TO EXISTING 8" WATER LINE.
7. INSTALL 8" V.B.& C. PER M.A.G. STD. DET. 391-1, TYPE "C"
8. CONSTRUCT VERTICAL REALIGNMENT OF 8" WATERINE WITH AIR RELEASE VALVES PER C.O.S. STD. DETAIL 2370.
9. INSTALL 6" PRESSURE REDUCING VALVE WITH 4" BYPASS VALVE IN VAULT PER C.O.S. STD. DETAIL 2342-1 AND SPECIFICATIONS
10. INSTALL 1" WATER SERVICE PER C.O.S. STD. DETAIL 2330
11. INSTALL 45° BEND.

SEWER

1. INSTALL 8" PVC SEWER LINE.
2. CONSTRUCT 4' DIAMETER MANHOLE PER M.A.G. STD. DETAIL 420 & 424.
3. INSTALL 8" PLUG PER M.A.G. STD. DETAIL 427.
4. CONSTRUCT 5' DIAMETER DROP MANHOLE PER M.A.G. STD. DETAIL 426, TYPE 'A'.
5. INSTALL 4" SEWER SERVICE PER M.A.G. STD. DETAIL 440.

IMPROVEMENT PLANS

WINFIELD PLAT TWO, PHASE 1

Date JANUARY 8, 1998 | Job No. 54801E | Sheet 5 of 21

71-PP-96 217-DR-96 214-E-96 1370-E-97

DRAWING NAME: J:\DESIGN\DWG\54801\01E\PLAT TWO\0155.DWG
MACHINE NUMBER: HAL
DATE PLOTTED: 1-8-98

2325.39

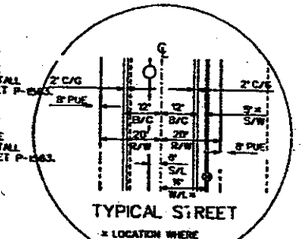
CONSTRUCTION NOTES

1. SURVEY MARKER - MAG STD DET 120-1 TYPE B
2. ROLL CURB & GUTTER - MAG STD DET 220 TYPE C
3. VERTICAL CURB & GUTTER - MAG STD DET 220 TYPE A
4. FIRE HYDRANT PAVEMENT MARKER - COS STD DET 2383
5. SEWER MANHOLE & COVER FRAME ADJUSTMENT - MAG STD DET 422
6. VALVE & SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT MAG STD DET 270
7. 5' SIDEWALK - MAG STD DET 230
8. SIDEWALK RAMPS -MAG STD DET 234
9. SIDEWALK RAMPS - MAG STD DET 233
10. 6' VALLEY GUTTER - COS STD DET 2240
11. STREET SIGN BASE - COS STD DET 2131 WITH R1-1 "STOP SIGN PER M.U.T.C.D.
12. 5' CURB TRANSITION - MAG STD DET 221
13. VALLEY GUTTER - COS STD DET 2240 (MODIFIED- SEE PLAN FOR WIDTH
14. TRANSITION FROM 6" MOUNTABLE TO 4" VERT. CURB THROUGH OUT RETURN
15. DRIVEWAY- ENTRANCE - COS STD DET 2255 (22' WIDE)
16. MOUNTABLE CURB & GUTTER - C.O.S. STD. DET. 2221 TYPE "M"
17. SIDEWALK RAMPS - MAG STD DET 232

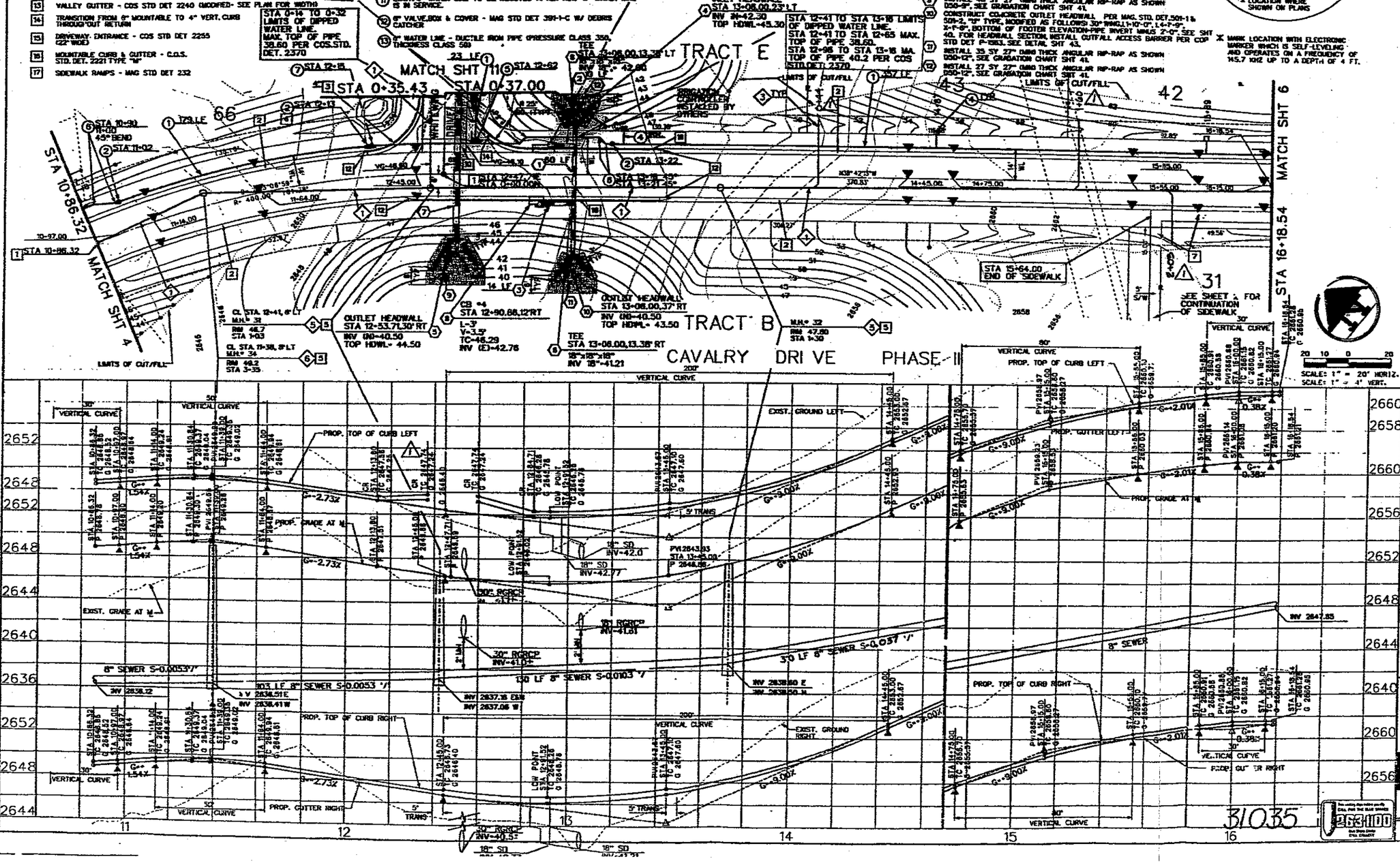
1. 8" WATER LINE - DUCTILE IRON PIPE (PRESSURE CLASS 350, THICKNESS CLASS 50)
2. 8" VALVE, BOX & COVER - MAG STD DET 391-1-C W/ DEBRIS CATCHER
3. FIRE HYDRANT COMPLETE - MAG #.0 DET 360
4. 1" WATER SERVICE CONNECTION - COS STD DET 2330
5. 8" TEE
6. BEND - AS INDICATED ON PLANS
7. AIR RELEASE VALVE PER C.O.S. STD. DET. 2348
8. REMOVE TAPPED CAP & CONNECT NEW WATERLINE
9. TAPPED CAP W/ FLUSHING PIPE - MAG STD DET 390, TYPE B
10. EXIST. WATER METER & SERVICE TO BE REMOVED AFTER NEW SERVICE HAS BEEN CONNECTED.
11. EXIST. 6" WATER LINE TO BE REMOVED AFTER NEW 8" WATER LINE IS IN SERVICE.
12. 6" VALVE,BOX & COVER - MAG STD DET 391-1-C W/ DEBRIS CATCHER
13. 6" WATER LINE - DUCTILE IRON PIPE (PRESSURE CLASS 350, THICKNESS CLASS 50)

1. 8" SEWER LINE - PVC
2. CLEANOUT MAG STD DET 441
3. 4" SEWER SERVICE TAP - MAG STD DET 440 TYPE A
4. 4" SERVICE CONNECTION TO MANHOLE
5. 4' DIAMETER MANHOLE - MAG STD DET 420
6. 5' DIAMETER MANHOLE - MAG STD DET 420 W/30" COVER
7. REMOVE PLUG & CONNECT NEW 8" SEWER
8. PLUG & STUB PER MAG STD DET 427
9. DROP CONNECTION PER MAG.STD.DET. 426-TYPE "A"
10. DROP CONNECTION PER MAG.STD.DET. 426-TYPE "B"

1. INSTALL 18" RGRCP, CL. III S=0.0300 FT/FT, SEE SHEET 45 FOR STORM DRAIN PROFILE (SYSTEM 1A)
2. INSTALL 18" RGRCP, CL. III S=0.07700 FT/FT
3. INSTALL 18" RGRCP, CL. III S=0.11071 FT/FT
4. CONSTRUCT CONCRETE OUTLET HEADWALL PER MAG. STD. DET. 501-1 & 501-2, "U" TYPE, MODIFIED AS FOLLOWS: 30" WING, L1=10'-0", L4=1'-9", X=1'-9", BOTTOM OF FOOTER ELEVATION-PIPE INVERT MINUS 2'-0", SEE SHT 40. FOR HEADWALL SECTION, INSTALL 18" STORM SEWER OUTFALL ACCESS BARRIER PER COP STD DET P-1563. SEE DETAIL SHT 43.
5. CONSTRUCT CONCRETE OUTLET HEADWALL PER MAG. STD. DET. 501-1 & 501-2, "U" TYPE, MODIFIED AS FOLLOWS: 30" WING, L1=14'-0", L4=2'-3", X=1'-9", BOTTOM OF FOOTER ELEVATION-PIPE INVERT MINUS 2'-0", SEE SHT 40. FOR HEADWALL SECTION, INSTALL 30" STORM SEWER OUTFALL ACCESS BARRIER PER COP STD DET P-1563. SEE DETAIL SHT 43.
6. CONSTRUCT 18"x18"x18" PRE-FAB TEE OR PIPE CONNECTION PER MAG STD DET 524
7. SEE SHEET 11 & 41 FOR STORM DRAIN INFORMATION (SYSTEM B
8. CONSTRUCT CATCH BASIN PER C.O.P. STD DET P-1[illegible]-1, M-1 SEE DETAIL SHEET 43.
9. INSTALL 48 SY 27" (MIN) THICK ANGULAR RIP-RAP AS SHOWN D50=9", SEE GRADATION CHART SHT 41.
10. CONSTRUCT CONCRETE OUTLET HEADWALL PER MAG. STD. DET. 501-1 & 501-2, "U" TYPE, MODIFIED AS FOLLOWS: 30" WING, L1=10'-0", L4=1'-9", X=1'-9", BOTTOM OF FOOTER ELEVATION-PIPE INVERT MINUS 2'-0", SEE SHT 40. FOR HEADWALL SECTION, INSTALL OUTFALL ACCESS BARRIER PER COP STD DET P-1563. SEE DETAIL SHT 43.
11. INSTALL 35 SY 27" (MIN) THICK ANGULAR RIP-RAP AS SHOWN D50=12", SEE GRADATION CHART SHT 41.
12. INSTALL 27 SY 27" (MIN) THICK ANGULAR RIP-RAP AS SHOWN D50=12", SEE GRADATION CHART SHT 41.



* MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF-LEVELING AND OPERATES ON A FREQUENCY OF 145.7 KHZ UP TO A DEPTH OF 4 FT.



LEGEND TRAIL PARCEL E

IMPROVEMENT PLANS

4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

REVISIONS	DATE	BY

DESIGNED TR.BE
DRAWN JM.KP.TT
CHECKED JAK
DATE 11/98

SHEET 5 OF 47

48-00.9
PLAN A

31035

263100

DATE: Jan 19, 1997
TIME: 09:28
FILE: q:\48001\land\lm20s85.dgn

2214 E 96 47 PP 98

TECOLOTE
OFFSITE SEWER
(SCOTTSDALE ROAD TO HAYDEN ROAD ALIGNMENT)

A PORTION OF SECTION 11
TOWNSHIP 5 NORTH, RANGE 4 EAST
OF THE GILA & SALT RIVER BASE & MERIDIAN,
MARICOPA COUNTY, ARIZONA

1990 CITY OF SCOTTSDALE GENERAL CONSTRUCTION NOTES FOR PUBLIC CONSTRUCTION

1. ALL CONSTRUCTION IN THE PUBLIC RIGHTS-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE (COST) SUPPLEMENTAL STANDARD SPECIFICATIONS AND SUPPLEMENTAL STANDARD DETAILS. IF THERE IS A CONFLICT, THE LATTER SHALL GOVERN.
2. THE ENGINEERING DESIGNS ON THESE PLANS ARE ONLY APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
3. APPROVAL OF PLANS IS VALID FOR SIX (6) MONTHS IF AN ENCROACHMENT PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN SIX MONTHS. THE PLANS SHALL BE RESUBMITTED TO THE CITY FOR RE-APPROVAL.
4. A PUBLIC WORKS INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE RIGHTS-OF-WAY AND IN EASEMENTS. NOTIFY INSPECTION SERVICES 24 HOURS PRIOR TO STARTING OF CONSTRUCTION (TELEPHONE 391-5757).
5. WHENEVER EXCAVATION IS TO BE DONE, CALL THE "BLUE STAKE CENTER" (263-1100) TWO WORKING DAYS BEFORE EXCAVATION IS TO BEGIN. THE CENTER WILL SEE THAT THE LOCATION OF THE UNDERGROUND UTILITIES ARE IDENTIFIED FOR THE PROJECT. CALL AGAIN IF NECESSARY.
6. ENCROACHMENT PERMITS ARE REQUIRED FOR ALL WORK IN PUBLIC RIGHTS-OF-WAY AND EASEMENTS GRANTED FOR PUBLIC PURPOSES. AN ENCROACHMENT PERMIT WILL BE ISSUED BY THE CITY UPON RECEIPT OF PAYMENT OF A BASE FEE FOR INSPECTION SERVICES TO BE PROVIDED BY THE CITY. COPIES OF ALL PERMITS SHALL BE RETAINED ON SITE AND SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE WORK STOPPAGE UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.
7. ALL EXCAVATION AND GRADING WHICH IS NOT IN THE PUBLIC RIGHTS-OF-WAY OR NOT IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO CHAPTER 70, EXCAVATION AND GRADING, OF THE LATEST EDITION OF THE UNIFORM BUILDING CODE PREPARED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. A PERMIT FOR THE GRADING MUST BE SECURED FROM THE CITY FOR A FEE ESTABLISHED BY THE UNIFORM BUILDING CODE.

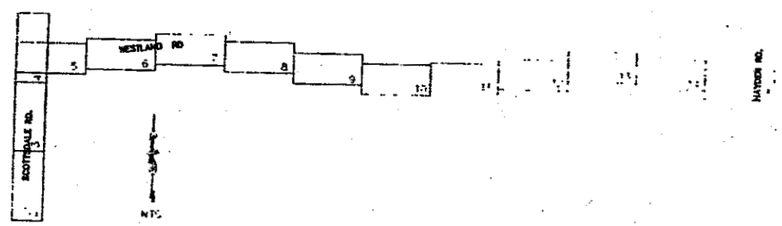
BHA STANDARD NOTES

1. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO BEGINNING CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING OF EXISTING PERMITS AND RENEWAL OF EXPIRED PERMITS.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ARRANGEMENTS FOR INSPECTION AND TESTING.
4. THE CONTRACTOR SHALL NOTIFY THE INSPECTING AGENCY 24 HOURS PRIOR TO CONSTRUCTION. CONSTRUCTION CONDUCTED WITHOUT THE REQUIRED INSPECTION SHALL BE SUBJECT TO EXPOSURE AT THE CONTRACTOR'S EXPENSE.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES BEFORE CONSTRUCTION. CALL BLUE STAKE AT 602/263-1100 AT LEAST 48 HOURS BEFORE ANY CONSTRUCTION BEGINS.
6. THE CONTRACTOR SHALL FOLLOW GUIDELINES AND REGULATIONS SET FORTH BY O.S.H.A. BRUCE HERSEY & ASSOCIATES, INC. WILL NOT BE RESPONSIBLE FOR JOB-SITE SAFETY PRECAUTIONS OR PROCEDURES.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE TAKE OFF AND QUANTITIES. QUANTITIES SHOWN HEREON ARE ESTIMATES ONLY AND AS SUCH ARE NOT TO BE USED FOR BID PURPOSES.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE NOTIFICATION OF THE PROPER AUTHORITIES IF THERE ARE DEFICIENCIES OR DEFECTIVE IMPROVEMENTS ON THE CONSTRUCTION DRAWINGS. ANY EXISTING IMPROVEMENTS OR PUBLIC PROPERTY CONSTRUCTION SHALL BE REPLACED IN THE SAME OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE.
9. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL ON AND AROUND THE CONSTRUCTION SITE.
10. THE CONTRACTOR'S AUTHORIZED REPRESENTATIVE SHALL REQUEST STAKING SERVICES TWO WORKING DAYS IN ADVANCE. RESTAKING WILL BE PROVIDED ON A TIME AND MATERIALS BASIS AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL WATER FOR CONSTRUCTION, TANK TRUCK WATER, ETC.
12. THE CONTRACTOR SHALL PROTECT AND PRESERVE THE NATURAL LANDSCAPE, TREES, NATIVE PLANTS, ETC. WHERE REQUIRED BY REGULATION, WILL BE ALLOWED ABOVE THE CONTRACT LIMITS. ANY DAMAGE PRESENT AND CAUSED BY THE CONTRACTOR SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
13. ALL REFERENCED MONUMENTS, CONTROL POINTS, BENCHMARKS, ETC. SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

BENCHMARK

[illegible]

SHEET INDEX



NTS

NOTE

[illegible]

ESTIMATED QUANTITIES

THE QUANTITIES LISTED BELOW ARE APPROXIMATE. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION OF THE QUANTITIES, AND BASE HIS BID ON HIS OWN ESTIMATE. PAYMENT WILL BE MADE IN ACCORDANCE WITH THE CONTRACT FOR WORK ACTUALLY COMPLETED.

5' DIA. MANHOLE-MONOLITHICALLY POURED	15 EA
5' DIA. DROP MANHOLE	[illegible] EA
4' DIA. MANHOLE	1 EA
10" SANITARY SEWER-PVC	3976 LF
REMOVE & REPLACE EXIST. AC	680 SY
CONCRETE ENCASEMENT	2125 LF
10" SANITARY SEWER-DIP	1322 LF

APPROVED BY:
MARICOPA COUNTY ENVIRONMENTAL SERVICES DEPT.
[illegible] 6/12/96

VICINITY MAP

UTILITIES

[illegible]

OWNER

TECOLOTE MONTAÑALLC

[illegible]

ENGINEER

[illegible]

N/A [illegible] 6/7/96 N/A

N/A [illegible] 6-4-96 [illegible] 6-4-96

[illegible] 6-4-96

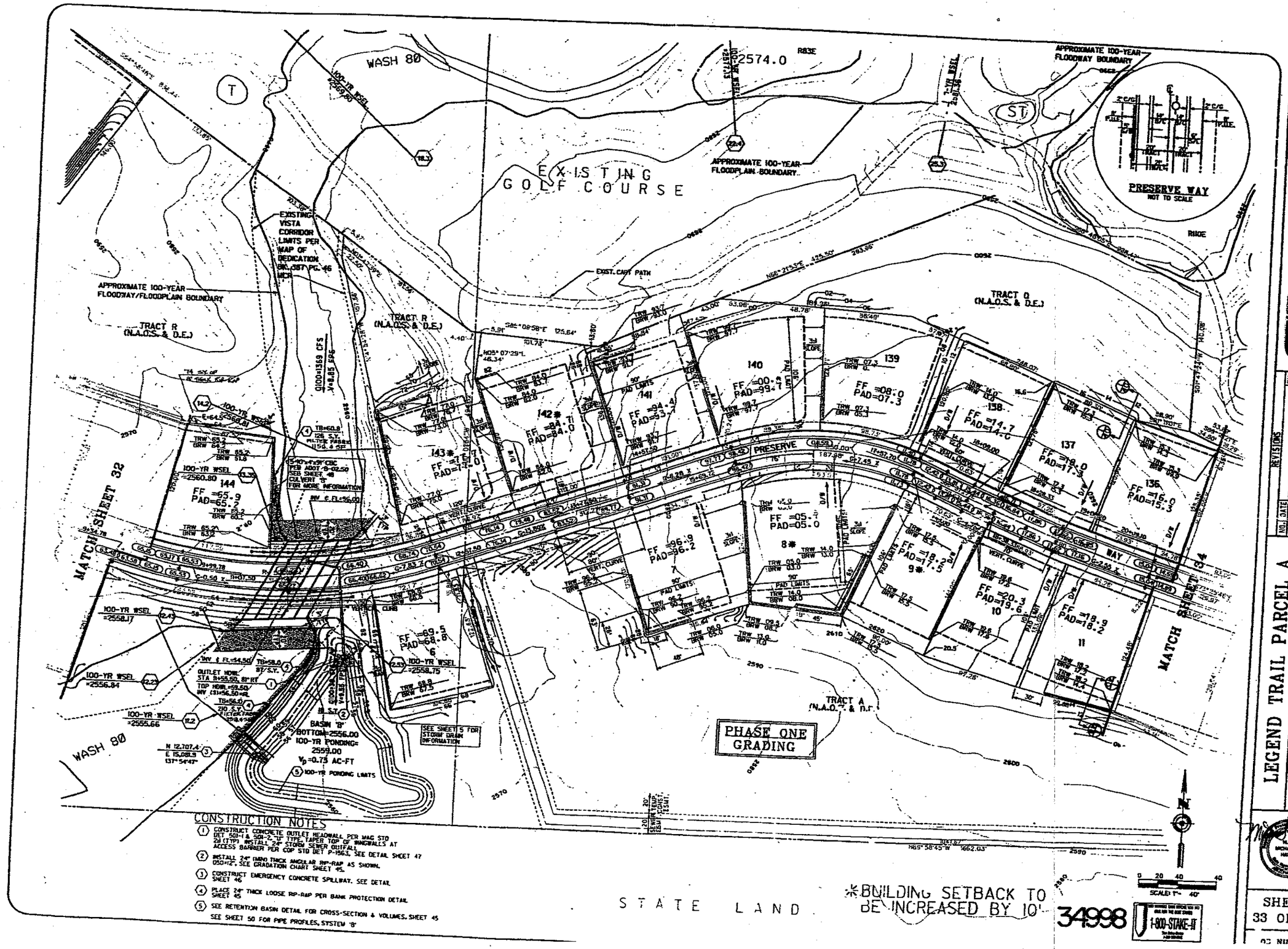
1722 E 95' SEWER

37421

BROOKS, HERSEY AND ASSOCIATES, INC.
CONSULTING ENGINEERS
4802 East Mount Royal, 10
Phoenix, Arizona 85044
(602) 437-3723

TECOLOTE
OFFSITE SEWER

DFS GR: BVK
DRAWN: BVK
CHECK: GCK
SCALE:
HORZ: N.A.



CONSTRUCTION NOTES

1. CONSTRUCT CONCRETE OUTLET HEADWALL PER MAG STD DET. 501-1 & 501-2, "U" TYPE, TAPER TOP OF WINGWALLS AT 2H (TYP). INSTALL 24" STORM SEWER OUTFALL
2. INSTALL 24" (MIN) THICK ANGULAR RIP-RAP AS SHOWN, D50=12", SEE GRADATION CHART SHEET 45.
3. CONSTRUCT EMERGENCY CONCRETE SPILLWAY. SEE DETAIL SHEET 46
4. PLACE 24" THICK LOOSE RIP-RAP PER BANK PROTECTION DETAIL.
5. SEE RETENTION BASIN DETAIL FOR CROSS-SECTION & VOLUMES. SHEET 45

SEE SHEET 50 FOR PIPE PROFILES, SYSTEM 'B'

Carter Burgess
4411 NORTH CENTRAL AVE, SUITE 600 - PHOENIX, ARIZONA 85012
(602) 265-5369 FAX (602) 265-4071

NO.	DATE	REVISIONS	BY

LEGEND TRAIL PARCEL A

GRADING & DRAINAGE PLANS

NATIVE PLANT PERMIT • 124397

SHEET 33 OF 51

02 NUMBER

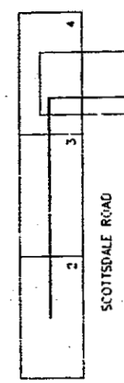
102 E 97 54 FP 98 216 DR 98

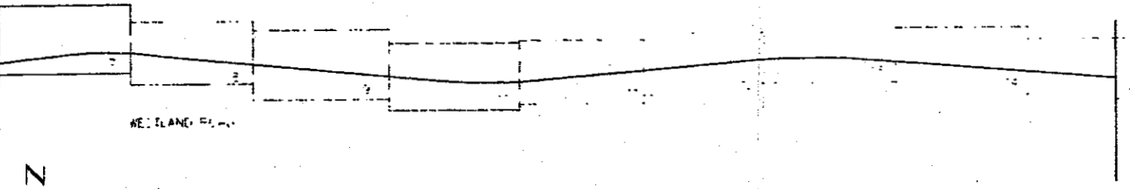
BHA GENERAL NOTES

1. The Contractor shall obtain all necessary permits prior to beginning construction.
2. The Contractor is responsible for verification of existing permits and renewal of lapsed permits.
3. The Contractor is responsible for making arrangements for inspection and testing.
4. The Contractor shall notify the inspecting agency(s) 24 hours prior to construction. Construction concealed without the required inspection shall be subject to exposure at the Contractor's expense.
5. The Contractor is responsible for the location of existing underground utilities prior to construction. Call Blue Stake at (602) 263-1100 at least 48 hours before any construction begins.
6. The Contractor will follow guidelines and regulations set forth by O.S.H.A. Brooks, Hersey & Associates, Inc. will not be responsible for job-site safety procedures or conditions.
7. The Contractor is responsible for his own takeoff quantities. Quantities shown hereon are estimates only and as such are not to be used for bid purposes.
8. The Contractor is responsible for the notification of the proper authority(s) if there are obstructions to proposed improvements as shown on the construction drawings. Any existing item removed to facilitate construction shall be replaced in the same or better condition at the Contractor's expense.
9. The Contractor is responsible for traffic control on and around the construction site.
10. The Contractor's authorized representative shall request staking services two working days in advance. Restaking will be provided on a Time & Materials basis at the current crew rates.
11. The Contractor is responsible for verification of all construction stakes prior to start of construction.
12. The Contractor shall protect and preserve the original survey stakes. No claim against Brooks, Hersey & Associates, Inc. will be allowed where such stakes are not present and verified as to their origin.
13. Any reestablishment of survey stakes or monuments destroyed by construction shall be recovered at the Contractor's expense.
14. Contractor shall unearth and verify location and depth of existing structures and utilities prior to construction.

GENERAL CONSTRUCTION NOTES FOR PUBLIC WORKS CONSTRUCTION

1. All construction in the public rights-of-way or in easements granted for public use must conform to the latest Maricopa Association of Governments (MAG) Uniform Standard Specifications and Uniform Standard Details for Public Works Construction as amended by the latest version of the City of Scottsdale (COS) Supplemental Standard Specifications and Supplemental Standard Details. If there is a conflict, the latter shall govern.
2. The engineering designs on these plans are only approved by the City, in scope and not in detail. If construction quantities are shown on these plans, they are not verified by the City.
3. Approval of plans is valid for six (6) months. If an encroachment permit for the construction has not been issued within six months, the plans shall be resubmitted to the City for re-approval.
4. A City Capital Project's inspector will inspect all work indicated by the plans. Inspection of work for compliance with Uniform Notes and Codes, as may be indicated on the plans, will be done by a City Public Works Inspector. Notify Inspection Services 24 hrs. prior to starting of construction (telephone 391-5750).
5. Whenever excavation is to be done, call the "Blue Stake Center" 263-1100, two working days before excavation is to begin. The Center will see that the location of the underground utility lines is identified for the project. Call "Blue Stake" if necessary.
6. Encroachment permits are required for all work in public rights-of-way and easements granted for public purposes. An encroachment permit will be issued by the City. Copies of all permits shall be retained on site and shall be available for inspection at all times. Failure to produce the required permits will result in immediate work stoppage until the proper permit documentation is obtained.
7. All excavation and grading which is not in the public rights-of-way or not in easements granted for public use must conform to Chapter 70, Excavation and Grading, of the latest edition of the Uniform Building Code prepared by the International Conference of Building Officials. A permit for this grading must be secured from the City.





N

NTS

SHEET INDEX

BENCH MARK

UTILITIES

ESTIMATED QUANTITIES

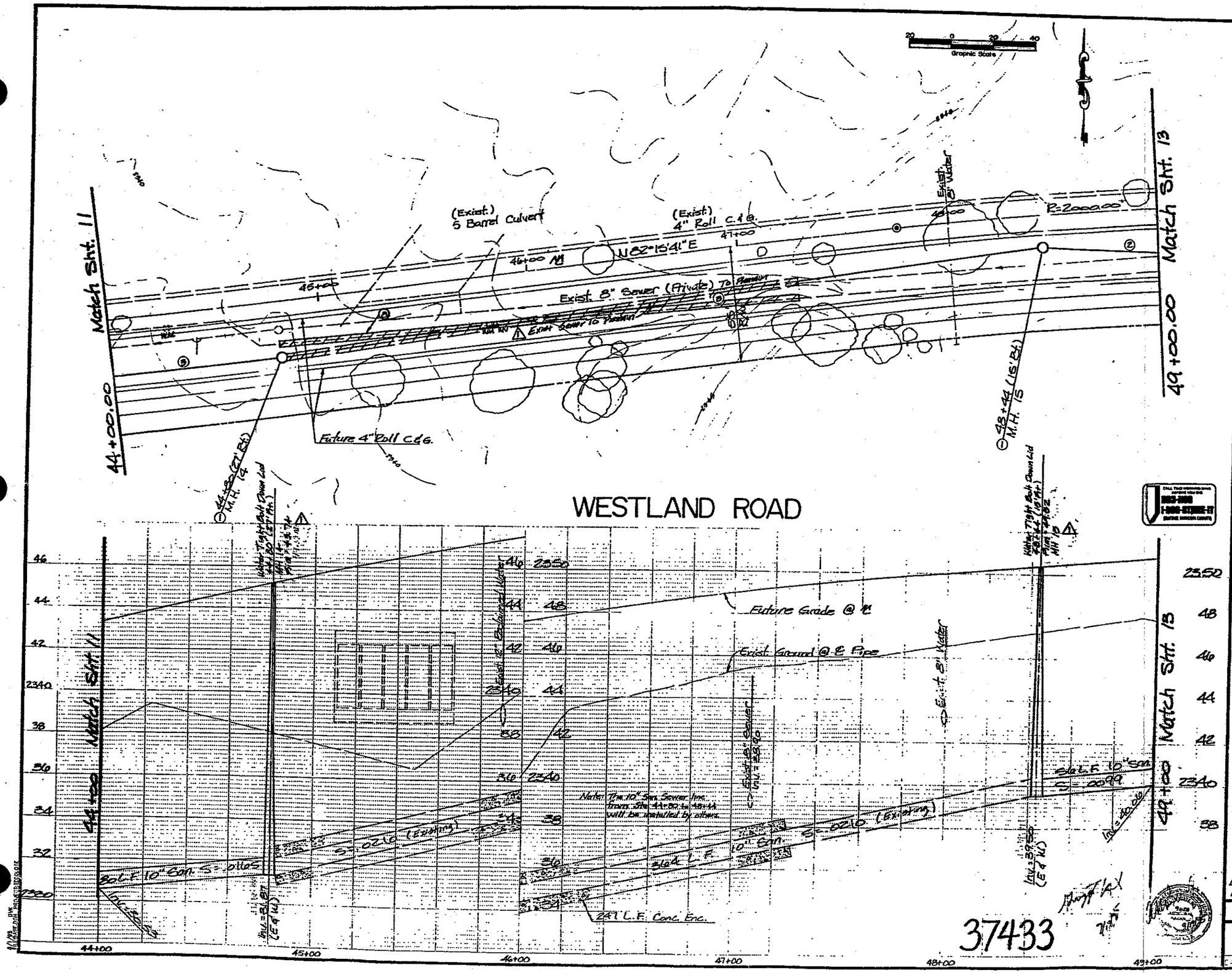
37422

BROOKS, HERSEY AND ASSOCIATES, INC.
ENGINEERS/SURVEYORS
4605 S. Elwood Street, 10
Phoenix, Arizona 85040
(602) 437-3733

TECOLOTE OFFSITE SEWER CITY OF SCOTTSDALE

DES CH: DMF
DRAWN: DMF
CHECK: GTr
SCALE:
HORZ: N/A
VERT: N/A

JOB NO. 190-01FP DATE: 12/15/97 SHEET 1A OF 15



37433

Construction Notes

1. 5' Dia. M.H.–COP Det P-1430 Monolithically Poured
2. 10" Sanitary Sewer P.V.C.
3. 10" Sanitary Sewer D.I.P.
8. Conc. Encasement – M.A.G. 404

Note: The 10" San. Sewer line from Sta. 44+00 to 48+44 will be installed by others.

Revised Per COS Request Dec. 18, 1997

OFFSITE SEWER

TECOLOTE

9/12/96 | 12 - 15

1722 E 96 Sewer

FOR PUBLIC WORKS CONSTRUCTION

1. ALL CONSTRUCTION IN THE PUBLIC RIGHTS-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE (COS) SUPPLEMENTAL STANDARD SPECIFICATIONS AND SUPPLEMENTAL STANDARD DETAILS. IF THERE IS A CONFLICT, THE LATTER SHALL GOVERN.

2. THE ENGINEERING DESIGNS ON THESE PLANS ARE ONLY APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.

3. APPROVAL OF PLANS IS VALID FOR SIX (6) MONTHS. IF AN ENCROACHMENT PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN SIX MONTHS, THE PLANS SHALL BE RESUBMITTED TO THE CITY FOR REAPPROVAL.

4. A PUBLIC WORKS INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE RIGHTS-OF-WAY AND IN EASEMENTS. NOTIFY INSPECTION SERVICES 24 HOURS PRIOR TO STARTING OF CONSTRUCTION (TELEPHONE 391-5750).

5. WHENEVER EXCAVATION IS TO BE DONE, CALL THE "BLUE STAKE CENTER", 263-1100, TWO WORKING DAYS BEFORE EXCAVATION IS TO BEGIN. THE CENTER WILL SEE THAT THE LOCATION OF THE UNDERGROUND UTILITY LINES IS IDENTIFIED FOR THE PROJECT. CALL "COLLECT" IF NECESSARY.

6. ENCROACHMENT PERMITS ARE REQUIRED FOR ALL WORK IN PUBLIC RIGHTS-OF-WAY AND EASEMENTS GRANTED FOR PUBLIC PURPOSES. AN ENCROACHMENT PERMIT WILL BE ISSUED BY THE CITY UPON RECEIPT OF PAYMENT OF A BASE FEE PLUS A FEE FOR INSPECTION SERVICES TO BE PROVIDED BY THE CITY. COPIES OF ALL PERMITS SHALL BE RETAINED ONSITE AND SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE WORK STOPPAGE UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.

7. ALL EXCAVATION AND GRADING WHICH IS NOT IN THE PUBLIC RIGHTS-OF-WAY OR NOT IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO CHAPTER 70, EXCAVATION AND GRADING, OF THE LATEST EDITION OF THE UNIFORM BUILDING CODE PREPARED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. A PERMIT FOR THIS GRADING MUST BE SECURED FROM THE CITY FOR A FEE ESTABLISHED BY THE UNIFORM BUILDING CODE.

ENGINEER'S NOTES

THE CONTRACTOR SHALL MAKE NO CLAIM AGAINST THE OWNER OR THE ENGINEER REGARDING ALLEGED INACCURACY OF CONSTRUCTION STAKES SET BY THE ENGINEER UNLESS ALL SURVEY STAKES SET BY THE ENGINEER ARE MAINTAINED INTACT AND CAN BE VERIFIED AS TO THEIR ORIGIN. IF, IN THE OPINION OF THE ENGINEER, THE STAKES ARE NOT MAINTAINED INTACT AND CANNOT BE VERIFIED AS TO THEIR ORIGIN, ANY REMEDIAL WORK REQUIRED TO CORRECT ANY ITEM OR IMPROPER CONSTRUCTION WORK IN THIS DEVELOPMENT SHALL BE PERFORMED AT THE SOLE EXPENSE OF THE RESPONSIBLE CONTRACTOR OR SUBCONTRACTOR.

NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL CREATE, NOR SHALL BE CONSTRUED TO CREATE, ANY CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR ANY SUBCONTRACTOR.

THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OR FOR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK, AND HE WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

A THOROUGH ATTEMPT HAS BEEN MADE TO SHOW THE LOCATIONS OF ALL UNDERGROUND OBSTRUCTIONS AND UTILITY LINES IN THE WORK AREA. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO OBSTRUCTIONS AND UTILITY LINES ENCOUNTERED DURING CONSTRUCTION AND SHALL DETERMINE THE EXACT LOCATION OF UTILITIES IN THE AREA.

THE ENGINEER WILL MAKE FIELD RECORD DRAWING MEASUREMENTS OF THE WORK UPON NOTIFICATION BY THE PAVING CONTRACTOR THAT THE WORK IS COMPLETE AND READY FOR RECORD DRAWING SURVEY.

ALL EARTHWORK CONSTRUCTION SHALL CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS STANDARD DETAILS AND/OR SPECIFICATIONS INCLUDING ANY SUPPLEMENTS THERETO AND THE SOILS REPORT PREPARED BY:

CONSTRUCTION INSPECTIN AND TESTING

#94-5428

DATA FOR EARTHWORK CALCULATIONS IS PROVIDED IN THE SOILS REPORT AND (IF APPLICABLE) ANY SUPPLEMENTS THERETO.

THE CONTRACTOR SHALL, IN ALL CASES, BEGIN SEWERLINE CONSTRUCTION FROM THE DOWNSTREAM MANHOLE OR SEWER STUB, WHETHER EXISTING OR PROPOSED. PRIOR TO INSTALLATION OF ANY SEWER LINE, THE CONTRACTOR SHALL EXCAVATE AND EXPOSE THE POINT OF CONNECTION OF NEW SEWERLINE TO THE EXISTING STUB OR MANHOLE AND VERIFY THE ELEVATION AND LOCATION. SHOULD THE EXISTING CONDITION VARY FROM THE DESIGN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.

ALL SEWER SERVICES WILL BE STATIONED FROM THE NEAREST DOWNSTREAM MANHOLE. EACH NEAREST DOWNSTREAM MANHOLE WILL BE DESIGNATED AS STATION 0+00.

ALL COMPACTION IN STREETS TO BE TYPE I OR PER M.A.G. SPECS. SECTION 601.

THE ENGINEER WILL MAKE FIELD RECORD DRAWING MEASUREMENTS OF THE WORK UPON NOTIFICATION BY THE WATER/SEWER CONTRACTOR THAT THE PIPE WORK IS COMPLETE AND READY FOR RECORD DRAWING SURVEY. IF THE CONTRACTOR DOES NOT LEAVE THE TRENCHES OPEN SO THAT THE ACTUAL PIPE LINE AND SERVICES CAN BE OBSERVED, THE RECORD DRAWING MEASUREMENTS WILL REFLECT THE TRENCH LOCATION ONLY. IF THE TRENCHES ARE BACKFILLED AND OBSCURED TO THE POINT THAT RECORD DRAWING MEASUREMENTS CANNOT BE PERFORMED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ACCURATE RECORD DRAWING MEASUREMENTS AND SECURING THE ACCEPTANCE OF THE RECORD DRAWING BY THE JURISDICTIONAL AGENCY.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE THE FITTINGS ARE COVERED SO RECORD DRAWING MEASUREMENTS MAY BE TAKEN. FITTINGS SHALL NOT BE COVERED UNTIL SURVEYS HAVE BEEN COMPLETED.

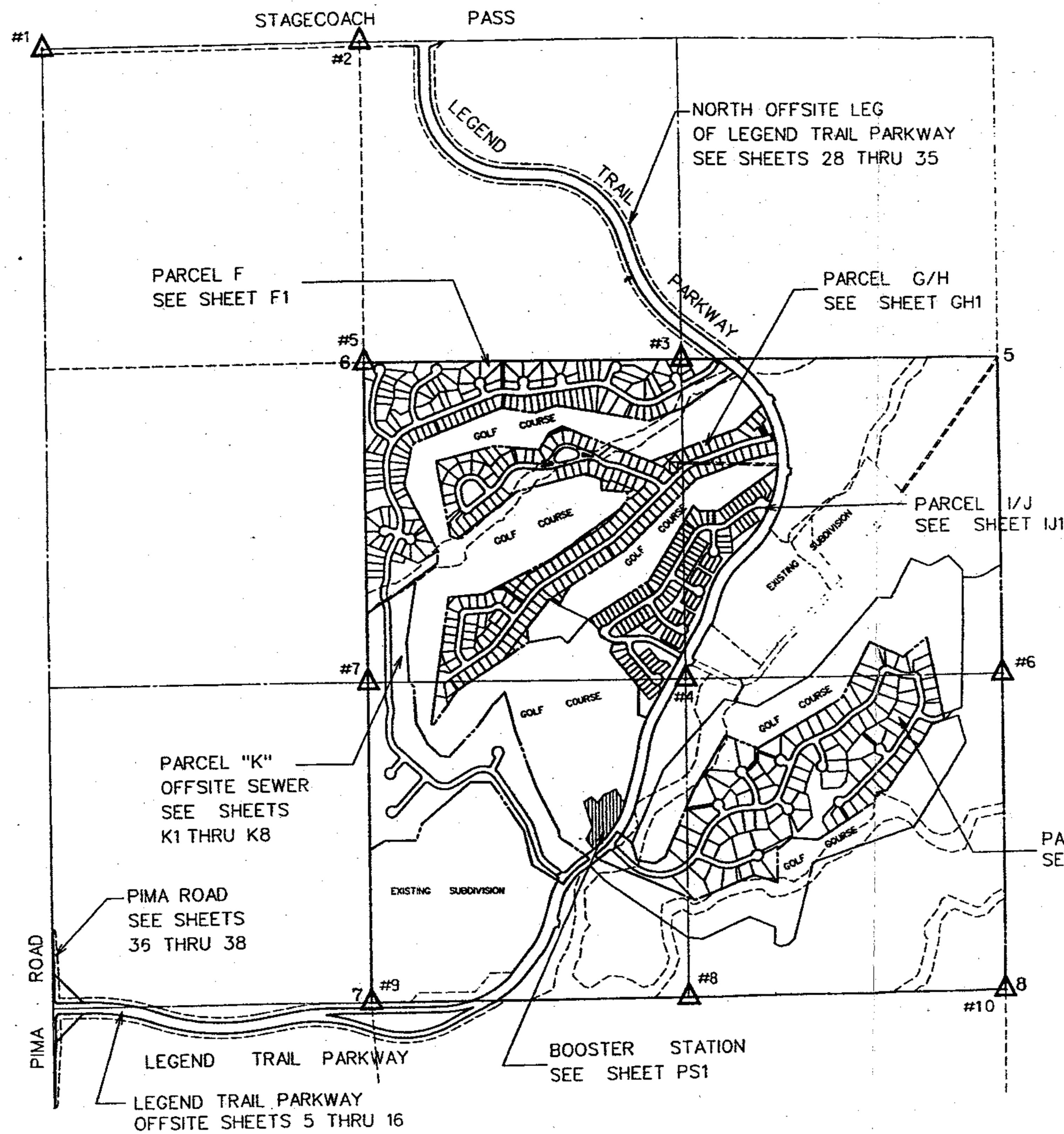
THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING EARTHWORK QUANTITIES OR THAT THE EARTHWORK FOR THIS PROJECT WILL BALANCE DUE TO THE VARYING FIELD CONDITIONS, CHANGING SOIL TYPES, ALLOWABLE CONSTRUCTION TOLERANCES AND CONSTRUCTION METHODS THAT ARE BEYOND THE CONTROL OF THE ENGINEER.

PRIOR TO BIDDING THE WORK, THE CONTRACTOR SHALL THOROUGHLY SATISFY HIMSELF AS TO THE ACTUAL CONDITIONS, EARTHWORK QUANTITIES, IF ANY. NO CLAIM SHALL BE MADE AGAINST THE OWNER/DEVELOPER, OR ENGINEER FOR ANY EXCESS OR DEFICIENCY THEREIN, ACTUAL OR RELATIVE.

ALL CONDUITS (BOX CULVERT, REINFORCED CONCRETE PIPE, CAST-IN-PLACE PIPE, AND/OR CORRUGATED METAL PIPE) SHOWN ON THESE PLANS ARE DESIGNED FOR STANDARD HIGHWAY LOADINGS. THE STANDARD SATISFACTORY MINIMUM COVER REQUIREMENTS AS ESTABLISHED BY THE CONDUIT MANUFACTURER MAY NOT ALWAYS BE ADEQUATE DURING CONSTRUCTION. WHEN CONSTRUCTION EQUIPMENT, FREQUENTLY HEAVIER THAN TRAFFIC LOADS FOR WHICH THE CONDUIT HAS BEEN DESIGNED, IS TO BE DRIVEN OVER OR CLOSE TO THE BURIED CONDUIT, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE CONDUIT. THE ADEQUACY OF THE COVER REQUIREMENTS FOR CONDUITS SHALL BE ANALYZED AND CHECKED BY THE CONTRACTOR TO ADDRESS LOADING CONDITIONS IMPOSED BY CONSTRUCTION ACTIVITY. ANY CONDUIT DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE REPLACED AT THE CONTRACTORS' EXPENSE.

PROJECT BENCHMARKS

#1 ON COVER SHEET PT #9999.
#2 G.L.O. B.C. 1.4' ABOVE GROUND N 1/4 COR. SECTION 6. PT #9998 ELEVATION: 2611.32 COS DATUM.
#3 G.L.O. B.C. 1.2' ABOVE GROUND EAST 1/4 COR. SECTION 6. PT #9982 ELEVATION: 2625.10 COS DATUM.
#4 G.L.O. B.C. 1.2' ABOVE GROUND SEC COR. SECTIONS 5, 6, 7, & 8 PT # 9979 ELEVATION 2604.22 COS DATUM.
#5 1/2" REBAR. CENTER OF SECTION 6. PT #9983 ELEVATION: 2586.81 COS DATUM.
#6 G.L.O. B.C. 1 FT ABOVE GROUND. SOUTH 1/4 COR. SECTION 5 PT #9980 ELEVATION 2643.40 COS DATUM.
#7 1/2" REBAR W/CAP #21754. SOUTH 1/4 COR. SECTION 6 PT #9978 ELEVATION: 2558.40 COS DATUM.
#8 G.L.O. B.C. 1.5' ABOVE GROUND E 1/4 COR. SECTION 7. PT #9976 ELEVATION: 2567.60 COS DATUM.
#9 1/2" REBAR. CENTER SECTION 7. PT 9977 ELEVATION: 2567.60 COS DATUM.
#10 1/2" REBAR. CENTER SECTIN 8. PT #9975 ELEVATION: 2625.34 COS DATUM.



FOR SIGNING & STRIPING PLANS SEE SHEETS TS1 THRU TS9

FOR LANDSCAPE PLANS AND IRRIGATION PLANS, SEE SHEETS L1-L51

LEGEND

- ▲ GRADE BREAK
- → DIRECTION OF FLOW
- T.C-25.32 TOP OF CURB ELEVATION
- (T.C.-25.82) EXIST. TOP OF CURB ELEVATION
- G-24.92 GUTTER ELEVATION
- (G-24.92) EXIST. GUTTER ELEVATION
- P-02.54 PAVEMENT ELEVATION
- VG-02.21 VALLEY GUTTEER ELEVATION
- B/C BACK OF CURB
- R/W RIGHT OF WAY
- P.U.E. PUBLIC UTILITY EASEMENT
- R.W. RETAINING WALL
- L.F. LINEAL FOOT
- ◎ SURVEY MONUMENT
- D/W DRIVEWAY LOCATION
- ECR END CURB RETURN
- BCR BEGIN CURB RETURN
- FIRE HYDRANT
- WATER VALVE
- REDUCER
- MANHOLE
- 2590 PROPOSED CONTOURS
- CATCH BASIN, C.O.P. TYPE P-1569
- 130P CULVERT IDENTIFICATION
- GRADER DITCH FLOW LINE
- HANDRAIL
- SCUPPER & SPILLWAY
- RIP-RAP APRON
- PIPE END SECTION
- STORM DRAIN/CULVERT PIPE
- PIPE COLLAR
- CATCH BASIN, MAG. STD.TYPE 'F' W/APRON
- RIP-RAP
- BOX CULVERT W/WING WALLS
- #6 △ BENCHMARK
- S.V.T. SITE VISABILITY TRIANGLE
- R.W.L. RECLAIMED WATER LINE
- T.C.E. TEMPORARY CONSTRUCTION EASEMENT
- AIR RELEASE VALVE
- N.A.O.S. NATURAL AREA OPEN SPACE
- D.E. DRAINAGE EASEMENT
- N.P.W NON-POTABLE WATERLINE (R.W.L.)

INDEX MAP

DESERT RANCH IMPROVEMENT DISTRICT PROJECT #13705

IMPROVEMENT PLANS

CVL PROJECT NO.	SHEET NO.	TOTAL SHEETS
48-0010	1	49

SCALE: 1"=800'

COE & VAN LOO
4550 NORTH 12TH STREET PHOENIX, AZ 85014
PHONE (602) 264-6831 FAX (602) 264-0928

263-1100

26053

8 DR 94 318 E 94

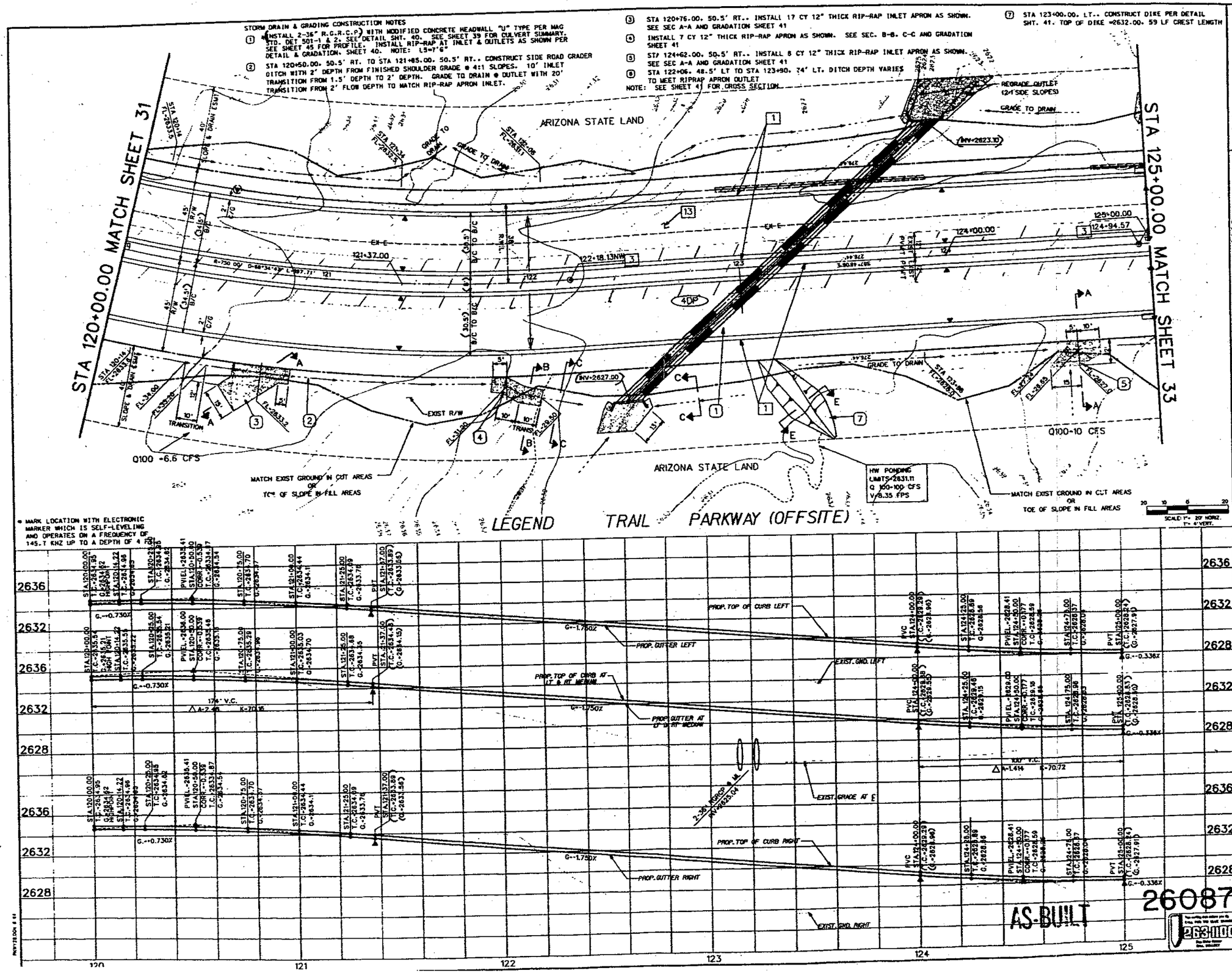
INDI X.DGN 8/94

STORM DRAIN & GRADING CONSTRUCTION NOTES

1. INSTALL 2-36" R.C.R.C.P. WITH MODIFIED CONCRETE HEADWALL "U" TYPE PER MAG STD. DET 501-1 & 2. SEE DETAIL SHT. 40. SEE SHEET 39 FOR CULVERT SUMMARY. SEE SHEET 45 FOR PROFILE. INSTALL RIP-RAP AT INLET & OUTLETS AS SHOWN PER DETAIL & GRADATION. SHEET 40. NOTE: L=7'6"
2. STA 120+50.00, 50.5' RT. TO STA 121+85.00, 50.5' RT.. CONSTRUCT SIDE ROAD GRADER DITCH WITH 2' DEPTH FROM FINISHED SHOULDER GRADE @ 4:1 SLOPES. 10' INLET TRANSITION FROM 1.5' DEPTH TO 2' DEPTH. GRADE TO DRAIN @ OUTLET WITH 20' TRANSITION FROM 2' FLOW DEPTH TO MATCH RIP-RAP APRON INLET.
3. STA 120+76.00, 50.5' RT.. INSTALL 17 CY 12" THICK RIP-RAP INLET APRON AS SHOWN. SEE SEC A-A AND GRADATION SHEET 41
4. INSTALL 7 CY 12" THICK RIP-RAP APRON AS SHOWN. SEE SEC. B-B, C-C AND GRADATION SHEET 41
5. STA 124+62.00, 50.5' RT.. INSTALL 8 CY 12" THICK RIP-RAP INLET APRON AS SHOWN. SEE SEC A-A AND GRADATION SHEET 41
6. STA 122+06, 48.5' LT TO STA 123+90, 74' LT. DITCH DEPTH VARIES TO MEET RIPRAP APRON OUTLET

NOTE: SEE SHEET 41 FOR CROSS SECTION

7. STA 123+00.00, LT.. CONSTRUCT DIKE PER DETAIL SHT. 41. TOP OF DIKE =2632.00. 59 LF CREST LENGTH



* MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF-LEVELING AND OPERATES ON A FREQUENCY OF 145.7 KHZ UP TO A DEPTH OF 4 FEET

SEWER CONSTRUCTION NOTES

1. INSTALL 10" SEWERLINE.
2. INSTALL 8" SEWERLINE.
3. INSTALL 15" SEWERLINE.
4. INSTALL 8" SERVICE TAP PER M.A.G. STD. DET. 440 (TYPE A).
5. INSTALL 4" SERVICE CONNECTION TO MANHOLE.
6. INSTALL 4-FOOT DIAMETER MANHOLE PER M.A.G. STD. DET. 420.
7. INSTALL 5-FOOT DIAMETER MANHOLE PER M.A.G. STD. DET. 420.
8. INSTALL 8" PLUG PER M.A.G. STD DET. 427.
9. INSTALL CLEANOUT PER M.A.G. STD DET 441.
10. INSTALL DROP SEWER CONNECTION PER M.A.G. STD. DET. 426 TYPE 'A'.
11. INSTALL DROP SEWER CONNECTION PER M.A.G. STD. DET. 426 TYPE 'B'.
12. INSTALL 12" SEWERLINE.

WATER CONSTRUCTION NOTES

1. INSTALL 8" WATERLINE.
2. INSTALL 12" WATERLINE.
3. INSTALL 16" WATERLINE.
4. INSTALL 8" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1-'C'.
5. INSTALL 12" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1-'A'.
6. INSTALL 16" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1 "A".
7. INSTALL 8" 11-1/4° ELBOW.
8. INSTALL 8" X 45° ELBOW.
9. INSTALL 8" X 90° ELBOW.
10. INSTALL 16" X 12" TEE.
11. INSTALL COMBINATION AIR/VACUUM RELEASE VALVE. PER C.O.S. STD. DET. 2348.
12. INSTALL 6" FIRE HYDRANT ASSEMBLY COMPLETE PER M.A.G. STD. DET. 360.
13. INSTALL 1" WATER SERVICE CONNECTION PER C.O.S. STD. DET. 2330.
14. INSTALL 16" X 8" TEE.
15. INSTALL 16"X 2" TAPPED CAP WITH FLUSHING PIPE PER M.A.G. STD. DET. 390-'A'.
16. INSTALL 8"X 2" TAPPED CAP WITH FLUSHING PIPE PER M.A.G. STD. DET. 390-'B'.
17. INSTALL 1" IRR. SERVICE CONNECTION PER C.O.S. STD DET 2330.
18. INSTALL 12" X 8" TEE.
19. INSTALL 16" X 16" TEE.
20. INSTALL 12" X 90° ELBOW.
21. INSTALL 16" TO 12" REDUCER.
22. INSTALL 6" GATE VALVE W/BAC
23. INSTALL 12"X12"X 6" TEE.
24. INSTALL 6"X 6"TAPPING SLEEVE &VALVE
25. INSTALL 12"X 6" REDUCER.
26. INSTALL 16"X 6" TEE.
27. INSTALL 6" TAPPED CAP & CORP STOP
28. INSTALL 6"X 90° ELBOW.
29. INSTALL 6"X 11 1/4° ELBOW

PAVING CONSTRUCTION NOTES

1. INSTALL ROLL TYPE CURB & GUTTER PER M.A.G. STD. DET. 220 (TYPE C).
2. INSTALL 4" VERT. CURB & GUTTER PER M.A.G. STD. DET. 220 (TYPE A).
3. INSTALL SURVEY MARKER PER M.A.G. STD. DET. 120-1 (TYPE B).
4. INSTALL FIRE HYDRANT PAVEMENT MARKER PER C.O.S. STD. DET. 2363.
5. INSTALL SEWER MANHOLE & COVER FRAME ADJUSTMENT PER M.A.G. STD. DET. 422.
6. INSTALL WATER VALVE OR SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT PER M.A.G. STD. DET. 270.
7. INSTALL 5' SIDEWALK PER M.A.G. STD. DET. 230.
8. INSTALL SIDEWALK RAMPS PER M.A.G. STD. DET. 232.
9. INSTALL SIDEWALK RAMPS PER M.A.G. STD. DET. 233.
10. INSTALL 6' VALLEY GUTTER PER C.O.S. STD. DET. 2240.
11. INSTALL 5' CURB TRANSITION PER M.A.G. STD. DET. 221.
12. INSTALL STREET SIGN BASE PER M.A.G. STD. DET. 131.
13. REMOVE ALL EXISTING A.C. PAVEMENT.
14. INSTALL BARRICADE TYPE 'B' M.A.G. STD. DET. 130.
15. MATCH EXIST GRADE WITH NEW PAVEMENT.

DESERT RANCH IMPROVEMENT DISTRICT PROJECT *I3705

IMPROVEMENT PLANS

CVL PROJECT NO.	SHEET NO.	TOTAL SHEETS
48-0010	32	49

SCALE 1"=20'

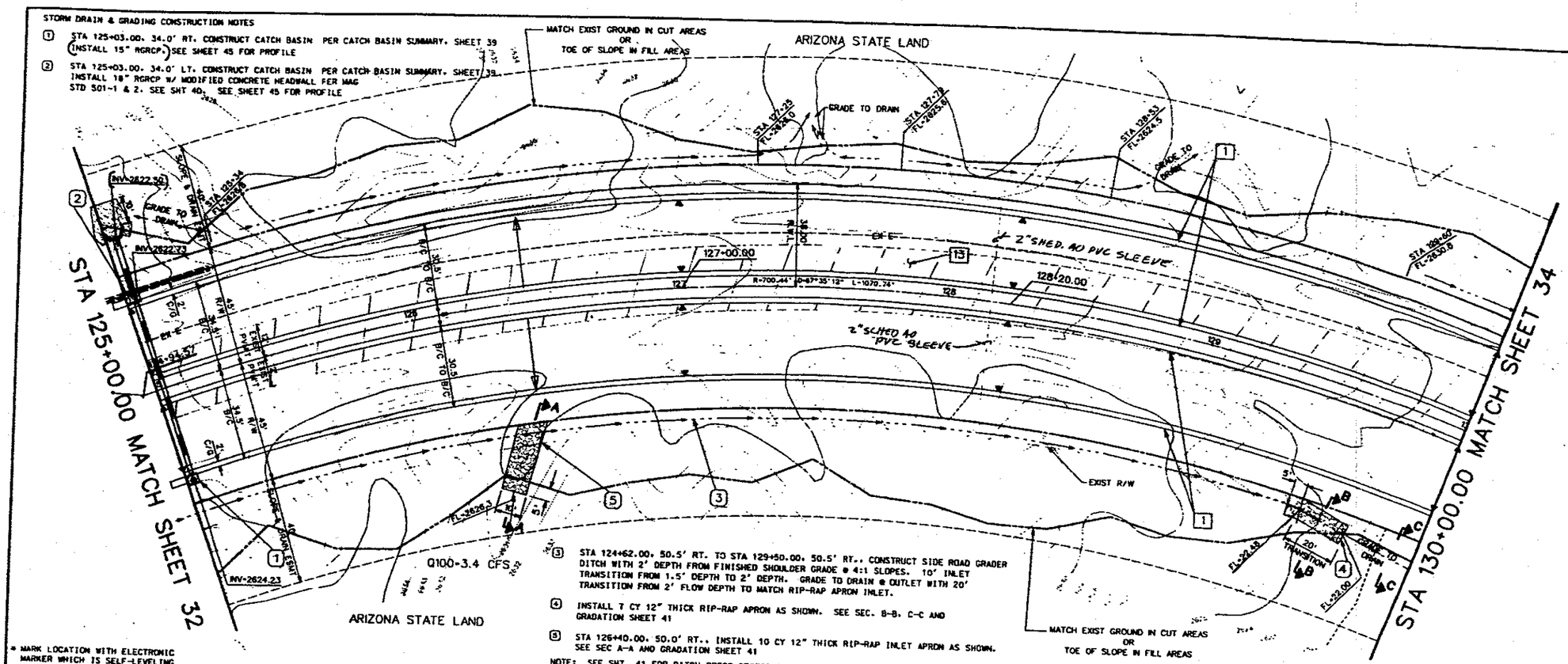
COE & VAN LOO
4550 NORTH 12TH STREET PHOENIX, AZ. 85014
PHONE (602) 264-6831 FAX (602) 264-0928

8 DR 94 318 E 94

STORM DRAIN & GRADING CONSTRUCTION NOTES

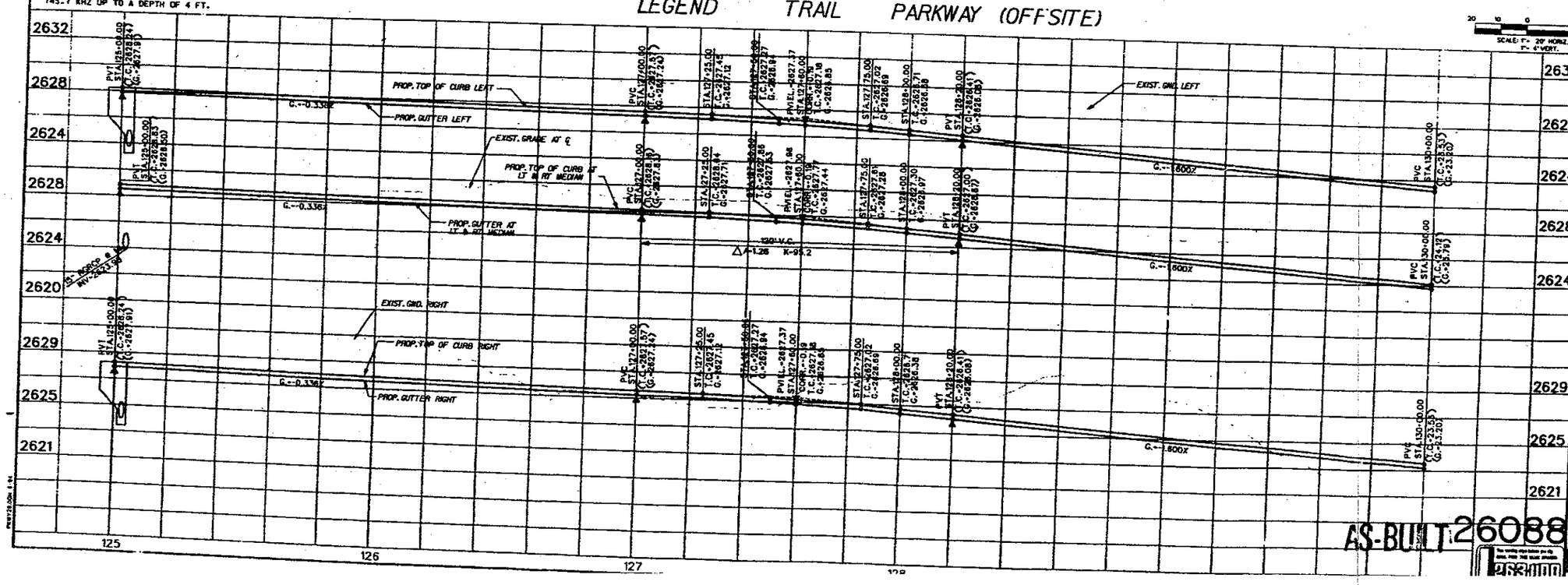
1. STA 125+03.00, 34.0' RT. CONSTRUCT CATCH BASIN PER CATCH BASIN SUMMARY, SHEET 39 (INSTALL 15" RGRCP.) SEE SHEET 45 FOR PROFILE
2. STA 125+03.00, 34.0' LT. CONSTRUCT CATCH BASIN PER CATCH BASIN SUMMARY, SHEET 39. INSTALL 18" RGRCP W/ MODIFIED CONCRETE HEADWALL PER MAG STD 501-1 & 2. SEE SHT 40. SEE SHEET 45 FOR PROFILE
3. STA 124+62.00, 50.5' RT. TO STA 129+50.00, 50.5' RT., CONSTRUCT SIDE ROAD GRADER DITCH WITH 2' DEPTH FROM FINISHED SHOULDER GRADE @ 4:1 SLOPES. 10' INLET TRANSITION FROM 1.5' DEPTH TO 2' DEPTH. GRADE TO DRAIN @ OUTLET WITH 20' TRANSITION FROM 2' FLOW DEPTH TO MATCH RIP-RAP APRON INLET.
4. INSTALL 7 CY 12" THICK RIP-RAP APRON AS SHOWN. SEE SEC. B-B, C-C AND GRADATION SHEET 41
5. STA 126+40.00, 50.0' RT., INSTALL 10 CY 12" THICK RIP-RAP INLET APRON AS SHOWN. SEE SEC A-A AND GRADATION SHEET 41

NOTE: SEE SHT. 41 FOR DITCH CROSS-SECTIONS



* MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF-LEVELING AND OPERATES ON A FREQUENCY OF 145.7 KHZ UP TO A DEPTH OF 4 FT.

LEGEND TRAIL PARKWAY (OFFSITE)



SEWER CONSTRUCTION NOTES
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3. INSTALL 15" SEWERLINE.
4. INSTALL 8" SERVICE TAP PER M.A.G. STD. DET. 440 (TYPE A).
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7. INSTALL 5-FOOT DIAMETER MANHOLE PER M.A.G. STD. DET. 420.
8. INSTALL 8" PLUG PER M.A.G. STD DET. 427.
9. INSTALL CLEANOUT PER M.A.G. STD DET 441.
10. INSTALL DROP SEWER CONNECTION PER M.A.G. STD. DET. 426 TYPE 'A'.
11. INSTALL DROP SEWER CONNECTION PER M.A.G. STD. DET. 426 TYPE 'B'.
12. INSTALL 12" SEWERLINE.

WATER CONSTRUCTION NOTES
1. INSTALL 8" WATERLINE.
2. INSTALL 12" WATERLINE.
3. INSTALL 16" WATERLINE.
4. INSTALL 8" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1-"C".
5. INSTALL 12" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1 "C".
6. INSTALL 16" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1 "A".
7. INSTALL 8" 11-1/4" ELBOW.
8. INSTALL 8" X 45° ELBOW.
9. INSTALL 8" X 90° ELBOW.
10. INSTALL 16" X 12" TEE.
11. INSTALL COMBINATION AIR/VACUUM RELEASE VALVE. PER C.O.S. STD. DET. 2348.
12. INSTALL 6" FIRE HYDRANT ASSEMBLY COMPLETE PER M.A.G. STD. DET. 360.
13. INSTALL 1" WATER SERVICE CONNECTION PER C.O.S. STD. DET. 2330.
14. INSTALL 16" X 8" TEE.
15. INSTALL 16"X 2" TAPPED CAP WITH FLUSHING PIPE PER M.A.G. STD. DET. 390-"A".
16. INSTALL 8"X 2" TAPPED CAP WITH FLUSHING PIPE PER M.A.G. STD. DET. 390-"B".
17. INSTALL 1" IRR. SERVICE CONNECTION PER C.O.S. STD DET 2330.
18. INSTALL 12" X 8" TEE.
19. INSTALL 16" X 16" TEE.
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22. INSTALL 6" GATE VALVE W/B&C
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28. INSTALL 6"X 90° ELBOW.
29. INSTALL 6"X 11 1/4" ELBOW

PAVING CONSTRUCTION NOTES
1. INSTALL ROLL TYPE CURB & GUTTER PER M.A.G. STD. DET. 220 (TYPE C).
2. INSTALL 4" VERT. CURB & GUTTER PER M.A.G. STD. DET. 220 (TYPE A).
3. INSTALL SURVEY MARKER PER M.A.G. STD. DET. 120-1 (TYPE B).
4. INSTALL FIRE HYDRANT PAVEMENT MARKER PER C.O.S. STD. DET. 2363.
5. INSTALL SEWER MANHOLE & COVER FRAME ADJUSTMENT PER M.A.G. STD. DET. 422.
6. INSTALL WATER VALVE OR SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT PER M.A.G. STD. DET. 270.
7. INSTALL 5' SIDEWALK PER M.A.G. STD. DET. 230.
8. INSTALL SIDEWALK RAMPS PER M.A.G. STD. DET. 232.
9. INSTALL SIDEWALK RAMPS PER M.A.G. STD. DET. 233.
10. INSTALL 6' VALLEY GUTTER PER C.O.S. STD. DET. 2240.
11. INSTALL 5' CURB TRANSITION PER M.A.G. STD. DET. 221.
12. INSTALL STREET SIGN BASE PER M.A.G. STD. DET. 131.
13. REMOVE ALL EXISTING A.C. PAVEMENT.
14. INSTALL BARRICADE TYPE 'B' M.A.G. STD. DET. 130.
15. MATCH EXIST GRADE WITH NEW PAVEMENT.

DESERT RANCH IMPROVEMENT DISTRICT PROJECT #13705

IMPROVEMENT PLANS

CVL PROJECT NO.	SHEET NO.	TOTAL SHEETS
48-0010	33	49

SCALE 1"=20'

COE & VAN LOO

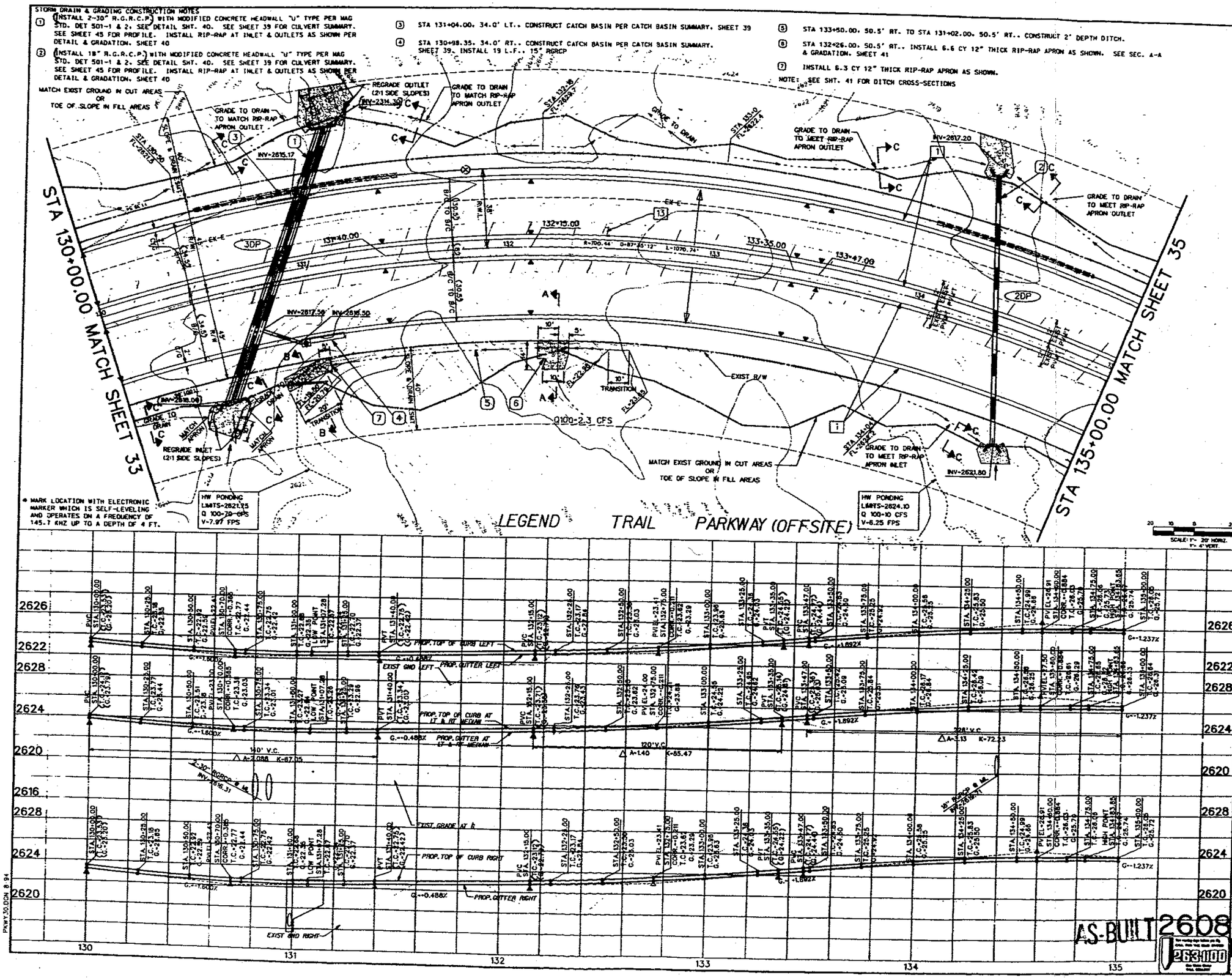
AS-BUILT 26088

DR 94 318 E 94

STORM DRAIN & GRADING CONSTRUCTION NOTES

1. (INSTALL 2-30" R.G.R.C.P.) WITH MODIFIED CONCRETE HEADWALL "U" TYPE PER MAG STD. DET 501-1 & 2. SEE DETAIL SHT. 40. SEE SHEET 39 FOR CULVERT SUMMARY. SEE SHEET 45 FOR PROFILE. INSTALL RIP-RAP AT INLET & OUTLETS AS SHOWN PER DETAIL & GRADATION. SHEET 40
2. (INSTALL 18" R.G.R.C.P.) WITH MODIFIED CONCRETE HEADWALL "U" TYPE PER MAG STD. DET 501-1 & 2. SEE DETAIL SHT. 40. SEE SHEET 39 FOR CULVERT SUMMARY. SEE SHEET 45 FOR PROFILE. INSTALL RIP-RAP AT INLET & OUTLETS AS SHOWN PER DETAIL & GRADATION. SHEET 40
3. STA 131+04.00, 34.0' LT., CONSTRUCT CATCH BASIN PER CATCH BASIN SUMMARY, SHEET 39
4. STA 130+98.35, 34.0' RT., CONSTRUCT CATCH BASIN PER CATCH BASIN SUMMARY. SHEET 39, INSTALL 19 L.F., 15" RGRCP
5. STA 133+50.00, 50.5' RT. TO STA 131+02.00, 50.5' RT., CONSTRUCT 2' DEPTH DITCH.
6. STA 132+26.00, 50.5' RT., INSTALL 6.6 CY 12" THICK RIP-RAP APRON AS SHOWN. SEE SEC. A-A & GRADATION. SHEET 41
7. INSTALL 6.3 CY 12" THICK RIP-RAP APRON AS SHOWN.

NOTE: SEE SHT. 41 FOR DITCH CROSS-SECTIONS



SEWER CONSTRUCTION NOTES

1. INSTALL 10" SEWERLINE.
2. INSTALL 8" SEWERLINE.
3. INSTALL 15" SEWERLINE.
4. INSTALL 8" SERVICE TAP PER M.A.G. STD. DET. 440 (TYPE A).
5. INSTALL 4" SERVICE CONNECTION TO MANHOLE.
6. INSTALL 4-FOOT DIAMETER MANHOLE PER M.A.G. STD. DET. 420.
7. INSTALL 5-FOOT DIAMETER MANHOLE PER M.A.G. STD. DET. 420.
8. INSTALL 8" PLUG PER M.A.G. STD DET. 427.
9. INSTALL CLEANOUT PER M.A.G. STD DET 441.
10. INSTALL DROP SEWER CONNECTION PER M.A.G. STD. DET. 426 TYPE 'A'.
11. INSTALL DROP SEWER CONNECTION PER M.A.G. STD. DET. 426 TYPE 'B'.
12. INSTALL 12" SEWERLINE.

WATER CONSTRUCTION NOTES

1. INSTALL 8" WATERLINE.
2. INSTALL 12" WATERLINE.
3. INSTALL 16" WATERLINE.
4. INSTALL 8" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1-"C".
5. INSTALL 12" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1-"A".
6. INSTALL 16" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1 "A".
7. INSTALL 8" 11-1/4" ELBOW.
8. INSTALL 8" X 45° ELBOW.
9. INSTALL 8" X 90° ELBOW.
10. INSTALL 16" X 12" TEE.
11. INSTALL COMBINATION AIR/VACUUM RELEASE VALVE, PER C.O.S. STD. DET. 2348.
12. INSTALL 6" FIRE HYDRANT ASSEMBLY COMPLETE PER M.A.G. STD. DET. 360.
13. INSTALL 1" WATER SERVICE CONNECTION PER C.O.S. STD. DET. 2330.
14. INSTALL 16" X 8" TEE.
15. INSTALL 16"X 2" TAPPED CAP WITH FLUSHING PIPE PER M.A.G. STD. DET. 390-'A'.
16. INSTALL 8"X 2" TAPPED CAP WITH FLUSHING PIPE PER M.A.G. STD. DET. 390-'B'
17. INSTALL 1" IRR. SERVICE CONNECTION PER C.O.S. STD DET 2330.
18. INSTALL 12" X 8" TEE.
19. INSTALL 16" X 16" TEE.
20. INSTALL 12" X 90° ELBOW.
21. INSTALL 16" TO 12" REDUCER.
22. INSTALL 6" GATE VALVE W/B&C
23. INSTALL 12"X12"X 6" TEE.
24. INSTALL 6"X 6"TAPPING SLEEVE &VALVE
25. INSTALL 12"X 6" REDUCER.
26. INSTALL 16"X 6" TEE.
27. INSTALL 6" TAPPED CAP & CORP STOP
28. INSTALL 6"X 90° ELBOW.
29. INSTALL 6"X 11 1/4° ELBOW

PAVING CONSTRUCTION NOTES

1. INSTALL ROLL TYPE CURB & GUTTER PER M.A.G. STD. DET. 220 (TYPE C).
2. INSTALL 4" VERT. CURB & GUTTER PER M.A.G. STD. DET. 220 (TYPE A).
3. INSTALL SURVEY MARKER PER M.A.G. STD. DET. 120-1 (TYPE B).
4. INSTALL FIRE HYDRANT PAVEMENT MARKER PER C.O.S. STD. DET. 2363.
5. INSTALL SEWER MANHOLE & COVER FRAME ADJUSTMENT PER M.A.G. STD. DET. 422.
6. INSTALL WATER VALVE OR SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT PER M.A.G. STD. DET. 270.
7. INSTALL 5' SIDEWALK PER M.A.G. STD. DET. 230.
8. INSTALL SIDEWALK RAMPS PER M.A.G. STD. DET. 232.
9. INSTALL SIDEWALK RAMPS PER M.A.G. STD. DET. 233.
10. INSTALL 6' VALLEY GUTTER PER C.O.S. STD. DET. 2240.
11. INSTALL 5' CURB TRANSITION PER M.A.G. STD. DET. 221.
12. INSTALL STREET SIGN BASE PER M.A.G. STD. DET. 131.
13. REMOVE ALL EXISTING A.C. PAVEMENT.
14. INSTALL BARRICADE TYPE 'B' M.A.G. STD. DET. 130.
15. MATCH EXIST GRADE WITH NEW PAVEMENT.

DESERT RANCH IMPROVEMENT DISTRICT PROJECT #I3705

IMPROVEMENT PLANS

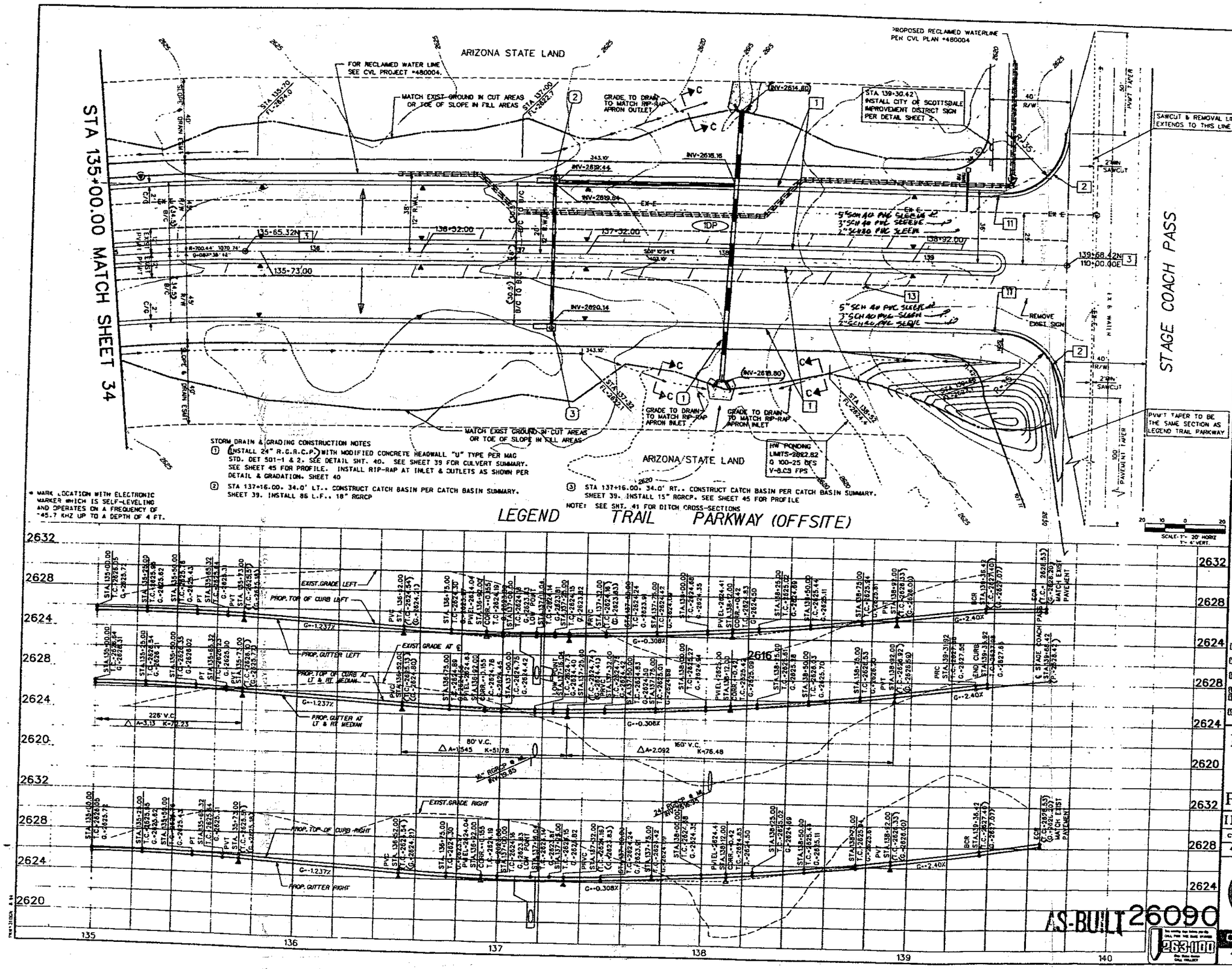
CVL PROJECT NO.	SHEET NO.	TOTAL SHEETS
48-0010	34	49

SCALE 1"=20'

COE & VAN LOO
4550 NORTH 12TH STREET PHOENIX, AZ 85014
PHONE (602) 264-6831 FAX (602) 264-0928

PKWY10.DGN 8 94

8 DR 94 318 E 94



STORM DRAIN & GRADING CONSTRUCTION NOTES

1. INSTALL 24" R.G.R.C.P. WITH MODIFIED CONCRETE HEADWALL "U" TYPE PER MAG STD. DET 501-1 & 2. SEE DETAIL SHT. 40. SEE SHEET 39 FOR CULVERT SUMMARY. SEE SHEET 45 FOR PROFILE. INSTALL RIP-RAP AT INLET & OUTLETS AS SHOWN PER DETAIL & GRADATION. SHEET 40
2. STA 137+16.00, 34.0' LT., CONSTRUCT CATCH BASIN PER CATCH BASIN SUMMARY. SHEET 39. INSTALL 86 L.F., 18" RGRCP
3. STA 137+16.00, 34.0' RT., CONSTRUCT CATCH BASIN PER CATCH BASIN SUMMARY. SHEET 39. INSTALL 15" RGRCP. SEE SHEET 45 FOR PROFILE

NOTE: SEE SHT. 41 FOR DITCH CROSS-SECTIONS

* MARK LOCATION WITH ELECTRONIC MARKER WHICH IS SELF-LEVELING AND OPERATES ON A FREQUENCY OF 145.7 KHZ UP TO A DEPTH OF 4 FT.

SEWER CONSTRUCTION NOTES

1. INSTALL 10" SEWERLINE.
2. INSTALL 8" SEWERLINE.
3. INSTALL 15" SEWERLINE.
4. INSTALL 8" SERVICE TAP PER M.A.G. STD. DET. 440 (TYPE A).
5. INSTALL 4" SERVICE CONNECTION TO MANHOLE.
6. INSTALL 4-FOOT DIAMETER MANHOLE PER M.A.G. STD. DET. 420.
7. INSTALL 5-FOOT DIAMETER MANHOLE PER M.A.G. STD. DET. 420.
8. INSTALL 8" PLUG PER M.A.G. STD DET. 427.
9. INSTALL CLEANOUT PER M.A.G. STD DET 441.
10. INSTALL DROP SEWER CONNECTION PER M.A.G. STD. DET. 426 TYPE A.
11. INSTALL DROP SEWER CONNECTION PER M.A.G. STD. DET. 426 TYPE B.
12. INSTALL 12" SEWERLINE.

WATER CONSTRUCTION NOTES

1. INSTALL 8" WATERLINE.
2. INSTALL 12" WATERLINE.
3. INSTALL 16" WATERLINE.
4. INSTALL 8" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1-1/4.
5. INSTALL 12" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1-1/4.
6. INSTALL 16" VALVE, BOX AND COVER PER M.A.G. STD. DET. 391-1-1/4.
7. INSTALL 8" 11-1/4° ELBOW.
8. INSTALL 8" X 45° ELBOW.
9. INSTALL 8" X 90° ELBOW.
10. INSTALL 16" X 12" TEE.
11. INSTALL COMBINATION AIR/VACUUM RELEASE VALVE. PER C.O.S. STD. DET. 2348.
12. INSTALL 6" FIRE HYDRANT ASSEMBLY COMPLETE PER M.A.G. STD. DET. 360.
13. INSTALL 1" WATER SERVICE CONNECTION PER C.O.S. STD. DET. 2330.
14. INSTALL 16" X 8" TEE.
15. INSTALL 16"X 2" TAPPED CAP WITH FLUSHING PIPE PER M.A.G. STD. DET. 390-"A".
16. INSTALL 8"X 2" TAPPED CAP WITH FLUSHING PIPE PER M.A.G. STD. DET. 390-"B".
17. INSTALL 1" IRR. SERVICE CONNECTION PER C.O.S. STD DET 2330.
18. INSTALL 12" X 8" TEE.
19. INSTALL 16" X 16" TEE.
20. INSTALL 12" X 90° ELBOW.
21. INSTALL 16" TO 12" REDUCER.
22. INSTALL 6" GATE VALVE W/B&C
23. INSTALL 12"X12"X 6" TEE.
24. INSTALL 6"X 6"TAPPING SLEEVE &VALVE
25. INSTALL 12"X 6" REDUCER.
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27. INSTALL 6" TAPPED CAP & CORP STOP
28. INSTALL 6"X 90° ELBOW.
29. INSTALL 6"X 11 1/4° ELBOW

PAVING CONSTRUCTION NOTES

1. INSTALL ROLL TYPE CURB & GUTTER PER M.A.G. STD. DET. 220 (TYPE C).
2. INSTALL 4" VERT. CURB & GUTTER PER M.A.G. STD. DET. 220 (TYPE A).
3. INSTALL SURVEY MARKER PER M.A.G. STD. DET. 120-1 (TYPE B).
4. INSTALL FIRE HYDRANT PAVEMENT MARKER PER C.O.S. STD. DET. 2363.
5. INSTALL SEWER MANHOLE & COVER FRAME ADJUSTMENT PER M.A.G. STD. DET. 422.
6. INSTALL WATER VALVE OR SEWER CLEANOUT FRAME & COVER GRADE ADJUSTMENT PER M.A.G. STD. DET. 270.
7. INSTALL 5' SIDEWALK PER M.A.G. STD. DET. 230.
8. INSTALL SIDEWALK RAMPS PER M.A.G. STD. DET. 232.
9. INSTALL SIDEWALK RAMPS PER M.A.G. STD. DET. 233.
10. INSTALL 6' VALLEY GUTTER PER C.O.S. STD. DET. 2240.
11. INSTALL 6" CURB TRANSITION PER M.A.G. STD. DET. 221.
12. INSTALL STREET SIGN BASE PER M.A.G. STD. DET. 131.
13. REMOVE ALL EXISTING A.C. PAVEMENT.
14. INSTALL BARRICADE TYPE "B" M.A.G. STD. DET. 130.
15. MATCH EXIST GRADE WITH NEW PAVEMENT.

DESERT RANCH IMPROVEMENT DISTRICT PROJECT #13705

IMPROVEMENT PLANS

CVL PROJECT NO.	SHEET NO.	TOTAL SHEETS
48-0010	35	49

SCALE 1"=20'

COE & VAN LOO
4550 NORTH 12TH STREET PHOENIX, AZ. 85014
PHONE (602) 264-6831 FAX (602) 264-0928

8 DR 94 318 E 94