VOLUME II
HYDROLOGIC BACKUP DATA

Diversions
Stage-Storage Relationships
Routing Parameters

Loop 303 Corridor/White Tanks
Area Drainage Master Plan Update
Contract FCD 99-40

Prepared for

Flood Control District of Maricopa County

URS

URS Job No. E1-00001526

November 4, 2002

eec

Project Title [illegible] Project No. [illegible] Date [illegible]

Subject [illegible] Prepared By [illegible] Checked By _____ Page 1 of 2

112 RET

The drainage report for Happy Trails Golf Resort could not be located. The City of Surprise indicated that the 100-year 1-hour storm event (required at time) is assumed to be retained within the development.

Retention was calculated for Happy Trails using the following equation: $\left[\text{Retention Volume} = C \times A \times \frac{D}{12}\right]$

D = The 100-year 1-hour rainfall depth was obtained using data from the Drainage Design Manual for Maricopa County, Arizona.

X_1 = 100yr 6-hr rainfall depth = 3.3"

X_2 = 100yr 24-hr rainfall depth = 4.0"

$$D = \text{100yr 1hr rainfall depth} = 0.494 + 0.755\left(\frac{X_1^2}{X_2}\right)$$

$$D = 2.5''$$

C = The runoff coefficient = 0.65 which is required by City of Surprise (personal comm., Robert Eroh, Engineering Dept.)

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 10-23-00

Subject Retention in SUB-2A Prepared By KMH Checked By _____ Page 2 of 2

112 RET

A = The area of the development = 403.2 acres

$$\text{Retention Volume} = (0.65)(403.2\ ac)\left(\frac{2.5\ in}{\left(\frac{12\ in}{ft}\right)}\right)$$

$$= \underline{54.6\ \text{acre-feet}}$$

$$54.6 \times 0.8 = 43.68\ ac\text{-}ft$$

Reduced by 20% to provide for differences in as-built condition.

Used in HEC-1 → $\underline{\underline{43.68\ ac\text{-}ft}}$

eec

Project Title LOOP 303 Project No. 99551 Date 11/3/00

Subject Retention Prepared By LAV Checked By _____ Page 1/3

Sun City Grand Retention

Revised Subbasins 114 & 115 are a composite of several smaller subbasins and therefore contains the retention basins located within those basins

Basin 114

OID ID	% included	Ret. Volume	Ret Volume NEW 114
100	85%	—	—
102	100%	—	—
103	100%	34.66	34.66
107	85%	73.40	62.39
108	60%	134.08	80.45
113	100%	39.94	39.94
114	40%	59.33	23.73

Total = 241.17

Reduce by 20% as a conservative Estimate to provide for differences in As-builts.

241.17 * 0.8 = 192.94 Ac-ft ←

Basin 115

OID ID	% included	Ret Vol.	Ret Vol. New 115
100	15%	—	—
107	15%	73.40	11.01
108	40%	134.08	53.63
109	100%	60 *	60
114	60%	59.33	35.60
115	100%	60 *	60
116	40%	60 *	24
110	20%	—	—

Total = 244.24

* Estimated Need Sun City GRAND DRAINAGE REPORT for Phase III & IV

Reduced by 20% as a conservative Estimate to provide for differences in As-builts.

244.24 * 0.8 = 195.39 Ac-ft ←

TABLE D-2
SUN CITY GRAND PHASE 1
RETENTION BASIN SUMMARY
(Refer to HEC-1 Files 13688H1A and PH1RET)

	Retention Basin Operation	Located in ADMS Sub-basin	Depth (Ft) @ Spillway Elevation	Volume (AC FT) @ Spillway Elevation
1	DT114	107	2.1	4.66
2	DT112	107	3.6	10.03
3	DT115A	107	2.6	7.58
4	DT115B	107	3.8	3.48
5	DT101	103	4.6	10.95
6	DT102	103	3.6	9.14
7	DT105	108	5.5	8.12
8	DT107A	108	3.1	4.09
9	DT107B	108	2.1	1.58
10	DT104	103	4.1	7.36
11	DT111	107	4.1	15.33
12	DT107	108	4.5	20.07
13	DT108A	103	3.1	7.21
14	DT108B	108	3.1	3.59
15	DT109	108	4.6	27.40
16	DT110	108	6.6	69.23
			Average Depth = 3.8 ft.	Total Volume = 209.82 AC FT
Total Retention Volume in ADMS Sub-Basin 103 = 34.66 AC FT.				
Total Retention Volume in ADMS Sub-Basin 107 = 41.08 AC FT.				
Total Retention Volume in ADMS Sub-Basin 108 = 134.08 AC FT.				

TABLE D-3
SUN CITY GRAND PHASE 2
RETENTION BASIN SUMMARY
(Refer to HEC-1 Files 13688H1B and PH2RET)

	Retention Basin Operation	Located in ADMS Sub-basin	Depth (Ft) @ Spillway Elevation	Volume (AC FT) @ Spillway Elevation
1	DT203A	107	6.4	6.52
2	DT203B	107	4.6	2.21
3	DT205A	107	3.6	5.00
4	DT205B	107	2.6	3.59
5	DT209	107	4.1	15.00
6	DT215A	114	5.5	5.32
7	DT215B	113	5.0	4.61
8	DT224	113	4.0	4.60
9	DT217	113	4.5	4.28
10	DT220A	113	4.5	4.21
11	DT220B	113	7.1	20.87
12	DT49A1	113	2.1	0.67
13	DT49A2	113	1.1	0.26
14	DT49A3	113	1.1	0.44
15	DT249B	114	4.6	4.06
16	1DT230	114	8.5	17.41
17	2DT230	114	7.1	13.94
18	1DT246	114	2.6	6.05
19	DT238B	114	4.0	1.37
20	DT246A	114	3.6	11.18
21	1DT237	115	5.5	6.73
22	2DT237	115	6.5	3.23
23	3DT237	115	6.5	3.61
24	4DT237	115	6.5	3.17
25	5DT237	115	6.0	3.41
26	1DT240	115	7.0	6.31
27	2DT240	115	6.0	3.33
28	3DT240	115	5.5	3.61
29	DT246B	115	8.0	22.35
			Average Depth = 5.0 ft.	Total Volume = 187.34 AC FT
Total Retention Volume in ADMS Sub-Basin 107 = 32.32 AC FT.				
Total Retention Volume in ADMS Sub-Basin 113 = 39.94 AC FT.				
Total Retention Volume in ADMS Sub-Basin 114 = 59.33 AC FT.				
Total Retention Volume in ADMS Sub-Basin 115 = 55.75 AC FT.				

Table 5.2 Retention Basin Requirement Sub-basin 122

Parcel No.	Zone*	Area (acre)	Runoff Coeff.	Rainfall (inches)	Total Volume (ac-ft)	Volume (ft^3)
1	CM	13.0	0.75	2.6	2.11	92020.5
2	MF	13.8	0.69	2.6	2.06	89868.6
3	SF	20.0	0.63	2.6	2.73	118918.8
4	SF	38.0	0.63	2.6	5.19	225945.7
5	CM	10.0	0.75	2.6	1.63	70785.0
6	SF	49.4	0.63	2.6	6.74	293603.4
7	SF	43.2	0.63	2.6	5.89	256567.3
8	SF	43.1	0.63	2.6	5.88	256091.6
9	MF	11.2	0.69	2.6	1.67	72936.9
10	SF	36.4	0.63	2.6	4.97	216432.2
11	SF	39.5	0.63	2.6	5.39	234864.6
12	SF	25.0	0.63	2.6	3.41	148648.5
13	MF	16.4	0.69	2.6	2.45	106800.4
14	SF	24.0	0.63	2.6	3.28	142702.6
15	SF	24.0	0.63	2.6	3.28	142702.6
16	SF	36.0	0.63	2.6	4.91	214053.8
17	CM	7.0	0.75	2.6	1.14	49549.5
18	SF	27.0	0.63	2.6	3.69	160540.4
19	CH	3.0	0.85	2.6	0.55	24066.9

* CM Commercial Area
MF Multi Family
SF Single Family
CH Church

Preliminary plat of each parcel shall address specific retention size. Final drainage report for each parce shall demonstrate that all requirements have been fulfilled for retention and exact area calculations shall be provided.

Desert Vista Ranch

The table Above describes Required Retention for each of the Sub-developments, existing or future. The home builders are Required to provide this Retention as Construction is completed

$V_{req(TOTAL)}$ = 66.97 Ac-ft (Assume Required Volumes are met)

$V_{provided}$ = 66.97 * 0.8 = 53.58 Ac-ft

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Project Title LOOP 303 Project No. 99551 Date 11/7/00

Subject RETENTION SB 122 Prepared By CAV Checked By _____ Page _____

Subbasin 122

Subbasin 122 was divided further to account for Development. The New basins are 122A & 122B.

- To determine the Retention in each of the new subbasins we assumed an equal disbursement of retention facilities. Therefore we used the ratio of The drainage area for Subbasin 122A and 122B Compared to The Total Area of Subbasin 122 and Then applied these ratios to the total Retention Volume.

	Area	Ratio
Subbasin 122	0.88 mi^2	
Subbasin 122A	0.50 mi^2	0.5/0.88 = 0.57
Subbasin 122B	0.38 mi^2	0.38/0.88 = 0.43

Total Retention Volume = 53.58 Ac-ft

Retention in 122A = 53.58 * 0.57 = 30.54 Ac-ft

Retention in 122B = 53.58 * 0.43 = 23.04 Ac-ft

APPENDIX C

RETENTION CALCULATIONS

RETENTION

The required retention volume for the subject property is calculated using the following formula:

$$V_r = \frac{P}{12} A C$$

Where:

V_r = required retention volume (ac-ft)

P = 100 yr, 2 hr rainfall depth

A = contributing area (ac)

C = runoff coefficient

According to Figure 2.1 in the Maricopa County Hydrology Manual, the 100-year, 2-hour rainfall depth is 2.78 inches. Runoff coefficients are obtained from Table 3.2 in the manual. Copy of these figures are contained in APPENDIX C. The following table summarizes the coefficients used for the various land uses within the site.

LAND USE	"C"
Single Family Development	0.69
Golf Course	0.31
Club House	0.81
Roadway	0.95

Each drainage area acts as a separate system in regard to retention requirements. The following discussion summarizes the retention characteristics of each area.

AREA 1:

The retention requirements of AREA 1 is provided in Basins 1B1 and 1B2, respectively.

RETENTION REQUIRED FOR DRAINAGE AREA 2

SUB-BASIN	LAND USE	AREA (ac)	C	V_r (ac-ft)
2A1	SF	10.00	0.69	1.60
2A2	SF	22.52	0.69	3.60
2A3	SF	13.74	0.69	2.20
2A4	SF	16.07	0.69	2.57
2A5	SF	10.93	0.69	1.75
2A6	SF	8.04	0.69	1.29
2A7	SF	10.19	0.69	1.63
2A8	SF	14.39	0.69	2.30
2A9	SF	11.96	0.69	1.91
2A10	SF	6.72	0.69	1.07
2G1	GC	24.40	0.31	1.75
2G2	GC	3.55	0.31	0.25
2G3	GC	4.77	0.31	0.34
2G4	GC	37.71	0.31	2.71
2G5	GC	8.41	0.31	0.60
2R1	ROAD	2.40	0.95	0.53
2R2	ROAD	3.20	0.95	0.70
2R3	ROAD	7.40	0.95	1.63
TOTAL		**216.40**		**28.43**

SF = SINGLE FAMILY GC = GOLF COURSE

RETENTION PROVIDED FOR DRAINAGE AREA 2

BASIN	WEIR ELEVATION (ft)	V_p (ac-ft)
2B1	1326.0	1.02
2B2	1318.0	17.15
2B3	1320.0	1.92
2B4	1316.0	1.64
2B5	1311.0	15.75
	Total V_p Area 2	**37.48**

RETENTION REQUIRED FOR DRAINAGE AREA 3

SUB-BASIN	LAND USE	AREA (ac)	C	V_r (ac-ft)
3A1	SF	9.90	0.69	1.49
3A2	SF	8.22	0.69	1.24
3A3	SF	8.37	0.69	1.34
3A4	SF	14.30	0.69	2.15
3G1	GC	19.84	0.31	1.42
TOTAL		**60.63**		**7.64**

SF = SINGLE FAMILY CG = GOLF COURSE

RETENTION PROVIDED FOR DRAINAGE AREA 3

BASIN	WEIR ELEVATION (ft)	V_p (ac-ft)
3B1	1320.0	15.58
	Total V_p Area 4	**15.58**

RETENTION REQUIRED FOR DRAINAGE AREA 4

SUB-BASIN	LAND USE	AREA (ac)	C	V_r (ac-ft)
4A1	SF	23.00	0.69	3.68
4A2	SF	13.36	0.69	2.14
4A3	SF	22.33	0.69	3.57
4A4	SF	19.44	0.69	3.11
4A5	SF	9.35	0.69	1.49
4A6	SF	19.44	0.69	3.11
4A7	SF	25.98	0.69	4.15
4A8	SF	12.24	0.69	1.96
4A9	SF	6.36	0.69	1.19
4G1	GC	7.76	0.31	0.56
4G2	GC	25.89	0.31	1.86
4R1	ROAD	3.30	0.95	0.73
4R2	ROAD	6.90	0.95	1.52
4R3	ROAD	0.80	0.95	0.18
TOTAL		**196.15**		**29.23**

SF = SINGLE FAMILY GC = GOLF COURSE

RETENTION PROVIDED FOR DRAINAGE AREA 4

BASIN	WEIR ELEVATION (ft)	V_P (ac-ft)
4B1	1314.0	2.22
4B2	1309.8	1.68
4B3	1306.8	2.76
4B4	1304.5	3.03
4B5	1305.5	22.39
	Total V_P Area 4	**32.08**

It is proposed that drywells be used to drain the basins within AREA 1. Basins within AREAS 2, 3, and 4 will be drained by bleed lines which will follow the same drainage pattern as the HEC-1 routing. Should the grades in AREA 4 permit, Basins 4B1 through 4B4 could bleed to the East Drainage Channel. Should this be the case, an 8 inch line would be sufficient to drain Basin 4B4. Bleed lines for basins within the parcels will be sized to drain the basins within 36 hours. Bleed lines within the golf course will be sized to drain the course within 24 hours. Subsequent bleed lines are sized to drain the entire upstream volume required. Standpipes and headgates will be installed to regulate the bleed lines. The table on the following page summarizes the estimated bleed line sizes required to drain the site.

RETENTION BASIN CALCULATIONS

V = C(D/12)*A D=2.7"*

Design Storm: 100-year, 2-hour

Retention Basins from Parcel 4 & Basin 1

(see *Final Drainage Report for Parcel 4* for detailed calculations)

15.24	Acre-ft	PROVIDED
10.32	Acre-ft	REQUIRED
7		DRYWELLS

CONTRIBUTING DRAINAGE AREAS **Parcel 4, A', B', C', & G'**

Type	Area (Ac)	C' Coefficient	Depth (ft)	Retention Required (AF)
Residential	36.25	0.66	0.23	5.38
Grass	8.35	0.25	0.23	0.47
Street	3.38	0.90	0.23	0.68
Agricultural	76.46	0.22	0.23	3.78
Total	124.44			10.32

BASIN 2

[illegible]tion	Area (ft^2)	Avg. Area (ft^2)	Depth (ft)	Volume (ft^3)	Σ Volume
[illegible].5	66,265				
		64,175	1.0	64,175	64,175
1285.5	62,084				

64,175 ft^3

1.47	Acre-ft	PROVIDED
0.75	Acre-ft	REQUIRED

CONTRIBUTING DRAINAGE AREAS D'

Type	Area (Ac)	C' Coefficient	Depth (ft)	Retention Required (AF)
Agricultural	15.13	0.22	0.23	0.75
Total	15.13			0.75

BASIN D"

Elevation	Area (ft^2)	Avg. Area (ft^2)	Depth (ft)	Volume (ft^3)	Σ Volume
1297.0	179,824				
		89,912	0.8	71,930	71,930
1296.2	0				

71,930 ft^3
1.65 Acre-ft PROVIDED
0.83 Acre-ft REQUIRED

CONTRIBUTING DRAINAGE AREAS **D"**

Type	Area (Ac)	C' Coefficient	Depth (ft)	Retention Required (AF)
Agricultural	16.74	0.22	0.23	0.83
Total	16.74			0.83

BASIN E"

Elevation	Area (ft^2)	Avg. Area (ft^2)	Depth (ft)	Volume (ft^3)	Σ Volume
1293.0	241,234				
		120,617	0.8	96,494	96,494
1292.2	0				

96,494 ft^3
2.22 Acre-ft PROVIDED
0.76 Acre-ft REQUIRED

CONTRIBUTING DRAINAGE AREAS **E"**

Type	Area (Ac)	C' Coefficient	Depth (ft)	Retention Required (AF)
Agricultural	15.26	0.22	0.23	0.76
Total	15.26			0.76

TOTAL RETENTION REQUIRED **15.09 AC-FT**

TOTAL PROJECT AREA:

RESIDENTIAL	36.25 AC
GRASS	8.35 AC
STREET	6.88 AC
AGRICULTURAL	158.50 AC

BASIN 3

Elevation	Area (ft^2)	Avg. Area (ft^2)	Depth (ft)	Volume (ft^3)	Σ Volume
1284.2	40,184				
		38,135	1.0	38,135	38,135
1283.2	36,086				

38,135 ft^3
0.88 Acre-ft PROVIDED
1.07 Acre-ft REQUIRED
0.19 Acre-ft SHORTAGE

CONTRIBUTING DRAINAGE AREAS **E' & F'**

Type	Area (Ac)	C' Coefficient	Depth (ft)	Retention Required (AF)
Agricultural	15.77	0.22	0.23	0.78
Street	1.45	0.90	0.23	0.29
Total	17.22			1.07

BASINS 4 & 5

Elevation	Area (ft^2)	Avg. Area (ft^2)	Depth (ft)	Volume (ft^3)	Σ Volume
1283.2	88,248				
		83,999	1.0	83,999	83,999
1282.2	79,749				

83,999 ft^3
1.93 Acre-ft PROVIDED
1.55 Acre-ft REQUIRED

CONTRIBUTING DRAINAGE AREAS **F", F"' & H'**

Type	Area (Ac)	C' Coefficient	Depth (ft)	Retention Required (AF)
Street	1.34	0.90	0.23	0.27
Agricultural	19.14	0.22	0.23	0.95
Area corresponding to the flow-by from Sub-area 1E				
Street	0.71	0.90	0.23	0.14
Total	21.19			1.36
Additional Volume not provided by Off-Site Basin 3				0.19
Total (including flow-by)				1.55

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Project Title LOOP 303 WhiteTanksUpdate Project No. 99551 Date 3/7/01

Subject Retention Divert Prepared By MJK Checked By _____ Page _____

Temporary Retention in sub basin 102A.

Volume From "Master Drainage Report for Del Webb's Grand Avenue Property" Dated December, 1994

Volume = 38 ac-ft

Reduce to 80% ∴ 38 x .8 = 30.4 ac-ft

```
KK 102AOT
DT 102ART   30.4
DI 0        10000
DQ 0        10000
```

eec

Project Title Loop 303 White Tanks Update Project No. 99551 Date 3/7/01

Subject Retention Divert Prepared By MJR Checked By _____ Page _____

Temporary Retention in sub basin 106

Volume from "Master Drainage Report for Del Webb's Grand Avenue Property" Dated: December 1994

Volume = 41 ac-ft

Reduce to 80% ∴ 41 × 0.8 = 32.8 ac-ft

KK 106OUT
DT 106RET 32.8
DI 0 10000
DO 0 10000

eec

Project Title Loop 303 [illegible] Project No. [illegible] Date [illegible]

Subject Retention SUB-2A Prepared By [illegible] Checked By _____ Page _____

111 RET

Total retention volume in subbasin 111 = 15.58 ac-ft
from Master Drainage Study for Arizona
Traditions prepared by Clouse Engineering, Inc

15.58 x 0.80 = 12.46 ac ft
to provide for difference
in as-built conditions

used in
HEI-1 → 12.46 ac-ft

eec

Project Title Loop 303 Drainage Master Study Project No. [illegible] Date [illegible]

Subject Retention in SUB-2A Prepared By KMN Checked By _____ Page 1

111A RT

Total retention volume in subbasin 111A = 69.56 ACFT from Master Drainage Study for Arizona Traditions prepared by Nicus Engineering, Inc. (1/12/96).

69.56 X 0.80 = 55.65 ac-ft
to provide for difference
in as-built conditions

Used in
HEC-1 → 55.65 ac-ft

eec

ect Title [illegible] Project No. [illegible] Date [illegible]

Subject [illegible] Prepared By KMH Checked By _____ Page 1/4

113A RT

Total retention volume in Subbasin 113A = 23.39 AC-FT from Master Drainage Report Bell West Ranch Prepared by David Evans and Associates, Inc. (3/99).

Retention Basin	Ret. Vol. (ac-ft)	Cum. Ret. Vol. (ac-ft)
Parcel 4 + Basin 1	15.24	15.24
Basin 2	1.47	16.71
Basin 3	0.88	17.59
Basins 4 + 5	1.93	19.52
Basin D"	1.65	21.17
Basin E"	2.22	23.39

23.39 × 0.80 = 18.71 ac-ft

Reduced by 20% to provide for differences in as-built condition

Used in HEC-1 → 18.71 ac-ft

Stage/Storage/Discharge Calculations

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 1B1:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1327.9	1.77				
		1.88	1.0	1.88	
1328.9	1.99				1.88
		2.10	1.0	2.10	
1329.9	2.21				3.98
		2.32	1.0	2.32	
1330.9	2.43				6.30

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 1B1:

- No discharge for 100-year, 6-hour storm.

On-site Retention volume

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1327.9	0.0	0.00
1328.9	0.0	1.88
1329.9	0.0	3.98
1330.9	0.0	6.30

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 1B2:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1326.5	1.58				
		1.72	1.0	1.72	
1327.5	1.86				1.72
		2.00	1.0	2.00	
1328.5	2.14				3.72
		2.28	1.0	2.28	
1329.5	2.42				6.00

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 1B2:

- No discharge for 100-year, 6-hour storm.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1326.5	0.0	0.00
1327.5	0.0	1.72
1328.5	0.0	3.72
1329.5	0.0	6.00

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 2B1:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1323.0	0.31				
		0.32	1.0	0.32	
1324.0	0.33				0.32
		0.34	1.0	0.34	
1325.0	0.35				0.66
		0.36	1.0	0.36	
1326.0	0.37				1.02
		0.38	1.0	0.38	
1327.0	0.39				1.40

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 2B1:

Discharge through 5 foot rectangular weir at elevation 1326.0.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1323.0	0.0	0.00
1324.0	0.0	0.32
1325.0	0.0	0.66
1326.0	0.0	1.02
1327.0	16.0	1.40

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 2B2:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1312.0	0.33				
		0.45	1.0	0.45	
1313.0	0.56				0.45
		1.18	1.0	1.18	
1314.0	1.80				1.63
		2.33	1.0	2.33	
1315.0	2.86				3.96
		3.39	1.0	3.39	
1316.0	3.92				7.35
		4.41	1.0	4.41	
1317.0	4.90				11.76
		5.39	1.0	5.39	
1318.0	5.88				17.15

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 2B2:

- No discharge for 100-year, 6-hour storm event.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1312.0	0.0	0.00
1313.0	0.0	0.45
1314.0	0.0	1.63
1315.0	0.0	3.96
1316.0	0.0	7.35
1317.0	0.0	11.76
1318.0	0.0	17.15

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 2B3:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1316.0	0.12				
		0.21	1.0	0.21	
1317.0	0.30				0.21
		0.39	1.0	0.39	
1318.0	0.48				0.60
		0.57	1.0	0.57	
1319.0	0.66				1.17
		0.75	1.0	0.75	
1320.0	0.84				1.92

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 2B3:

- No discharge for 100-year, 6-hour storm event.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1316.0	0.0	0.00
1317.0	0.0	0.21
1318.0	0.0	0.60
1319.0	0.0	1.17
1320.0	0.0	1.92

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 2B4:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1312.0	0.18				
		0.25	1.0	0.25	
1313.0	0.32				0.25
		0.36	1.0	0.36	
1314.0	0.40				0.61
		0.48	1.0	0.48	
1315.0	0.56				1.09
		0.60	1.0	0.60	
1316.0	0.64				1.69

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 2B4:

No discharge for 100-year, 6-hour storm event.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1312.0	0.0	0.00
1313.0	0.0	0.25
1314.0	0.0	0.61
1315.0	0.0	1.08
1316.0	0.0	1.69

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 2B5:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1306.0	1.02				
		1.42	1.0	1.42	
1307.0	1.82				1.42
		2.21	1.0	2.21	
1308.0	2.60				3.63
		3.02	1.0	3.02	
1309.0	3.44				6.65
		3.87	1.0	3.87	
1310.0	4.30				10.52
		5.23	1.0	5.23	
1311.0	6.16				15.75
		7.08	1.0	7.08	
1312.0	8.00				22.83

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 2B5:

Discharge through triangular weir at elevation 1311.0.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1306.0	0.0	0.00
1307.0	0.0	1.42
1308.0	0.0	3.63
1309.0	0.0	6.65
1310.0	0.0	10.52
1311.0	0.0	15.75
1312.0	140.0	22.83

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 3B1:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1316.0	1.94				
		2.42	1.0	2.42	
1317.0	2.90				2.42
		3.38	1.0	3.38	
1318.0	3.86				5.80
		4.38	1.0	4.38	
1319.0	4.89				10.18
		5.41	1.0	5.41	
1320.0	5.92				15.58

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 3B1:

No discharge for 100-year, 6-hour storm event.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1316.0	0.0	0.00
1317.0	0.0	2.42
1318.0	0.0	5.80
1319.0	0.0	10.18
1320.0	0.0	15.58

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 4B1:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1311.0	0.65				
		0.68	1.0	0.68	
1312.0	0.71				0.68
		0.74	1.0	0.74	
1313.0	0.77				1.42
		0.80	1.0	0.80	
1314.0	0.83				2.22
		0.86	1.0	0.86	
1315.0	0.89				3.08

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 4B1:

Discharge through 12 foot rectangular weir at elevation 1314.0.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1311.0	0.0	0.00
1312.0	0.0	0.68
1313.0	0.0	1.42
1314.0	0.0	2.22
1315.0	38.4	3.08

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 4B2:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1306.8	0.47				
		0.50	1.0	0.50	
1307.8	0.53				0.50
		0.56	1.0	0.56	
1308.8	0.59				1.06
		0.62	1.0	0.62	
1309.8	0.65				1.68
		0.68	1.0	0.68	
1310.8	0.71				2.36

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 4B2:

Discharge through 10 foot rectangular weir at elevation 1309.8.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1306.8	0.0	0.00
1307.8	0.0	0.50
1308.8	0.0	1.06
1309.8	0.0	1.68
1310.8	32.0	2.36

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 4B3:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1303.8	0.74				
		0.80	1.0	0.80	
1304.8	0.86				0.80
		0.92	1.0	0.92	
1305.8	0.98				1.72
		1.04	1.0	1.04	
1306.8	1.10				2.76
		1.16	1.0	1.16	
1307.8	1.22				3.92

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 4B3:

Discharge through 3 foot rectangular weir at elevation 1306.8.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1303.8	0.0	0.00
1304.8	0.0	0.80
1305.8	0.0	1.72
1306.8	0.0	2.76
1307.8	9.6	3.92

JOB NAME: **ARIZONA TRADITIONS** JOB NO: **931007**

STORAGE CALCULATIONS FOR BASIN 4B4:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1301.5	0.80				
		0.87	1.0	0.87	
1302.5	0.94				0.87
		1.01	1.0	1.01	
1303.5	1.08				1.88
		1.15	1.0	1.15	
1304.5	1.22				3.03
		1.29	1.0	1.29	
1305.5	1.36				4.32

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 4B4:

Discharge through 10 foot rectangular weir at elevation 1304.5.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1301.5	0.0	0.00
1302.5	0.0	0.87
1303.5	0.0	1.88
1304.5	0.0	3.03
1305.5	32.0	4.32

JOB NAME: **ARIZONA TRADITIONS** JOB NO: 931007

STORAGE CALCULATIONS FOR BASIN 4B5:

ELEVATION (ft)	AREA (ac)	AVERAGE AREA (ac)	DEPTH (ft)	VOLUME (ac-ft)	TOTAL VOLUME (ac-ft)
1300.0	1.58				
		1.78	1.0	1.78	
1301.0	1.98				1.78
		2.46	1.0	2.46	
1302.0	2.94				4.24
		3.63	1.0	3.63	
1303.0	4.32				7.87
		5.01	1.0	5.01	
1304.0	5.70				12.88
		6.13	1.0	6.13	
1305.0	6.56				19.01
		6.77	1.0	6.77	
1305.5	6.99				22.39
		7.21	1.0	7.21	
1306.0	7.42				26.00

STAGE/STORAGE/DISCHARGE TABLE FOR BASIN 4B5:

Discharge through 55 foot rectangular weir at elevation 1305.5.

STAGE	DISCHARGE (cfs)	STORAGE (ac-ft)
1300.0	0.0	0.00
1301.0	0.0	1.78
1302.0	0.0	4.24
1303.0	0.0	7.87
1304.0	0.0	12.88
1305.0	0.0	19.01
1305.5	0.0	22.39
1306.0	63.0	26.00

eec

Project Title LOOP 303 Project No. 99551 Date 10/31/00

Subject Prepared By LAV Checked By Page

116 RET

The DRAINAGE Report for the development in Subbasin 116 could not be found. [Kingswood Parke]

Assuming that the 100-YR, 2-hour STORM is the Required Storm for retention.

$$\text{Retention Volume} = \left[C * A * \frac{D}{12} \right]$$

where C = Runoff Coefficient
0.65 as suggested from the City of Surprise Drainage manual
A = Area of Subbasin in Acres
D = depth in inches (100-YR, 2 HR per FCDMC NOAA - ATLAS)
D = 2.7 inches

$$V_R = (0.65)(0.66 * 640 \text{ Ac/mi}^2)\left(\frac{2.7}{12}\right)$$

$$= \underline{\underline{61.8 \text{ Ac-Ft}}} \quad \times 80\%$$

$$= \underline{\underline{49.4 \text{ Ac-Ft}}} \leftarrow$$

eec

Project Title Loop 303 Project No. 99551 Date

Subject Prepared By LAV Checked By Page

117 RET

The Drainage Report for the development in Subbasin 117 Could not be found. [Sun Village]

Assuming that the 100-yr, 2-hour storm is the required storm for Retention.

$$\text{Retention Volume} = \left[C * A * \frac{D}{12} \right]$$

$$V_R = (0.65)\left(0.92 * 640 \frac{Ac}{mi^2}\right)\left(\frac{2.7}{12}\right)$$

$$= \underline{\underline{86.1 \text{ Ac-ft}}} \quad * \; 0.8 \quad (80\%)$$

$$= \underline{\underline{68.9 \text{ Ac-ft}}} \leftarrow$$

eec

Project Title Loop 303 Project No. 99551 Date 10/31/00

Subject _____ Prepared By CAV Checked By _____ Page _____

118 RET

This Area is being Developed by Commercial businesses including Walmart and Home Depot

Assuming that the 100-YR, 2-HR STORM is the Required storm for Retention

C=0.80 per FCDMC
C= — per City of Surprise

$$\text{Retention Volume} = \left[C * A * \frac{D}{12} \right]$$

$$V_R = (0.80)\left(0.16 * 640 \frac{Ac}{mi^2}\right)\left(\frac{2.7}{12}\right)$$

$$= \underline{\underline{18.4 \text{ Ac-ft}}} \times 0.8 \quad (80\%)$$

$$= \underline{\underline{14.7 \text{ Ac-ft}}}$$

eec

Project Title LOOP 303 Project No. 99551 Date 11/1/00

Subject Prepared By CAV Checked By Page

126 RET

The DRAINAGE REPORT FOR the development in subbasin 126 Could not be found. [WEST POINT TOWN CENTER] Assuming that the 100-YR, 2-hour STORM IS The Required STORM For Retention.

$$\text{Retention Volume} = \left[C * A * \frac{D}{12} \right]$$

C = 0.65 per City of Surprise for Medium density Residential
C = 0.80 per FCDMC for Commercial
C = 0.30 per FCDMC for bare ground (pre-Development)

AREA TOTAL = 0.95 mi^2
A_1 = 0.732, MDR
A_2 = 0.028, Comm
A_3 = 0.190, PRE-DEVELOP

$$V_R = (0.65)\left(0.732 * 640 \tfrac{Ac}{mi^2}\right)\left(\tfrac{2.7}{12}\right) + (0.80)\left(0.028 * 640 \tfrac{Ac}{mi^2}\right)\left(\tfrac{2.7}{12}\right) + (0.30)\left(0.190 * 640 \tfrac{Ac}{mi^2}\right)\left(\tfrac{2.7}{12}\right)$$

$$= \underline{\underline{79.9 \text{ Ac-ft}}} * 0.8 \ (80\%)$$

$$= 63.9 \text{ Ac-ft}$$

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 11-1-00

Subject Retention in Subbasin 133 Prepared By KMH Checked By _____ Page 1

133 RET

The drainage report for the development located within subbasin 133 could not be located.

Retention was calculated for the development in subbasin 133 using the following equation:

$$\text{Retention Volume} = C \times A \times D/12$$

D = The 100-year 2-hour rainfall depth was obtained using data from the Drainage Design manual for Maricopa County

D = 2.7"

C = The runoff coefficient = 0.65 which is required by the City of Surprise

A = The area of the development = 80 acres

$$\text{Retention Vol} = (0.65)(80) \times 2.7/12 = 11.7 \text{ AC-FT}$$

Reduced by 20% to provide for differences in as-built condition. $[11.7 \times 0.8] = 9.36$ AC-FT

Used in HEC-1 → 9.36 AC-FT

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 11-1-00

Subject Retention in Subbasin 135 Prepared By KMH Checked By _____ Page 1

135 RET

The drainage report for the development located within subbasin 135 could not be located.

Retention was calculated for the development in subbasin 135 using the following equation:

$$\text{Retention Volume} = C \times A \times D/12$$

D = The 100-year 2-hr rainfall depth was obtained using data from the Drainage Design manual for Maricopa County
= 2.7"

C = The runoff coefficient = 0.65 which is required by the City of Surprise

A = The area of the development = 153.6 acres

Retention Vol. = (0.65)(153.6)(2.7/12) = 22.5 AC-FT

Reduced by 20% to provide for differences in as-built conditions (22.5) × 0.8 = 18.0 AC-FT

Used in HEC-1 → 18.0 AC-FT

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 1-4-01

Subject Retention Prepared By KMH Checked By _____ Page 1

138AOT

The Drainage Report for the development in subbasin 138A could not be found. Assuming that the 100-year, 2-hour storm is the required storm for retention.

$$\text{Retention Volume} = [C * A * D/12]$$

C = 0.65 per FCDMC for medium density residential

$$V_R = (0.65)(0.46 * 640 \text{ ac/mi}^2)(2.7/12)$$

$$V_R = 43.06 \text{ ac-ft}$$

The retention volume is reduced by 20% to account for as-built conditions

$$V_R = 43.06 \times 0.80 = 34.44 \text{ ac-ft}$$

used in

HEC-1 → 34.44 ac-ft

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 11-29-00

Subject Retention Prepared By KMH Checked By _____ Page 1

139 RET

The drainage report for the development in subbasin 139 could not be found. Assuming that the 100-year, 2-hr storm is the required storm for retention,

$$\text{Retention Volume} = \left[C * A * \frac{D}{12} \right]$$

C = 0.65 for medium density residential

D = 2.7

$$V_R = (0.65)(.40 * 640 \text{ ac/mi}^2)\left(\frac{2.7}{12}\right)$$

$$V_R = 37.44 \text{ Ac-ft}$$

Reduced volume by 20% to account for as-built conditions.

$$V_R \cdot 80\% = 29.95 \text{ Ac-ft}$$

used in HEC-1 → **29.95 Ac-ft**

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 11-29-00

Subject Retention Prepared By KMH Checked By _____ Page 1

157 RET

The drainage report for the development in subbasin 157 could not be found. Assuming the 100-year, 2-hour storm is the required storm for retention,

$$\text{Retention volume} = \left[C * A * \frac{D}{12} \right]$$

C = 0.65 for medium density residential

D = 2.7

$$V_R = (0.65)(0.36 * 640\ ac/mi^2)\left(\frac{2.7}{12}\right)$$

$$V_R = 33.70\ ac\text{-}ft$$

Reduced volume by 20% to account for as-built conditions.

$$V_R \cdot 80\% = 26.96\ ac\text{-}ft$$

used in HEC-1 → 26.96 Ac-ft

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 11-29-00

Subject Retention Prepared By KMH Checked By _____ Page 1

158 RET

The drainage report for the development in subbasin 158 could not be found. Assuming the 100-year, 2-hour storm is the required storm for retention,

$$\text{Retention Volume} = [C * A * \tfrac{D}{12}]$$

C = 0.65 for medium density residential

D = 2.7

$V_R = (0.65)(0.82 \times 640\ ac/mi^2)(\frac{2.7}{12})$

$V_R = 77.17$ ac-ft

Reduced volume by 20% to account for as built conditions.

$V_R \cdot 80\% = 61.74$ ac ft

Used in HEC-1 → 61.74 ac.ft

eec

Project Title Loop 303 Drainage Master Study Project No. 99051 Date [illegible]-00

Subject Retention in Subbasin 192A Prepared By KAK Checked By _____ Page 1

192ART

The drainage report for the development located within subbasin 192A could not be located.

Retention was calculated for the SF-Res development in subbasin 192A using the following equations:

$$\text{Retention Vol.} = C \times A \times D/12$$

D = The 100-year 2-hour rainfall depth was obtained using data from the Drainage Design Manual for Maricopa County

D = 2.7"

C = The runoff coefficient = 0.623 average value obtained from the Drainage Design Manual for Maricopa County

A = The area of the development = 47.36 acres

$$\text{Retention Vol} = (0.625)(47.36)\left(\frac{2.7}{12}\right) = 6.66 \text{ Ac-ft}$$

Reduced by 20% to provide for differences in as-built condition.

$$(6.66) \times 0.8 = 5.33 \text{ AC-FT}$$

Used in HEC-1 → 5.33 AC-FT

eec

Project Title Loop 303 Project No. _____ Date _____

Subject 194A Retention Prepared By GR Checked By _____ Page _____

Detention provided in Dysart Drain detention basin - see ECOMC Design Report.

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 11-1-00

Subject Retention in Subbasin 198 Prepared By KMH Checked By _____ Page 1

198 RET

The drainage report for the development located within subbasin 198 could not be located.

Retention was calculated for the development in subbasin 198 using the following equation:

$$\text{Retention Vol.} = C \times A \times D/12$$

D = The 100-year 2-hour rainfall depth was obtained using the data from the Drainage Design manual for Maricopa County

D = 2.7"

C = The runoff coefficient = 0.625 for residential
= 0.70 for commercial

from the Drainage Design Manual for Maricopa County

A = the area of the developments = 40 acres residential
: 80 acres = commercial

$$\text{Retention Vol.} = (0.7)(80)(2.7/12) + (0.625)(40)(2.7/12)$$
$$= 18.2 \text{ AC-FT}$$

Reduced by 20% to provide for differences in as-built conditions $(18.2) \times 0.8 = 14.6$ AC-FT

Used in HEC-1 → 14.6 AC-FT

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 11-9-00

Subject Retention in Subbasin 203 Prepared By KMH Checked By _____ Page 1

203 RET

Retention was estimated for existing basins located in subbasin 203. It was assumed that the entire volume of runoff within the subbasin would be retained. Retention was calculated using the following equation:

$$\text{Retention Vol.} = C \times A \times D/12$$

D = The 100-year 2-hour rainfall depth was obtained using the data from the Drainage Design Manual for Maricopa County

D = 2.7"

C = The runoff coefficient = .42 for undeveloped areas from the Drainage Design Manual for Maricopa County

A = The area of the subbasin = 70.4 acres

$$\text{Ret. Vol.} = (0.42)(70.4)(2.7/12) = 6.65 \text{ AC-FT}$$

The entire volume of runoff within subbasin 203 is assumed to be retained on-site.

Used in HEC-1 → 6.65 AC-FT

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 12-13-00

Subject Retention Prepared By KMN Checked By _____ Page 1

243ART

The drainage report for the development in subbasin 243A could not be found. Assuming that the 100-year, 2-hour storm is the required storm for retention,

$$\text{Retention Volume} = [C * A * \frac{D}{12}]$$

$C = 0.65$ per FCDMC for residential (medium density)

$V_R = (0.65)(0.051 * 640\ ac/mi^2)(\frac{2.7}{12})$

$V_R = 4.77$ ac-ft

Retention volume is reduced by 20% to account for as-built conditions.

$V_R = 4.77 \times 0.80 = 3.82$ ac-ft

used in HEC-1 → 3.82 ac-ft

eec

Project Title Loop 303 Drainage Master Study Project No. 99951 Date 12-13-00

Subject Retention Prepared By KMH Checked By _____ Page 1

244ART

The drainage report for the development in subbasin 244A could not be found. Assuming that the 100-year, 2-hour storm is the required storm for retention,

$$\text{Retention Volume} = \left[C * A * \frac{D}{12} \right]$$

C = 0.05 per FCDMC for residential (medium density)

$V_R = (0.65)(0.032 * 640\ AC/mi^2)\left(\frac{2.7}{12}\right)$

$V_R = 3.00$ AC-FT

Retention volume is reduced by 20% to account for as-built conditions.

$V_R = 3.00 * 0.80 = 2.40$ ac-ft

Used in HEC-1 → 2.40 ac-ft

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 12-13-00

Subject Retention Prepared By KMH Checked By _____ Page 1

245 RET

The drainage report for the development in subbasin 245 could not be found. Assuming that the 100-yr, 2-hour storm is the required storm for retention,

$$\text{Retention Volume} = \left[C * A * \frac{D}{12}\right]$$

C = 0.88 per FCDMC for industrial

$$V_R = (0.88)(0.080 * 640 \text{ AC/mi.}^2)\left(\frac{2.7}{12}\right)$$

$V_R = 10.14$ ac-ft

Retention volume is reduced by 20% to account for as-built conditions.

$$V_R = 10.14 \times 0.80 = 8.11 \text{ ac-ft}$$

Used in

HEC-1 → 8.11 ac-ft

eec

Project Title LOOP303 Drainage Master Study Project No. 99551 Date 12-20-00

Subject _____ Prepared By MJC Checked By _____ Page 1

254 Ret

This retention basin was constructed along the southside of the Airline Canal. The volume was determined from the Original White Tanks Mapping.

Basin Volume: 37 ac-ft from "Palm Valley Concept Drainage Plan for the RID Canal Watershed", by the The WHB Group, May 16, 1996 Revised October 28 1996, December 17, 1996.

Diverted Volume = 0.8 (37) = 29.6 ac-ft

eec

Project Title LOOP303 Drainage Master Study Project No. 99551 Date 12-20-00

Subject Retention Prepared By MJR Checked By _____ Page _____

256RET

The drainage report for the development in subbasin 256 could not be located. Therefore EEC assumed retention volume. A field visit confirmed the development is providing retention. 100-yr-2hr storm

$$\text{Retention Volume} = \left[C \times A \times \frac{D}{12}\right]$$

$C = 0.65$ per FCDMC Residential Development

$D = 2.7''$

$A = 44\,ac$

$$V_r = .65 \times 44 \times \frac{2.7}{12} = 6.44\,ac\text{-}ft$$

Retention Volume Reduced by 20% to account for As-Built Conditions

$$\therefore V_r = 0.8\,(6.44) = \underline{5.15\,ac\text{-}ft}$$

eec

Project Title LOOP 303 Drainage Master Study Project No. 99551 Date 12.20.00

Subject Retention Prepared By MJR Checked By _____ Page _____

266RET

Retention volume from Palm Valley Master Drainage study. 100-yr 6hr storm

$V_r = 104.2$

Retention Volume reduced by 20% to account for As-Built conditions.

$V_r = 0.8\,(104.2) = 83.4$ ac-ft.

eec

Project Title LOOP 303 Master Drainage Study Project No. 99551 Date 12-20-00

Subject Retention Prepared By MJR Checked By _____ Page _____

267 Ret

Retention Volume from Palm Valley Master Drainage Study. It is a combination of all of Pebble Creek Phase 1 basins.

$V_r = 131.4$ ac-ft

Retention Volume Reduced by 20% to account for As-Built conditions

$\therefore V_r = 0.8(131.4) = 105.12$ ac-ft

eec

Project Title LAOP303 Master Drainage Study Project No. 49551 Date 12-20-00

Subject Retention Prepared By MJL Checked By _____ Page _____

268RET

Retention Volume from Palm Valley Concept Drainage Plan for the Roosevelt Canal Watershed.
(Retention is in commercial area only)
$V_r = 2.0$ ac-ft

Retention volume is reduced 20% to account for as-built conditions.

$V_r = 0.8 \times 2.0 = 1.6$ ac-ft

eec

Project Title Loop 303 Master Drainage Study Project No. 99551 Date 12-20-00

Subject Retention Prepared By MJR Checked By _____ Page _____

269 Ret

Retention Volume from Palm Valley Master Drainage study + Estimated from Aerial mapping.

$V_r = 3.1$ ac-ft

Retention Volume reduced by 20% to account for As-Built conditions.

$V_r = 0.8 \times 3.1 = 2.5$ ac-ft

eec

Project Title LOOP 303 Master Drainage Study Project No. 99551 Date 12-20-06

Subject Retention Prepared By MJR Checked By _____ Page _____

2693 RET

The drainage report for this development in subbasin 2693 could not be found. Assuming 100yr-6hr storm is required for stormwater retention

Retention Volume $= V_r = \left[C \times A \times \frac{D}{12}\right]$

$C = 0.65$ per FCDMC for Residential Area

87 ac of new Res. Development

$V_r = .65 \times 87 \times \frac{3.1}{12} = 14.61$ ac-ft

Retention Volume reduced 20% to account for as-built conditions.

$V_r = 0.8 \times 14.61 = 11.69$ ac-ft

eec

Project Title LOOP 303 Master Drainage Study Project No. 99551 Date 12-20-00

Subject Retention Prepared By MJR Checked By _____ Page _____

271A RET

Retention Volume from "Revision for The Roosevelt Irrigation District (RID) Canal Overchute Hydrologic Model.

$V_r = 13.9$ ac-ft

Retention Volume reduced 20% to account for as-Built Conditions.

$V_r = 0.8 \times 13.9 = \underline{11.1 \text{ ac-ft}}$

eec

Project Title LOOP 303 Master Drainage Study Project No. 94551 Date 12-20-00

Subject Retention Prepared By MJR Checked By _____ Page _____

SR271A
SR271

Retention Volume taken from the FCDMC HEC-1 model. Volumes + Stage, Storage table were taken from the FCDMC HEC-1 model RIDHydro.Dat. This model was used to determine the peak discharge at the RID canal Overchute structure.

eec

Project Title LOOP303 Drainage Project No. 99551 Date

Subject Retention Direct Prepared By MJK Checked By Page

279ARET

Retention Basin for Sump meet assumed to be contained within Subbasin 279A.
(Use all of 279A, B, C Area ~96 acres)
Sub-basin is in the City of Goodyear

∴ use 100-yr-6hr Rainfall Depth = 3.1 inches

$V_r = CIA$

$C = 0.85$ - Commercial Area

$I = 3.1$ inches

$A = 96$ ac

$V_r = .85 \frac{(3.1)}{12} (96) = 21$ ac-ft

Volume Reduced by 20% to account for As-Built Conditions.

$\therefore V = 0.8(21) = 16.8$ ac-ft

SR 279A

Note: original stormwater storage from WTADMS assumed to be Replaced by this operation.

eec

Project Title LOOP 303 WT TANKS Project No. 99551 Date 2/27/01

Subject Retention Prepared By MJK Checked By _____ Page _____

287E OT

This area is being Developed as commercial with very little Residential.

Retention Runoff coefficients have been assumed. Drainage reports not available.

100yr-2hr storm $I = 2.7$ inches

$C \sim 0.8$

Area ~ 100 acs (Estimated from Aerial Photo)

$$V = 0.8 \frac{(2.7)}{12} (100) = 18 \text{ ac-ft}$$

USE 80% for modeling purposes

$$\therefore V_m = 0.8(18) = \underline{14.4 \text{ ac-ft}}$$

eec

Project Title Loop 303 White Tanks Project No. 99551 Date 3/11/01

ubject Retention Prepared By MJR Checked By _____ Page _____

290 out

Drainage report for Corte Sierra was not found. therefore, drainage areas + retention volume was developed by site visits + aerial mapping.

$V = CIA$

$C = 0.65$ single Family Res.

$I = 2.6$ inch 100yr 2hr City of Avondale

$A = 190$ ac

$V = .65 \left(\frac{2.6}{12}\right)(190) = 26.8$ ac-ft

use 80% $\therefore V = 0.8(26.8) = 21.4$ ac-ft

KK 290out

DT 290RET 21.4

DI 0 10000

DQ 0 10000

eec

Project Title Loop 303 White Tanks Project No. 99551 Date 3/11/01

ubject Retention Prepared By MJR Checked By _____ Page _____

291out

Drainage Report for Rancho Santa was not located. Therefore retention volume was developed by aerial photographs + site visits.

$V = CIA$

$C = 0.65$ Single family residential

$I = 2.6$ inch 100yr 2hr City of Avondale

$A = 634$ ac

$V = .65 \left(\frac{2.6}{12}\right) 634 = 89.3$ ac-ft

use 80% $\therefore V = .8(89.3) = 71.4$ ac-ft

kk 291out

DT291RET 71.4

DI 0 10000

DQ 0 10000

eec

Subject Title LOOP 303 Master Drainage Study Project No. 99551 Date 12-20-00

Subject Retention Prepared By MJR Checked By _____ Page _____

Z 88ARET

Retention Volume from Drainage Report for Palm Valley Phase 2 Mass Grading.

$V_r = 4.0$ ac-ft

Retention Volume reduced 20% to account for As-Built Conditions.

$V_r = 0.8 \times 4.0 = \underline{3.2 \text{ ac-ft}}$

eec

ject Title LOOP 303 Project No. 99551 Date 12/26/00

Subject Retention Prepared By CAV Checked By _____ Page _____

295 RET

The DRAINAGE REPORT COULD Not be Found for the New development in Subbasin 295. Assuming that the 100-YR, 2-hr STORM is The required STORM For Retention.

Retention Volume = $[C * A * \frac{D}{12}]$

C = 0.50 per FCDMC For single Family Residential

A = 0.0775 mi^2 (Approximate)

D = 2.7 in

$$V_R = 0.65 \left(0.0775 * 640 \frac{Ac}{mi^2}\right) \left(\frac{2.7 \text{ in}}{\frac{12 \text{ in}}{Ft}}\right) = 7.25 \text{ Ac-ft}$$

$$7.25 * 0.8 \ (80\%) = \underline{\underline{5.80 \text{ Ac-Ft}}} \leftarrow$$

- USE DIVERSION To simulate Retention
- subdivision is localized

eec

Project Title Loop 303 Project No. 99551 Date 12/26/00

Subject Retention Prepared By LAV Checked By _____ Page _____

296 RET

The DRAINAGE REPORT BY CVL for Canyon Trails has the following Retention basins within Subbasin 296

BASIN	Retention Volume [Ac-ft]
A	12.0
B	15.0
D	8.0
E	11.0

TOTAL = 46.0 Ac-ft

- USE DIVERSION TO SIMULATE Retention
- subdivision is not localized, online Retention is effected by UPSTREAM Runnoff and conveyed by Communal channels

eec

Project Title LOOP 303 Project No. 99551 Date 12/26/00

Subject Retention Prepared By LAV Checked By _____ Page _____

296A RT

The DRAINAGE Report by CVL for Canyon Trails has the following Retention basins within Subbasin 296 A.

Basin	Retention Volume [Ac-ft]
B1	6.0
C1	6.0
F	10.0
G	13.0

Total = 35.0 Ac-ft

- USE DIVERSION TO SIMULATE Retention
- subdivision is not localized, online Retention is effected by upstream runoff and conveyed by Communal channels.

eec

Project Title LOOP 303 White Tanks Project No. 99551 Date 3/11/01

Subject Retention Prepared By MJR Checked By _____ Page _____

298 out

Drainage Report not available. Therefore volume assumed by using aerial photographs + site visit.

$V = CIA$ $I = 3.1$ 100yr-6hr (City of Goodyear)

$C = .65$ residential

$C = .80$ commercial

$A_{res} = 120$ ac
$A_{com} = 70$ ac $\Big\} 190$

$$C_w = \frac{.65(120)}{190} + \frac{.8(70)}{190} = 0.70$$

$$V = .7\left(\frac{3.1}{12}\right)(190) = 34.4 \text{ ac-ft}$$

use 80% $\therefore V = .8(34.4) = \underline{27.5 \text{ ac-ft}}$

KK 298 out
DT 298 Ret 27.5
DI 0 10000
DQ 0 10000

eec

Project Title LOOP 303 White Tanks Project No. 99551 Date 3/11/01

ubject Retention Prepared By MJR Checked By _____ Page _____

229out

Drainage report not available. Volume Estimated by $V_r = CIA$, (100yr-6hr) $I = 3.6$ inches

$A = 40ac$; $C = 0.88$

$V = .88 \times \frac{3.6}{12} \times 40 = 10.56 ac\text{-}ft$

Assume 80% available

$\therefore V_r = 0.8 \times 10.56 = \underline{8.45 ac\text{-}ft}$

```
kk 229out
DT 229RET   8.45
DI  0   10000
DQ  0   10000
```

eec

Project Title: LOOP 303 Project No. 99551 Date 12/26/00

Subject: Retention Prepared By: LAV Checked By: _____ Page: _____

313 RET

The Drainge Report for the development in Subbasin 313 Could Not Be found. Assume that the 100-YR, 2-hr Storm is Required for Retention

$$\text{Retention Volume} = \left[C * A * \frac{D}{12} \right]$$

$C = 0.5$ per FCDMC for Single family Residential

$A = 0.43 \ mi^2$

$D = 2.7$ in

$$V_R = 0.65 \left(0.43 \ mi^2 * 640 \frac{Ac}{mi^2} \right) \left(\frac{2.7 \ in}{\frac{12 \ in}{ft}} \right) = 40.25 \ Ac\text{-}ft$$

$$40.25 * 0.8 \ (80\%) = \underline{\underline{32.20 \ Ac\text{-}ft}} \leftarrow$$

- USE DIVERSION TO SIMULATE Retention
- subdivision is localized - retention is onsite (on each individual lot)

eec

Project Title Loop 303 Project No. 99551 Date 12/26/00

Subject Retention Prepared By LAV Checked By _____ Page _____

314 RET

The Drainge Report for the Development in Subbasin 314 Could not be found. Assume that the 100-YR, 2-hour storm is Required for Retention.

$$\text{Retention Volume} = \left[C * A * \frac{D}{12}\right]$$

C = 0.5 per FCDMC for Single Family Residential

C = 0.2 per FCDMC for Agriculture

Area	Land use
0.273	Ag
0.147	Res
0.42	TOTAL

$$V_R = 0.65\left(0.147 * 640 \frac{Ac}{mi^2}\right)\left(\frac{2.7}{12}\right) \quad 13.76$$

$$+ 0.2\left(0.273 * 640 \frac{Ac}{mi^2}\right)\left(\frac{2.7}{12}\right) \quad 7.86$$

$$= 21.62 \text{ Ac-ft} * 0.8 (80\%)$$

$$= \underline{\underline{17.30 \text{ Ac-ft}}} \leftarrow$$

- USE DIVERSION TO SIMULATE Retention
- Subdivision is localized

eec

ect Title Loop 303 Project No. 99551 Date 12/26/00

Subject Retention Prepared By LAV Checked By _____ Page _____

330 RET

Based upon the report by American Engineering for Cotton Flower Unit I, II, & III the following Retention Basins are located within:

DRAINAGE Area	Retention basin	Volume provided
	offsite basin	134,165 CF
DA-1	1	402,343 CF
DA-2	2	137,808 CF
DA-3	3	28619 CF
DA-4	4	28,619 CF
DA-6	6	95,072 CF
DA-7	7	37,397 CF
DA-8	8	69,200 CF
DA-9	9	215,578 CF
DA-10	10	37,312 CF

TOTAL = 1,157,494 CF

= 26.57 Ac-ft

The Subdivision is only partially Complete, Therefore The Basins (5, 11 & 12) were not included in the Retention Volume Calc's.

- USE DIVERSION TO SIMULATE Retention
- subdivision is localized

eec

ect Title Loop 303 Project No. 9955 Date 12/26/00

Subject Retention Prepared By LAV Checked By Page

333 RET

The master DRAINAGE PLAN By Neil / McGill Consultants, INC for Estrella Vista has the following Retention basins within Subbasin 333

Drainage Areas	Retention Volume
Parcels C, D, E, F, G, H	10.92 Ac-ft
Parcels A, B	6.26 Ac-ft
Parcel 8	3.06 Ac-ft
Total =	20.24 Ac-ft

However at the time of this revision the Retention basins for Parcels A, B & 8 have not been Constructed.
Therefore, only 10.92 Ac-ft of Retention will be included in The revised HEC-1 model

TOTAL Retention = 10.92 Ac-ft ←

- USE DIVERSION TO SIMULATE Retention.
- subdivision is localized.

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 3-13-90

STAGE - STORAGE - DISCHAGE TABLE

FOR SUB-BASIN 16

ELEV. (FT.)	AREA (AC.)		VOLUME (AC-FT.)	DISCHARGE (CFS.)
1198	0		0	0
		.74		
1200	.74		.74	0
		30.5		
1210	5.36		31.24	0
		83.0		
1220	11.24		114.24	0
		155.35		
1230	19.83		269.59	0
		232.1		
1240	26.59		501.69	0
		304.85		
1250	34.38		806.54	0
		512.05		
1260	68.03		1318.59	0
		457.53		
1266	84.48		1776.12	0
		132.24		
1267	90.0		1908.36	4050

WEIR FLOW OVER TOP OF DIKE

$Q = CLH^{3/2}$

$L = 3000/2 = 1500$

$C = 2.70$

$H = 1.0$

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 3-14-90

STAGE - STORAGE - DISCHARGE TABLE

WHITE TANKS STR # 3 SUBBASIN # 17

ELEV. (FT)	AREA (AC)		VOLUME (AC-FT)		WITH GATES CLOSED DISCHARGE (CFS)
1174	0		0	(0)	0
		.92			
1176	.92		.92	(1)	0
		12.81			
1180	5.17		13.73	(14)	0
		27.96			
1184	8.81		41.69	(42)	0
		49.28			
1188	15.83		90.97	(91)	0
		111.58			
1192	39.96		202.55	(203)	0
		262.98			
1196	91.53		465.53	(466)	0
		492.21			
1200	154.52		957.74	(958)	0
		746.36			
1204	218.66		1704.10	(1704)	0
		1011.86			
1208	287.27		2715.96	(2716)	0
		296.01			
1209	304.75		3011.97	(3012)	0
		313.50			
1210	322.24		3325.47	(3325)	3550
		331.28			
1211	340.31		3656.75	(3657)	9000
		349.34			
1212	358.38		4006.09	(4006)	17600

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 5-3-90

STAGE - STORAGE - DISCHARGE TABLE

TANK ON EAST SIDE OF SUBBASIN # 20

CATERPILLAR PROVING GROUNDS

ELEV. (FT)	AREA (AC)		VOLUME (AC-FT)	DISCHARGE (CFS)
1443.0	0		0	0
		1.05		
1446.0	0.70		1.05	0
		8.38		
1450.0	3.49		9.43	0
		17.48		
1454.0	5.25		26.91	0
		27.4		
1458.0	8.45		54.31	0
		38.58		
1462.0	10.84		92.89	0
		45.78		
1466.0	12.05		138.67	0
		37.8		
*1469.0	13.15		176.47	0
		13.61		
1470	14.06		190.08	265
		28.97		
1472	14.91		219.05	1377
		30.52		
1474	15.61		249.57	2963

* Overflow Elevation

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COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 5-2-90

STAGE - STORAGE - DISCHARGE TABLE

TANK ON EAST SIDE OF SUBBASIN # 21

CATERPILLAR PROVING GROUNDS

ELEV (FT.)	AREA (AC)		VOLUME (AC-FT)	DISCHARGE (CFS)
1319.0	0		0	0
		0.68		
1320.0	1.36		0.68	0
		20.0		
1330	2.64		20.68	0
		36.9		
1340	4.74		57.58	0
		38.33		
* 1347	6.21		95.91	0
		6.43		
1348	6.64		102.34	265
		15.31		
1350	8.67		117.65	1377
1351			130	2100

* Overflow Elevation

at 1.0 L = 105' $Q = 2.5\ 105(1.0)^{3/2} = 265$

at 3.0 L = 105 $Q = 2.5\ 105(3.0)^{3/2} = 1377$

at 4.0 L = 105 $Q = 2.5\ 105(4.0)^{3/2} = 2100$

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 5-2-90

STAGE - STORAGE - DISCHARGE TABLE

TANK ON SOUTHEAST SIDE OF SUBBASIN # 23

CATERPILLAR PROVING GROUNDS

ELEV. (FT)	AREA (AC)		VOLUME (AC-FT)	DISCHARGE (CFS)
1272	0.85		0	0
		6.04		
1276	2.17		6.04	0
		14.34		
1280	5.00		20.38	0
		33.44		
1284	11.72		53.82	0
		66.56		
1288	21.56		120.38	0
		95.86		
1292	26.37		216.24	0
		109.74		
1296	28.5		325.98	0
		129.44		
1300	36.22		455.42	0
		150.68		
1304	39.12		606.1	0
		39.39		
*1305	39.66		645.49	0
		40.12		
1306	40.58		685.61	920
		82.37		
1308	41.79		767.98	8950

* Overflow Elevation

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 5-2-90

STAGE - STORAGE - DISCHARGE TABLE

TANK IN SOUTHEAST CORNER OF SUBBASIN # 24
CATERPILLAR PROVING GROUNDS

ELEV (FT)	AREA (AC)		VOLUME (AC-FT)	DISCHARGE (CFS)
1210	0		0	0
		0.46		
1214	0.23		0.46	0
		2.5		
1216	2.27		2.96	0
		13.64		
1220	4.55		16.60	0
		69.40		
1230	9.33		86.00	0
		135.55		
1240	17.78		221.55	0
		61.44		
* 1243	23.18		282.99	0
		23.6		
1244	24.02		306.59	50 cfs
		50.43		
1246	26.41		357.02	2598 cfs

* Overflow Elevation

C = 2.5

at 1.0 L = 20 ft $Q = 2.5(20)(1.0)^{3/2} = 50$ cfs

at 3.0 L = 200 ft $Q = 2.5(200)(3)^{3/2} = 2598$ cfs

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 5-2-90

STAGE - STORAGE - DISCHARGE TABLE

TANK IN SOUTHEAST CORNER OF SUBBASIN # 25

CATERPILLAR PROVING GROUNDS

ELEV. (FT)	AREA (AC)		VOLUME (AC-FT)	DISCHARGE (CFS)
1204	0		0	0
		5.61		
1210	1.87		5.61	0
		4.66		
1212	2.79		10.27	0
		2.88		
* 1213	2.97		13.15	0
		3.47		
1214	3.96		16.62	125 cfs
		9.58		
1216	5.62		26.20	2273 cfs

* Overflow Elevation

C = 2.5

at 1.0 L = 50 $Q = 2.5(50)(1.0)^{3/2} = 125$ cfs

at 3.0 L = 175 $Q = 2.5(175)(3.0)^{3/2} = 2273$

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 4-27-90

STAGE – STORAGE – DISCHARGE TABLE

TANK IN SOUTHEAST CORNER OF SUBBASIN # 27

CATERPILLAR PROVING GROUNDS

ELEV. (FT)	AREA (AC)		VOLUME (AC-FT)	DISCHARGE (CFS)
1203	0		0	0
		0.13		
1204	0.25		0.13	0
		5.64		
1210	1.63		5.77	0
		3.60		
1212	1.97		9.37	0
		2.05		
* 1213	2.13		11.42	0
		2.29		
1214	2.45		13.71	550 cfs
		5.5		
1216	3.05		19.21	4546 cfs

* Overflow Elevation

C = 25

at 1.0 L = 220 $Q = 25\ 220\ (1.0)^{3/2} = 550$

at 3.0 L = 350 $Q = 25\ 350\ (3.0)^{3/2} = 4546$

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 5-2-90

STAGE - STORAGE - DISCHARGE TABLE

TANK IN THE SOUTHEAST CORNER OF SUBBASIN # 29

CATERPILLAR PROVING GROUNDS

ELEV. (FT)	AREA (AC)		VOLUME (AC-FT)	DISCHARGE (CFS)
1164.5	0		0	0
		0.99		
1166	1.32		0.99	0
		11.74		
1170	4.55		12.73	0
		10.72		
1172	6.17		23.45	0
		12.8		
1174	6.63		36.25	0
		14.43		
1176	7.80		50.68	0
		4.08		
1177.5 *	8.54		54.76	0
		4.57		
1178	9.77		59.33	88
		23.87		
1180	14.10		83.20	6226

* Overflow Elevation

C = 2.5

at .5 L = 100 $Q = 2.5(100)(.5)^{3/2} = 88$

at 2.5 L = 630 $Q = 2.5(630)(2.5)^{3/2} = 6226$

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 5-3-90

STAGE - STORAGE - DISCHARGE TABLE

TANK ON EAST SIDE OF SUBBASIN # 38

CATERPILLAR PROVING GROUNDS

ELEV. (FT)	AREA (AC)		VOLUME (AC-FT)	DISCHARGE (CFS)
1275	0		0	0
		1.83		
1280	0.73		1.83	0
		13.55		
1290	1.98		15.38	0
		23.87		
* 1297.5	2.42		39.25	0
		2.51		
1298	2.60		41.76	44
		5.69		
1300	3.09		47.45	2223
1301			60.58	6550

* Overflow Elevation $C = 2.5$

at .5 $L = 50$ $Q = 2.5\ 50(.5)^{3/2} = 44$

at 2.5 $L = 225$ $Q = 2.5\ 225(2.5)^{3/2} = 2223$

at 3.5 $L = 400$ $Q = 2.5\ 400(3.5)^{3/2} = 6550$

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 4-27-90

STAGE - STORAGE - DISCHARGE TABLE

TANK IN SOUTHEASTERN PART OF SUBBASIN # 42

ELEV. (FT)	AREA (AC)		VOLUME (AC-FT)	DISCHARGE (CFS)
1071.5	0	.11	0	0
1072	.45		.11	0
		1.032		
1080	2.13		10.43	0
		31.20		
1090	4.11		41.63	0
		28.27		
* 1095	7.20		69.90	0
		7.44		
1096	7.68		77.34	163
		16.86		
1098	9.18		94.20	844
		19.46		
1100	10.28		113.66	2096
		21.04		
1102	10.76		134.70	4630
		26.08		
1104	15.32		160.78	13500

* Overflow Elevation C = 2.5

at 1.0 L = 65 $Q = 2.5(65)(1)^{3/2} = 163$

at 3.0 L = 65 $Q = 2.5(65)(3)^{3/2} = 844$

at 5.0 L = 75 $Q = 2.5(75)(5)^{3/2} = 2096$

at 7.0 L = 100 $Q = 2.5(100)(7)^{3/2} = 4630$

at 9.0 L = 200 $Q = 2.5(200)(9)^{3/2}$ 13500

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUAFRIA ADMS Prepared by JSE Date 4-27-90

STAGE - STORAGE - DISCHARGE TABLE

WHITE TANKS STRUKTURE # 4 - SUBBASIN (H7)

ELEV. (Ft)	AREA (Ac.)		VOLUME (AC-FT)	W/ GATES - CLOSED	W/ GATES - OPEN DISCHARGE (CFS)
997	0		0		0
		2.81			
1000	1.87		2.81		0
		48.2			
1010	7.77		51.01		0
		96.9			
1020	11.61		147.91		0
		129.5			
1030	14.29		277.41		0
		265.75			
1040	38.86		543.16		0
		726.12			
* 1049	122.50		1269.28		0
		126.86			
1050	131.21		1396.14		375
		293.67			
1052	162.46		1689.81		2600
		355.63			
1054	193.17		2045.44		6150
		200.57			
** 1055	207.97		2246.01		14700

* Spillway Elevation

** Top of Dam Elevation C=2.5 L=150

at 1.0 $Q = 2.5(150)(1)^{3/2} = 375$ cfs

at 3.0 $Q = 2.5(200)(3)^{3/2} = 2600$ cfs

at 5.0 $Q = 2.5(220)(5)^{3/2} = 6150$ cfs

at 6.0 $Q = 2.5(400)(6)^{3/2}$

This analysis considers only one spillway should use L = 330'

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITETANKS / AGUA FRIA ADMS Prepared by JSE Date 7-16-90

STAGE – STORAGE – DISCHARGE TABLE (I-10)

STA 6255+85 1-30" CMP AT CPLNA

ELEVATION		VOLUME	DISCHARGE	DIVERT
1133.45		0	0	0
1134.91		.43	10	0
1135.23		.53	14	0
1135.58		.63	18	0
1135.97		.74	23	0
1137.62		1.24	29	0
1139.0	Top of Dike	1.65	33	0
1140.3		3.40	35	834
1143.85		6.2	42	6008

Dike Length = 225' assume C = 2.5

at 1.3 $Q = 2.5(225)(1.3)^{3/2} = 834$ cfs

at 4.85 $Q = 2.5(225)(4.85)^{3/2} = 6008$ cfs

STA 6255+85

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 12, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1- 30" CMP	VALUE
Culvert Diameter (feet).....	2.50
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	266.0
Culvert Slope (feet per foot).....	0.0120

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.7	0.50	1.46	-0.84	1.10	1.04	1.10	4.68
13.5	0.60	1.78	-0.18	1.33	1.24	1.33	5.09
0.7							
18.0	0.70	2.13	0.82	1.60	1.44	1.60	5.43
23.0	0.80	2.52	2.21	1.92	1.63	1.92	5.67
28.7	0.90	3.05	4.17	2.50	1.83	1.83	7.47
35.1	1.00	3.66	6.85	2.50	2.01	2.01	8.29
42.2	1.10	4.53	10.40	2.50	2.17	2.17	9.31
50.1	1.20	5.67	15.08	2.50	2.30	2.30	10.60

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STA 6255+85, 6267+60, 6305+22

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0125
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.7	3.00	0.829	0.140	0.640	3.3	8.0
0.6	13.5	3.32	0.849	0.171	0.771	4.1	8.6
0.7	18.0	3.61	0.867	0.203	0.903	5.0	9.2
0.8	23.0	3.89	0.882	0.235	1.035	5.9	9.8
0.9	28.7	4.15	0.895	0.267	1.167	6.9	10.4
1.0	35.1	4.39	0.908	0.300	1.300	8.0	11.0
1.1	42.2	4.63	0.919	0.332	1.432	9.1	11.6
1.2	50.1	4.85	0.929	0.365	1.565	10.3	12.2
1.3	58.6	5.07	0.939	0.399	1.699	11.6	12.8
1.4	67.9	5.28	0.948	0.432	1.832	12.9	13.4
1.5	78.1	5.48	0.957	0.466	1.966	14.2	14.0
1.6	89.0	5.67	0.965	0.500	2.100	15.7	14.6
1.7	100.7	5.87	0.973	0.534	2.234	17.2	15.2
1.8	113.3	6.05	0.980	0.569	2.369	18.7	15.8
2.0	141.1	6.41	0.994	0.639	2.639	22.0	17.0
2.5	226.9	7.26	1.024	0.819	3.319	31.3	20.0

==========

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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 626+65 - 30" CMP AT (P41A2)

ELEVATION		VOLUME	DISCHARGE	DIVERT
1132.74		0	0	0
1134.07		.10	8	0
1134.98		.24	19	0
1135.56	Top of Dike	.31	24	0
1137.34		.62	30	594
1139.65		1.72	36	2068

at 1.78 Length 100' C=2.5

$Q = 2.5(100)(1.78)^{3/2} = 594$

at 4.09

$Q = 2.5(100)(4.09)^{3/2} = 2068$

STA 6261+65, 6315+00

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 12, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0089
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	8.2	2.53	0.699	0.099	0.599	3.3	8.0
0.6	11.4	2.80	0.716	0.122	0.722	4.1	8.6
0.7	15.2	3.05	0.731	0.144	0.844	5.0	9.2
0.8	19.4	3.28	0.744	0.167	0.967	5.9	9.8
0.9	24.3	3.50	0.756	0.190	1.090	6.9	10.4
1.0	29.7	3.71	0.766	0.213	1.213	8.0	11.0
1.1	35.6	3.90	0.775	0.237	1.337	9.1	11.6
1.2	42.2	4.09	0.784	0.260	1.460	10.3	12.2
1.3	49.5	4.28	0.792	0.284	1.584	11.6	12.8
1.4	57.3	4.45	0.800	0.308	1.708	12.9	13.4
1.5	65.9	4.62	0.807	0.332	1.832	14.2	14.0

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STA 6261+65

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 12, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1- 30" CMP	VALUE
Culvert Diameter (feet)	2.50
FHWA Chart Number (1,2 or 3)	2
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.0240
Entrance Loss Coefficient of Culvert Opening	0.50
Culvert Length (feet)	240.0
Culvert Slope (feet per foot)	0.0112

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.2	0.50	1.33	-0.58	1.02	0.95	1.02	4.37
11.4	0.60	1.61	-0.13	1.23	1.13	1.23	4.75
15.2	0.70	1.91	0.55	1.46	1.31	1.46	5.10
19.4	0.80	2.24	1.48	1.72	1.49	1.72	5.37
24.3	0.90	2.62	2.82	2.12	1.68	1.68	6.93
29.7	1.00	3.15	4.60	2.50	1.86	1.86	7.59
35.6	1.10	3.72	6.91	2.50	2.02	2.02	8.36
42.2	1.20	4.53	9.97	2.50	2.17	2.17	9.31
49.5	1.30	5.58	13.91	2.50	2.29	2.29	10.50
57.3	1.40	6.89	18.78	2.50	2.37	2.37	11.90

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6267+60 1-30" CMP AT CP41A3

ELEVATION		VOLUME	DISCHARGE	DIVERT
1128.67		0	0	0
1130.13		.86	10	0
1130.45		1.05	14	0
1130.80		1.25	18	0
1131.19		1.48	23	0
1132.94		2.57	29	0
1133.5	Top of Dike	2.84	32	0
1134.0		4.15	33	221
1134.5		5.46	34	625
1135.57		8.08	35	1861

Length = 250' C = 2.5

at .5 Q = 221 cfs

at 1.0 Q = 625 cfs

at 2.07 Q = 1861 cfs

STA 6267+60

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 12, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1-30" CMP	VALUE
Culvert Diameter (feet).....	2.50
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	260.0
Culvert Slope (feet per foot).....	0.0115

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.7	0.50	1.46	-0.65	1.11	1.04	1.11	4.61
13.5	0.60	1.78	-0.00	1.35	1.24	1.35	5.01
18.0	0.70	2.13	0.98	1.63	1.44	1.63	5.31
23.0	0.80	2.52	2.35	1.96	1.63	1.96	5.56
28.7	0.90	3.05	4.27	2.50	1.83	1.83	7.47
1.0	35.10	0.44	32.11	0.35	0.32	2.50	0.20
35.1	1.00	3.66	6.90	2.50	2.01	2.01	8.29
42.2	1.10	4.53	10.39	2.50	2.17	2.17	9.31
50.1	1.20	5.67	14.97	2.50	2.30	2.30	10.60

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STA 6255+85, 6267+60, 6305+22

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0125
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.7	3.00	0.829	0.140	0.640	3.3	8.0
0.6	13.5	3.32	0.849	0.171	0.771	4.1	8.6
0.7	18.0	3.61	0.867	0.203	0.903	5.0	9.2
0.8	23.0	3.89	0.882	0.235	1.035	5.9	9.8
0.9	28.7	4.15	0.895	0.267	1.167	6.9	10.4
1.0	35.1	4.39	0.908	0.300	1.300	8.0	11.0
1.1	42.2	4.63	0.919	0.332	1.432	9.1	11.6
1.2	50.1	4.85	0.929	0.365	1.565	10.3	12.2
1.3	58.6	5.07	0.939	0.399	1.699	11.6	12.8
1.4	67.9	5.28	0.948	0.432	1.832	12.9	13.4
1.5	78.1	5.48	0.957	0.466	1.966	14.2	14.0
1.6	89.0	5.67	0.965	0.500	2.100	15.7	14.6
1.7	100.7	5.87	0.973	0.534	2.234	17.2	15.2
1.8	113.3	6.05	0.980	0.569	2.369	18.7	15.8
2.0	141.1	6.41	0.994	0.639	2.639	22.0	17.0
2.5	226.9	7.26	1.024	0.819	3.319	31.3	20.0

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (T-10)

STA 6273+88 1-36" CMP AT CD41A

ELEVATION		VOLUME	DISCHARGE	DIVERT
1124.36		0	0	0
1125.75		1.22	10	0
1127.38		2.65	36	0
1127.86		3.07	44	0
1128.0	Top of Dike	3.20	45	0
1128.5		4.78	47	265
1129.0		6.37	49	750
1129.5		7.96	51	1378
1129.92		9.57	52	1995

C = 2.5 Length = 300'

at .5 $Q = 2.5(300)(.5)^{3/2} = 265$

at 1.0 Q = 750 cfs

at 1.5 Q = 1378 cfs

at 1.92 Q = 1995 cfs

STA 6273+00

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 12, 1990

PROGRAM INPUT DATA:

1-36" CMP

DESCRIPTION	VALUE
Culvert Diameter (feet)	3.00
FHWA Chart Number (1,2 or 3)	2
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.0240
Entrance Loss Coefficient of Culvert Opening	0.50
Culvert Length (feet)	287.0
Culvert Slope (feet per foot)	0.0146

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
10.1	0.50	1.39	-1.93	0.98	1.01	0.98	5.03
36.3	1.00	3.02	1.78	2.10	1.96	2.10	6.88
43.6	1.10	3.50	3.42	2.45	2.15	2.45	7.05
51.7	1.20	4.10	5.56	3.00	2.34	2.34	8.75
60.5	1.00	4.85	8.27	3.00	2.51	2.51	9.58
60.5	1.30	4.85	8.27	3.00	2.51	2.51	9.58
70.2	1.40	5.81	11.70	3.00	2.66	2.66	10.59

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STA 6247+05, 6273+88, 6288+25

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 12, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0133
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	10.1	3.10	0.856	0.149	0.649	3.3	8.0
1.0	36.3	4.54	0.937	0.320	1.320	8.0	11.0
1.1	43.6	4.78	0.949	0.354	1.454	9.1	11.6
1.2	51.7	5.01	0.960	0.390	1.590	10.3	12.2
1.3	60.5	5.23	0.970	0.425	1.725	11.6	12.8
1.4	70.2	5.45	0.979	0.461	1.861	12.9	13.4
1.5	80.6	5.66	0.988	0.497	1.997	14.2	14.0
1.6	91.9	5.86	0.996	0.533	2.133	15.7	14.6
1.7	104.0	6.06	1.004	0.570	2.270	17.2	15.2
1.8	117.0	6.25	1.012	0.607	2.407	18.7	15.8
1.9	130.9	6.44	1.019	0.644	2.544	20.3	16.4
2.0	145.7	6.62	1.026	0.681	2.681	22.0	17.0
2.5	234.3	7.50	1.057	0.873	3.373	31.3	20.0

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6288+35 2-36" CMP AT (CP41-1)

ELEVATION	VOLUME (AC-FT)	DISCHARGE	DIVERT
1112.69	0	0	0
95714			
1114.08	.73	10	0
1115.71	3.47	36	0
1116 Top of Dike	3.94	44	0
1116.5	4.53	47	442
1117.0	5.12	50	1250
1117.5	5.71	52	2296

C = 2.5 Length = 500'

at .5 Q = 442

at 1.0 Q = 1250

at 1.5 Q = 2296

STA 6288+25

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 12, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	216.0
Culvert Slope (feet per foot).....	0.0162

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
10.1	0.50	1.39	-1.28	0.96	1.01	0.96	5.19
36.3	1.00	3.02	1.76	2.01	1.96	2.01	7.20
43.6	1.10	3.50	3.09	2.33	2.15	2.33	7.41
51.7	1.20	4.10	4.81	3.00	2.34	2.34	8.75
60.5	1.30	4.85	6.99	3.00	2.51	2.51	9.58
70.2	1.40	5.81	9.74	3.00	2.66	2.66	10.59
80.6	1.50	7.00	13.11	3.00	2.78	2.78	11.80
91.9	1.60	8.48	17.26	3.00	2.86	2.86	13.23
104.0	1.70	10.27	22.30	3.00	2.91	2.91	14.84

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STA 6247+05, 6273+88, 6288+25

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 12, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0133
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	10.1	3.10	0.856	0.149	0.649	3.3	8.0
1.0	36.3	4.54	0.937	0.320	1.320	8.0	11.0
1.1	43.6	4.78	0.949	0.354	1.454	9.1	11.6
1.2	51.7	5.01	0.960	0.390	1.590	10.3	12.2
1.3	60.5	5.23	0.970	0.425	1.725	11.6	12.8
1.4	70.2	5.45	0.979	0.461	1.861	12.9	13.4
1.5	80.6	5.66	0.988	0.497	1.997	14.2	14.0
1.6	91.9	5.86	0.996	0.533	2.133	15.7	14.6
1.7	104.0	6.06	1.004	0.570	2.270	17.2	15.2
1.8	117.0	6.25	1.012	0.607	2.407	18.7	15.8
1.9	130.9	6.44	1.019	0.644	2.544	20.3	16.4
2.0	145.7	6.62	1.026	0.681	2.681	22.0	17.0
2.5	234.3	7.50	1.057	0.873	3.373	31.3	20.0

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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6305+22 2-42" CMP AT (P41-2)

ELEVATION		VOLUME	DISCHARGE	DIVERT
1099.16	0	0	0	0
1100.45	1.31	.84	10	0
1100.70	1.84	1.23	14	0
1100.96	2.36	1.78	18	0
1101.23	2.75	2.46	23	0
1101.52	3.14	3.31	29	0
1101.83	3.53	4.34	35	0
1102.17	3.93	5.61	42	0
1102.83	5.23	7.63	50	0
1103.5 Top of Dike	6.55	11.57	56	0
1103.77	7.54	13.47	59	142
1104.0	8.39	15.30	61	358
1104.5	8.92	19.63	64	405
1104.95	9.45	23.76	68	1768

C = 2.5 Length = 405'

at H = .37 Q = 142

H = .5 Q = 358

H = 1.0 Q = 405

H = 1.45 Q = 1768

STA 6305+22

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 2-42" CMP	VALUE
Culvert Diameter (feet)	3.50
FHWA Chart Number (1,2 or 3)	2
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.0240
Entrance Loss Coefficient of Culvert Opening	0.50
Culvert Length (feet)	200.0
Culvert Slope (feet per foot)	0.0075

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.7	0.50	1.29	0.81	1.07	0.94	1.07	3.87
13.5	0.60	1.54	0.98	1.28	1.12	1.28	4.24
18.0	0.70	1.80	1.20	1.50	1.30	1.50	4.57
23.0	0.80	2.07	1.47	1.72	1.47	1.72	4.88
28.7	0.90	2.36	1.84	1.97	1.65	1.97	5.15
5.1	1.00	0.92	0.61	0.78	0.68	0.78	3.21
35.1	1.00	2.67	2.30	2.25	1.84	2.25	5.38
42.2	1.10	3.01	2.90	2.58	2.02	2.58	5.55
50.1	1.20	3.37	3.67	3.14	2.21	2.21	7.82
58.6	1.30	3.77	4.61	3.50	2.40	2.40	8.34
67.9	1.40	4.36	5.79	3.50	2.58	2.58	8.92
78.1	1.50	4.91	7.25	3.50	2.76	2.76	9.59

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STA 6255+85, 6267+60, 6305+22

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0125
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.7	3.00	0.829	0.140	0.640	3.3	8.0
0.6	13.5	3.32	0.849	0.171	0.771	4.1	8.6
0.7	18.0	3.61	0.867	0.203	0.903	5.0	9.2
0.8	23.0	3.89	0.882	0.235	1.035	5.9	9.8
0.9	28.7	4.15	0.895	0.267	1.167	6.9	10.4
1.0	35.1	4.39	0.908	0.300	1.300	8.0	11.0
1.1	42.2	4.63	0.919	0.332	1.432	9.1	11.6
1.2	50.1	4.85	0.929	0.365	1.565	10.3	12.2
1.3	58.6	5.07	0.939	0.399	1.699	11.6	12.8
1.4	67.9	5.28	0.948	0.432	1.832	12.9	13.4
1.5	78.1	5.48	0.957	0.466	1.966	14.2	14.0
1.6	89.0	5.67	0.965	0.500	2.100	15.7	14.6
1.7	100.7	5.87	0.973	0.534	2.234	17.2	15.2
1.8	113.3	6.05	0.980	0.569	2.369	18.7	15.8
2.0	141.1	6.41	0.994	0.639	2.639	22.0	17.0
2.5	226.9	7.26	1.024	0.819	3.319	31.3	20.0

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (T-10)

STA 635+00 2-36" CMP AT CP41

ELEVATION		VOLUME	DISCHARGE	DIVERT
1094.67	0	0	0	0
1095.91	.78	.07	8	0
1096.15	1.57	.37	11	0
1096.42	2.03	.86	15	0
1096.99	2.49	2.15	24	0
1097.30	2.95	2.99	30	0
1097.91	3.41	4.92	36	0
1099.12	5.21	5.83	42	0
1099.5	Top of Dike 5.77	7.92	43	0
1100.0	6.82	11.06	46	354
1100.66	7.25	15.07	50	1169

C = 2.5 L = 400

at .5 Q = 354 cfs

at 1.1 Q = 1169 cfs

STA 6315+00

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 12, 1990

PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	224.0
Culvert Slope (feet per foot).....	0.0088

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.2	0.50	1.24	0.12	1.00	0.90	1.00	3.95
6.0							
11.4	0.60	1.48	0.34	1.20	1.07	1.20	4.33
15.2	0.70	1.75	0.64	1.45	1.24	1.45	4.48
19.4	0.80	2.02	1.04	1.63	1.41	1.63	4.96
24.3	0.90	2.32	1.60	1.88	1.59	1.88	5.22
29.7	1.00	2.63	2.32	2.17	1.76	2.17	5.42
35.6	1.10	2.98	3.24	2.62	1.94	1.94	7.37
42.2	14.20	3.37	16.09	3.00	2.12	3.00	5.97
42.2	1.20	3.37	4.45	3.00	2.12	2.12	7.92
49.5	1.30	3.93	5.99	3.00	2.29	2.29	8.55
57.3	1.40	4.56	7.88	3.00	2.45	2.45	9.27
65.9	1.50	5.36	10.25	3.00	2.60	2.60	10.13

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STA 6261+65, 6315+00

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 12, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0089
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	8.2	2.53	0.699	0.099	0.599	3.3	8.0
0.6	11.4	2.80	0.716	0.122	0.722	4.1	8.6
0.7	15.2	3.05	0.731	0.144	0.844	5.0	9.2
0.8	19.4	3.28	0.744	0.167	0.967	5.9	9.8
0.9	24.3	3.50	0.756	0.190	1.090	6.9	10.4
1.0	29.7	3.71	0.766	0.213	1.213	8.0	11.0
1.1	35.6	3.90	0.775	0.237	1.337	9.1	11.6
1.2	42.2	4.09	0.784	0.260	1.460	10.3	12.2
1.3	49.5	4.28	0.792	0.284	1.584	11.6	12.8
1.4	57.3	4.45	0.800	0.308	1.708	12.9	13.4
1.5	65.9	4.62	0.807	0.332	1.832	14.2	14.0

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6319+32, 6321+33, 6323+05, 6324+32 AT CP43-1
1-48" 1-48" 1-48" 2-48"

ELEVATION		VOLUME	DISCHARGE	DIVERT
1091.69	0	0	0	0
1092.82	0.06	0.37	32	0
1093.25	1.32	0.80	160	0
1093.72	1.98	1.58	202	0
1094.21	2.65	2.71	120	0
1094.77	3.90	4.54	220	0
1095.08	4.59	5.86	260	0
1195.43	5.38	7.60	301	0
1196.19	Top of Dike 7.08	12.33	357	0
1196.5	8.78	14.79	378	123
1197.09	10.49	21.44	417	640

C = 2.5 L = 300'

at .3 Q = 123 cfs

at .9 Q = 640 cfs

STA 6319+32

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 12, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 1-48" CMP	VALUE
Culvert Diameter (feet).....	4.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	234.0
Culvert Slope (feet per foot).....	0.0098

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PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.3	0.50	1.13	0.17	0.89	0.84	0.89	3.99
11.5	0.60	1.35	0.28	1.05	0.99	1.05	4.39
15.2	0.70	1.56	0.41	1.21	1.14	1.21	4.76
19.5	0.80	1.79	0.56	1.37	1.30	1.37	5.11
24.4	0.90	2.03	0.76	1.55	1.46	1.55	5.43
29.4	1.00	2.25	0.97	1.71	1.61	1.71	5.72
35.8	1.41	2.52	1.28	1.92	1.78	1.92	6.02
35.8	1.10	2.52	1.28	1.92	1.78	1.92	6.02
42.5	1.20	2.80	1.65	2.12	1.95	2.12	6.28
49.7	1.30	3.08	2.08	2.34	2.11	2.34	6.52
57.7	1.30	3.39	2.63	2.58	2.29	2.58	6.73
57.7	1.40	3.39	2.63	2.58	2.29	2.58	6.73
100.0	2.00	5.17	6.54	4.00	3.03	3.03	9.79
65.0	1.50	3.67	3.18	2.82	2.43	2.82	6.87
70.0	1.60	3.86	3.58	3.00	2.53	3.00	6.93
80.0	1.80	4.24	4.47	3.44	2.71	2.71	8.83

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STA 632+33

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 12, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 1-48" CMP	VALUE
Culvert Diameter (feet).....	4.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	214.0
Culvert Slope (feet per foot).....	0.0112

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.3	0.50	1.13	0.05	0.86	0.84	0.86	4.19
11.5	0.60	1.35	0.16	1.01	0.99	1.01	4.62
15.2	0.70	1.56	0.29	1.16	1.14	1.16	5.02
19.5	0.80	1.79	0.44	1.33	1.30	1.33	5.36
24.4	0.90	2.03	0.63	1.49	1.46	1.49	5.73
29.8	1.00	2.27	0.85	1.66	1.62	1.66	6.04
35.8	1.10	2.52	1.13	1.83	1.78	1.83	6.40
42.5	1.20	2.80	1.48	2.04	1.95	2.04	6.60
49.7	1.30	3.08	1.89	2.24	2.11	2.24	6.86
57.7	1.40	3.39	2.40	2.47	2.29	2.47	7.10

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STA 6323+05

DIOS CULVERT ANALYSIS
COMPUTATION OF CULVERT DISCHARGE CURVE
July 17, 199[illegible]

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
1-48" CMP	
Culvert Diameter (feet)	4.00
FHWA Chart Number (1,2 or 3)	2
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.024[illegible]
Entrance Loss Coefficient of Culvert Opening	0.5[illegible]
Culvert Length (feet)	219.0
Culvert Slope (feet per foot)	0.007[illegible]

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.3	0.50	1.13	0.75	0.5[illegible]	0.84	0.94	3.6
11.5	0.60	1.35	0.86	[illegible]	0.99	1.11	4.0
15.2	0.70	1.5[illegible]	0.99	1.29	[illegible]	1.29	4.3
19.5	0.80	1.79	[illegible]	1.46	[illegible]	1.46	4.7
24.4	0.90	2.03	[illegible]	[illegible]	1.45	[illegible]	5.0
29.8	1.00	2.27	[illegible]	[illegible]	[illegible]	[illegible]	5.2
35.8	1.10	2.52	1.84	[illegible]	1.79	2.05	[illegible]
42.5	1.20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
49.7	1.30	3.0[illegible]	[illegible]	[illegible]	[illegible]	2.52	5.9
57.7	1.40	3.38	[illegible]	2.9[illegible]	[illegible]	2.81	6.1
66.2	1.50	3.7[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.1
75.5	1.60	4.05	[illegible]	[illegible]	[illegible]	[illegible]	6.6
85.5	1.70	4.45	[illegible]	[illegible]	[illegible]	2.80	[illegible]
96.1	1.80	[illegible]	[illegible]	[illegible]	[illegible]	2.97	[illegible]
107.5	1.90	5.54	[illegible]	4.00	[illegible]	3.14	[illegible]

DIOS CULVERT ANALYSIS COMPUTES [illegible]
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STA 6324+32

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 13, 1990

PROGRAM INPUT DATA:

DESCRIPTION 2-48" CMP	VALUE
Culvert Diameter (feet).....	4.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	212.0
Culvert Slope (feet per foot).....	0.0080

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.3	0.50	1.13	0.75	0.93	0.84	0.93	3.73
11.5	0.60	1.35	0.86	1.10	0.99	1.10	4.10
15.2	0.70	1.56	0.99	1.27	1.14	1.27	4.44
19.5	0.80	1.79	1.14	1.45	1.30	1.45	4.76
24.4	0.90	2.03	1.32	1.63	1.46	1.63	5.06
29.8	1.00	2.27	1.55	1.82	1.62	1.82	5.35
35.8	1.10	2.52	1.83	2.05	1.78	2.05	5.53
57.8	1.40	3.39	3.10	2.77	2.29	2.77	6.23
100.0	2.00	5.17	6.77	4.00	3.03	3.03	9.79

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STA 6319+32, 6321+33, 6323+05, 6324+32, 6326+40

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

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PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0090
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	8.3	2.54	0.703	0.100	0.600	3.3	8.0
0.6	11.5	2.82	0.721	0.123	0.723	4.1	8.6
0.7	15.2	3.07	0.735	0.146	0.846	5.0	9.2
0.8	19.5	3.30	0.748	0.169	0.969	5.9	9.8
0.9	24.4	3.52	0.760	0.192	1.092	6.9	10.4
1.0	29.8	3.73	0.770	0.216	1.216	8.0	11.0
1.1	35.8	3.93	0.780	0.239	1.339	9.1	11.6
1.2	42.5	4.12	0.789	0.263	1.463	10.3	12.2
1.3	49.7	4.30	0.797	0.287	1.587	11.6	12.8
1.4	57.7	4.48	0.805	0.311	1.711	12.9	13.4
1.5	66.2	4.65	0.812	0.335	1.835	14.2	14.0
1.6	75.5	4.81	0.819	0.360	1.960	15.7	14.6
1.7	85.5	4.98	0.825	0.385	2.085	17.2	15.2
1.8	96.1	5.14	0.831	0.410	2.210	18.7	15.8
1.9	107.6	5.29	0.837	0.435	2.335	20.3	16.4

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TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6326+40 1-36" CMP AT CP43-2

ELEVATION		VOLUME	DISCHARGE	DIVERT
1092.03	0	0	0	0
1093.28	0.97	0.12	8	0
1093.52	1.16	0.38	12	0
1093.78	1.36	0.71	15	0
1094.05	1.57	1.11	20	0
1094.35	1.73	1.61	24	0
1095.13	2.15	3.12	36	0
1095.50	Top of Bank 2.35	3.95	38	0
1096.0	2.62	5.19	40	88
1096.3	2.90	6.02	43	179
1096.5	3.2	6.63	45	390

C = 2.5 L = 100

at .5 Q = 88

at 8 Q = 179

at 1.0 Q = 390 L = 150

Form 209

STA 6326+40

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 13, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	208.0
Culvert Slope (feet per foot).....	0.0096

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.3	0.50	1.25	0.10	0.99	0.91	0.99	4.09
11.5	0.60	1.49	0.31	1.18	1.08	1.18	4.48
15.2	0.70	1.75	0.60	1.37	1.24	1.37	4.82
19.5	0.80	2.02	0.99	1.59	1.42	1.59	5.12
24.4	1.00	2.32	1.52	1.83	1.59	1.83	5.40
35.8	1.10	2.99	3.10	2.49	1.94	1.94	7.38
42.5	1.20	3.39	4.27	3.00	2.12	2.12	7.95
49.7	1.30	3.94	5.71	3.00	2.29	2.29	8.57
57.7	1.40	4.60	7.56	3.00	2.46	2.46	9.30

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STA 6319+32, 6321+33, 6323+05, 6324+32, 6326+40

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0090
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	8.3	2.54	0.703	0.100	0.600	3.3	8.0
0.6	11.5	2.82	0.721	0.123	0.723	4.1	8.6
0.7	15.2	3.07	0.735	0.146	0.846	5.0	9.2
0.8	19.5	3.30	0.748	0.169	0.969	5.9	9.8
0.9	24.4	3.52	0.760	0.192	1.092	6.9	10.4
1.0	29.8	3.73	0.770	0.216	1.216	8.0	11.0
1.1	35.8	3.93	0.780	0.239	1.339	9.1	11.6
1.2	42.5	4.12	0.789	0.263	1.463	10.3	12.2
1.3	49.7	4.30	0.797	0.287	1.587	11.6	12.8
1.4	57.7	4.48	0.805	0.311	1.711	12.9	13.4
1.5	66.2	4.65	0.812	0.335	1.835	14.2	14.0
1.6	75.5	4.81	0.819	0.360	1.960	15.7	14.6
1.7	85.5	4.98	0.825	0.385	2.085	17.2	15.2
1.8	96.1	5.14	0.831	0.410	2.210	18.7	15.8
1.9	107.6	5.29	0.837	0.435	2.335	20.3	16.4

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject White Tanks / Agua Fria ADMS Prepared by G A Date 9/18/90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6330+50, 6335+25, 6340+10 AT CP43-3
1-36" 1-36" 1-36"

	ELEVATION		VOLUME	DISCHARGE	DIVERT
	1092.84	0	0	0	0
	1094.12	3.86	2.47	27	0
	1094.37	4.45	3.51	36	0
	1094.65	5.11	4.85	48	0
	1094.93	5.77	6.37	63	0
	1095.24	6.51	8.27	78	0
	1095.59	7.33	10.69	93	0
Top of Bank	1096.00	8.30	13.89	102	63
	1096.56	9.08	18.76	114	250
	1097.79	10.80	30.99	135	816

C = 2.5 ; L = 100'

at .4 Q = 63

at 1.0 Q = 250

at 2.2 Q = 816

STA 6330+50

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet)	3.00
FHWA Chart Number (1,2 or 3)	2
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.0240
Entrance Loss Coefficient of Culvert Opening	0.50
Culvert Length (feet)	208.0
Culvert Slope (feet per foot)	0.0086

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.7	0.50	1.28	0.33	1.05	0.93	1.05	3.95
12.1	0.60	1.53	0.56	1.25	1.10	1.25	4.36
16.1	0.70	1.81	0.88	1.47	1.28	1.47	4.67
20.6	0.80	2.09	1.31	1.70	1.46	1.70	4.99
25.7	0.90	2.40	1.88	2.02	1.64	2.02	5.09
31.4	1.00	2.73	2.64	2.30	1.82	2.30	5.39
37.8	1.10	3.11	3.64	3.00	2.00	2.00	7.55
44.8	1.20	3.62	4.92	3.00	2.18	2.18	8.14
52.4	1.30	4.15	6.52	3.00	2.35	2.35	8.81
60.8	1.40	4.87	8.55	3.00	2.52	2.52	9.61

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STA 6335+25

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

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PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	204.0
Culvert Slope (feet per foot).....	0.0098

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.7	0.50	1.28	0.12	1.00	0.93	1.00	4.24
12.1	0.60	1.53	0.35	1.20	1.10	1.20	4.57
16.1	0.70	1.81	0.67	1.41	1.28	1.41	4.93
20.6	0.80	2.09	1.09	1.63	1.46	1.63	5.24
0.7	0.90	0.36	-0.36	0.29	0.27	0.29	1.99
25.7	0.90	2.40	1.65	1.88	1.64	1.88	5.51
31.4	1.00	2.73	2.40	2.19	1.82	2.19	5.68
37.8	1.10	3.11	3.39	2.66	2.00	2.00	7.55
44.8	1.20	3.62	4.65	3.00	2.18	2.18	8.14
52.4	1.30	4.15	6.22	3.00	2.35	2.35	8.81
60.8	1.40	4.87	8.23	3.00	2.52	2.52	9.61
69.8	1.50	5.77	10.67	3.00	2.65	2.65	10.55

==========

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STA 6340+10

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	198.0
Culvert Slope (feet per foot).....	0.0081

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.7	0.50	1.28	0.51	1.06	0.93	1.06	3.90
2.1							
12.1	0.60	1.53	0.74	1.27	1.10	1.27	4.26
16.1	0.70	1.81	1.05	1.49	1.28	1.49	4.58
20.6	0.80	2.09	1.46	1.73	1.46	1.73	4.87
25.7	0.90	2.40	2.02	2.01	1.64	2.01	5.10
31.4	1.00	2.73	2.75	2.37	1.82	1.82	7.01
37.8	1.10	3.11	3.72	3.00	2.00	2.00	7.55
44.8	1.20	3.62	4.95	3.00	2.18	2.18	8.14
52.4	1.30	4.15	6.49	3.00	2.35	2.35	8.81
60.8	1.40	4.87	8.45	3.00	2.52	2.52	9.61
69.8	1.50	5.77	10.84	3.00	2.65	2.65	10.55

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STA 6330+50, 6335+25, 6340+10, 6343+25, 6345+65

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0100
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	8.7	2.68	0.741	0.112	0.612	3.3	8.0
0.6	12.1	2.97	0.759	0.137	0.737	4.1	8.6
0.7	16.1	3.23	0.775	0.162	0.862	5.0	9.2
0.8	20.6	3.48	0.789	0.188	0.988	5.9	9.8
0.9	25.7	3.71	0.801	0.214	1.114	6.9	10.4
1.0	31.4	3.93	0.812	0.240	1.240	8.0	11.0
1.1	37.8	4.14	0.822	0.266	1.366	9.1	11.6
1.2	44.8	4.34	0.831	0.292	1.492	10.3	12.2
1.3	52.4	4.53	0.840	0.319	1.619	11.6	12.8
1.4	60.8	4.72	0.848	0.346	1.746	12.9	13.4
1.5	69.8	4.90	0.856	0.373	1.873	14.2	14.0
1.6	79.6	5.08	0.863	0.400	2.000	15.7	14.6
1.7	90.1	5.25	0.870	0.427	2.127	17.2	15.2
1.8	101.3	5.41	0.876	0.455	2.255	18.7	15.8
1.9	113.4	5.58	0.883	0.483	2.383	20.3	16.4
2.0	126.2	5.74	0.889	0.511	2.511	22.0	17.0

==========

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
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COMPUTATION DATA SHEET

Subject White Tanks / Agua Fria ADMS Prepared by GA Date 9/18/90

STAGE - STORAGE - DISCHARGE TABLE (J-10)

STA 6343+25, 6345+65 AT CP43-4
1-36" 1-36"

	ELEVATION	h	VOLUME	DISCHARGE	DIVERT
	1092.84	0	0	0	0
	1094.12	1.39	0.89	18	0
	1094.39	1.7	1.27	24	0
	1094.65	2.06	1.80	37	0
	1094.93	2.41	2.43	42	0
	1095.24	2.80	3.24	52	0
	1095.59	3.24	3.31	62	0
Top of Bank ←	1096.00	3.76	4.75	68	63
	1096.56	4.47	7.05	76	250
	1097.79	4.94	12.83	90	816

C = 2.5 ; L = 100'

at .4 Q = 63

at 1.0 Q = 250

at 2.2 Q = 816

STA 6343+25

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	200.0
Culvert Slope (feet per foot).....	0.0081

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.7	0.50	1.28	0.50	1.06	0.93	1.06	3.90
12.1	0.60	1.53	0.72	1.27	1.10	1.27	4.26
16.1	0.70	1.81	1.04	1.49	1.28	1.49	4.58
20.6	0.80	2.09	1.45	1.73	1.46	1.73	4.87
25.7	0.90	2.40	2.01	2.01	1.64	2.01	5.10
31.4	1.00	2.73	2.75	2.37	1.82	1.82	7.01
37.8	1.10	3.11	3.72	3.00	2.00	2.00	7.55
44.8	1.20	3.62	4.96	3.00	2.18	2.18	8.14
52.4	1.30	4.15	6.52	3.00	2.35	2.35	8.81
60.8	1.40	4.87	8.49	3.00	2.52	2.52	9.61
69.8	1.50	5.77	10.90	3.00	2.65	2.65	10.55

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STA 6345+65

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	210.0
Culvert Slope (feet per foot).....	0.0120

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.7	0.50	1.28	-0.40	0.96	0.93	0.96	4.49
12.1	0.60	1.53	-0.17	1.14	1.10	1.14	4.92
16.1	0.70	1.81	0.16	1.33	1.28	1.33	5.31
20.6	0.80	2.09	0.59	1.54	1.46	1.54	5.66
25.7	0.90	2.40	1.16	1.76	1.64	1.76	5.95
31.4	1.00	2.73	1.93	2.02	1.82	2.02	6.21
37.8	1.10	3.11	2.93	2.35	2.00	2.35	6.38
44.8	1.20	3.62	4.22	3.00	2.18	2.18	8.14
52.4	1.30	4.15	5.83	3.00	2.35	2.35	8.81
60.8	1.40	4.87	7.88	3.00	2.52	2.52	9.61
69.8	1.50	5.77	10.37	3.00	2.65	2.65	10.55

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STA 6349+45

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0114
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.3	2.86	0.791	0.127	0.627	3.3	8.0
0.6	12.9	3.17	0.811	0.156	0.756	4.1	8.6
0.7	17.2	3.45	0.828	0.185	0.885	5.0	9.2
0.8	22.0	3.71	0.842	0.214	1.014	5.9	9.8
0.9	27.4	3.96	0.855	0.244	1.144	6.9	10.4
1.0	33.6	4.19	0.867	0.273	1.273	8.0	11.0
1.1	40.3	4.42	0.878	0.303	1.403	9.1	11.6
1.2	47.8	4.63	0.888	0.333	1.533	10.3	12.2
1.3	56.0	4.84	0.897	0.364	1.664	11.6	12.8
1.4	64.9	5.04	0.906	0.394	1.794	12.9	13.4
1.5	74.5	5.23	0.914	0.425	1.925	14.2	14.0

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TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6354+00 1-36" CMP AT CP43-6

ELEVATION		VOLUME	DISCHARGE	DIVERT
1089.27	0	0	0	0
1090.58	2.43	1.59	9	0
1090.84	2.92	2.29	13	0
1091.12	3.44	3.18	17	0
1091.42	3.99	4.29	22	0
1091.73	4.57	5.62	27	0
1092.09	5.24	7.39	33	0
1092.47	6.03	9.53	39	0
1093.23	6.25	14.20	47	0
1095.27	9.82	30.25	55	0
1095.5	Top of Dike 10.36	32.52	56	0
1096	11.54	38.0	58	83
1096.5	11.83	43.84	60	265
1097	12.11	49.83	61	750
1097.5	12.40	55.96	62	1378
1097.82	12.59	59.96	64	2650

C = 2.5 L = 300'

at .23 Q = 83 at 1.0 Q = 750 at 2.32 Q = 2650
at .5 Q = 265 at 1.5 Q = 1378

STA 6354+00

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	254.0
Culvert Slope (feet per foot).....	0.0153

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.1	0.50	1.31	-1.71	0.92	0.95	0.92	4.97
12.6	0.60	1.57	-1.44	1.08	1.13	1.08	5.47
16.8	0.70	1.85	-1.05	1.28	1.31	1.28	5.87
21.5	0.80	2.15	-0.53	1.47	1.49	1.47	6.26
26.8	0.90	2.46	0.17	1.68	1.67	1.68	6.60
32.8	1.00	2.82	1.13	1.90	1.86	1.90	6.93
39.4	1.10	3.20	2.36	2.19	2.04	2.19	7.14
46.7	1.20	3.78	3.96	2.61	2.23	2.23	8.30
54.7	1.30	4.34	6.00	3.00	2.40	2.40	9.02
63.4	1.40	5.12	8.55	3.00	2.56	2.56	9.87
72.9	1.50	6.10	11.72	3.00	2.69	2.69	10.90

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STA 6354+00

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0109
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.1	2.80	0.774	0.122	0.622	3.3	8.0
0.6	12.6	3.10	0.793	0.149	0.749	4.1	8.6
0.7	16.8	3.37	0.809	0.177	0.877	5.0	9.2
0.8	21.5	3.63	0.823	0.205	1.005	5.9	9.8
0.9	26.8	3.87	0.836	0.233	1.133	6.9	10.4
1.0	32.8	4.10	0.848	0.261	1.261	8.0	11.0
1.1	39.4	4.32	0.858	0.290	1.390	9.1	11.6
1.2	46.7	4.53	0.868	0.319	1.519	10.3	12.2
1.3	54.7	4.73	0.877	0.348	1.648	11.6	12.8
1.4	63.4	4.93	0.885	0.377	1.777	12.9	13.4
1.5	72.9	5.11	0.893	0.406	1.906	14.2	14.0
1.6	83.1	5.30	0.901	0.436	2.036	15.7	14.6
1.7	94.0	5.48	0.908	0.466	2.166	17.2	15.2

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 63574.00 1-36" CMP AT CPW-7

ELEVATION		VOLUME	DISCHARGE	DIVERT
1087.57	0	0	0	0
1088.93	.40	0.27	10	0
1089.20	.49	0.39	13	0
1089.49	.58	0.55	18	0
1089.80	.68	0.74	23	0
1090.13	.79	0.98	29	0
1090.57	.91	1.30	35	0
1091.0	Top of Bank 1.04	1.78	38	0
1091.39	1.25	2.23	40	61
1093.26	1.84	5.12	42	850

C = 2.5 L = 100

at .39 Q = 61 cfs

at 2.26 Q = 850 cfs

STA 6357+00

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet)	3.00
FHWA Chart Number (1,2 or 3)	2
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.0240
Entrance Loss Coefficient of Culvert Opening	0.50
Culvert Length (feet)	266.0
Culvert Slope (feet per foot)	0.0117

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.7	0.50	1.36	-0.89	1.02	0.98	1.02	4.58
13.4	0.60	1.63	-0.58	1.21	1.16	1.21	5.01
17.8	0.70	1.92	-0.15	1.42	1.35	1.42	5.41
22.8	0.80	2.23	0.45	1.64	1.54	1.64	5.75
28.5	0.90	2.56	1.28	1.90	1.73	1.90	6.03
34.9	1.00	2.94	2.38	2.21	1.92	2.21	6.25
41.9	1.10	3.35	3.82	2.75	2.11	2.11	7.89
49.7	1.20	3.94	5.69	3.00	2.29	2.29	8.57
58.1	1.30	4.63	8.04	3.00	2.47	2.47	9.34
67.4	1.40	5.52	11.02	3.00	2.62	2.62	10.29

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STA 6357+00

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

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PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0123
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.7	2.97	0.822	0.137	0.637	3.3	8.0
0.6	13.4	3.29	0.842	0.168	0.768	4.1	8.6
0.7	17.8	3.59	0.860	0.200	0.900	5.0	9.2
0.8	22.8	3.86	0.875	0.231	1.031	5.9	9.8
0.9	28.5	4.11	0.888	0.263	1.163	6.9	10.4
1.0	34.9	4.36	0.900	0.295	1.295	8.0	11.0
1.1	41.9	4.59	0.912	0.327	1.427	9.1	11.6
1.2	49.7	4.81	0.922	0.360	1.560	10.3	12.2
1.3	58.1	5.03	0.932	0.392	1.692	11.6	12.8
1.4	67.4	5.23	0.941	0.425	1.825	12.9	13.4
1.5	77.4	5.43	0.949	0.458	1.958	14.2	14.0
1.6	88.3	5.63	0.957	0.492	2.092	15.7	14.6

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6360+85 1-36" CMP AT CP43-8

ELEVATION		VOLUME	DISCHARGE	DIVERT
1085.13	0	0	0	0
1086.33	0.35	0.22	8	0
1086.62	0.46	0.32	12	0
1086.88	0.58	0.46	15	0
1087.15	0.71	0.63	20	0
1087.48	0.87	0.89	24	0
1088.28	1.25	1.74	30	0
1089.33	1.93	3.41	36	0
1090.0	Top of Bank 2.62	4.93	39	0
1090.5	2.87	6.30	41	88
1090.69	3.12	6.87	43	143

C = 2.5 L = 100

at .5 Q = 88

at .69 Q = 143

STA 6360+85

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	258.0
Culvert Slope (feet per foot).....	0.0054

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
8.3	0.50	1.25	0.73	1.15	0.91	1.15	3.32
11.5	0.60	1.49	0.97	1.38	1.08	1.38	3.62
15.2	0.70	1.75	1.29	1.63	1.24	1.63	3.88
19.5	0.80	2.02	1.74	1.92	1.42	1.92	4.09
24.4	0.90	2.32	2.35	2.27	1.59	1.59	6.40
29.8	1.00	2.64	3.15	3.00	1.77	1.77	6.88
35.8	1.10	2.99	4.20	3.00	1.94	1.94	7.38
42.5	1.20	3.39	5.56	3.00	2.12	2.12	7.95
49.7	1.30	3.94	7.26	3.00	2.29	2.29	8.57
57.7	1.40	4.60	9.43	3.00	2.46	2.46	9.30
66.2	1.50	5.39	12.07	3.00	2.60	2.60	10.16

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STA 6360+85

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0090
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	8.3	2.54	0.703	0.100	0.600	3.3	8.0
0.6	11.5	2.82	0.721	0.123	0.723	4.1	8.6
0.7	15.2	3.07	0.735	0.146	0.846	5.0	9.2
0.8	19.5	3.30	0.748	0.169	0.969	5.9	9.8
0.9	24.4	3.52	0.760	0.192	1.092	6.9	10.4
1.0	29.8	3.73	0.770	0.216	1.216	8.0	11.0
1.1	35.8	3.93	0.780	0.239	1.339	9.1	11.6
1.2	42.5	4.12	0.789	0.263	1.463	10.3	12.2
1.3	49.7	4.30	0.797	0.287	1.587	11.6	12.8
1.4	57.7	4.48	0.805	0.311	1.711	12.9	13.4
1.5	66.2	4.65	0.812	0.335	1.835	14.2	14.0
1.6	75.5	4.81	0.819	0.360	1.960	15.7	14.6
1.7	85.5	4.98	0.825	0.385	2.085	17.2	15.2

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-16-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

* STA. 6247+05 1-36" CMP

ELEVATION		VOLUME	DISCHARGE	DIVERT
1135.24		0	0	0
1136.62		.12	10	0
1138.26	Top of Bank	.25	36	0
1138.74		.3	44	44
1140.32		3.4	52	369
1142.71		6.15	61	1000

$Q = CLH^{3/2}$ Assume $C = 2.5$

at .5 $Q = 2.5(50)(.5)^{3/2} = 44$ cfs

at 1.0 $Q = 2.5(50)(1)^{3/2} = 125$ cfs

at 1.5 $Q = 2.5(50)(1.5)^{3/2} = 230$ cfs

at 2.0 $Q = 2.5(50)(2)^{3/2} = 353$ cfs

at 2.5 $Q = 2.5(50)(2.5)^{3/2} = 495$ cfs

at 4.0 $Q = 2.5(50)(4.0)^{3/2} =$

* VOID - NOT IN DRAINAGE AREA

eec

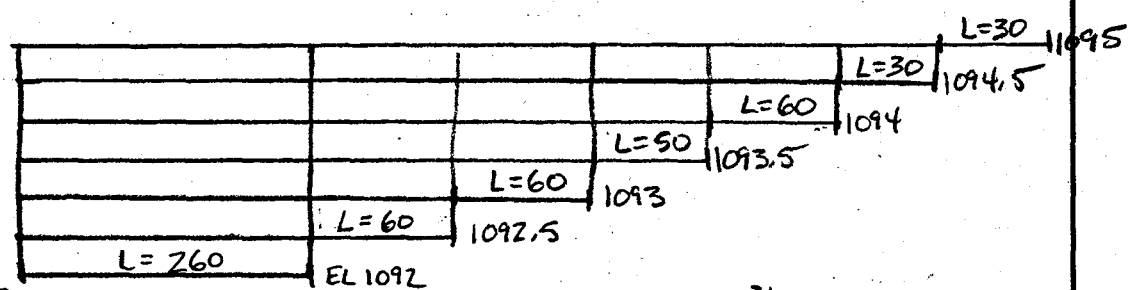
Project Title: White Tanks No 4 Project No. LAV Date 10/5/00

Subject _____ Prepared By _____ Checked By _____ Page _____

STAGE-STORAGE-Discharge Table (I-10) @ SR43

Elevation	Volume	Discharge	DIVERT
1081.16	0	0	0
1085.18	0.52	920	0
1087.60	4.33	1824	0
1090.19	16.22	2976	0
1091.5 (Top of Dike)	24.89	3396	0
1092	28.79	3536	230
1092.5	33.09	3676	700
1093	37.88	3816	1400
1093.5	42.63	3974	2300
1094	49.69	4125	3450
1094.5	56.35	4275	4800

C = 2.5
L = Varies
H = Varies



Elev	H	L		
1092	0.5	260	EL 1092	$Q = CLH^{3/2} = (2.5)(260)(0.5)^{3/2} = 230$ cfs
1092.5	1.0	320	EL 1092.5	$Q = CL_1H_1^{3/2} + CL_2H_2^{3/2} = 700$ cfs
1093.0	1.5	380	EL 1093.0	$Q = C(L_1H_1^{3/2} + L_2H_2^{3/2} + L_3H_3^{3/2}) = 1400$ cfs
1093.5	2.0	430	EL 1093.5	$Q = C(L_1H_1^{3/2} + L_2H_2^{3/2} + L_3H_3^{3/2} + L_4H_4^{3/2}) = 2300$ cfs
1094	2.5	490	EL 1094.0	$Q = C(L_1H_1^{3/2} + L_2H_2^{3/2} + L_3H_3^{3/2} + L_4H_4^{3/2} + L_5H_5^{3/2}) = 3447$ cfs
1094.5	3.0	520	EL 1094.5	$Q = C(L_1H_1^{3/2} + \ldots) = 4800$ cfs
1095	3.5	550		

STA 6366+85

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 13, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 4-10'x8' B.C's	VALUE
Culvert Span (Width of Opening) (feet).....	10.00
Culvert Rise (Height of Opening) (feet).....	8.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.012(
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	227.0
Culvert Slope (feet per foot).....	0.0111

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
229.7	1.00	4.02	2.98	1.57	2.54	1.57	14.6
456.0	1.50	6.44	4.41	2.49	4.01	2.49	18.3
744.5	2.00	9.03	6.72	3.52	5.56	3.52	21.1
1092.1	2.50	13.65	10.36	4.66	7.18	4.66	23.4
1497.2	3.00	19.96	15.42	5.91	8.00	5.91	25.3
1959.0	3.50	29.57	22.49	7.28	8.00	7.28	26.9

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COMPUTATION DATA SHEET

Subject WHITE TANKS/ AGUAFRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

Combined Storage Table

STA 6368+00, 6370+30, 6373+00, 6375+20 CP45-1
1-12'x12' BC 2-42" CMP 2-36" CMP 1-36" CMP

ELEV.		VOLUME	DISCHARGE	DIVERT	
1083.1		0	0	0	
1084.78		85	51	0	
1086	2.9	223	156	0	
1087.4	4.3	573	305	895	
1089.0	5.9	1122	480	2650	
1089.5	6.4	1461	543	3618	
1090.0	6.9	1971	610	4899	
1092.	8.9	3109	894	8764	9658
1094	10.9	4607	1212	12600	13,8
1096	12.9	6475	1560	24,744	26.:

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COMPUTATION DATA SHEET

Changed

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6368+00 1-12'x12' BC AT CP45-1

ELEVATION	VOLUME	DISCHARGE	DIVERT
1083.98	0	0	0
1086.00 Top of Bank	.50	63	0
1086.93	.75	95	448
1088.39	1.5	192	1847
1089.79	5.0	321	3689
1091.30	7.5	480	6100

C = 2.5 L = 200

at .93 Q = 448 cfs

at 2.39 Q = 1847 cfs

at 3.79 Q = 3689 cfs

at 5.3 Q = 6100

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COMPUTATION DATA SHEET

Changed

18 of 28

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6370+30 6373+00 6375+20 AT CP45-2

2-42" CMP 2-36" CMP 1-36" CMP

ELEVATION		VOLUME	DISCHARGE	DIVERT
1083.11	0	0	0	0
1084.78	0.78	0.65	26	0
1085.70	1.57	1.73	75	0
1087.4	1.97	4.74	179	0
1089.0	Top of Dike 2.36	8.20	232	0
1089.5	6.16	10.33	249	310
1090.0	9.96	14.36	267	875
1090.5	10.50	24.59	285	1607

C = 2.5 L = 350

at .5 Q = 310

at 1.0 Q = 875

at 1.5 Q = 1607

STA 6368+00

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 12, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0083
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	20.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
1.0	95.0	4.13	0.774	0.265	1.265	23.0	26.0
1.5	192.4	5.24	0.820	0.426	1.926	36.7	29.0
2.0	320.6	6.17	0.852	0.590	2.590	52.0	32.0
2.5	480.1	6.98	0.878	0.757	3.257	68.8	35.0
3.0	671.8	7.72	0.899	0.926	3.926	87.0	38.0
3.5	896.9	8.40	0.918	1.096	4.596	106.7	41.0
4.0	1156.6	9.04	0.934	1.268	5.268	128.0	44.0
4.5	1452.3	9.63	0.948	1.441	5.941	150.7	47.0
5.0	1785.3	10.20	0.961	1.616	6.616	175.0	50.0
5.5	2157.1	10.75	0.973	1.793	7.293	200.7	53.0
6.0	2569.0	11.27	0.984	1.971	7.971	228.0	56.0
6.5	3022.3	11.77	0.994	2.152	8.652	256.7	59.0
7.0	3518.4	12.26	1.004	2.334	9.334	287.0	62.0

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TA 6370+30, 6373+00, 6375+20, 6379+84, 6381+45, 6384+25, 6388+55, 6390+50, 6395+75, 6400+60

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0111
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.2	2.82	0.781	0.124	0.624	3.3	8.0
0.6	12.8	3.13	0.800	0.152	0.752	4.1	8.6
0.7	16.9	3.41	0.817	0.180	0.880	5.0	9.2
0.8	21.7	3.66	0.831	0.209	1.009	5.9	9.8
0.9	27.1	3.91	0.844	0.237	1.137	6.9	10.4
1.0	33.1	4.14	0.855	0.266	1.266	8.0	11.0
1.1	39.8	4.36	0.866	0.295	1.395	9.1	11.6
1.2	47.2	4.57	0.876	0.324	1.524	10.3	12.2
1.3	55.2	4.77	0.885	0.354	1.654	11.6	12.8
1.4	64.0	4.97	0.894	0.384	1.784	12.9	13.4
1.5	73.6	5.16	0.902	0.414	1.914	14.2	14.0
1.6	83.8	5.35	0.909	0.444	2.044	15.7	14.6
1.7	94.9	5.53	0.916	0.474	2.174	17.2	15.2

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
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(713) 895-8322. A manual with equations & flow chart is available.

STA 6368+00

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 13, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1- 12'x12' BC	VALUE
Culvert Span (Width of Opening) (feet).....	12.00
Culvert Rise (Height of Opening) (feet).....	12.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.012
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	194.0
Culvert Slope (feet per foot).....	0.019

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outle Velocit (fps
95.0	1.00	1.93	2.95	0.66	1.25	1.25	6.3
192.4	1.50	3.12	3.36	1.03	2.00	2.00	8.0
320.6	2.00	4.41	3.85	1.42	2.81	1.42	18.7
480.0	2.50	5.81	4.44	1.86	3.68	1.86	21.5
671.8	3.00	7.32	5.18	2.32	4.60	2.32	24.0
896.9	3.50	8.92	6.12	2.83	5.58	2.83	26.4
1156.6	4.00	10.63	7.31	3.38	6.61	3.38	28.5
1452.3	4.50	12.44	8.82	3.97	7.69	3.97	30.5
1785.3	5.00	14.77	10.75	4.60	8.83	4.60	32.1
2157.1	5.50	18.36	13.20	5.29	10.01	5.29	34.0
2569.0	6.00	21.97	16.28	6.02	11.25	6.02	35.5

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STA 6370+30

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 2-42" CMP	VALUE
Culvert Diameter (feet)	3.50
FHWA Chart Number (1,2 or 3)	2
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.0240
Entrance Loss Coefficient of Culvert Opening	0.50
Culvert Length (feet)	260.0
Culvert Slope (feet per foot)	0.0088

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.25	0.02	1.01	0.92	1.01	4.01
12.8	0.60	1.49	0.19	1.19	1.09	1.19	4.42
16.9	0.70	1.74	0.41	1.39	1.25	1.39	4.77
21.7	0.80	2.00	0.70	1.59	1.43	1.59	5.11
27.1	0.90	2.28	1.09	1.81	1.60	1.81	5.38
33.1	1.00	2.58	1.58	2.04	1.78	2.04	5.70
39.8	1.10	2.89	2.22	2.32	1.96	2.32	5.87
47.2	1.20	3.24	3.03	2.67	2.14	2.67	6.00
55.2	1.30	3.61	4.04	3.50	2.33	2.33	8.13
64.0	1.40	4.07	5.31	3.50	2.51	2.51	8.68
73.6	1.50	4.63	6.88	3.50	2.69	2.69	9.29
83.8	1.60	5.29	8.77	3.50	2.85	2.85	9.98
94.9	1.70	6.10	11.07	3.50	3.01	3.01	10.79

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STA 6373+00

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	256.0
Culvert Slope (feet per foot).....	0.0031

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	1.39	1.43	0.96	0.96	4.73
12.8	0.60	1.58	1.67	1.74	1.14	1.14	5.21
16.9	0.70	1.86	2.05	2.10	1.31	1.31	5.68
21.7	0.80	2.16	2.59	3.00	1.50	1.50	6.15
27.1	0.90	2.48	3.32	3.00	1.68	1.68	6.64
33.1	1.00	2.83	4.29	3.00	1.87	1.87	7.16
39.8	1.10	3.23	5.56	3.00	2.05	2.05	7.72
47.2	1.20	3.81	7.21	3.00	2.24	2.24	8.35
55.2	1.30	4.38	9.27	3.00	2.41	2.41	9.07
64.0	1.40	5.18	11.89	3.00	2.57	2.57	9.93
73.6	1.50	6.18	15.15	3.00	2.70	2.70	10.98
83.8	1.60	7.40	19.08	3.00	2.80	2.80	12.20
94.9	1.70	8.90	23.91	3.00	2.87	2.87	13.62

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STA 6375+20

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet)	3.00
FHWA Chart Number (1,2 or 3)	2
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.0240
Entrance Loss Coefficient of Culvert Opening	0.50
Culvert Length (feet)	256.0
Culvert Slope (feet per foot)	0.0083

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.06	1.09	0.96	1.09	3.99
12.8	0.60	1.58	0.34	1.30	1.14	1.30	4.37
16.9	0.70	1.86	0.72	1.54	1.31	1.54	4.64
21.7	0.80	2.16	1.26	1.78	1.50	1.78	4.98
27.1	0.90	2.48	1.99	2.07	1.68	2.07	5.21
33.1	1.00	2.83	2.96	2.48	1.87	1.87	7.16
39.8	1.10	3.23	4.23	3.00	2.05	2.05	7.72
47.2	1.20	3.81	5.88	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.94	3.00	2.41	2.41	9.07
64.0	1.40	5.18	10.56	3.00	2.57	2.57	9.93

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-19-90

STAGE - STORAGE - DISCHARGE TABLE (T-10)

COMBINED STORAGE-DISCHARGE FOR STA 6379+84, 6381+45, 6384+25, 6388+55, 6390+50

ELEVATION		VOLUME	DISCHARGE	DIVERT
			2-36" 1-36"	2-36"
1081.16	0	0	0	0
1082.74	2.33	1.84	41	0
1084.0	4.20	5.95	132	0
1086.0	Top of Dike 8.40	18.55	317	0
1086.5	10.49	23.27	362	1100
1087.0	12.59	29.04	392	3125
1088.0		41.95	450	
1090.0		61.66	567	
1092.0		83.65	676	
1094.0		110.95	784	

AT
CPL
Tot
35

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (T-10)

STA 6379+84 2-36" CMP AT CP45

ELEVATION	VOLUME	DISCHARGE	DIVERT
1083.43	0	0	0
1084.2 ✓		9	0
1084.75		18	0
1085.01		36	0
1085.29		42	0
1085.91 Top of Dike		54	0
1086.31		66	158
1087.18		80	895

C = 2.5 L = 250

at .4 Q = 158 cfs

at 1.27 Q = 895 cfs

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6381+45 1-36" CMP AT CP45

ELEVATION	VOLUME	DISCHARGE	DIVERT
1083.45	0	0	0
1084.2 ✓		7	0
1084.77		9	0
1085.03		13	0
1085.31		17	0
1085.61		22	0
1085.93 Top of Dike		27	0
1086.28		33	129
1086.81		40	516
1088.44		47	2485

C = 2.5 L = 250

at .35 Q = 129 cfs

at .88 Q = 516 cfs

at 2.51 Q = 2485 cfs

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6384+25 2-36" CMP AT CP45

ELEVATION	VOLUME	DISCHARGE	DIVERT
1081.82	0	0	0
1083.40		26	0
1083.98		44	0
1084.5		51	0
1085.0		58	0
1085.18		66	0
1086.0' Top of Dike		80	0
1086.81		94	455
1088.85		110	3007

C=25 L=250

at .81 Q=455

at 2.85 Q=3007

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6388+55 2-36" CMP AT CP45

ELEVATION	VOLUME	DISCHARGE	DIVERT
1081.16	0	0	0
1082.74		26	0
1083.32		44	0
1084.0		55	0
1084.4		66	0
1085.62		80	0
1086.0 Top of Dike		85	0
1086.5		90	220
1087.19		94	811

C = 2.5 L = 250

at .5 Q = 220 cfs

at 1.19 Q = 811 cfs

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6390+50 2-36" CMP AT CP45

ELEVATION	VOLUME	DISCHARGE	DIVERT
1082.94	0	0	0
1084.52		26	0
1085.10		44	0
1085.77		66	0
1086.0 Top of Dike		71	0
1086.91		80	542
1088.41		94	2338

C = 2.5 L = 250

at .91 Q = 542 cfs

at 2.41 Q = 2338 cfs

STA 637+84

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

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PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	260.0
Culvert Slope (feet per foot).....	0.0104

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PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	-0.52	1.02	0.96	1.02	4.33
12.8	0.60	1.58	-0.23	1.22	1.14	1.22	4.74
16.9	0.70	1.86	0.15	1.43	1.31	1.43	5.11
21.7	0.80	2.16	0.70	1.66	1.50	1.66	5.42
27.1	0.80	2.48	1.43	1.91	1.68	1.91	5.70
27.1	0.90	2.48	1.43	1.91	1.68	1.91	5.70
33.1	1.00	2.83	2.41	2.22	1.87	2.22	5.89
39.8	1.10	3.23	3.70	3.00	2.05	2.05	7.72
47.2	1.20	3.81	5.37	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.46	3.00	2.41	2.41	9.07
64.0	1.40	5.18	10.10	3.00	2.57	2.57	9.93
73.6	1.50	6.18	13.40	3.00	2.70	2.70	10.98

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STA 6381+45

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	252.0
Culvert Slope (feet per foot).....	0.0117

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	-0.77	0.99	0.96	0.99	4.50
12.8	0.60	1.58	-0.49	1.18	1.14	1.18	4.95
16.9	0.70	1.86	-0.11	1.38	1.31	1.38	5.33
21.7	0.80	2.16	0.42	1.60	1.50	1.60	5.67
27.1	0.90	2.48	1.15	1.84	1.68	1.84	5.97
33.1	1.00	2.83	2.10	2.12	1.87	2.12	6.20
39.8	1.10	3.23	3.36	2.51	2.05	2.05	7.72
47.2	1.20	3.81	4.99	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.03	3.00	2.41	2.41	9.07
64.0	1.40	5.18	9.61	3.00	2.57	2.57	9.93
73.6	1.50	6.18	12.83	3.00	2.70	2.70	10.98

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STA 6384+25

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

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PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	252.0
Culvert Slope (feet per foot).....	0.0067

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.49	1.16	0.96	1.16	3.65
12.8	0.60	1.58	0.77	1.38	1.14	1.38	4.04
16.9	0.70	1.86	1.15	1.62	1.31	1.62	4.33
21.7	0.80	2.16	1.68	1.90	1.50	1.90	4.59
27.1	0.90	2.48	2.41	2.26	1.68	2.26	4.74
33.1	1.00	2.83	3.36	3.00	1.87	1.87	7.16
39.8	1.10	3.23	4.62	3.00	2.05	2.05	7.72
47.2	1.20	3.81	6.25	3.00	2.24	2.24	8.35
55.2	1.30	4.38	8.29	3.00	2.41	2.41	9.07
64.0	1.40	5.18	10.87	3.00	2.57	2.57	9.93
73.6	1.50	6.18	14.09	3.00	2.70	2.70	10.98

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STA 6388+55

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	240.0
Culvert Slope (feet per foot).....	0.0071

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.47	1.13	0.96	1.13	3.76
2.8	0.60	0.70	0.07	0.61	0.52	0.61	2.69
12.8	0.60	1.58	0.74	1.36	1.14	1.36	4.12
16.9	0.70	1.86	1.11	1.60	1.31	1.60	4.41
21.7	0.80	2.16	1.63	1.87	1.50	1.87	4.67
27.1	0.90	2.48	2.32	2.23	1.68	2.23	4.82
33.1	1.00	2.83	3.24	3.00	1.87	1.87	7.16
39.8	1.10	3.23	4.46	3.00	2.05	2.05	7.72
47.2	1.20	3.81	6.03	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.99	3.00	2.41	2.41	9.07
64.0	1.40	5.18	10.48	3.00	2.57	2.57	9.93
73.6	1.50	6.18	13.58	3.00	2.70	2.70	10.98

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STA 6390+50

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	224.0
Culvert Slope (feet per foot).....	0.0089

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.17	1.06	0.96	1.06	4.10
12.8	0.60	1.58	0.43	1.27	1.14	1.27	4.48
16.9	0.70	1.86	0.78	1.49	1.31	1.49	4.81
21.7	0.80	2.16	1.28	1.74	1.50	1.74	5.11
27.1	0.90	2.48	1.94	2.02	1.68	2.02	5.36
33.1	1.00	2.83	2.82	2.38	1.87	2.38	5.50
39.8	1.10	3.23	3.97	3.00	2.05	2.05	7.72
47.2	1.20	3.81	5.47	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.33	3.00	2.41	2.41	9.07
64.0	1.40	5.18	9.69	3.00	2.57	2.57	9.93
73.6	1.50	6.18	12.63	3.00	2.70	2.70	10.98

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A 6370+30, 6373+00, 6375+20, 6379+84, 6381+45, 6384+25, 6388+55, 6390+50, 6395+75, 6400+60

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0111
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.2	2.82	0.781	0.124	0.624	3.3	8.0
0.6	12.8	3.13	0.800	0.152	0.752	4.1	8.6
0.7	16.9	3.41	0.817	0.180	0.880	5.0	9.2
0.8	21.7	3.66	0.831	0.209	1.009	5.9	9.8
0.9	27.1	3.91	0.844	0.237	1.137	6.9	10.4
1.0	33.1	4.14	0.855	0.266	1.266	8.0	11.0
1.1	39.8	4.36	0.866	0.295	1.395	9.1	11.6
1.2	47.2	4.57	0.876	0.324	1.524	10.3	12.2
1.3	55.2	4.77	0.885	0.354	1.654	11.6	12.8
1.4	64.0	4.97	0.894	0.384	1.784	12.9	13.4
1.5	73.6	5.16	0.902	0.414	1.914	14.2	14.0
1.6	83.8	5.35	0.909	0.444	2.044	15.7	14.6
1.7	94.9	5.53	0.916	0.474	2.174	17.2	15.2

==========

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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6395+75 2-36" CMP AT CP46-1

ELEVATION	VOLUME	DISCHARGE	DIVERT
1080.0	0	0	0
1081.58		26	0
1082.16		44	0
1082.84		66	0
1083.0 Top of Dike		71	0
1083.5		75	200
1084.0		80	563
1084.5		94	1033

C = 2.5 L = 225

at .5 Q = 200 cfs

at 1.0 Q = 563

at 1.5 Q = 1033

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6400+60 3-36" CMP AT CP46-1

ELEVATION	VOLUME	DISCHARGE	DIVERT
1078.36	0	0	0
1079.94		39	0
1080.52		66	0
1081.31		99	0
1082.44		120	0
1083.0 Top of Dike		128	0
1083.5		135	200
1083.9		141	480
1085.72		165	2523

C = 2.5 L = 225

at .5 Q = 200 cfs

at .9 Q = 480 cfs

at 2.72 Q = 2523 cfs

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-20-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

AT CP4E

COMBINED STORAGE - DISCHARGE FOR STA 6395+75, 6800+60
2-36" CMP 3-36" CMP

ELEVATION		VOLUME		DISCHARGE	DIVERT
1078.36	0	0		0	0
1080.0	1.31	107		39	0
1081.5	3.54	4.71		128	0
1082.0		6.9		156	
1082.5	5.93	9.0		183	0
					0
1083.0	Top of Dike 5.77	11.7		199	0
1083.5	6.95	14.88		210	400
1084.0	8.13	18.65	5.64	225	1126
1084.5	9.31	23.01	6.14	244	2066
1085.0		28.26		264	
1086.0		33.51		283	

STA 6395 + 75

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION 2-36" CMP	VALUE
Culvert Diameter (feet)	3.00
FHWA Chart Number (1,2 or 3)	2
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.0240
Entrance Loss Coefficient of Culvert Opening	0.50
Culvert Length (feet)	226.0
Culvert Slope (feet per foot)	0.0088

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.18	1.07	0.96	1.07	4.07
12.8	0.60	1.58	0.44	1.28	1.14	1.28	4.43
16.9	0.70	1.86	0.79	1.50	1.31	1.50	4.79
21.7	0.80	2.16	1.29	1.75	1.50	1.75	5.09
27.1	0.90	2.48	1.96	2.03	1.68	2.03	5.33
33.1	1.00	2.83	2.84	2.40	1.87	1.87	7.16
39.8	1.10	3.23	4.00	3.00	2.05	2.05	7.72
47.2	1.20	3.81	5.50	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.38	3.00	2.41	2.41	9.07
64.0	1.40	5.18	9.76	3.00	2.57	2.57	9.93
73.6	1.50	6.18	12.71	3.00	2.70	2.70	10.98

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STA 6400 + 60

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 3-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	217.0
Culvert Slope (feet per foot).....	0.0083

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.2	0.50	1.32	0.36	1.09	0.96	1.09	3.99
12.8	0.60	1.58	0.61	1.30	1.14	1.30	4.37
16.9	0.70	1.86	0.96	1.54	1.31	1.54	4.64
21.7	0.80	2.16	1.45	1.78	1.50	1.78	4.98
27.1	0.90	2.48	2.10	2.07	1.68	2.07	5.21
33.1	1.00	2.83	2.95	2.48	1.87	1.87	7.16
39.8	1.10	3.23	4.08	3.00	2.05	2.05	7.72
47.2	1.20	3.81	5.54	3.00	2.24	2.24	8.35
55.2	1.30	4.38	7.36	3.00	2.41	2.41	9.07
64.0	1.40	5.18	9.66	3.00	2.57	2.57	9.93
73.6	1.50	6.18	12.53	3.00	2.70	2.70	10.98

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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0111
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.2	2.82	0.781	0.124	0.624	3.3	8.0
0.6	12.8	3.13	0.800	0.152	0.752	4.1	8.6
0.7	16.9	3.41	0.817	0.180	0.880	5.0	9.2
0.8	21.7	3.66	0.831	0.209	1.009	5.9	9.8
0.9	27.1	3.91	0.844	0.237	1.137	6.9	10.4
1.0	33.1	4.14	0.855	0.266	1.266	8.0	11.0
1.1	39.8	4.36	0.866	0.295	1.395	9.1	11.6
1.2	47.2	4.57	0.876	0.324	1.524	10.3	12.2
1.3	55.2	4.77	0.885	0.354	1.654	11.6	12.8
1.4	64.0	4.97	0.894	0.384	1.784	12.9	13.4
1.5	73.6	5.16	0.902	0.414	1.914	14.2	14.0
1.6	83.8	5.35	0.909	0.444	2.044	15.7	14.6
1.7	94.9	5.53	0.916	0.474	2.174	17.2	15.2

==========

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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-18-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6419+30 5-10'x4' BC's AT CP46

ELEVATION		VOLUME	DISCHARGE	DIVERT
1065.41	0	0	0	0
1068.42	0.72	1.08	730	0
1070.53	1.22	3.13	1460	0
1071.4	Top of Bank 1.43	4.28	1680	0
1072.0	1.57	5.18	1834	58
1073	3.14	7.54	2090	250
1074.3	5.2	12.96	2470	617

C = 2.5 L = 50

at .6 Q = 58 cfs

at 1.6 Q = 250 cfs

at 2.9 Q = 617

STA 6419+30

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 13, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 5-10'x4' BC'S	VALUE
Culvert Span (Width of Opening) (feet).....	10.00
Culvert Rise (Height of Opening) (feet).....	4.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	52.0
Culvert Slope (feet per foot).....	0.0055

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
146.3	1.00	3.01	2.99	1.47	1.88	1.47	9.98
292.8	1.50	5.12	4.57	2.34	2.99	2.34	12.52
484.4	2.00	8.89	7.44	3.33	4.00	3.33	14.56
714.0	2.50	15.51	11.80	4.00	4.00	4.00	17.85
988.0	3.00	26.73	19.20	4.00	4.00	4.00	24.70

==========

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STA 6419+ 30

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 13, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.009
Manning's Roughness Coefficient (n-value).....	0.030
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	30.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
1.0	146.3	4.43	0.816	0.305	1.305	33.0	36.
1.5	292.8	5.66	0.866	0.497	1.997	51.7	39.
2.0	482.4	6.70	0.902	0.697	2.697	72.0	42.
2.5	714.0	7.62	0.930	0.901	3.401	93.8	45.
3.0	988.0	8.44	0.953	1.107	4.107	117.0	48.
3.5	1304.8	9.20	0.973	1.316	4.816	141.7	51.
4.0	1665.2	9.91	0.990	1.526	5.526	168.0	54.
4.5	2070.2	10.58	1.006	1.737	6.237	195.7	57.

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TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 198
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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-12-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 212

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
1077.1	0	0	0
	2.48		
1078	5.5	2.48	0
	11.26		
1079.4 x Weir Flow	10.58	13.74	0
	12.44		
1080	30.97	26.18	[illegible]
	37.15		
1081	43.41	63.33	[illegible]

Weir Flow [illegible]

$Q = CLH^{3/2}$ [illegible]

Q at [illegible] 327 cfs

Q at [illegible] 6314 cfs [illegible]

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-12-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 221A

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
1077.0	0	0	0
	1.31		
1078	2.61	1.31	0
	6.73		
1078.9 * Weir Flow	12.34	8.04	0
	20.12		
1080	24.24	28.16	2250 cfs
1080.5		40.0	5262 cfs
		Weir Flow	
		$Q = CLH^{3/2}$	L = 150'/2
			H = 1.1
		Q at 1080 = 2250 cfs	
		Q at 1080.5 =	L = 2000'/2
			H = 1.6

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject: White Tanks / Agua Fria ADMS Prepared by: G. AOUAD Date: 10/3/91

Stage Storage Discharge Table

Subbasin 225 Litchfield Park Detention Facility

	ELEV (FT)	AREA (AC)	VOLUME (AC-FT)	Q_{pipe} (CFS) 1-42" x 100'	Q_{weir} (CFS)	Q_{Total} (CFS)
Pipes Inv.	1058.8 *	0	0	0	0	0
	1059	1.54	.15	2	0	2
	1060	7.17 (4.34)	4.51	7	0	7
	1061	14.52 (12.34)	15.36	15	0	15
	1062	20.40 (12.88)	32.82	43	0	43
	1064	21.53 (41.27)	74.75	82	0	82
	1066	22.66 (44.19)	118.94	110	0	110
weir elev.	1066.5 *	24.87 (11.33)	130.82	116	0	116
	1067	26.08 (12.74)	143.56	122	1237	1359
	1068	33.79 (23.54)	173.50	124	6430	6554

$Q_{weir} = C L H^{3/2}$ $C = 2.5$, $L = 1400'$

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
October 3, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Diameter (feet).....	3.50
FHWA Chart Number (1,2 or 3).....	1
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	100.0
Culvert Slope (feet per foot).....	0.0020

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
14.6	0.45	1.61	2.20✓	1.31	1.16	1.16	5.22
43.3	0.80	3.10	3.20✓	2.57	2.05	2.05	7.39
81.7	1.10	5.21	5.20✓	3.50	2.82	3.50	8.49
110.1	1.35	7.56	7.20✓	3.50	3.17	3.50	11.44
116.4	1.40	8.17	7.70✓	3.50	3.22	3.50	12.10
122.3	1.45	8.78	8.20✓	3.50	3.26	3.50	12.71
133.6	1.50	10.02	9.20✓	3.50	3.33	3.50	13.89
144.1	1.55	11.27	10.20	3.50	3.37	3.50	14.98

==========

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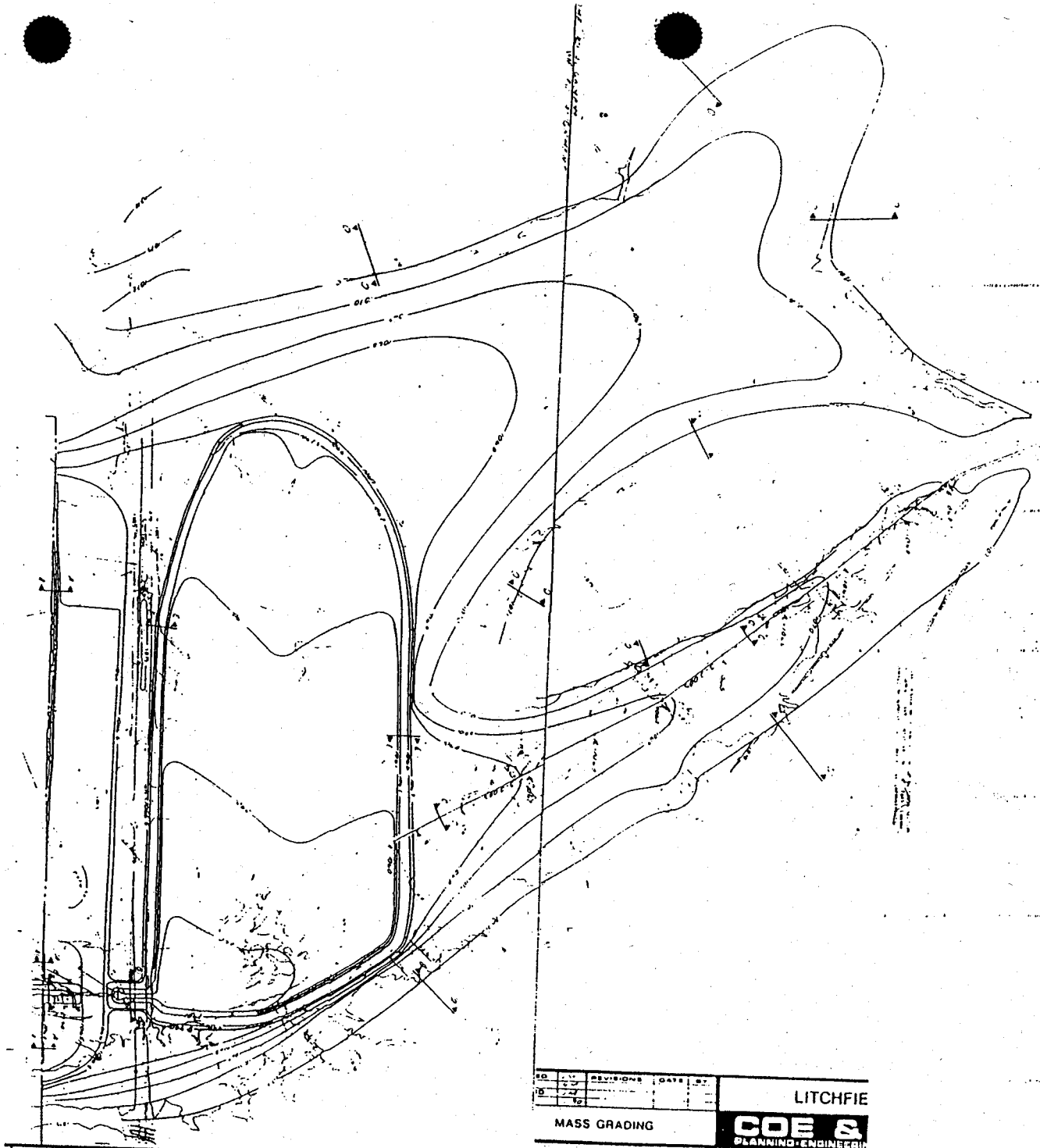

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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject White Tanks / Agua Fria ADMS Prepared by G. AQUAD Date 10/3/91

Stage Storage Discharge Table

Subbasin 225 Litchfield Park Detention Facility

	ELEV (FT)	AREA (AC)	VOLUME (AC-FT)	Q_{pipe} (CFS) 1-42" x 100'	Q_{weir} (CFS)	Q_{Total} (CFS)
pipes inv.	1058.8 *	0	0	0	0	0
	1059	1.54	.15	2	0	2
	1060	7.17 (4.34)	4.51	7	0	7
	1061	14.52 (12.34)	15.36	15	0	15
	1062	20.40 (12.22)	32.82	43	0	43
	1064	21.53 (41.23)	74.75	82	0	82
	1066	22.66 (44.19)	118.94	110	0	110
weir elev.	1066.5 *	24.87 (11.33)	130.82	116	0	116
	1067	26.08 (12.74)	143.56	122	1237	1359
	1068	33.79 (23.24)	173.50	124	6430	6554

$Q_{weir} = C L H^{3/2}$; $C = 2.5$, $L = 1400'$

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
October 3, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Diameter (feet).....	3.50
FHWA Chart Number (1,2 or 3).....	1
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	100.0
Culvert Slope (feet per foot).....	0.0020

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
14.6	0.45	1.61	2.20✓	1.31	1.16	1.16	5.22
43.3	0.80	3.10	3.20✓	2.57	2.05	2.05	7.39
81.7	1.10	5.21	5.20✓	3.50	2.82	3.50	8.49
110.1	1.35	7.56	7.20✓	3.50	3.17	3.50	11.44
116.4	1.40	8.17	7.70✓	3.50	3.22	3.50	12.10
122.3	1.45	8.78	8.20✓	3.50	3.26	3.50	12.71
133.6	1.50	10.02	9.20✓	3.50	3.33	3.50	13.89
144.1	1.55	11.27	10.20	3.50	3.37	3.50	14.98

==========

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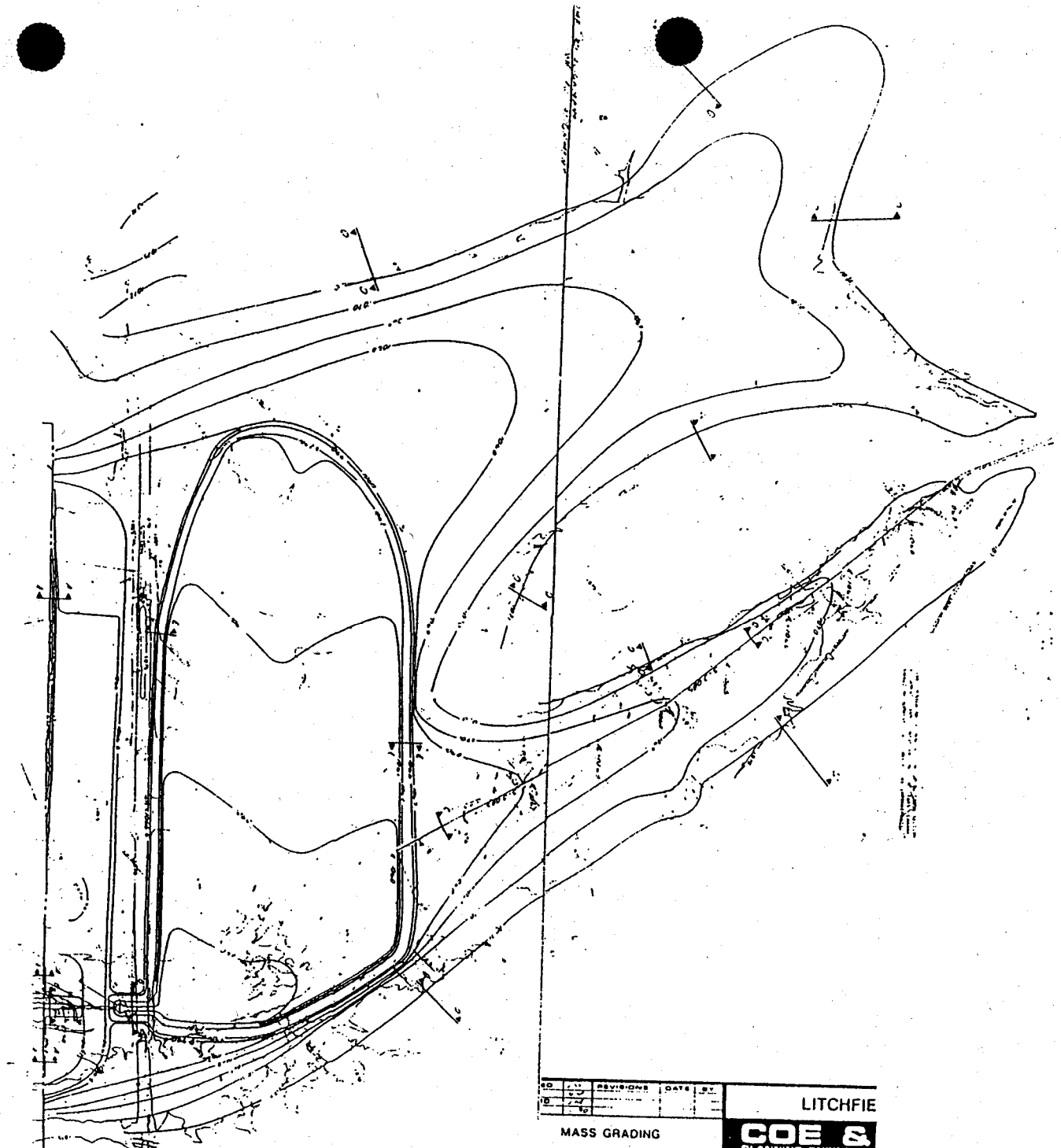

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MASS GRADING

		REVISIONS	DATE	BY

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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

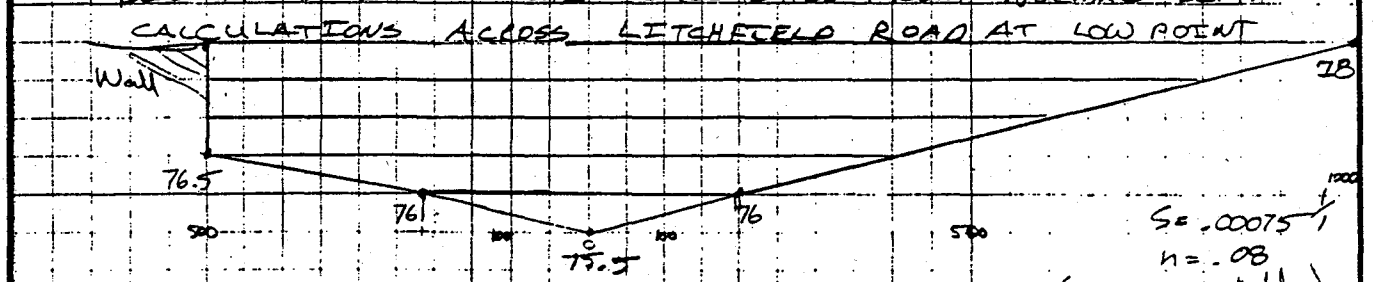
Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 10-25-91

STAGE - STORAGE - DISCHARGE TABLE

CP 226

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
1075.2	0	0	0
	.24		
1075.5 Out Flow Elev.	1.6	0.24	0
	3.1		
1076.0	10.8	3.34	21
	14.7		
1076.5	48.1	18.04	136
	33.4		
1077.0	85.3	51.44	428
	51.4		
1077.5	120.3	102.84	875
	68.9		
1078.0	155.3	171.74	1487

DISCHARGE RELATIONSHIP CALCULATED FROM NORMAL DEPTH CALCULATIONS ACROSS LITCHFIELD ROAD AT LOW POINT



$S = .00075 \frac{1}{1000}$

$n = .08$

(Assumes some buildings restricting flow)

Q at 1076 $\frac{1.49}{.08} 105 \left(\frac{105}{72}\right)^{2/3} (.00075)^{1/2}$ Q = 21 cfs

Q at 1076.5 $\frac{1.49}{.08} 435 \left(\frac{435}{600}\right)^{2/3} (.00075)^{1/2}$ Q = 136 cfs

Q at 1077 $\frac{1.49}{.08} 935 \left(\frac{935}{1100}\right)^{2/3} (.00075)^{1/2}$ Q = 428 cfs

Q at 1077.5 $\frac{1.49}{.08} 1535 \left(\frac{1535}{1300}\right)^{2/3} (.00075)^{1/2}$ Q = 875 cfs

Q at 1078 $\frac{1.49}{.08} 2235 \left(\frac{2235}{1500}\right)^{2/3} (.00075)^{1/2}$ Q = 1487 cfs

Form 209

The WLB Group Inc

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-12-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN (241) BULLNECK WASH AND CAMELBACK ROAD
4-52" CP's Invert 1042.2' Top of Road - 1046.2
-S .0033'/'

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
1042.2 ← Invert	0	0	0
1.8	.09		
1044	.10	.09	4
3.8	.56		
1046	.46	.65	280
1.1	.29		
1047.3 ← Weir Flow	1.49	.94	324
1.9	7.51		
1049.2	7.35	8.45	476 + 1297 = 1773
2.0	8.47		
1049.2	7.64	16.94	584 + 6921 = 7505

Weir Flow
$Q = CLH^{3/2}$ L = 150/2 H = 1.7

Q at 1043 = 1297 cfs

L = 150/2 H = 2.7

Q at 1049 = 6921 cfs

Form 209

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

Culvert Diameter (feet)	4.33
FHWA Chart Number (1,2 or 3)	1
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	.0123
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (feet)	60
Culvert Slope (feet per foot)	.0033

*** RESULTS ***

Flow Rate (cfs)	Tailwater Depth(ft)	..Headwater (ft).. In.Ctrl.	Out.Ctrl.	Normal Depth(ft)	Critical Depth(ft)	Depth at Outlet(ft)	Outlet Vel.(fps)
4.00	0.50	0.76	2.25	0.57	0.57	0.57	3.53
70.00	3.20	3.70	3.81	2.54	2.47	3.20	6.00
81.00	3.20	4.09	4.12	2.80	2.66	3.20	6.94
119.00	4.20	5.58	5.76	4.33	3.24	4.20	8.15
146.00	4.33	6.81	6.78	4.33	3.57	4.33	9.91

Enter Flow Rate and Tailwater, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
February 12, 1991

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0033
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	10.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	9.4	1.64	0.434	0.042	0.542	5.8	13.0
0.8	21.4	2.15	0.464	0.072	0.872	9.9	14.8
1.0	31.8	2.44	0.478	0.093	1.093	13.0	16.0
1.4	58.6	2.95	0.500	0.135	1.535	19.9	18.4
1.6	75.1	3.17	0.509	0.156	1.756	23.7	19.6
1.7	84.2	3.28	0.513	0.167	1.867	25.7	20.2
1.8	93.8	3.38	0.516	0.178	1.978	27.7	20.8
1.9	103.9	3.48	0.520	0.188	2.088	29.8	21.4
2.0	114.6	3.58	0.524	0.199	2.199	32.0	22.0
2.2	137.8	3.77	0.530	0.221	2.421	36.5	23.2
2.5	177.0	4.05	0.539	0.254	2.754	43.8	25.0
2.8	221.7	4.30	0.547	0.287	3.087	51.5	26.8
3.0	254.6	4.47	0.552	0.310	3.310	57.0	28.0
3.5	348.8	4.86	0.563	0.367	3.867	71.7	31.0
3.8	413.6	5.09	0.569	0.402	4.202	81.3	32.8

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A manual with equations & flow chart is available.

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-12-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN (253) BULLARD WASH AND INDIAN SCHOOL ROAD
2-8'x4' BC'S Invert = 1021.1 Top of Road = 1025.3
S = .0025%

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
1021.1 x Pipe Invert	0	0	0
.8	.045		
1022	.1	.045	2
2.9	3.54		
1024	3.44	3.58	190
4.2	12.72		
1025.3 x Weir Flow	16.13	16.31	3.80
4.9	13.68		
1026	22.96	29.98	460 + 685 = 1145
5.4	13.48		
1026.5	30.99	43.46	484 + 3247 = 3731
	17.50	60.96	484 + 6339 = 6823
1027.0	39.0	Weir Flow	C = 2.6
		$Q = CLH^{3/2}$	L = 200'±
			H = .7
		Q at 1026 = 685 cfs	
		Q at 1026.5 = 3247 cfs	L = 1700'±
			H = 1.2
		Q at 1027.0 =	L = 2200'±
			H = 1.7

Form 209

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 12, 1991

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	8.00
Culvert Rise (Height of Opening) (feet).....	4.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	60.0
Culvert Slope (feet per foot).....	0.0025

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
1.0	0.50	0.12	1.89	0.10	0.08	0.50	0.25
95.0	1.80	2.61	2.90	1.70	1.64	1.80	6.60
165.0	2.65	3.81	3.72	2.50	2.36	2.50	8.25
230.0	3.10	4.96	4.67	3.17	2.95	3.17	9.06
242.0	3.20	5.37	4.86	3.29	3.05	3.29	9.18

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TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
February 12, 1991

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0033
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	20.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	18.3	1.71	0.440	0.045	0.545	10.7	23.0
1.0	59.8	2.60	0.487	0.105	1.105	23.0	26.0
1.5	121.1	3.30	0.516	0.169	1.669	36.7	29.0
2.0	201.8	3.88	0.536	0.234	2.234	52.0	32.0
2.5	302.2	4.40	0.553	0.300	2.800	68.8	35.0
3.0	422.8	4.86	0.566	0.367	3.367	87.0	38.0
3.5	564.5	5.29	0.578	0.434	3.934	106.7	41.0
4.0	728.0	5.69	0.588	0.502	4.502	128.0	44.0
4.5	914.1	6.06	0.597	0.571	5.071	150.7	47.0
5.0	1123.7	6.42	0.605	0.640	5.640	175.0	50.0
5.5	1357.7	6.76	0.612	0.710	6.210	200.7	53.0
6.0	1616.9	7.09	0.619	0.781	6.781	228.0	56.0

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
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STA 6330+50, 6335+25, 6340+10, 6343+25, 6345+65

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
July 17, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0100
Manning's Roughness Coefficient (n-value).....	0.0300
Channel Side Slope - Left Side (horizontal/vertical)....	3.00
Channel Side Slope - Right Side (horizontal/vertical)...	3.00
Channel Bottom Width (feet).....	5.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.5	8.7	2.68	0.741	0.112	0.612	3.3	8.0
0.6	12.1	2.97	0.759	0.137	0.737	4.1	8.6
0.7	16.1	3.23	0.775	0.162	0.862	5.0	9.2
0.8	20.6	3.48	0.789	0.188	0.988	5.9	9.8
0.9	25.7	3.71	0.801	0.214	1.114	6.9	10.4
1.0	31.4	3.93	0.812	0.240	1.240	8.0	11.0
1.1	37.8	4.14	0.822	0.266	1.366	9.1	11.6
1.2	44.8	4.34	0.831	0.292	1.492	10.3	12.2
1.3	52.4	4.53	0.840	0.319	1.619	11.6	12.8
1.4	60.8	4.72	0.848	0.346	1.746	12.9	13.4
1.5	69.8	4.90	0.856	0.373	1.873	14.2	14.0
1.6	79.6	5.08	0.863	0.400	2.000	15.7	14.6
1.7	90.1	5.25	0.870	0.427	2.127	17.2	15.2
1.8	101.3	5.41	0.876	0.455	2.255	18.7	15.8
1.9	113.4	5.58	0.883	0.483	2.383	20.3	16.4
2.0	126.2	5.74	0.889	0.511	2.511	22.0	17.0

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-17-90

STAGE - STORAGE - DISCHARGE TABLE (I-10)

STA 6349+45 1-36" CMP AT CP43-5

ELEVATION		VOLUME	DISCHARGE	DIVERT
1089.76	0	0	0	0
1091.09	0.52	0.09	9	0
1091.35	0.64	0.24	13	0
1091.64	0.77	0.44	17	0
1091.94	0.91	0.69	22	0
1092.26	1.05	1.00	27	0
1092.62	1.27	1.42	34	0
1093.13	1.57	2.14	40	0
1093.5	1.80	2.76	42	0
1094.0	Top of Bank 2.09	3.73	44	0
1094.5	2.36	4.84	46	88
1094.94	2.62	5.94	48	228

C = 2.5 L = 100'

at .5 Q = 88 cfs

at .94 Q = 228 cfs

STA 6349+45

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
July 17, 1990

==========

PROGRAM INPUT DATA:

DESCRIPTION 1-36" CMP	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	2
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0240
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	280.0
Culvert Slope (feet per foot).....	0.0121

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
9.3	0.50	1.33	-1.18	0.99	0.96	0.99	4.58
12.0							
12.9	0.60	1.59	-0.88	1.18	1.14	1.18	5.02
17.2	0.70	1.88	-0.46	1.38	1.33	1.38	5.43
22.0	0.80	2.18	0.12	1.64	1.51	1.64	5.56
27.4	0.90	2.50	0.91	1.83	1.69	1.83	6.07
33.6	1.00	2.86	1.99	2.12	1.88	2.12	6.30
40.3	1.10	3.26	3.37	2.50	2.07	2.07	7.76
0.8							
47.8	1.20	3.84	5.18	3.00	2.25	2.25	8.40
56.0	1.30	4.45	7.48	3.00	2.43	2.43	9.14
64.9	1.40	5.26	10.35	3.00	2.58	2.58	10.02

==========

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COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 1-21-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 258

ELEV (FT)	AREA (AC.)		VOLUME (AC-FT)	DISCHARGE (CFS)
967	0		0	0
		19.92		
970	5.69		19.92	0
		115		
980	17.31		134.9	0
		265.6		
990	35.81		400.5	0
		399.1		
1000	44.0		799.6	0
		473		
1010	50.6		1272.6	0
		401.2		
1017 * Weir Flow	64.03		1673.8	0
		200.7		
1020	69.79		1874.5	3377

* Weir Flow

$Q = CLH^{3/2}$ $C = 2.6$
$L = 500/2 = 250$
$H = 3$

Q at 1020 = 3377

Form 209

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

December 28, 2000

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Culvert Diameter (ft)	2.0
FHWA Chart Number	3
FHWA Scale Number (Type of Culvert Entrance)	2
Manning's Roughness Coefficient (n-value)	0.012
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (ft)	100.0
Invert Elevation at Downstream end of Culvert (ft)	1,056.0
Invert Elevation at Upstream end of Culvert (ft)	1,056.33
Culvert Slope (ft/ft)	0.0033
Starting Flow Rate (cfs)	10.0
Incremental Flow Rate (cfs)	1.0
Ending Flow Rate (cfs)	20.0
Starting Tailwater Depth (ft)	2.0
Incremental Tailwater Depth (ft)	0.5
Ending Tailwater Depth (ft)	7.0

COMPUTATION RESULTS

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
10.0	2.0	1.62	2.07	1.24	1.13	2.0	3.18
11.0	2.5	1.72	2.66	1.33	1.19	2.0	3.5
12.0	3.0	1.81	3.25	1.42	1.24	2.0	3.82
13.0	3.5	1.91	3.85	1.52	1.3	2.0	4.14
14.0	4.0	2.01	4.46	1.63	1.35	2.0	4.46
15.0	4.5	2.11	5.08	1.8	1.4	2.0	4.77
16.0	5.0	2.25	5.7	2.0	1.44	2.0	5.09
17.0	5.5	2.38	6.33	2.0	1.49	2.0	5.41
18.0	6.0	2.45	6.97	2.0	1.53	2.0	5.73
19.0	6.5	2.55	7.62	2.0	1.57	2.0	6.05
20.0	7.0	2.64	8.28	2.0	1.61	2.0	6.37

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Assume Tailwater Depth is 2.5' and flow will begin to spill over Indian School Rd when H.W. is ~ 2.7'.

∴ 4 RGRCP's (one on southside at loop 303)

4 x 11 cfs = 44 cfs

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 1-25-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 280A

ELEV. (FT)	AREA (AC.)		VOLUME (AC-FT)	DISCHARGE (CFS)
1007.4	0		0	0
		6.24		
1008.0	20.79		6.24	0
		15.53		
1008.7 * Weir Flow	23.58		21.77	0
		7.14		
1009	24.0		28.91	726

Weir Flow
$Q = C L H^{3/2}$

C = 2.6
L = 3400/2
H = .3

Q at 1009.0 = 726

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 293A

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
1002.5	0	0	0
	3.50		
1004	4.66	3.50	0
	4.74		
1004.6	11.13	8.24	0
	10.43		
1005.3 * Weir Flow West Over Road & South Over Canal	18.66	18.67	0
	15.70		
1006.0	26.2	34.37	391
	14.05	48.42	2563
1006.5	30	Weir Flow Over Canal	C=2.6
		$Q = CLH^{3/2}$	H=.7
			L=1050/2
		Q at 1006 = 800 cfs	H=1.2
		Q at 1006.5 = 2050 cfs	L=1200/2
			C=2.6
		Weir Flow West Over Road	H=.7
			L=120/2
		Q at 1006 = 91 cfs	H=1.2
		Q at 1006.5 = 512 cfs	L=300/2

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-27-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 293

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
1006.4	0	0	0
	8.72		
1007.4 w Weir Flow Across Road	17.43	8.72	0
	13.60		
1008.0	27.90	22.32	1450
	24.48		
1008.5	35.0	64.79	3600
		Weir Flow	L = 26
		Q = CLH^3/2	L = 2400/2
			H = 2
		at 1008.0 Q = 1450 cfs	
		at 1008.5 Q = 3600	L = 2400/2
			H = 6.1

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN (294)

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
970.4	0	0	0
	6.32		
972	7.90	6.32	0
	13.24		
980	25.20	19.56	0
	28.35		
990	31.07	300.91	0
	33.44		
1000	35.81	635.31	0
	38.64		
1007 * Weir Flow Over Canal	39.8	899.95	0
	42.16		
1008	44.52	942.11	715
	47.35		
1008.B	48.35	979.46	2198

Weir Flow
$Q = CLH^{3/2}$

C = 2.6
H = 1.0
L = 550 ft

Qat 1008 = 715 cfs

C = 2.6
H = 1.0
L = 700 ft

Q at 1008.B 2198

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-12-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 294A

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
1006.7	0	0	0
	3.78		
1007.8 x Weir Flow	6.89	3.78	0
	1.51		
1008	8.19	5.29	46
	52.01		
1010	43.82	57.30	1696.3

Weir Flow
$Q = CLH^{3/2}$

C = 2.6
L = 200
H = .2

Q at 1008 = 46 cfs

Q at 1010 = 1696.3

L = 2000
H = 2.2

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 1-25-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 297
(PIT)

ELEV (FT)	AREA (AC.)	VOLUME (AC-FT)	DISCHARGE (CFS)
937.9	0	0	0
	12.78		
940	3.41	12.78	0
	117.1		
950	8.30	129.9	0
	267.3		
960	18.43	397.18	0
	199		
970	21.37	596.18	0
	207.2		
979.1	24.17	803.38	0
	22.25		
1000	25.27	825.63	555 cfs

Weir Flow
$Q = CLH^{3/2}$

C = 2.6
L = 500/2
H = .9

Q at 1000 = 555 cfs

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 1-25-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 277
(PIT)

ELEV (FT)	AREA (AC)		VOLUME (AC-FT)	DISCHARGE (CFS)
937.9	0		0	0
		12.78		
940	3.41		12.78	0
		117.1		
960	8.30		129.9	0
		267.3		
980	18.43		397.18	0
		199		
990	21.37		596.18	0
		207.2		
999.1	24.17		803.38	0
		22.25		
1000	25.27		825.63	555 cfs

Weir Flow
$Q = CLH^{3/2}$

C = 2.6
L = 500 ft
H = .9

Q at 1000 = 555 cfs

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 1-25-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN (298)

ELEV. (FT)	AREA (AC.)	VOLUME (AC-FT)	DISCHARGE (CFS)
975.5	0	0	0
	.03		
976	.34	.08	0
	6.95		
978	6.61	7.03	0
	2.25		
978.3x	8.40	9.28	0
	22.91		
980	18.55	32.19	2881
	2.70		
981	25.0	53.97	8075

Weir Flow
$Q = CLH^{3/2}$

C = 3.0
L = 50
H = 1.7

Q at 980 = 2881

L = 1400/2
H = 2.7

Q at 981 = 8075

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 302 1-30" CP into Agua Fria

ELEV (FT)	AREA (AC.)	VOLUME (AC-FT)		DISCHARGE (CFS.)
972.0 = Invert	0	0		0
	1.16			
974	1.10	1.16		13
	6.28			
976	5.18	7.44		39
	10.38			
* 977.6 Weir Flow South	7.79	17.82		49
	4.33			
978	13.88	22.15	51 + 66	117
	38.71			
980	24.83	60.86	62 + 3625	3687

Weir Flow $Q = CLH^{3/2}$

C = 2.6
L = 200/2
H = .4

at 978 Q = 66 cfs

C = 2.6
L = 750/2
H = 2.4

at 980 Q = 3625

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Diameter (feet).....	2.50
FHWA Chart Number (1,2 or 3).....	1
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	100.0
Culvert Slope (feet per foot).....	0.0050

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
16.0	1.35	2.00	1.80	1.26	1.35	1.26	6.43
38.0	2.08	4.06	3.91	2.50	2.08	2.50	7.74
49.0	2.29	5.64	5.42	2.50	2.29	2.50	9.98
51.0	2.31	5.97	5.73	2.50	2.31	2.50	10.39
62.0	2.41	8.02	7.60	2.50	2.41	2.50	12.63

==========

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 305

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
1001.5	0	0	0
	.32		
1002	1.28	.32	0
	4.2		
1003 + Weir Flow Across Canal	7.12	4.52	0
	10.54		
1004	13.96	15.06	845 cfs
	7.56		
1004.5	24.3	24.62	4777 cfs

Weir Flow
$Q = CLH^{3/2}$

C = 2.6
L = 650 l/2
H = 1.0

Q at 1004 = 845 cfs

C = 2.6
L = 2000 l/2
H = 1.5

Q at 1004.5 = 4777

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN (306)

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
1004.5	0	0	0
	3.71		
1005.3 *Weir Flow Over Canal	9.27	3.71	0
	9.33		
1006.0	17.38	13.04	3426

C = 2.5
H = 7
L = 750

Weir Flow
$Q = CLH^{3/2}$

Q·d·1.98 = 3426

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-8-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 320 1-36" CP into Agua Fria Invert 956.0 Top RR = 962.3
L=60 S=.005 ft

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
956.0 * Invert	0	0	0
	4.15		
958	4.15	4.15	16
	30.07		
960	12.96	34.22	50
	36.87		
962	23.91	71.09	71
	70.34		
964	46.43	141.43	87
	135.53		
966	89.10	276.96	100
	204.1		
968	115.00	481.06	112
	35.25		
968.3 * Weir Flow	120.01	516.31	114
	88.10		
969	131.7	604.41	117+1218 = 1335
	140.05		
970	148.4	744.46	123+10373 = 10496

Weir Flow
Q = CL H 3/2
Q at 969 = 1218 cfs

Q at 970 = 10373

C = 3.2
L = 1500/2
H = .7

L = 3200/2
H = 1.7

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 8, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Diameter (feet).....	3.00
FHWA Chart Number (1,2 or 3).....	1
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	60.0
Culvert Slope (feet per foot).....	0.0050

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
16.0	1.28	1.81	1.99	1.15	1.28	1.28	5.56
50.0	2.41	4.00	3.80	2.41	2.30	2.41	8.22
71.0	2.67	6.03	5.46	3.00	2.67	3.00	10.04
87.0	2.83	8.04	7.01	3.00	2.83	3.00	12.31
100.0	2.90	9.98	8.45	3.00	2.90	3.00	14.15
112.0	2.90	12.00	9.95	3.00	2.93	3.00	15.84
114.0	2.90	12.36	10.21	3.00	2.94	3.00	16.13
117.0	2.94	12.91	10.62	3.00	2.94	3.00	16.55
123.0	2.95	14.06	11.46	3.00	2.95	3.00	17.40

==========

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 321

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
998.3	0	0	0
	11.57		
1000	17.28	11.57	0
	21.88		
1001.1 * Weir Flow Across Canal	38.69	43.45	0
	46.97		
1002	54.58	85.42	102.12

Weir Flow $Q = CLH^{3/2}$ C = 2.6, H = .9, L = 40.0

Q at 1002 = 102.12

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 323

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
998.7	0	0	0
	.39		
1000	2.61	.39	0
	11.06		
1001.5 * Weir Flow Across Road & Canal	12.14	11.45	0
	2.81		
1001.8	15.96	14.26	64+64 128
	5.65		
1002.0	21.68	19.91	2114+230 = 2344

Weir Flow Across Canal C=2.6
L=300/2
Q at 1001.8 64 cfs H=.3
Q at 1002 = 2114 H=.5 L=200
Weir Flow Across Road
C=2.6
Q at 1002 = 230 cfs L=500/2
H=.5

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-8-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 336

≈ 3800 Feet of Kearns Rd BW = 25' LSS = 4:1 RSS = 2:1

SRER Bridge Invert = 922.8' Top of RR = 935.2 LC = 2'

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
922.3 x Invert	0	0	0
	.54		
930	.14	.54	1400
	1.18		
932	1.04	1.72	2075
	2.77		
932.8 x Weir Flow West	5.88	4.49	2335
	1.30		
933	7.10	5.79	14 + 2400 = 2414
	10.12		
934	13.15	15.91	205 + 2595 = 2800
	16.50	32.49	5939 + 2595 = 8534
935	20.0		

x Weir Flow

$Q = CLH^{3/2}$

Qat 933 = 14 cfs C = 2.6, L = 60, H = .2

Qat 934 = 705 cfs L = 60, H = 1.2

Qat 934 = 5939 L = 700, H = 2.2

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	25.00
Culvert Rise (Height of Opening) (feet).....	9.40
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0220
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	30.0
Culvert Slope (feet per foot).....	0.0050

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
1400.0	5.01	7.38	7.72	5.01	4.60	5.01	11.18
2075.0	6.51	9.68	9.46	6.57	5.98	6.57	12.64
2335.0	7.13	10.50	10.21	7.13	6.47	7.13	13.10
2400.0	7.27	10.70	10.41	7.27	6.59	7.27	13.20
2595.0	7.68	11.70	11.02	7.68	6.94	7.68	13.51

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BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	56.00
Culvert Rise (Height of Opening) (feet).....	4.70
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0220
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	30.0
Culvert Slope (feet per foot).....	0.0050

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
520.0	1.51	2.19	2.99	1.52	1.39	1.51	6.15
1730.0	3.20	5.01	4.85	3.20	3.09	3.20	9.65
2045.0	3.56	5.80	5.48	3.56	3.46	3.56	10.27
2085.0	3.60	6.00	5.56	3.60	3.50	3.60	10.35
2400.0	3.93	7.01	6.26	3.93	3.85	3.93	10.90

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-8-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 336B ≅ 1750' East of Reems Road BW=5' RSS=0:1
Invert=924.31 Top of BR=927.8' LK=3' LSS=3:1

SPAR Bridge

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
924.3 * Invert	0	0	0
	2.37		
924.0	1.75	2.37	110
	3.05		
925.0 * Weir Flow	4.36	5.42	169
	7.34		
925.5	5.0	7.76	192 + 1057 = 1249

Weir Flow: C = 2.6
Q = CLH^3/2 L = 1150
Q at 925.5 = 1057 cfs H = 2.5

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	10.00
Culvert Rise (Height of Opening) (feet).....	3.50
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	25.0
Culvert Slope (feet per foot).....	0.0050

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
110.0	2.31	2.48	2.70	2.31	1.55	2.31	4.76
169.0	3.12	3.34	3.71	3.12	2.07	3.12	5.42
192.0	3.42	3.65	4.21	3.42	2.25	3.42	5.61

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-12-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 337

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
951.3	0	0	0
	.06		
952	.18	.06	10
	3.03		
954	2.90	3.14	100
	11.94		
956	9.04	15.08	250
	30.2		
958	21.16	45.28	310
	65.31		
960	44.15	110.59	380
	111.19		
962	67.04	221.78	393
	68.66		
962.8 * Weir Flow	104.62	290.44	383
	159.37		
964	161.0	449.81 383+8545	8928

Weir Flow
$Q = CLH^{3/2}$

C = 2.6
L = 2500
H = 1.2

Q at 964 = 8545 cfs

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 1-23-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 33RA

3-11'x6' BCS L= [illegible] S= .0016

ELEV. (FT)		AREA (AC.)	VOLUME (AC-FT)	DISCHARGE (CFS)
*939.6	Box Culvert Invert	0	0	0
		.51		
942		.46	.51	3
		8.61		
944		8.15	9.12	729
		30.02		
*945.8	Weir Flow South Ave. Road	25.21	39.14	1410
		5.23		
946		27.11	44.37	1470 + 23 = 1493

Weir Flow C=2.6
Q= CLH^3/2 L= [illegible]
H= .2
Q= 23 cfs

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	11.00
Culvert Rise (Height of Opening) (feet).....	6.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	130.0
Culvert Slope (feet per foot).....	0.0016

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
1.0	0.05	0.10	2.82	0.09	0.06	0.06	1.43
243.0	2.47	3.95	4.39	2.91	2.47	2.47	8.93
470.0	3.84	6.22	6.07	4.66	3.84	4.66	9.18
490.0	3.95	6.40	6.24	4.80	3.95	4.80	9.28

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-12-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 346C RUBBERMAID SITE

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
905.4	0	0	0
	.55		
906	1.34	.55	0
	9.74		
908	7.9	10.29	0
	8.69		
909 x Weir Flow Start	9.48	18.98	0
	13.93		
910	18.38	32.91	1040
	1084		
910.5	25.0	48.76	28.66

Weir Flow
Q = CLH^3/2

C = 2.6
L = 400
H = 1.0

Q at 910 = 1040 cfs

Q at 910.5 = 28.66

L = 600
H = 1.5

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-22-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 346B WEST OF RUBBERMAID SITE

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
907	0	0	0
	.84		
907.7 * Weir Flow West	2.41	.84	0
	.88		
908 * Weir Flow South + West	3.44	1.72	27
	2.16		
908.5	5.19	3.88	280 + 69 = 349
	3.25		
909	7.82	7.13	1252 + 423 = 1675
	9.13		
910	10.44	16.26	3038 + 2390 = 5428

Weir Flow (West) $Q = CLH^{3/2}$ C = 2.6

Q at 908 = 27 cfs H = .3 L = 125/2

Q at 908.5 = 280 cfs H = .8 L = 300/2

Q at 909 = 1252 cfs H = 1.3 L = 650/2

Q at 910 = 3038 cfs H = 2.3 L = 670/2

Weir Flow (South) $Q = CLH^{3/2}$ C = 2.6

Q at 908.5 = 69 cfs H = .3 L = 150/2

Q at 909 = 423 cfs H = 1.0 L = 325/2

Q at 910 = 2390 cfs H = 2 L = 550/2

Form 209

The WLB Group Inc. **WLB**

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

① Test Well of Sandy Ave Area = C = 1 [illegible] 2.7 Invert = 904.4 Top of RR = 908.1

SUBBASIN 347 ② ≈ 2050' West of [illegible] DW = 9' D = 3' L = 3 Invert = 906.0 Top of RR = 910

SPAR Bridge ③ ≈ 3400' West of [illegible] BW = 12 D = 2.5' L = 2 Invert = 905.5 Top of RR = 910.0

④ ≈ [illegible] Invert = 905.2 Top of RR = 911.2

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
Invert 904.4 + ① Invert	0	0	0
	.004		
Invert 905.2 + ④ Invert	.01	.04	11
	.006		
Invert 905.5 + ③ Invert	.03	.1	13 + 1 = 14
	.02		
Invert 906 + ② Invert	.05	.12	21 + 1 + 1 = 23
	.136		
908.1 + Weir Flow	.09	.26	11 + 151 + [illegible] + 57 = 370
	58.5		
910	61.5	58.75	58 + 279 + [illegible] + 400 + [illegible] = 7710
	97.9		
911.2	101.67	156.65	59 + 376 + 293 + 225 + 37465 + [illegible]

Weir Flow $Q = CLH^{3/2}$ C = 2.6

at 910 L = 2050/2

Q at 910 = 6980 cfs H = 1.9

Q at 911.2 = 37465 cfs L = [illegible]

H = 3.1

Form 209

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	6.00
Culvert Rise (Height of Opening) (feet).....	1.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	30.0
Culvert Slope (feet per foot).....	0.0050

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
11.0	0.74	0.75	0.79	0.74	0.47	0.74	2.48
13.0	0.83	0.85	0.97	0.83	0.53	0.83	2.61
21.0	1.00	1.18	1.60	1.00	0.72	1.00	3.50
41.0	1.00	2.61	3.69	1.00	1.00	1.00	6.83
53.0	1.00	3.81	5.60	1.00	1.00	1.00	8.83
59.0	1.00	4.53	6.74	1.00	1.00	1.00	9.83

==========

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BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	12.00
Culvert Rise (Height of Opening) (feet).....	3.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	30.0
Culvert Slope (feet per foot).....	0.0050

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
1.0	0.05	0.09	1.38	0.11	0.06	0.06	1.39
1.0	0.11	0.09	1.38	0.11	0.06	0.11	0.76
151.0	2.47	2.74	2.90	2.47	1.70	2.47	5.09
277.0	3.00	4.71	4.79	3.00	2.55	3.00	7.69
346.0	3.00	5.99	5.88	3.00	3.00	3.00	9.61

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BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	12.00
Culvert Rise (Height of Opening) (feet).....	2.50
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	30.0
Culvert Slope (feet per foot).....	0.0050

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
1.0	0.02	0.09	1.13	0.11	0.06	0.06	1.39
123.0	2.15	2.39	2.59	2.15	1.48	2.15	4.77
240.0	2.50	4.49	4.58	2.50	2.32	2.50	8.00
293.0	2.50	5.70	5.68	2.50	2.50	2.50	9.77

==========

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BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	9.00
Culvert Rise (Height of Opening) (feet).....	3.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	30.0
Culvert Slope (feet per foot).....	0.0050

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
55.0	1.58	1.67	2.02	1.58	1.05	1.58	3.87
160.0	3.00	3.48	4.03	3.00	2.14	3.00	5.93
225.0	3.00	5.10	5.19	3.00	2.69	3.00	8.33

==========

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN (348) Sarival Ave. 24" CP West across Road north of RR
Invert 906.6 Top of Road = 909.6 L=50' Sp. 0.0152

ELEV. (FT)	AREA (AC)		VOLUME (AC-FT)		DISCHARGE (CFS)
906.6 Invert	0		0		0
907.6	0		0		0.5
		0.72			
908	3.60		0.72		5
		1.40			
908.3 x Weir Flow South Across R.R.	5.72		2.12		9
		13.39			
909.6 x Weir Flow West Across Road	14.80		15.51	18 + 3033 = 3101	
		6.52			
910	17.70		22.03	21 + 5475 + 165 = 5661	

Weir Flow Across RR

Q at 909.6 = 3033 cfs H = 1.7 L = 120'
Q at 910 = 5475 cfs H = 1.7 L = 120'

Weir Flow Across Road

Q at 910 = 165 cfs H = .4 L = 77'/2

Form 209

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Diameter (feet).....	2.00
FHWA Chart Number (1,2 or 3).....	1
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0120
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	60.0
Culvert Slope (feet per foot).....	0.0015

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
0.5	0.31	0.32	1.03	0.31	0.24	0.31	1.61
5.0	1.05	1.11	1.39	1.05	0.79	1.05	2.99
9.0	1.55	1.58	1.73	1.55	1.07	1.55	3.44
18.0	2.00	2.65	3.00	2.00	1.53	2.00	5.73
21.0	2.00	3.12	3.39	2.00	1.64	2.00	6.68

==========

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-11-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 348B = 1/4 MILE WEST OF REEMS ROADS R.W.=12 D=2.3 LC=37

INVERT = 907.6' Top of RR = 914.0

SPRR Bridge

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
908.5 = Invert	0	0	0
	.08		
910.1	.10	.08	50
	8.25		
914 = Wt. Flow Area RR	4.13	8.33	235
	5.83		
915	7.52	14.16	37.2 + 455 = 778
	9.21		
916	10.9	23.37	35.8 + 4228 = 4586

(Weir Flow) $Q = CLH^{3/2}$

C = 3.6
L = 350/2
H = 1.0

Q at 915 = 455 cfs

L = 1150/2
H = 2.0

Q at 916 = 4228 cfs

Form 209

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	12.00
Culvert Rise (Height of Opening) (feet).....	2.50
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	30.0
Culvert Slope (feet per foot).....	0.0050

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
50.0	1.19	1.29	1.60	1.19	0.81	1.19	3.50
285.0	2.50	5.50	5.50	2.50	2.50	2.50	9.50
323.0	2.50	6.49	6.40	2.50	2.50	2.50	10.77
358.0	2.50	7.51	7.32	2.50	2.50	2.50	11.93

==========

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-30-91

349-1

STAGE - STORAGE - DISCHARGE TABLE

L = 25' S = .005'

SUBBASIN 349 700' East of Dean Road BW = 10' Height = 5' Invert = 889.1 LCS = 3'

SPRR Bridges 3150' West of Airport Rd BW = 38 Height = 5' Invert = 890.9'

RSS = 0:1 LSS = 3:1

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
889.1 = Invert	0	0	0
890.9 = Invert	0	0	0
	.065		
894.1	.17	.085	265 + 375 = 640
	5.68		
896.1	5.51	5.76	485 + 1245 = 1680
	8.82		
897.1 = Weir Flow Over RR	10.52	14.59	506 + 1495 = 2001
	15.41		
898	23.73	29.99	555 + 1695 + 666 = 2916

Weir Flow $Q = CLH^{3/2}$ C = 3.4 L = 600/2 = 300 H = .9

Q at 898 = 666 cfs

349-2

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	10.00
Culvert Rise (Height of Opening) (feet).....	5.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	25.0
Culvert Slope (feet per foot).....	0.0050

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
265.0	4.32	4.50	4.99	4.32	2.79	4.32	6.13
435.0	5.00	6.95	7.03	5.00	3.89	5.00	8.70
506.0	5.00	7.99	7.79	5.00	4.30	5.00	10.12
555.0	5.00	8.79	8.38	5.00	4.57	5.00	11.10

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BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	38.00
Culvert Rise (Height of Opening) (feet).....	5.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	25.0
Culvert Slope (feet per foot).....	0.0050

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
375.0	1.93	2.28	3.20	1.93	1.45	1.93	5.11
1245.0	4.14	5.21	5.17	4.14	3.22	4.14	7.92
1495.0	4.66	5.95	6.20	4.66	3.64	4.66	8.44
1695.0	5.00	7.11	7.01	5.00	3.95	5.00	8.92

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-30-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN (350)

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
886.8	0	0	0
	4.41		
888	7.35	4.41	0
	19.73		
889 * Weir Flow Over Canal	32.10	24.14	0
	44.48		
890	56.86	68.62	3900

* Weir Flow
$Q = CLH^{3/2}$

$C = 2.6$
$L = 3000/2$
$H = 1.0$

Q at 890 = 3900 cfs

The WLB Group Inc WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-30-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN (351) 5050' West of Jackrabbit Trail Levees SS=3:1 LC=3'
Bridges Under SPRR Invert-892.5 Top of Area=898.5
4200' West of Jackrabbit Trail Levees SS=3:1 LC=3' Invert=[illegible]
Top of Area=[illegible]

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
888.5 * Invert	0	0	0
	.80		
892.5 * Invert	.80	.20	495
	4.0		
894	2.93	4.80 700 + 15 =	715
	6.09		
895.5 * Weir Flow Over RR	5.19	10.37 910 + 335 =	1245
	2.78		
896	5.73	13.66 970 + 391 + 92 =	1453
	4.30		
898	8.93	23.52 1175 + 642 + 6166 =	7733
	42.07		
900	53.14	90.59 1348 + 825 + 37229 =	39402

Weir Flow $Q = CLH^{3/2}$ C = 2.6, L = 200/2, H = .5

Q at 896 = 92 cfs

Q at 898 = 6166 cfs L = 1800/2, H = 2.5

Q at 900 = 37229 cfs L = 3000/2, H = 4.5

351-2

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	23.00
Culvert Rise (Height of Opening) (feet).....	4.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	25.0
Culvert Slope (feet per foot).....	0.0050

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
495.0	3.29	3.93	3.98	3.29	2.43	3.29	6.54
700.0	4.00	5.41	5.51	4.00	3.06	4.00	7.61
910.0	4.00	7.01	6.64	4.00	3.65	4.00	9.89
970.0	4.00	7.52	7.02	4.00	3.81	4.00	10.54
1175.0	4.00	9.52	8.49	4.00	4.00	4.00	12.77
1348.0	4.00	11.51	9.94	4.00	4.00	4.00	14.65

==========

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351-3

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	24.00
Culvert Rise (Height of Opening) (feet).....	3.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	25.0
Culvert Slope (feet per foot).....	0.0050

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
15.0	0.35	0.35	1.49	0.36	0.23	0.35	1.79
335.0	2.47	2.94	3.00	2.47	1.82	2.47	5.65
391.0	2.73	3.27	3.50	2.73	2.02	2.73	5.97
642.0	3.00	5.49	5.28	3.00	2.81	3.00	8.92
825.0	3.00	7.48	6.84	3.00	3.00	3.00	11.46

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 352

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
889.9	0	0	0
	.08		
890	1.65	.09	0
	14.08		
891.7 x Weir Flow Across Canal	14.92	14.16	0
	4.83		
892	17.26	18.99	21
	45.87		
894	28.61	64.86	2267

Weir Flow $Q = CLH^{3/2}$ C = 2.6, L = 50, H = .3

Q at 892 = 21 cfs

Q at 894 = 2267 cfs L = 500/2, H = 2.3

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-30-91

STAGE - STORAGE - DISCHARGE TABLE

Just West of Jackrabbit BW=10 ES=0.1 Height = 2' LC=2'

SUBBASIN 353 Invert = 894.4 Top RR Bed = 898.4

Bridge Under SPRR

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
894.4 x Invert	0	0	0
	.19		
898	.11	.19	138
	.35		
898.4 Weir Flow	1.63	.54	153
	2.80		
890	7.71	3.31	167 + 1315 = 1483
	4.43		
890.5	10.2	7.74	167 + 3165 = 3332
		Weir Flow	= 2.6
		$Q = CLH^{3/2}$	L = 500'
			H = 1.6
		Q at 890 = 1315 cfs	
		Q at 890.5 = 3165	L = 800'
			H = 2.1

35B-2

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	10.00
Culvert Rise (Height of Opening) (feet).....	2.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	25.0
Culvert Slope (feet per foot).....	0.0050

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
138.0	2.00	3.45	3.60	2.00	1.81	2.00	6.90
153.0	2.00	3.87	3.99	2.00	1.94	2.00	7.65
167.0	2.00	4.30	4.40	2.00	2.00	2.00	8.35

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-30-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 352A

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
884.7	0	0	0
	.48		
888	.29	.48	0
	8.0		
890	7.71	8.48	0
	16.28		
891.1 * Weir Flow	21.89	24.76	0
	24.92		
892	33.49	49.68	1664

C=26

Weir Flow $Q = CLH^{3/2}$

L=1500/2

H=.9

Q at 892 = 1664 cfs

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 354
SPRR Bridge

1-49" x 32" HERCP Invert = 887.0' Top of RR = 896'
1550' East of Jackrabbit Trail
1820' West of Perryville Road BW = 15 SS = 0:1 L = 3'
Invert = 891.9' Top of RR = 896.4'

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)		DISCHARGE (CFS)
887.0 - Invert 49" x 32" HERCP	0	0		0
	.24			
891.9 ± Invert Bridge	.1	0.24		74
	17.67			
3 FT * Weir	1.70	17.91	09 + 143	252
Over RR at Jackrabbit Road	22.6			
~16	53.7	40.51	116 + 179 + 1170 =	1465

* Weir Flow
$Q = CLH^{3/2}$

C = 2.6
L = 450
H = 1.0

Q at 896 = 1170 cfs

354-2

CURRENT DATE: 02-11-1991
CURRENT TIME: 13:34:17

FILE DATE: 01-23-1991
FILE NAME: WT2

FHWA CULVERT ANALYSIS
HY-8, VERSION 3.2

CULV	SITE DATA: INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (FT)	RISE (FT)	MANNING n	INLET TYPE
1	887.00	886.95	30.00	1 RCPE	4.08	2.67	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (CFS) FILE: WT2 DATE: 01-23-1991

ELEV (FT)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
887.00	0	0	0	0	0	0	0	0	1
893.83	100	100	0	0	0	0	0	0	1
895.39	400	113	0	0	0	0	0	286	7
895.54	600	114	0	0	0	0	0	480	4
895.67	800	116	0	0	0	0	0	681	4
895.79	1000	117	0	0	0	0	0	881	4
895.90	1200	117	0	0	0	0	0	1074	3
896.00	1400	116	0	0	0	0	0	1274	3
896.10	1600	114	0	0	0	0	0	1477	3
896.20	1800	112	0	0	0	0	0	1680	3
896.29	2000	109	0	0	0	0	0	1884	3
895.00	110	110	0	0	0	0	0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: WT2 DATE: 01-23-1991

HEAD ELEV(FT)	HEAD ERROR(FT)	TOTAL FLOW(CFS)	FLOW ERROR(CFS)	% FLOW ERROR
887.00	0.00	0	0	0.00
893.83	0.00	100	0	0.00
895.39	-0.00	400	1	0.26
895.54	-0.01	600	5	0.91
895.67	-0.01	800	4	0.47
895.79	-0.01	1000	2	0.25
895.90	-0.00	1200	9	0.75
896.00	-0.00	1400	10	0.72
896.10	-0.00	1600	9	0.58
896.20	-0.00	1800	8	0.45
896.29	-0.00	2000	7	0.34

<1> TOLERANCE (FT) = 0.010 <2> TOLERANCE (%) = 1.000

RENT DATE: 02-11-1991
ENT TIME: 13:34:17

FILE DATE: 01-23-1991
FILE NAME: WT2

CULVERT # 1

PERFORMANCE CURVE FOR 1 BARREL(S)

Q (cfs)	HWE (ft)	TWE (ft)	ICH (ft)	OCH (ft)	FLOW TYPE	CCE (ft)	FCE (ft)	TCE (ft)	VO (fps)
0	887.00	886.95	0.00	-0.05	0-NF	0.00	887.00	0.00	0.00
100	893.83	887.87	6.83	5.91	4-FF	0.00	0.00	0.00	11.36
113	895.27	889.04	8.27	6.88	4-FF	0.00	0.00	0.00	12.66
114	895.42	889.59	8.42	6.98	4-FF	0.00	0.00	0.00	12.80
116	895.54	890.07	8.54	7.51	4-FF	0.00	0.00	0.00	12.92
117	895.66	890.49	8.66	8.01	4-FF	0.00	0.00	0.00	13.03
117	895.74	890.88	8.74	8.45	4-FF	0.00	0.00	0.00	13.11
116	895.75	891.24	8.65	8.75	4-FF	0.00	0.00	0.00	13.22
114	895.89	891.57	8.36	8.89	4-FF	0.00	0.00	0.00	12.94
112	896.03	891.88	8.09	9.03	4-FF	0.00	0.00	0.00	12.67
109	896.16	892.18	7.83	9.16	4-FF	0.00	0.00	0.00	12.41

El. inlet face invert 887.00 ft El. outlet invert 886.95 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION (FT)	0.00
INLET ELEVATION (FT)	887.00
OUTLET STATION (FT)	30.00
OUTLET ELEVATION (FT)	886.95
NUMBER OF BARRELS	1.00
SLOPE (V-FT/H-FT)	0.0017
CULVERT LENGTH ALONG SLOPE (FT)	30.00

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	ELLIPTICAL
BARREL SPAN	49.00 FT
BARREL RISE	32.00 FT
BARREL MATERIAL	CONCRETE
BARREL MANNING'S N	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQ. EDGE WITH HEADWALL
INLET DEPRESSION	NONE

354-4

CURRENT DATE: 02-11-1991
CURRENT TIME: 13:34:17

FILE DATE: 01-23-1991
FILE NAME: WT2

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH (FT)	30.00
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (FT/FT)	0.006
MANNING'S N (.01-0.1)	0.030
CHANNEL INVERT ELEVATION (FT)	886.95
CULVERT NO.1 OUTLET INVERT ELEVATION	886.95 FT

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (CFS)	W.S.E. (FT)	FROUDE NUMBER	VEL. (FPS)	SHEAR (PSF)
0.00	886.95	0.000	0.00	0.00
100.00	887.87	0.626	3.41	0.33
400.00	889.04	0.684	5.61	0.76
600.00	889.59	0.698	6.44	0.96
800.00	890.07	0.706	7.08	1.13
1000.00	890.49	0.713	7.61	1.28
1200.00	890.88	0.717	8.07	1.42
1400.00	891.24	0.721	8.47	1.55
1600.00	891.57	0.724	8.83	1.67
1800.00	891.88	0.726	9.15	1.79
2000.00	892.18	0.728	9.45	1.89

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	GRAVEL
EMBANKMENT TOP WIDTH (FT)	20.00
CREST LENGTH (FT)	450.00
OVERTOPPING CREST ELEVATION (FT)	895.00

354-5

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	15.00
Culvert Rise (Height of Opening) (feet).....	1.50
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning`s Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	30.0
Culvert Slope (feet per foot).....	0.0050

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
143.0	1.50	2.77	3.11	1.50	1.41	1.50	6.36
179.0	1.50	3.65	4.11	1.50	1.50	1.50	7.96

==========

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 355A

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
892.3	0	0	0
	16.98		
894	19.98	16.98	0
	8.10		
894.4 x Weir Flow	20.5	25.08	0
	12.45		
895	21.0	37.53	725

Weir Flow
$Q = C L H^{3/2}$

C = 2.6
L = 1200/2
H = .6

Q at 895 = 725 cfs

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 355

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
890.2	0	0	0
	3.80		
892	4.22	3.80	0
	57.62		
894	53.4	61.42	0
	27.13		
894.5 * Weir Flow	55.33	88.6	0
	29.14		
895	57.26	116.74	[illegible]
	29.82		
895.5	62.0	146.56	3120 cfs
	33		
899	70.0	179.56	5732 cfs
			L = 2200/2
		Qat [illegible]	H = .5
			L = 2400/2
		Qat 895.5 = 3120	H = 1.0
		Qat 899 = 5732	L = 2400/2
			H = 1.5

Form 200

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 356 Bridge [illegible] at [illegible] Road BW = 6' Depth = 2.4' LC = [illegible]
SPRR Bridge Invert = 897.5 Top [illegible]

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
8[illegible] Invert	0	0	0
	.22		
896	.3	.22	24
	18.58		
8[illegible]	18.78	18.8	57
	22.87		
8[illegible].9 x Weir Flow	33.54	41.67	67
	20.56		
899.5	36.9 20.75	62.23	73 + 725 = 798
900	450	82.48	73 + 3000 = 3073
		Weir Flow	C = 2.6
		$Q = CLH^{3/2}$	L = 2000/2
			H = .6
		Q at 899.5 = 725 cfs	
		Q at 900 = 3000	L = 2000/2
			H = 1.1

356-2

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	6.00
Culvert Rise (Height of Opening) (feet).....	1.40
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	30.0
Culvert Slope (feet per foot).....	0.0050

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
24.0	1.24	1.28	1.49	1.24	0.79	1.24	3.23
57.0	1.40	2.91	3.51	1.40	1.40	1.40	6.79
67.0	1.40	3.58	4.38	1.40	1.40	1.40	7.98
73.0	1.40	4.04	4.96	1.40	1.40	1.40	8.69

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-27-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 357 & 359 Citrus Road [illegible] BW=6' [illegible] LC=.2 D=4'
SPRR B. [illegible] Invert=894.5' Top of RR 902.7

ELEV. (FT)	AREA (ac)	VOLUME (AC-FT)	DISCHARGE (CFS)
894.5 * Invert	0	0	0
	.17		
898	.1	.17	90
	39.96		
900	42.06	40.13	120
	93.39		
901.7 * Water over RR	67.81	133.48	242
	21.02		
902.0	72.35	154.54	253 + 684 = 937
	38.08		
902.5	80.0	192.63	253 + 1488 = 1741

Q = [illegible] $H^{3/2}$ H = [illegible] C=2.6
L=600

Q at 902 = 934 cfs

Q at 902.5 = 1488 cfs = H=.8
L=800

357/359-2

BOX CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE
February 11, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Culvert Span (Width of Opening) (feet).....	6.00
Culvert Rise (Height of Opening) (feet).....	4.00
FHWA Chart Number (8,9,10,11,12 or 13).....	8
Scale Number on Chart (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.0300
Entrance Loss Coefficient of Culvert Opening.....	0.50
Culvert Length (feet).....	30.0
Culvert Slope (feet per foot).....	0.0050

==========

PROGRAM RESULTS:

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
90.0	3.20	3.06	3.51	3.20	1.91	3.20	4.69
120.0	4.00	3.73	4.67	3.99	2.32	4.00	5.00
242.0	4.00	7.15	7.19	4.00	3.70	4.00	10.08
253.0	4.00	7.52	7.50	4.00	3.81	4.00	10.54

==========

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 358

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
892.5	0	0	0
	26.03		
894	34.71	26.03	0
	27.56		
894.7 * Weir Flow	44.02	53.59	0
	39.47		
895.5	54.66	93.06	837 cfs
	59.83		
896.5	65.0	152.89	5651 cfs
		Weir Flow	
		$Q = CLH^{3/2}$	L = 900'±
			H = .3
		Qat 895.5 = 837 cfs	
		Qat 896.5 = 5651	L = 1500'±
			H = 1.8

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 360

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
893.2	0	0	0
	6.01		
894	15.02	6.01	0
	13.06		
894.6 * Weir Flow West	28.50	19.07	0
	56.09		
896.0	51.64	75.17	1739 cfs

Weir Flow
$Q = CLH^{3/2}$
L = 700/2
H = 1.4

Q at 896 = 1939 cfs

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 361

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
895.3	0	0	0
	1.54		
896	4.40	1.54	0
	40.4		
898 * Weir Flow	36.0	41.94	0
	23.57		
898.5	58.29	65.51	253 cfs

Weir Flow
$Q = CLH^{3/2}$

C = 2.6
L = 130/2
H = .5

Q at 898.5 = 253 cfs

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 367

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
899.1	0	0	0
	1.31		
900	2.98	1.34	0
	38.21		
901.8 * Weir Flow Across Canal	39.48	39.55	0
	8.30		
902	43.53	47.85	47
	29		
902.5	72.47	76.85	761
	93.82		
903.5	115.17	170.67	10373 cfs
		Weir Flow	C = 2.6
			H = .2
		Q at 902 = 47 cfs	L = 400/2
		Q at 902.5 = 761	C = 2.6
			H = .7
			L = 1000/2
		Q at 903.5 = 10373	H = 1.7
			L = 3000/2

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-30-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 364

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
908	0.91	0	0
910	0.91	.91	0
	3.74		
911 x Weir Flow South	6.57	4.65	0
	2.23		
911.3 x Weir Flow West	8.27	6.88	21
	7.18		
912	12.23	14.06	163 + 343 = 506 cfs
	8.14		
912.5	20.31	22.19	597 + 3589 = 4186 cfs
	11.33		1103 + 6051 = 7154 cfs
913.0	25.0	33.52	C = 2.6

Weir Flow South

$Q = CLH^{3/2}$

Qat 911.3 = 21 cfs L = 50 H = .3

Qat 912 = 163 cfs L = 125/2 H = 1.0

Qat 912.5 = 597 cfs L = 250/2 H = 1.5

Qat 913 = 1103 cfs L = 500/2 H = 2.0

C = 2.6

Weir Flow West

Qat 912 = 343 cfs L = 450/2 H = .7

Qat 912.5 = 3589 cfs L = 2100/2 H = 1.2

Qat 913 = 6051 cfs L = 2100/2 H = 1.7

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-30-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 368

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
914	0	0	0
	1.84		
916	1.84	1.84	0
	5.98		
916.9 * Weir Flow South Over Canal	11.44	7.82	0
	19.04		
918	23.17	26.86	247
	146.77		
920	123.6	173.63	6031 cfs
		Weir Flow	C = 2.6
		$Q = CLH^{3/2}$	L = 165/2
			H = 1.1
		Q at 918 = 247 cfs	
			L = 850/2
		Q at 920 = 6031 cfs	H = 3.1

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-29-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 377

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
892.2	0	0	0
	38.24		
894.	42.60	38.24	0
	50.57		
895.1 * Weir Flow South	49.35	88.91	0
	46.90		
896.	54.87	135.71	1332

Weir Flow
$Q = CLH^{3/2}$

C = 2.5
L = 1000/2
H = .9

Q at 896 = 1332 cfs

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-30-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 379

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
858.7	0	0	0
	.38		
860	.59	.38	0
	6.84		
860.7 * Weir Flow West	18.95	22.2	0
	58.80		
862	71.51	66.02	4817

Weir Flow
$Q = CLH^{3/2}$

C = 2.6
L = 2500/2
H = 1.3

Q at 862 = 4817 cfs

The WEB Group Inc

COMPUTATION DATA SHEET

Prepared by TSE Date 1-30-91

SUBBASIN (SB)

					DISCHARGE (CFS)
					0
					0
					2174
					= 23
					L = 145±/3
					= 1/2

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 1-30-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN 381A

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
864.7	0	0	0
	13.51		
866	22.79	13.51	0
	60.93		
867.8 x Weir Flow North	46.91	74.44	0
	9.67		
868	49.81	84.11	11
	50.41		
869	51.0	134.52	1196

Weir Flow
$Q = CLH^{3/2}$

C = 2.6
L = 50
H = .2

Qat 868 = 11 cfs

Qat 869 1196

L = 200/2
H = .2

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 3-6-90

ROUTING PARAMETERS

CP1 to CP2

METHOD USED — NORMAL DEPTH

CROSS-SECTION DATA (Average)

RS NSTPS 3 STOR −1 0 Vel = 11.65 ft/sec

RC Left Overbank n = .06 Length = 17800 ft
Channel n = .04 Slope = .0469 %
Right Overbank n = .06

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1000	1125	1300	1390	1405	1490	1590	1750

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1440	1439	1437	1428	1428	1439	1442	1444

Loss Rate (Transmission) RL — — 1.0 1428

CP2 to CP3

RS NSTPS 1 STOR −1 0

(2) Vel = 6.62 ft/sec

RC

LOB n = .06 Length = 4500 ft
Channel n = .035 Slope = .0111 %
ROB n = .06

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1000	1100	1350	1705	1735	1780	1850	2000

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1304	1302	1302	1298	1298	1303	1302	1305

Transmission Loss Rate

RL — — 1.5 1298

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G A Date 9-20-90

ROUTING PARAMETERS

CP3A TO CP3

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min

Assume V_{av} = 8.0 ft/sec

∴ NSTPS = 2

Actual vel =

	NSTPS			
RS	2	—	1	0

	Ndeft	Nchan	Nright	Length	Slope
RC	0.03	0.03	0.05	5300	0.0060

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1023	1032	1046	1058	1067	1250	1540
RY	1289	1288	1286	1284	1284	1286	1288	1291

Transmission Loss Rate

RL	—	—	1.5	1284

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/ AGUA FRIA ADMS Prepared by JSE Date 3-6-90

ROUTING PARAMETERS

CP3 to CP10

METHOD USED – NORMAL DEPTH

CROSS-SECTION DATA

RS NSTPS 1 STOR -1 0

Vel = 8.82 ft/sec

RC LOB n = .05
Channel n = .03
ROB n = .05

Length = 5280
Slope = .0083%

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1010	1015	1020	1050	1100	1275	1580	1750

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1251	1249	1249	1245	1245	1250	1250	1254

Transmission Loss Rate

RL – – 2.0 1245

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-28-91

ROUTING PARAMETERS

CP 3 TO CP 189

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTAS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{4500}{3 \times 300}$$

Time Interval = 5 min Assumed Vel = 3 ft/sec

Actual Vel. =

	NBTPS			
RS	5	—	—1	0

	N LEFT	N CHAN	N RIGHT	LENGTH	SLOPE
RC	.022	.035	.05	4500	.0038

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1040	1175	1250	1275	1350	1430	1750
RY	1261	1260	1255	1258	1258	1255	1258	1261

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 3-12-90

ROUTING PARAMETERS

CP5 TO CP7

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

Assume Vel = 15.0 ft/sec
Travel Time = .09 Time Interval = 5
NSTPS = 1
Actual Vel = 14.41 ft/sec

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

RS 1 ~~STOR~~ -1 0

RC

Left Overbank n = .08
Channel n = .05
Right Overbank n = .08

Length = 4800 ft
Slope = .0833 1/1

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
955	970	985	1000	1020	1035	1050	1065

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
2815	2810	2805	2800	2800	2805	2810	2815

Transmission Loss Rate

RL — — .5 2800

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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 3-12-90

ROUTING PARAMETERS

CP 7 TO CP 9

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

Assume Vel = 12 ft/sec
Travel Time = .236 Time Interval = 5
NSTPS = 2
Actual Vel = 13.23 ft/sec

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

RS 2 — -1 0

RC

Left Overbank n = .08
Channel n = .05
Right Overbank n = .08

Length = 10200 ft
Slope = .07745%

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1000	1045	1120	1195	1230	1300	1350	1450

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1910	1880	1850	1838	1838	1850	1880	1910

Transmission Loss Rate

RL — — .5 1838

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 3-7-90

ROUTING PARAMETERS

CP9 to CP10

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

Assume Vel. ≅ 8 ft/sec
≅ Travel Time = .67 hr; Time Interval = 5
NSTPS = 8

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Actual Vel = 10.90 ft/sec

RS 8 — -1 0

(3)

RC

Left Overbank n = .06
Channel n = .035
Right Overbank n = .06

Length = 19200 ft
Slope = .0232 ft/ft

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1000	1085	1310	1395	1415	1450	1630	1665

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1317	1314	1311	1308	1308	1314	1314	1317

Transmission Loss Rate

RL — — 1.5 1308

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 3-7-90

ROUTING PARAMETERS

CP10 to CP12

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

Assume Vel = 8.0 ft/sec
Travel Time = .12 Time Interval = 5
NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Act. Vel = 8.76 ft/sec

RS 1 — —1 0

RC

Left Overbank n = .03
Channel n = .03
Right Overbank n = .05

Length = 3500 ft
Slope = .0057 %

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
995	1000	1020	1055	1085	1165	1250	1330

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1221	1220	1220	1211	1211	1218	1220	1222

Transmission Rate Loss

RL — — 2.0 12.1

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The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 3-7-91

ROUTING PARAMETERS

CP10 TO CP188

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTAS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{1000}{3 \times 300} = 1.1$$

Time Interval = 5 min Assumed Vel = 3 ft/sec

Actual Vel. = 2.6

	NSTPS			
RS	1	—	-1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.06	.04	.06	1000	.0044

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1050	1150	1240	1300	1350	1400	1405
RY	1228	1227.5	1226	1225	1225	1226	1227.5	1228

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 3-7-90

ROUTING PARAMETERS

CP 12 to WT#3

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

Assume Vel = 8.0 ft/sec
Travel Time = .17 Time Interval = 5
NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Act. Vel = 5.73 ft/sec

RS 1 — -1 0

2

RC

Left Overbank	n = .03	Length = 4800 ft
Channel	n = .03	Slope = .0031 ft/ft
Right Overbank	n = .04	

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
995	1000	1020	1080	1200	1530	1665	1760

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1211	1211	1210	1196	1196	1200	1204	1204

Transmission Loss Rate

RL — — 2.0 1196

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COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 3-7-90

ROUTING PARAMETERS

CP11 to CP13

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

Assume Vel. = 10 ft/sec
Travel Time = .28 Time Interval = 5
NSTPS = 2

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Act Vel = 7.28 ft/sec

RS 2 — —1 0

RC

Left Overbank n = .06
Channel n = .035
Right Overbank n = .06

Length = 10200 ft
Slope = .0098%

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1000	1070	1300	1480	1510	1525	1555	1600

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1233	1232	1230	1222	1222	1230	1232	1233

Transmission Loss Rate

RL — — 1.5 1222

Form 209

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G A Date 9-20-90

ROUTING PARAMETERS

CP13 TO CP17

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min

Assume V_{av} = 5.0 ft/sec

∴ NSTPS = 2

Actual vel =

	NSTPS			
		1	0	
RS	2	1	0	

	N left	N chan	N right	Length	Slope
RC	.03	.03	.04	2400	0.0042

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1025	1040	1065	1085	1110	1175	1200
RY	1206	1198	1196	1194	1194	1198	1198	1201

Transmission ~~Loss~~ Rate

RL	—	—	2.0	1194

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 3-12-90

ROUTING PARAMETERS

CP 14 TO CP 15

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

Assume Vel = 8.0 ft/sec
Travel Time = .305 hr Time Interval = 5
NSTPS = 2

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

RS 2 — —1 0

Act. Vel. = 10.94 ft/sec

RC

Left Overbank n = .06
Channel n = .035
Right Overbank n = .06

Length = 8800 ft
Slope = .02556 ft/ft

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1000	1030	1075	1200	1220	1280	1415	1480

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1296	1295	1294	1288	1288	1294	1296	1300

Transmission Loss Rate

RL — — 1.0 1288

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 3-12-90

ROUTING PARAMETERS

CP 15 TO CP17

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

Ave. Vel. = 8.0 ft/sec
Travel Time = .236 Time Interval = 5
NSTPS = 2

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Act. Vel. = 5.07 ft/sec

RS 2 — -1 0

(3)

RC

Left Overbank n = .06
Channel n = .035
Right Overbank n = .06

Length = 6800 ft.
Slope = .0079 ft/ft

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1000	1310	1380	1540	1640	1670	1700	1910

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1234	1232	1228	1226	1226	1228	1232	1235

Transmission Loss Rate

RL — — 2.0 1226

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 7-13-90

ROUTING PARAMETERS

CP17 TO CPNT3

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

Ave Vel. ≅ 3.0 ft/sec

Travel Time = .15 Time Interval = 5

NSTPS $.625 \le \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \le 2.5$ NSTPS = 1

RS 1 — —1 0

Act. Vel = 3.4 ft/sec

RC

Left Overbank n = .06 Length = 1600 ft

Channel n = .04 Slope = .0022 ft/ft

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1000	1220	1280	1470	1530	1660	1680	1685

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1196	1194	1190	1182	1182	1210	1211	1212

Transmission Loss Rate

RL — — 2.0 1182

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP18 TO CP19

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 11.0 ft/sec
Travel Time = 0.197 hrs
NSTPS = 1

Actual Vel = ft/sec

RS	NSTPS		-1	0				
RS	1		-1	0				
RC	NLeft	Nchan	NRight	length	Slope			
RC	.08	.05	.08	7800	.0015			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1030	1080	1097	1120	1140	1205	1218
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1520	1518	1514	1510	1510	1512	1518	1520

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 19 TO CP21

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 8.0 ft/sec
Travel Time = 0.2 hrs
NSTPS = 1

Actual Vel = ft/sec

RS	NSTPS		-1	0				
RS	1		-1	0				
RC	NLeft	N chan	N Right	length	Slope			
RC	.06	.04	.06	5772	.0246			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1010	1025	1040	1055	1069	1080	1100
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1466	1464	1460	1458	1458	1460	1466	1467

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6 - 90

ROUTING PARAMETERS

CP 20 TO CP 21

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 5.0 ft/sec
Travel Time = .347 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS		-1	0				
RS	2		-1	0				
RC	NLeft	N chan	N Right	length	Slope			
RC	.06	.045	.06	6240	.0208			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1012	1025	1032	1050	1057	1070	1092
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1424	1422	1420	1418	1418	1420	1422	1424

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 21 TO CP 23

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 6.0 ft/sec
Travel Time = .108 hrs
NSTPS = 1

Actual Vel = ft/sec

RS	NSTPS		-1	0				
RS	1		-1	0				
RC	NLeft	Nchan	NRight	length	slope			
RC	.03	.03	.05	2340	.0196			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1030	1050	1070	1145	1212	1225	1250
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1310	1306	1304	1302	1302	1304	1306	1310

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 23 TO CP 22A

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 4.0 ft/sec
Travel Time = .347 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS			-1	0			
RS	2			-1	0			
RC	NLeft	N Chan	N Right	Length	Slope			
RC	.05	.03	.05	4992	.0050			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	930	975	1000	1010	1030	1040	1041	1042
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1397	1396.5	1396	1394	1394	1396	1396.5	1397

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6 - 90

ROUTING PARAMETERS

CP 22 TO CP 22A

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 8.0 ft/sec
Travel Time = .216 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS			-1	0			
RS	2			-1	0			
RC	NLeft	N chan	N Right	Length	Slope			
RC	.05	.03	.05	6230	0.025			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1030	1060	1070	1100	1115	1125	1150
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1294	1292	1290	1288	1288	1290	1292	1294

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 24A TO CP25

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 6.0 ft/sec
Travel Time = .325 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS			-1	0			
RS	2			-1	0			
RC	NLeft	N chan	N Right	length	slope			
RC	.03	.03	.05	7022	.00079			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1030	1040	1047	1070	1097	1120	1200
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1255	1254	1250	1248	1248	1250	1252	1254

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 24 TO CP25

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 5.0 ft/sec
Travel Time = .073 hrs.
NSTPS = 1

Actual Vel = ft/sec

RS	NSTPS		1	0				
RS	1		-1	0				
RC	NLeft	N chan	N Right	length	Slope			
RC	.05	.03	.05	1326	0.021			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1040	1070	1100	1200	1220	1245	1265
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1234	1232	1230	1228	1228	1230	1232	1234

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6 - 90

ROUTING PARAMETERS

CP 26 TO CP 27

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 mins
Assume Vel = 6.0 ft/sec
Travel Time = .225 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS				0			
RS	2				0			
RC	NLeft	N chan	N Right	length	slope			
RC	.05	.03	.05	7020	0.0157			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1012	1025	1040	1090	1105	1112	1120
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1250	1248	1245	1242	1242	1244	1247	1250

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6 - 90

ROUTING PARAMETERS

CP 27 TO CP 39

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 7.0 ft/sec
Travel Time = .235 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS		-1	0				
RS	2		-1	0				
RC	NLeft	N chan	N Right	Length	Slope			
RC	.03	.03	.05	5928	.0084			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1010	1020	1025	1055	1085	1175	1250
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1210	1210	1210	1202	1202	1204	1206	1208

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6 - 90

ROUTING PARAMETERS

CP 28 TO CP 30

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 5.0 ft/sec
Travel Time = .061 hrs
NSTPS =

Actual Vel = ft/sec

RS	NSTPS		-1	0				
RS	1		-1	0				
RC	NLeft	N chan	N Right	Length	Slope			
RC	.03	.03	.05	2400	0.027			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1035	1050	1065	1075	1085	1095
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1165	1165	1164	1162	1162	1164	1166	1168

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 29 TO CP 30

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 4 ft/sec
Travel Time = .165 hrs
NSTPS = 1

Actual Vel = ft/sec

RS	NSTPS		-1	0				
RS	1		-1	0				
RC	NLeft	N chan	N Right	Length	Slope			
RC	.05	.03	.05	1200	.0021			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1042	1052	1060	1082	1090	1140	1170
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1171	1170	1168	1166	1166	1168	1170	1172

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 30 TO CP 31

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 6.0 ft/sec
Travel Time = .267 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS			-1	0			
RS	2			-1	0			
RC	NLeft	N chan	N Right	length	slope			
RC	.03	.03	.05	6772	.0069			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1025	1045	1070	1095	1110	1260	1550
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1157	1156	1154	1152	1152	1154	1156	1158

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 31 TO CP 46

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 4.0 ft/sec
Travel Time = 3.79 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS		-1	0				
RS	2		-1	0				
RC	NLeft	N chan	N Right	Length	Slope			
RC	.03	.03	.05	5800	.0082			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1012	1024	1035	1045	1053	1065	1078
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1093	1092	1090	1088	1088	1090	1092	1094

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 33 TO CP 35

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 10.0 ft/sec
Travel Time = 0.130 hrs
NSTPS = 1

Actual Vel = ft/sec

RS	NSTPS			-1	0				
RS	1			-1	0				
RC	NLeft	Nchan	NRight	length	slope				
RC	.08	.05	.08	4680	.0427				
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB	
RX	1000	1015	1022	1035	1050	1068	1092	1100	
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB	
RY	1800	1760	1720	1680	1680	1720	1760	1800	

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 35 TO CP 36

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 9.0 ft/sec
Travel Time = 0.156 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS	1	0
RS	2	1	0

RC	NLeft	N chan	N Right	Length	Slope
RC	.016	.035	.06	5070	0.0355

RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1012	1023	1034	1045	1056	1067	1079
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1429	1428	1426	1424	1424	1426	1428	1429

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 36 TO CP 38

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 8.0 ft/sec
Travel Time = .168 hrs
NSTPS = 1

Actual Vel = ft/sec

RS	NSTPS		1	0				
RS	1		1	0				
RC	NLeft	Nchan	NRight	length	Slope			
RC	.05	.03	.05	4836	.0198			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1008	1020	1032	1050	1112	1135	1183
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1344	1342	1340	1338	1338	1340	1342	1344

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 38 TO CP 39

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 7.0 ft/sec
Travel Time = .216 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS			-1	0			
RS	2			-1	0			
RC	NLeft	N chan	N Right	Length	Slope			
RC	.05	.03	.05	5438	.0167			
RX	LOB	LOB	LOB	CH	CH	RB	ROB	ROB
RX	1000	1005	1010	1025	1055	1085	1175	1250
RY	LOB	LOB	LOB	CH	CH	RB	ROB	ROB
RY	1212	1211	1210	1202	1202	1204	1206	1208

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP39 TO CP42

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 8.0 ft/sec
Travel Time = 0.168 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS	—	-1	0				
RS	2	—	-1	0				
RC	NLeft	N Chan	N Right	Length	Slope			
RC	.03	.03	.05	4836	.0141			
RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1015	1025	1055	1070	1087	1130
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1142	1142	1140	1132	1132	1136	1140	1142

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6 - 90

ROUTING PARAMETERS

CP 40 TO CP 42

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 5.0 ft/sec
Travel Time = .355 hrs
NSTPS = 2

Actual Vel = ft/sec

RS	NSTPS	-1	0
RS	2	-1	0

RC	N left	N chan	N Right	Length	Slope
RC	.05	.03	.05	6396	.0086

RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1070	1065	1095	1135	1155	1215	1220
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	1115	1114	1112	1110	1110	1112	1113	1114

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by GMA Date 6-90

ROUTING PARAMETERS

CP 42 TO CP 43

METHOD USED - NORMAL DEPTH

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Interval} \times \text{NSTPS}} \leq 2.5$

Time Interval = 5 min
Assume Vel = 4.0 ft/sec
Travel Time = .060 hrs
NSTPS = 1

Actual Vel = ft/sec

RS	NSTPS	1	0
RS	1	-1	0

RC	NLeft	Nchan	NRight	length	Slope
RC	.03	.03	.05	858	.0151

RX	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1010	1015	1030	1060	1075	1080	1090
	900	950	1000	1030	1060	1075	1085	1090
RY	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RY	~~1090~~ 1091 LAV	1088	1086	1084	1084	1086	1088	~~1090~~ 1091 LAV

Revised 1/5/00 by EEC

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-23-90

ROUTING PARAMETERS

CP4IA1 TO CP4IA2

METHOD USED – NORMAL DEPTH

Assume Vel = 4 ft/sec

CROSS-SECTION DATA

Travel Time = .04 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 580

Channel n = .03 Slope = .0093

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
600	800	900	965	1000	1020	1025	1030

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1147	1143	1142	1141	1141	1143	1145	1145

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP41A1 TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 9.0 ft/sec

Actual vel = 1.3

	NSTPS		1	0
RS	7180		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	7180	.014

$$= \frac{1138 - 1039}{7180}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1210	1450	1930	1620	1690	1849	1850
RY	1106	1105.5	1106	1104	1104	1106	1107	1107

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-23-90

ROUTING PARAMETERS

CP4A2 TO CP4A3

METHOD USED - NORMAL DEPTH

Assume Vel = 40 ft/sec

CROSS-SECTION DATA

Travel Time = .04 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 595

Channel n = .03 Slope = .0093

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
600	800	900	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1140	1136	1135	1134	1134	1136	1138	1140

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP41A2 TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 9.0 ft/sec

Actual vel = 1.3

	NSTPS		1	0
RS	3/19		1	0

	Nleft	Nchan	Nright	Length	Slope	= 1038 − 1039 / 7330
RC	.035	.035	.035	7330	.014	

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1210	1450	1530	1620	1690	1849	1850
RY	1106	1105.5	1106	1104	1104	1106	1107	1107

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-23-90

ROUTING PARAMETERS

CP41A3 to CP41A

METHOD USED – NORMAL DEPTH

Assume Vel = 4.0 ft/sec

CROSS-SECTION DATA

Travel Time = .044 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 628

Channel n = .03 Slope = .0093

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
600	900	900	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1135	1131	1130	1129	1129	1131	1133	1133

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP4A3 TO CP363

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 8.0 ft/sec

Actual vel = 1.24

	NSTPS	-1	0
RS	~~425~~	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.025	.025	.025	9360	.010

$$= \frac{1136 - 1039}{9360}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1210	1450	1930	1620	1690	1849	1850
RY	1106	1105.5	1106	1104	1104	1106	1107	1107

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-2-90

ROUTING PARAMETERS

CPHIA to CP41-1

METHOD USED - NORMAL DEPTH

Assume Vel = 4.0 ft/sec

CROSS-SECTION DATA

Travel Time = 10 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 1437

Channel n = .03 Slope = .0093

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
600	800	900	965	1000	1020	1025	1030

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1122	1118	1117	1116	1116	1118	1120	1120

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP 44A TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 8.0 ft/sec

Actual vel = 1.2

NSTPS		1	0	
RS	4/26	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	9360	.0095

$$= \frac{1128 - 1039}{9360}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1210	1450	1530	1620	1690	1849	1850
RY	1106	1105.5	1106	1104	1104	1106	1107	1107

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-23-90

ROUTING PARAMETERS

CP41-1 CP41-2

METHOD USED – NORMAL DEPTH

Assume Vel = 4 ft/sec

CROSS-SECTION DATA

Travel Time = .12 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 1697

Channel n = .03 Slope = .0075

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
600	800	900	965	1000	1020	1025	1030

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1104	1102	1101	1100	1100	1102	1104	1105

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 2/22/91

ROUTING PARAMETERS

CP41-1 TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 7.0 ft/sec

Actual vel = 1.1

	NSTPS			-1	0			
RS	~~4~~ 23			-1	0			
	Nleft	Nchan	Nright	Length	Slope	= 1112	-1039	9200
RC	.025	.025	.025	9200	.00079			
	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1300	1510	1660	1850	1890	1940	2100
RY	1080.5	1079	1080.5	1080	1080	1081	1080.5	1081

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP41-2 to CP41

METHOD USED – NORMAL DEPTH

Assume Vel = 4.0 ft/sec

CROSS-SECTION DATA

Travel Time = .068 Time Int = 5 min

NSTPS = 1

NSTPS .625 ≤ $\frac{\text{Travel Time} \times 60}{\text{Time Int} \times \text{NSTPS}}$ ≤ 25 Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 978'

Channel n = .03 Slope = .0053%

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
650	800	850	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1100	1099	1098	1096	1096	1098	1100	1101

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP41-2 TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 6.0 ft/sec

Actual vel = .95

	NSTPS	1	0	
RS	833	1	0	

	Ndeft	Nchan	Nright	Length	Slope	$= \frac{1100 - 1039}{9360}$
RC	.035	.035	.035	9360	.0065	

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1300	1510	1660	1850	1890	1910	2100
RY	1080.5	1079	1080.5	1080	1080	1081	1080.5	1081

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP41 to CP43-1

METHOD USED – NORMAL DEPTH

Assume Vel = 4.0 ft/sec

CROSS-SECTION DATA

Travel Time = .0491 hr Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 700

Channel n = .03 Slope = .0053

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
650	800	850	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1098	1097	1096	1094	1094	1096	1098	1099

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP411 TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 5.0 ft/sec

Actual vel = 1.1

NSTPS		-1	0
RS	730	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	9830	.00056

$$= \frac{1094 - 1039}{9830}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1300	1510	1460	1850	1890	1940	2100
RY	1080.5	1079	1080.5	1080	1080	1081	1080.5	1081

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP43-1 to CP43-2

METHOD USED - NORMAL DEPTH

Assume Vel = 4.0 ft/sec

CROSS-SECTION DATA

Travel Time = .012 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 175'

Channel n = .03 Slope = .005 ft/ft

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
600	725	800	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1095	1094	1093.5	1093	1093	1094	1096	1097

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP43- TO CP303A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 7.0 ft/sec

Actual vel = .37

	NSTPS	1	0	
RS	3/48	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	5300	.0091

$$= \frac{1092 - 1044}{5300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1090	1170	1250	1380	1400	1450	1630
RY	1077	1075.8	1076.5	1076	1076	1076.5	1076	1077

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP43-2 to CP43-3

METHOD USED – NORMAL DEPTH

Assume Vel = 40 ft/sec

CROSS-SECTION DATA

Travel Time = .069 Time Int = 5 min

NSTPS = 1

NSTPS 1 $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS — -1 0

RC

Left Overbank n = .08 Length = 1000

Channel n = .03 Slope = .003 ft/ft

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
750	800	900	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1096.5	1096	1094	1093	1093	1094	1096	1097

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 2/22/91

ROUTING PARAMETERS

CP43-2 TO CP303A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 7.0 ft/sec

Actual vel = 2.3

NSTPS		-1	0
RS	3/8	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	5300	.0091

$$= \frac{1092 - 1044}{5300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1090	1120	1250	1380	1400	1450	1630
RY	1077	1075.8	1076.5	1076	1076	1076.5	1076	1077

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP43-3 to CP43-4

METHOD USED - NORMAL DEPTH

Assume Vel = 6.0 ft/sec

CROSS-SECTION DATA

Travel Time = .08 Time Int = 5 min

NSTPS =

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 3.80

Channel n = .03 Slope = .018

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
800	850	930	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1096.5	1096	1094	1093	1093	1096	1097	1097.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP 43-3 TO CP 303A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 7.0 ft/sec

Actual vel = 1.2

	NSTPS	1	0	
RS	~~12~~ 13	1	0	

	N left	N chan	N right	Length	Slope
RC	.035	.035	.035	4840	.0091

$$= \frac{1092 - 1044}{5300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1170	1240	1270	1440	1470	1490	1550
RY	1069	1068	1068.5	1068	1068	1068.5	1067.8	1068.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP43-4 to CP43-5

METHOD USED - NORMAL DEPTH

Assume Vel = 6.0 ft/sec

CROSS-SECTION DATA

Travel Time = .08 Time Int = 5 min

NSTPS =

NSTPS .625 ≤ $\frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}}$ ≤ 25 Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 180

Channel n = .03 Slope = .018

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
800	850	930	965	1000	1060	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1096.5	1096	1094	1093	1093	1096	1097	1097.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP43-5 to CP43-6

METHOD USED – NORMAL DEPTH

Assume Vel = 50 ft/sec

CROSS-SECTION DATA

Travel Time = .022 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \le \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \le 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 400

Channel n = .03 Slope = .0068

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
800	850	930	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1096	1094	1093	1092	1092	1094	1096	1097.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP43-6 to CP43-7

METHOD USED – NORMAL DEPTH

Assume Vel = 50 ft/sec

CROSS-SECTION DATA

Travel Time = .08 Time Int = 5 min

NSTPS = 1

NSTPS .625 ≤ $\frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}}$ ≤ 25 Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 150

Channel n = .03 Slope = .0162

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
750	800	930	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1096	1094	1092	1090	1090	1092	1096	1097.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP43-1 to CP43-B

METHOD USED – NORMAL DEPTH

Assume Vel = 50 ft/sec

CROSS-SECTION DATA

Travel Time = .015 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 275

Channel n = .03 Slope = .018 ft/ft

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
700	800	850	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1094	1093	1092	1090	1090	1092	1096	1097.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP43+0 to CP43

METHOD USED – NORMAL DEPTH

Assume Vel = 4.0 ft/sec

CROSS-SECTION DATA

Travel Time = .035 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 500

Channel n = .03 Slope = .008

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
800	850	930	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1096	1092	1090	1088	1088	1090	1096	1097.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-25-90

ROUTING PARAMETERS

CP43 TO WT4

METHOD USED – NORMAL DEPTH

Assume Vel = 8.0 ft/sec
Travel Time = .138 Time Int = 5 min
NSTPS = 1

CROSS-SECTION DATA

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 2.5$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .05 Length = 4000

Channel n = .03 Slope = .0083 ft/ft

Right Overbank n = .05

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
800	900	965	1000	1050	1100	1200	1300

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1076	1075	1075	1064	1064	1071	1071	1075

Form 209

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

cp453 to cp451

METHOD USED - NORMAL DEPTH

Assume Vel = 50 ft/sec

CROSS-SECTION DATA

Travel Time = .025 Time Int. = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 450

Channel n = .03 Slope = .0042

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
800	900	930	970	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1088	1087	1086	1084	1084	1090	1094	1099

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP45-1 to CP45

METHOD USED – NORMAL DEPTH

Assume Vel = 50 ft/sec

CROSS-SECTION DATA

Travel Time = .039 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \le \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \le 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .04 Length = 700

Channel n = .03 Slope = .0042%

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
850	900	930	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1086	1085	1084	1083	1083	1086	1090	1091

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP45-1 to CP46-1

METHOD USED - NORMAL DEPTH

Assume Vel = 50 ft/sec

CROSS-SECTION DATA

Travel Time = .028 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .04 Length = 500

Channel n = .03 Slope = .0051 ft/ft

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
850	900	930	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1083	1082	1081	1080	1080	1082	1083	1084

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP46-1 to CP46

METHOD USED - NORMAL DEPTH

Assume Vel = 5.0 ft/sec

CROSS-SECTION DATA

Travel Time = .092 Time Int = 5 min

NSTPS = 1

NSTPS .625 ≤ $\frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}}$ ≤ 25 Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .04 Length = 1650

Channel n = .03 Slope = .0057 %

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
700	900	930	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1076	1075.5	1075	1074	1074	1078	1080	1082

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-25-90

ROUTING PARAMETERS

CP 43-4, -5, -6, -7, -8, 45, 45-1, 46-1 TO CP WT#4

METHOD USED – NORMAL DEPTH

Assume Vel = 6.0 ft/sec

CROSS-SECTION DATA

Travel Time = Time Int. = 5 min

NSTPS =

NSTPS $.625 \le \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \le 25$ Act Vel =

RS — -1 0

RC

Left Overbank n = .045 Length = 4200 ft

Channel n = .03 Slope = .0111 %

Right Overbank n = .045

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
900	940	970	990	1000	1020	1060	1100

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1064	1063	1062	1060	1060	1062	1063	1064

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-25-90

ROUTING PARAMETERS

CP46 TO WT4

METHOD USED – NORMAL DEPTH

Assume Vel = 10.0 ft/sec

CROSS-SECTION DATA

Travel Time = .189 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act. Vel =

RS 1 — -1 0

RC

Left Overbank n = .03 Length = 6800 ft

Channel n = .03 Slope = .0067 ft/ft

Right Overbank n = .05

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
910	930	940	950	1000	1020	1200	1400

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1065	1064	1064	1060	1060	1064	1064	1065

Form 209

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP41 TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 5.0 ft/sec

Actual vel = 1.1

NSTPS		1	0
RS	730	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	9830	.0056

$$= \frac{1094 - 1039}{9830}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1300	1510	1660	1850	1890	1940	2100
RY	1080.5	1079	1080.5	1080	1080	1081	1080.5	1081

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP 4A TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 8.0 ft/sec

Actual vel = 1.2

	NSTPS		1	0
RS	4/26		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	9360	.0095

$$= \frac{1128 - 1039}{9360}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1090	1210	1450	1530	1620	1690	1849	1850
RY	1106	1105.5	1106	1104	1104	1106	1107	1107

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP41-1 TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 7.0 ft/sec

Actual vel = 1.1

	NSTPS	1	0
RS	~~4~~ 28	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	9200	.0079

$$= \frac{1112 - 1039}{9200}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1300	1510	1660	1850	1890	1940	2100
RY	1080.5	1079	1080.5	1080	1080	1081	1080.5	1081

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP41-2 TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 6.0 ft/sec

Actual vel = .95

	NSTPS	–	-1	0
RS	~~833~~	–	-1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.035	9360	.00065

$$= \frac{1100 - 1039}{9360}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1360	1510	1660	1850	1890	1940	2100
RY	1080.5	1079	1080.5	1080	1080	1081	1080.5	1081

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP41A1 TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 9.0 ft/sec

Actual vel = 1.3

NSTPS		-1	0
RS	7180	-1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.035	7180	.014

$$= \frac{1138 - 1039}{7180}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1210	1450	1930	1620	1690	1849	1850
RY	1106	1105.5	1106	1104	1104	1106	1107	1107

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP41A2 TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 9.0 ft/sec

Actual vel = 1.3

	NSTPS	–	1	0
RS	3/19	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	7330	.014

= 1838 − 1039 / 7330

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1210	1450	1530	1620	1690	1849	1850
RY	1106	1105.5	1106	1104	1104	1106	1107	1107

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP411AB TO CP303

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 8.0 ft/sec

Actual vel = 1.24

	NSTPS	—	1	0
RS	~~4.25~~	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	9360	.010

$$= \frac{1126 - 1039}{9360}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1210	1450	1530	1620	1690	1849	1850
RY	1106	1105.5	1106	1104	1104	1106	1107	1107

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP43-1 TO CP303A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .37

NSTPS		1	0
RS	3/48	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	5300	.0091

$$= \frac{1092 - 1044}{5300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1090	1170	1250	1380	1400	1450	1630
RY	1077	1075.8	1076.5	1076	1076	1076.5	1076	1077

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 2/22/91

ROUTING PARAMETERS

CP43-2 TO CP303A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 7.0 ft/sec

Actual vel = 2.3

	NSTPS		-1	0
RS	~~3~~ 8		-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	5300	.0091

$$= \frac{1092 - 1044}{5300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1090	1170	1250	1380	1400	1450	1630
RY	1077	1075.8	1076.5	1076	1076	1076.5	1076	1077

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP 43-3 TO CP 303A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 7.0 ft/sec

Actual vel = 1.2

	NSTPS	–	1	0
RS	2/3	–	1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.035	4840	.0091

$$= \frac{1092 - 1044}{5300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1170	1240	1270	1440	1470	1490	1550
RY	1069	1068	1064.5	1068	1068	1068.5	1067.8	1068.5

eec

Project Title LOOP 303 Project No. 99551 Date 11/2/00

Subject CHANNEL ROUTING Prepared By CAV Checked By _____ Page 1/3

Sun City Grand – WEST Boundary is elevated and has a perimeter wall preventing Runoff from West of the proposed LOOP 303 Roadway from Entering the site.

New Channel Routes have to be developed for the following:

100A → 102A	R 100A
101 → 102A	R 101
102A → 106	R 102A
106 → 113A	R 106

R 100 A

L = 4500 ft

high Elev = 1330

Low Elev = 1314

$$S = \frac{1330 - 1314}{4500} = 0.0036\ \%$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1270	1500	1530	1570	1600	1606	1612
RY	1318	1316	1315	1314.5	1314.5	1315	1316	1318

RS

$$NSTPS = \frac{\text{Length}}{\text{Ave Velocity (Time STEP)}} = \frac{4500}{(1.5)\ (5 \times 60)} = 10$$

Time step = 5 min

Ave V = 1.50 ft/s, see mannings eqN worksheet (ATTACHED)

eec

ect Title _____ Project No. _____ Date _____

Subject _____ Prepared By _____ Checked By _____ Page 2/3

R101

L = 600 ft

high Elev = 1324

Low Elev = 1320

$S = \frac{1324-1320}{600} = 0.0067$ ft/ft

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1240	1290	1310	1340	1350	1410	1500
RY	1326	1324	1322	1320	1320	1322	1322	1322

RS

$NSTPS = \frac{\text{Length}}{\text{Ave V (Time step)}} = \frac{600}{3.6 \quad (5 * 60)} = 0.55$

∴ use 1

Time step = 5 min

Ave V = 3.6 ft/s, see mannings Eqn work sheet (ATTACHED)

R 102 A

L = 5280 ft

high elev = 1318

Low elev = 1296

$S = \frac{1318-1296}{5280} = 0.0042$ ft/ft

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1400	1730	1750	1790	1810	1816	1822
RY	1308	1306	1304	1303	1303	1304	1306	1308

RS

$NSTPS = \frac{\text{Length}}{\text{Ave V (Time step)}} = \frac{5280}{(2.36) \quad (5 \times 60)} = 7.46$

∴ use 7

Time Step = 5 min

Ave V = 2.36 ft/s, see mannings EQN work sheet (Attached)

R100A
Worksheet for Irregular Channel

Project Description	
Worksheet	R100A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.003600	ft/ft
Discharge	165.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Metho	Horton's Method

Results		
Mannings Coefficient	0.038	
Water Surface Elevation	1,315.48	ft
Elevation Range	1,314.50 to 1,318.00	
Flow Area	109.8	ft²
Wetted Perimeter	212.86	ft
Top Width	212.82	ft
Actual Depth	0.98	ft
Critical Elevation	1,315.11	ft
Critical Slope	0.029362	ft/ft
Velocity	1.50	ft/s
Velocity Head	0.04	ft
Specific Energy	1,315.51	ft
Froude Number	0.37	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
10+00	15+00	0.040
15+00	15+70	0.035
15+70	16+12	0.040

Natural Channel Points

Station (ft)	Elevation (ft)
10+00	1,318.00
12+70	1,316.00
15+00	1,315.00
15+30	1,314.50
15+70	1,314.50
16+00	1,315.00
16+06	1,316.00
16+12	1,318.00

R101
Worksheet for Irregular Channel

Project Description	
Worksheet	R101
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.006700	ft/ft
Discharge	190.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Metho	Horton's Method

Results		
Mannings Coefficient	0.035	
Water Surface Elevation	1,321.32	ft
Elevation Range	1,320.00 to 1,326.00	
Flow Area	52.8	ft²
Wetted Perimeter	50.03	ft
Top Width	49.83	ft
Actual Depth	1.32	ft
Critical Elevation	1,320.99	ft
Critical Slope	0.019126	ft/ft
Velocity	3.60	ft/s
Velocity Head	0.20	ft
Specific Energy	1,321.52	ft
Froude Number	0.62	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
10+00	12+90	0.040
12+90	13+50	0.035
13+50	15+00	0.040

Natural Channel Points

Station (ft)	Elevation (ft)
10+00	1,326.00
12+40	1,324.00
12+90	1,322.00
13+10	1,320.00
13+40	1,320.00
13+50	1,322.00
14+10	1,322.00
15+00	1,322.00

R102A
Worksheet for Irregular Channel

Project Description	
Worksheet	R102A
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.004200	ft/ft
Discharge	540.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Metho	Horton's Method

Results		
Mannings Coefficient	0.038	
Water Surface Elevation	1,305.02	ft
Elevation Range	1,303.00 to 1,308.00	
Flow Area	229.1	ft²
Wetted Perimeter	251.62	ft
Top Width	251.40	ft
Actual Depth	2.02	ft
Critical Elevation	1,304.44	ft
Critical Slope	0.023906	ft/ft
Velocity	2.36	ft/s
Velocity Head	0.09	ft
Specific Energy	1,305.11	ft
Froude Number	0.44	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
10+00	17+30	0.040
17+30	18+10	0.035
18+10	18+22	0.040

Natural Channel Points

Station (ft)	Elevation (ft)
10+00	1,308.00
14+00	1,306.00
17+30	1,304.00
17+50	1,303.00
17+90	1,303.00
18+10	1,304.00
18+16	1,306.00
18+22	1,308.00

R106
Worksheet for Irregular Channel

Project Description	
Worksheet	R106
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.002700	ft/ft
Discharge	870.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Metho	Horton's Method

Results		
Mannings Coefficient	0.038	
Water Surface Elevation	1,290.75	ft
Elevation Range	1,288.00 to 1,292.00	
Flow Area	377.7	ft²
Wetted Perimeter	307.86	ft
Top Width	307.53	ft
Actual Depth	2.75	ft
Critical Elevation	1,289.66	ft
Critical Slope	0.021144	ft/ft
Velocity	2.30	ft/s
Velocity Head	0.08	ft
Specific Energy	1,290.83	ft
Froude Number	0.37	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
10+00	14+40	0.040
14+40	15+40	0.035
15+40	15+49	0.040

Natural Channel Points

Station (ft)	Elevation (ft)
10+00	1,292.00
13+80	1,290.00
14+40	1,289.00
14+80	1,288.00
15+20	1,288.00
15+40	1,289.00
15+43	1,290.00
15+49	1,292.00

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-5-90

ROUTING PARAMETERS R104

CP104 TO CP112 CP104 → CP111A

JAV 10/18/2000

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3 ft/sec $A = \frac{5087 \times 4560}{6552} = 338$

∴ NSTPS = 7 $V = \frac{137}{338} = .41$ ft/sec

Actual vel = .41 ft/sec

∴ NSTPS = 53

	NSTPS	1	0	
RS	~~7~~ 53	1	0	

	Ndeft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	6552	.00156

$= \frac{1324 - 1287}{6552}$

	LOB	LOB	UB	CH	CH	RB	ROB	ROB
RX	1000	1001	1230	1270	1750	2000	2380	2650
RY	1321	1321	1320	1318	1318	1319	1318	1320

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-5-90

ROUTING PARAMETERS

CP105 TO CP112

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$$A = \frac{8.1}{5220} \times 43560 = 67.7 \text{ sq ft}$$

∴ NSTPS = 6

$$V = \frac{383}{67.7} = 5.6 \text{ ft/sec}$$

Actual vel = 5.6 ft/sec

∴ NSTPS = 3.1

	NSTPS		1	0
RS	~~6~~ 3		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.022	.022	.03	5220	.0044

$$= \frac{1310 - 1287}{5220}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1010	1020	1040	1090	1099	1100
RY	1303	1303	1303	1302	1302	1304	1305	1305

eec

Project Title LOOP 303 Whole Tanks Project No. 99551 Date

Subject Routing Prepared By MJR Checked By Page

R106

Route CP106 through 114. Exact route section unknown.

∴ use the following

L = 6800 ft S = 0.0031'/'

$NSTPS = \frac{6800}{2.3\,(300)} = 7.65\ (8)$

RS 8 -1 0

RC 0.05 0.05 0.05 6800 0.0031

Rx 1000 1032 1040 1085 1093 1108 1240 1390

Ry 1293 1291 1288 9 1288 88 1287 90 1292 1295 1 1295

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

~~CP111 TO CP112~~ CP111 TO CP111A KMN 10-17-00

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{18.2}{5280} \times 43560 = 150.4$

∴ NSTPS = 6

$V = \frac{288.5}{150} = 1.92$ ft/sec

Actual vel = 1.92 ft/sec

∴ NSTPS = 8.8

d = ~~0.80 ft~~ 0.95 ft

flow A = 152.4 ft²

V_{AVE} = ~~152.4~~ Q/A = 288.5/152.4 = 1.89 ft/s

NSTPS 3

RS 0 0

N STEP = (1800/1.89)/300 = 3.17

$\frac{1308 - 1301}{1800} = 0.0039$

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	5280 (1800)	~~.0040~~ 0.0039

$= \frac{1308 - 1287}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1070	1570	2040	2370	2440	2468	2469	2470
RY	1312	1310	1308	1306	1306	1307	1307	1307

eec

Project Title _____ Project No. 99551 Date 10/24/2000

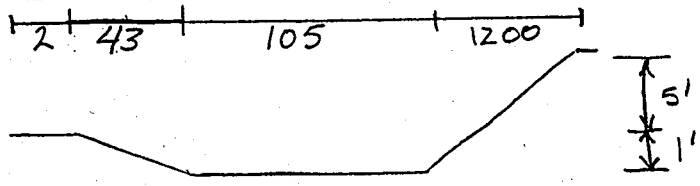
Subject R111A Prepared By CAV Checked By _____ Page _____

CHANNEL ROUTE R111A FROM CP111A TO ~~CP120A~~ CP 120 KMH 11-9-00

This Reach is Characterized as overland flow of Agriculture fields.

The cross section Geometry is based on Similar overland Routes (of Ag. fields) in the WLB model

Normal Depth



RX	1000	1001	1002	1045	1150	1570	1960	2350
RY	1249	1249	1249	1248	1248	1250	1252	1254

$L = 5700$

$S = \frac{1298 - 1282}{5700} = 0.0028$

$Q = 60 cfs$ from HEC-1

$V = 0.77$ ft/s

Flow $A = 77.5$ ft^2

$N_{STEPS} = L / V_{AVE} / n\text{-}min$

$= 5700 / 0.77 / (5 \times 60) = 24.7 \simeq 25$

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-5-90

ROUTING PARAMETERS

CP 112 TO CP113A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

$A = \frac{595}{2640} \times 43560 = 263$

$V = \frac{Q}{A} = \frac{362}{263} = 1.38$ ft/sec

∴ NSTPS = 4

Actual vel = 1.38 ft/sec

∴ NSTPS = 6.4

	NSTPS			
	6 ~~4~~		-1	0
RS			-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.035	.035	2640	.0023

$= \frac{1287 - 1281}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1490	1830	2600	2770	2788	2789	2790
RY	1290	1288	1286	1284	1284	1285	1285	1285

STANLEY CONSULTANTS

Project No. 13688.02.00-LMR23 Page No.

Subject

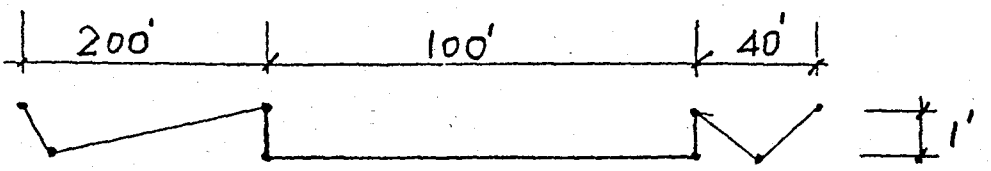
Computed by MFG Date 2/20/98

Checked by Date

Approved by Date

Sheet No. 6 of 8

R113A - routing along Bell Rd right-of-way



USE Average $n = 0.035$

$S = 0.0032$

$Q = 558$ cfs

Assume $d = 1.3'$

$A = (0.3 \times (200+100+40)) + (200 \times 1 \times 0.5) + (100 \times 1) + (40 \times 1 \times 0.5)$

$= 322 \text{ ft}^2$

$P = 340$ ft

$R = A/P = 0.947$ ft

$Q = \left(\frac{1.49}{0.035}\right) \times (322) \times (.947)^{2/3} \times (0.0032)^{1/2} = 748$ cfs

So use $d = 1.3'$

$V = 748/322 = 2.3$ fps

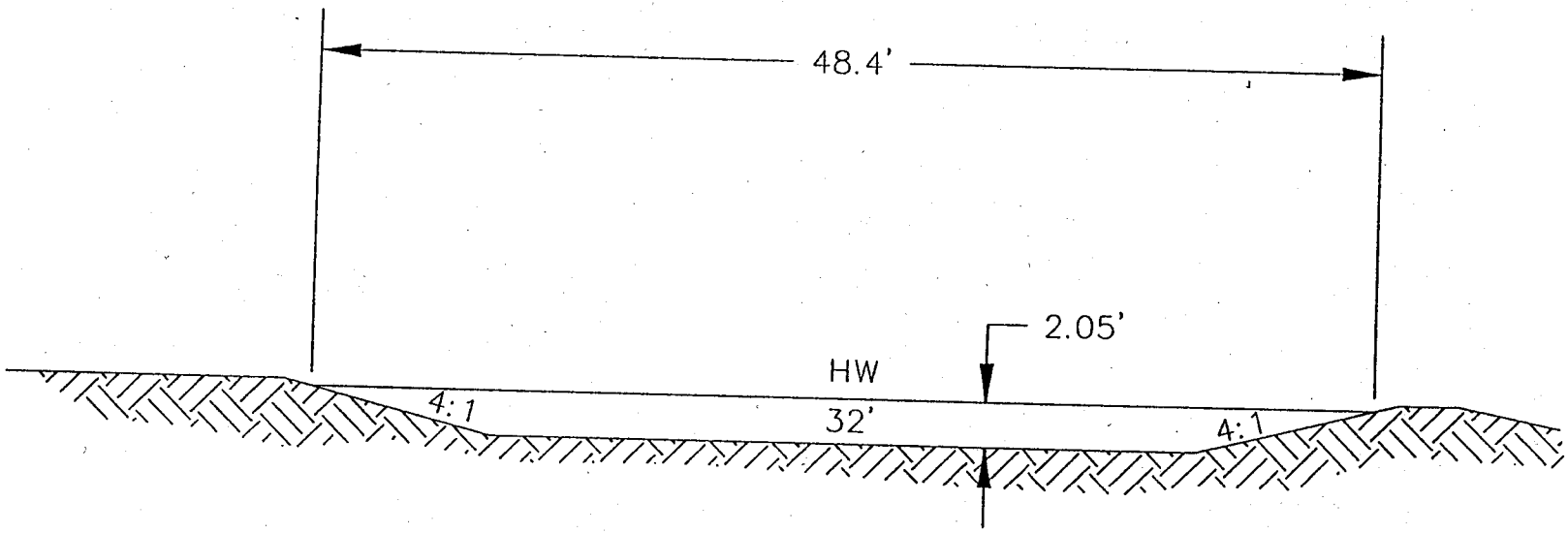
$NSTPS = L/V/NMIN$ $L = 2500$ ft

$= 5280/2.3/(5 \times 60)$ $2500/2.3/(5 \times 60)$

$= 8$ $= 3.6 \simeq 4$

SC 3004B3 795

R ID122 From CP ~~#3~~ 114 To CP122 Through Mountain Vista Ranch



A = 82.41 SF
P = 48.90 LF
R = 1.69 LF
n = 0.03
S = 0.0033
Q = 333.6 CFS
V = 4.0 FPS < 5 FPS OK
L = 6200

CHANNEL WILL BE UNLINED EARTH CHANNEL WITH 4:1 SLOPE. VELOCITY OF 4.0 FPS IS SATISFACTORY FOR FIRM CLAY. (SEE SOIL TESTING RESULTS).

n = L / V_Ave / n-min = 6200 / 4 / (5 x 60) = 5.2 ∴ use 5

Based on Channel in DR by American Engineering Jan 26, 1995

STANLEY CONSULTANTS

Project No. 13688.02.00-LMR23 Page No.

Subject

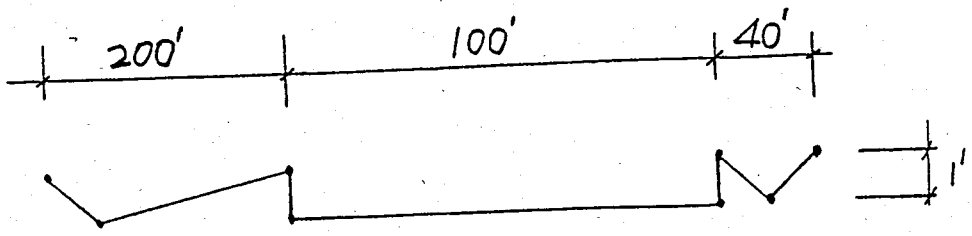
Computed by MFG Date 2/20/98

Checked by Date

Approved by Date

Sheet No. 8 of 8

R114 – routing along Bell Rd right-of-way



USE AVERAGE $n = 0.035$

$S = 0.0034$

$Q = 200$ cfs

Assume $d = 1'$

$A = (1 \times 200 \times 0.5) + (100 \times 1) + (1 \times 40 \times 0.5)$

$= 220$ ft^2

$P = 340$ ft

$R = A/P = 0.647$ ft

$Q = \left(\frac{1.49}{0.035}\right) \times (220) \times (0.647)^{2/3} \times (0.0034)^{1/2} = 408$ cfs

So use $d = 1'$

$V = Q/A = 408/220 = 1.85$ fps

NSTPS = L/V/NMIN

$= 2652/1.85/(5 \times 50)$

$= 5$

eec

Project Title _____ Project No. 99551 Date 10/23/00

Subject CH-Route R115 Prepared By LAV Checked By _____ Page 1/4

R115 FROM CP115 TO CP122

1I115 is located just South of Intersection of Bell Rd and Reemes Road

USE X-SECTION found on following 2 sheets titled "Reemes Road from Bell to Greenway"

L = 200 ft

Q = 408 cfs (Taken from LOMR Report for Mountain Vista)

n = 0.021 (Composite)

d = 3.38 ft

flow A = 117.5 ft^2 - see Flowmaster work sheet (Next 3 pages)

V = Q/A = 408/117.5 = 3.47 ft/s

nSTEPS = L / V_{AVE} / N min = 5180/3.47/(5×60) = 4.98 ∴ use 5

RS	5		-1					
RC	0.021	0.021	0.021	5180	0.0028			
RX	1000	1055	1110	~~1122~~ 1128	1128	1140	1145	1145.1
RY	1249	1248.5	1249	1246	1246	1249	1249	1252

Reemes Road Channel, from Bell to Greenway
Worksheet for Irregular Channel

2/4

Project Description

Worksheet	Irregular Channel
Flow Element	Irregular Channel
Method	Manning's Formul
Solve For	Channel Depth

Input Data

Slope	002800	ft/ft
Discharg	408.00	cfs

Options

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

Results

Mannings Coefficie	0.021	
Water Surface Elev	48.74	ft
Elevation Range	.36 to 52.00	
Flow Area	117.5	ft²
Wetted Perimeter	134.87	ft
Top Width	133.07	ft
Actual Depth	3.38	ft
Critical Elevation	48.52	ft
Critical Slope	0.007235	ft/ft
Velocity	3.47	ft/s
Velocity Head	0.19	ft
Specific Energy	48.93	ft
Froude Number	0.65	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
4+35	4+36	0.025
4+36	4+55	0.013
4+55	5+23	0.018
5+23	5+31	0.013
5+31	5+67	0.030
5+67	5+69	0.024

Natural Channel Points

Station (ft)	Elevation (ft)
4+35	52.00
4+36	48.50
4+54	48.10
4+55	47.60
4+89	48.40
5+23	47.60
5+24	48.10
5+31	48.31

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Reemes Road Channel, from Bell to Greenway
Worksheet for Irregular Channel

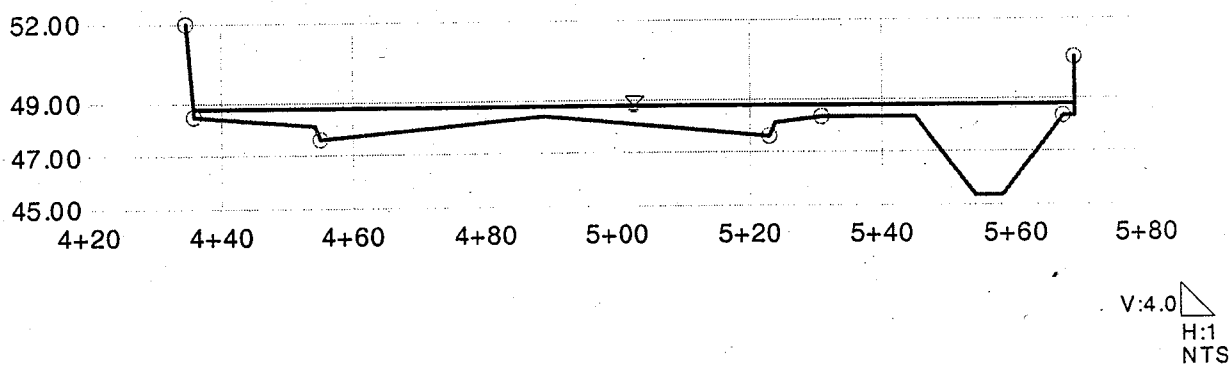
Natural Channel Points	
Station (ft)	Elevation (ft)
5+33	48.34
5+45	48.36
5+54	45.36
5+58	45.36
5+67	48.36
5+69	48.36
5+69	50.50

jReemes Road from Bell to Greenway
Cross Section for Irregular Channel

4/4

Project Description	
Worksheet	Irregular Channel
Flow Element	Irregular Channel
Method	Manning's Formul
Solve For	Channel Depth

Section Data		
Mannings Coefficiei	0.021	
Slope	0.002800	ft/ft
Water Surface Elev	48.74	ft
Elevation Range	;.36 to 52.00	
Discharge	408.00	cfs



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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP116 TO CP117

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec $\qquad A = \frac{209}{4300} \times 43560 = 211\ ft^2$

$\therefore$ NSTPS = 5 $\qquad V = \frac{842}{211} = 3.98\ ft/sec$

Actual vel = 3.98 ft/sec

$\therefore$ NSTPS = 3.6

NSTPS	—	1	0	
RS	~~5~~ 4	—	1	0

	Ndeft	Nchan	Nright	Length	Slope
RC	.05	.022	.022	4300	.0037

$$= \frac{1219 - 1203}{4300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1155	1185	1200	1240	1295
RY	1220	1220	1220	1218	1218	1218.5	1218	1221

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-15-90

ROUTING PARAMETERS

CP117 TO CP125

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

$A = \frac{42.7}{5450} \times 43560 = 342$

Assume V_{av} = 3.0 ft/sec

$V = \frac{13.64}{342} = 40$ ft/sec

∴ NSTPS = 6

Actual vel = 40 ft/sec

∴ NSTPS = 46

	NSTPS		1	0
RS	~~6~~ 5		1	0

	N left	N chan	N right	Length	Slope
RC	.022	.022	.025	5450	.0033

$= \frac{1203 - 1185}{5450}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1025	1060	1355	1765	1910
RY	1197	1197	1197	1196	1196	1198	1200	1201

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP118 TO CP126

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{10.9}{6708} \times 43560 = 70.5\ ft^2$

$V = \frac{Q}{A} = \frac{85}{70.5} = 1.2$ ft/sec

∴ NSTPS = 7

Actual vel = 1.2 ft/sec

∴ NSTPS = 18.6

$NSTPS = \frac{7500}{1.17 \times (5 \times 60)} = 21.4$

NSTPS	~~19~~ 21		-1	0	
RS	~~7~~		-1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	~~6708~~ 7500	~~.0049~~ 0.0045

$= \frac{1200 - 1166}{\cancel{1198 - 1165}\ \cancel{6708}\ 7500}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1030	1140	1260	1660	2349	2350
RY	1192.5	1192.5	1192	1190	1190	1191	1192	1192

R118 from CP118 to CP126
Worksheet for Irregular Channel

Project Description	
Worksheet	Irregular Channel - 1
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.004500	ft/ft
Discharge	90.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Metho	Horton's Method

Results		
Mannings Coefficient	0.035	
Water Surface Elevation	1,190.37	ft
Elevation Range	1,190.00 to 1,192.50	
Flow Area	76.7	ft²
Wetted Perimeter	290.20	ft
Top Width	290.20	ft
Actual Depth	0.37	ft
Critical Elevation	1,190.22	ft
Critical Slope	0.032077	ft/ft
Velocity	1.17	ft/s ←
Velocity Head	0.02	ft
Specific Energy	1,190.40	ft
Froude Number	0.40	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
10+00	16+60	0.035
16+60	23+50	0.075

Natural Channel Points

Station (ft)	Elevation (ft)
10+00	1,192.50
10+01	1,192.50
10+30	1,192.00
11+40	1,190.00
12+60	1,190.00
16+60	1,191.00
23+49	1,192.00
23+50	1,192.00

CROSS SECTION Based on WLB model

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP119 TO CP128

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

$A = \frac{11.7}{2640} \times 43560 = 193\ ft^2$

$V = \frac{440}{193} = 23$ ft/sec

∴ NSTPS = 4

Actual vel = 23 ft/sec

∴ NSTPS = 3.9 ∴ OK

	NSTPS		1	0
RS	4		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.06	2640	.0015

$= \frac{1290-1286}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1010	1045	1085	1460	1710
RY	1287	1287	1287	1286	1286	1288	1290	1292

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP119 TO CP119A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

$\therefore$ NSTPS = 4

$$A = \frac{134}{2640} \times 4 \times 560 = 220\ ft^2$$

$$V = \frac{306}{220} = 1.4\ ft/sec$$

Actual vel = 1.4 ft/sec

$\therefore$ NSTPS = 6.3

NSTPS		1	0
RS	~~4~~ 6	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.035	.035	2640	.0015

$$= \frac{1290 - 1286}{2640}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1450	1800	1820	1838	1839	1840
RY	1292	1292	1290	1288	1288	1289	1289	1289

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP119A TO CP120

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 5.0 ft/sec

$A = \frac{8.6}{2300} \times 45560 = 163 ft^2$

$V = \frac{642}{163} = 3.9 ft/sec$

∴ NSTPS = 2

Actual vel = 3.9 ft/sec

∴ NSTPS = 1.9 = OK

	NSTPS		1	0
RS	2		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	2300	.0096

$= \frac{1286-1264}{2300}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1180	1200	1213	1214	1215
RY	1278	1278	1278	1276	1276	1277	1277	1277

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP 1194 TO CP 130

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec $\quad A = \frac{Q}{6318} \times 43560 = 0$

$\therefore$ NSTPS = 5 $\quad V = \frac{Q}{0} = 0$

Actual vel = 0
No Flow ∴ OK

	NSTPS			
			1	0
RS	5		1	0

	N left	N chan	N right	Length	Slope
RC	.08	.08	.08	6318	.0062

$$= \frac{1286 - 1247}{6318}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1400	1770	2240	3260	3468	3469	3470
RY	1272	1270	1268	1266	1266	1267	1267	1267

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP120 TO CP130

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec $\qquad A = \frac{38}{5280} \times 48560 = 314 ft^2$

$\therefore$ NSTPS = 6 $\qquad V = \frac{1066}{314} = 3.4 ft/sec$

Actual vel = 3.4 ft/sec
$\therefore$ NSTPS = 52

	NSTPS		1	0
RS	~~6~~ 5		1	0

	Ndeft	Nchan	Nright	Length	Slope
RC	.030	.030	.06	5280	.0032

$$= \frac{1264-1247}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1040	1090	1520	1830
RY	1261	1261	1261	1260	1260	1262	1264	1266

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-31-90

ROUTING PARAMETERS

CP121A TO CP121

METHOD USED: NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{6200}{5.0 \times 300} = 7$$

Time Interval = 5 min Assumed Vel = 30 ft/sec

Actual Vel. = 4.7 ft/sec $A = \frac{9.47}{2640} \times 43560 = 156\ ft^2$

NSTPS = 4.4 $V = \frac{730}{156} = 4.7\ ft/sec$

	NSTPS			
RS	4	—	-1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.035	.035	.035	2640	.0096

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1130	1200	1278	1214	1215
RY	1278	1278	1278	1276	1276	1277	1277	1277

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP121 TO CP131

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{439}{5280} \times 4560 = 362\ ft^2$

$\therefore NSTPS = 6$

$V = \frac{946}{362} = 2.6\ ft/sec$

Actual vel = 2.6 ft/sec

$\therefore NSTPS = 6.7$

	NSTPS		-1	0
RS	~~6~~ 7		-1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.035	5280	.0055

$= \frac{1249 - 1220}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1061	1002	1050	1115	1450	1910	1570
RY	1239	1239	1239	1238	1238	1239	1240	1242

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP 122 TO CP133

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{19.89}{5280} \times 43560 = 164\ ft^2$

$V = \frac{195}{164} = 1.2\ ft/sec$

∴ NSTPS = 6

Actual vel = 1.2 ft/sec

∴ NSTPS = ~~14.8~~ 7.3 = 7 ~~AV~~

	NSTPS				
	~~15~~ ~~6~~	–	1	0	
RS		–	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.05	.05	.075	~~5280~~ 2640 ~~AV~~	~~.0040~~ 0.0038

$= \frac{1216 - 1206}{\cancel{5280}\ 2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1015	1235	1800	2030	2220
RY	1219	1219	1219	1218	1218	1220	1222	1224

R122 to CP133
Worksheet for Irregular Channel

Project Description	
Worksheet	R122-133
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.004200	ft/ft
Discharge	760.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Metho	Horton's Method

Results		
Mannings Coefficient	0.035	
Water Surface Elevation	1,221.66	ft
Elevation Range	1,218.00 to 1,224.00	
Flow Area	145.0	ft²
Wetted Perimeter	55.17	ft
Top Width	54.27	ft
Actual Depth	3.66	ft
Critical Elevation	1,220.64	ft
Critical Slope	0.014350	ft/ft
Velocity	5.24	ft/s ←
Velocity Head	0.43	ft
Specific Energy	1,222.09	ft
Froude Number	0.57	
Flow Type	Subcritical	

Roughness Segments		
Start Station	End Station	Mannings Coefficient
10+00	10+60	0.018
10+60	11+19	0.035

Natural Channel Points	
Station (ft)	Elevation (ft)
10+00	1,222.00
10+30	1,222.00
10+60	1,222.00
10+76	1,218.00
11+01	1,218.00
11+17	1,222.00
11+18	1,223.00
11+19	1,224.00

$$NSTPS = \frac{\text{Reach Length}}{\text{Ave Vel} * (\text{Time Interval})}$$

$$= \frac{2640}{5.24\ (5 * 60)}$$

$$= \underline{1.7} \quad \therefore \underline{\text{use } 2} \leftarrow$$

eec

Project Title: LOOP 303 Project No. 99551 Date 11/6/00

Subject: Channel Route R122B Prepared By: LAN Checked By: Page 1/2

R122B to CP122A

L = 1580 Ft

high elev = 1234

Low elev = 1228

$S = \frac{1234 - 1228}{1580} = 0.0038$ Ft/Ft

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
Rx	1000	1010	1020	1020.1	1080	1080	1090	1100
Ry	1232	1230	1229.5	1229	1229	1229.5	1230	1232

RS

$NSTPS = \frac{\text{Length}}{\text{Ave Velocity (Time step)}} = \frac{1580}{4.93\ (5 \times 60)} = 1.06$

∴ use 1 ←

$T_{STEP} = 5$ min

$V_{AVE} = 4.93$ ft/s, see mannings eqn work sheet (attached)

R122B
Worksheet for Irregular Channel

2/2

Project Description	
Worksheet	R122B
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.003800	ft/ft
Discharge	525.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Metho	Horton's Method

Results		
Mannings Coefficient	0.021	
Water Surface Elevation	1,230.50	ft
Elevation Range	1,229.00 to 1,232.00	
Flow Area	106.5	ft²
Wetted Perimeter	85.98	ft
Top Width	85.03	ft
Actual Depth	1.50	ft
Critical Elevation	1,230.30	ft
Critical Slope	0.006622	ft/ft
Velocity	4.93	ft/s
Velocity Head	0.38	ft
Specific Energy	1,230.88	ft
Froude Number	0.78	
Flow Type	Subcritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00	0+20	0.035
0+20	0+80	0.018
0+80	1+00	0.035

Natural Channel Points

Station (ft)	Elevation (ft)
0+00	1,232.00
0+10	1,230.00
0+20	1,229.50
0+20	1,229.00
0+80	1,229.00
0+80	1,229.50
0+90	1,230.00
1+00	1,232.00

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP123 TO CP124

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{1215}{2640} \times 4356 = 184$

$V = \frac{361}{184} = 2.0$ ft/sec

∴ NSTPS = 3

Actual vel = 2.0 ft/sec

∴ NSTPS = 4

	NSTPS			
	4		1	0
RS	3		1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.035	2640	.0038

$= \frac{1213 - 1203}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1350	1690	2040	2130	2148	2149	2150
RY	1216	1214	1212	1210	1210	1211	1211	1211

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP124 TO CP125

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{9.5}{5280} \times 43560 = 78 ft^2$

$V = \frac{196}{78} = 2.5$ ft/sec

∴ NSTPS = 6

Actual vel = 2.5 ft/sec

∴ NSTPS = 7

	NSTPS			
RS	~~6~~ 7	–	–1	0

	N left	N chan	N right	Length	Slope
RC	.025	.022	.022	5280	.0034

$= \frac{1203 - 1185}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1220	1400	1660	1680	1708	1709	1710
RY	1200	1198	1196	1194	1194	1195	1195	1195

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-15-90

ROUTING PARAMETERS

CP125 TO CP126

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{14}{5280} \times 43560 = 115 ft^2$

$V = \frac{543}{115} = 4.7 ft/sec$

∴ NSTPS = 6

Actual vel = 4.7 ft/sec

∴ NSTPS = 3.7

	NSTPS				
RS	~~6~~ 4	—	-1	0	
		—	-1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.05	.03	.03	5280	.0038

$= \frac{1185 - 1165}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1060	1350	1570	1590	1630	1645	1650	1670
RY	1184	1182	1180	1176	1176	1180	1182	1183

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP126 TO CP138

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{57.8}{5280} \times 43560 = 428\ ft^2$

$V = \frac{978}{428} = 2.3\ ft/sec$

∴ NSTPS = 6

Actual vel = 2.3 ft/sec

∴ NSTPS = 7.7

	NSTPS			
RS	~~6~~ 8	–	1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.015	5280	.0030

$$= \frac{1165 - 1149}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1010	1180	1560	2020	2200
RY	1161	1161	1161	1160	1160	1162	1164	1165

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP127 TO CP139

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{625}{3744} \times 43560 = 727\ ft^2$

∴ NSTPS = 4

$V = \frac{317}{727} = .44\ ft/sec$

Actual vel = .44 ft/sec

∴ NSTPS = 28.6

	NSTPS			
	29			
RS	4		1	0
			1	0

	N left	N chan	N right	Length	Slope
RC	.08	.08	.08	3744	.0030

$= \frac{1160 - 1148}{3744}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1410	1820	2410	2860	3000
RY	1155	1155	1155	1154	1154	1156	1158	1159

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP128 TO CP130

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

$A = \frac{109.7}{6240} \times 43560 = 766 ft^2$

$V = \frac{127}{766} = .55$ ft/sec

∴ NSTPS = 5

Actual vel = ~~.55 ft/sec~~

∴ NSTPS = 37.8

	NSTPS			
	38			
RS	~~5~~	—	-1	0
			-1	0

	N left	N chan	N right	Length	Slope
RC	.075	.075	.075	6240	.0062

$= \frac{1286 - 1247}{6240}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1400	1770	2240	3260	3468	3469	3470
RY	1272	1270	1268	1266	1266	1267	1267	1267

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP129 TO CP130

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

$A = \frac{275}{5280} \times 43560 = 227 ft^2$

$V = \frac{408}{227} = 2.06$ ft/sec

∴ NSTPS = 4

Actual vel = 2.06 ft/sec

∴ NSTPS = 8.5

	NSTPS			
	9			
RS	~~4~~	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.04	.04	5280	.0060

$= \frac{1279-1247}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1250	1150	2070	2080	2098	2099	2100
RY	1270	1268	1266	1264	1264	1265	1265	1265

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10 - 8 - 90

ROUTING PARAMETERS

CP130 TO CP131A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{475}{5280} \times 43560 = 784\ ft^2$

$V = \frac{892}{784} = 1.14\ ft/sec$

∴ NSTPS = 3

Actual vel = 1.14 ft/sec

∴ NSTPS = 7.7

	NSTPS			
	8		1	0
RS	3		1	0

	Ndeft	Nchan	Nright	Length	Slope
RC	.075	.041	.04	2640	.0057

$= \frac{1247 - 1232}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1640	2050	2290	2328	2329	2330
RY	1234	1234	1232	1230	1230	1231	1231	1231

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-8-90

ROUTING PARAMETERS

CP130 TO CP144

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec $\quad A = \frac{35}{5280} \times 43560 = 289\ ft^2$

$\therefore$ NSTPS = 6 $\quad V = \frac{715}{289} = 2.47\ ft/sec$

Actual vel = 2.47 ft/sec

$\therefore$ NSTPS = 7.1

	NSTPS			
	7		1	0
RS	~~6~~		1	0

	Nleft	Nchan	Nright	length	Slope
RC	.035	.035	.075	5280	.0044

$$= \frac{1247 - 1221}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1110	1570	2080	2370
RY	1239	1239	1239	1238	1238	1240	1242	1244

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-31-90

ROUTING PARAMETERS

CP13A TO CP13I

METHOD USED: NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}}$$

Time Interval = 5 min Assumed Vel = 3.0 ft/sec

Actual Vel. = 1.14 ft/sec

∴ NSTPS = 7.7

	NSTPS			
RS	8	—	—1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.075	.04	.04	2640	.0051

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1040	2050	2290	2328	2329	2330
RY	1234	1234	1232	1230	1230	1231	1231	1231

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-25-90

ROUTING PARAMETERS

CP43 TO WT4

METHOD USED – NORMAL DEPTH

Assume Vel = 8.0 ft/sec
Travel Time = 138 Time Int = 5 min
NSTPS = 1

CROSS-SECTION DATA

NSTPS $.625 \le \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \le 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .05 Length = 4000

Channel n = .03 Slope = .0083 ft/ft

Right Overbank n = .05

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
800	900	965	000	1050	1100	1200	1300

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1076	1075	1075	1064	1064	1071	1071	1075

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP43 to CP45-1

METHOD USED - NORMAL DEPTH

Assume Vel = 50 ft/sec

CROSS-SECTION DATA

Travel Time = .025 Time Int. = 5 min

NSTPS = 1

NSTPS .625 ≤ $\frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}}$ ≤ 25 Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 450

Channel n = .03 Slope = .0042

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
800	900	930	970	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1088	1087	1086	1084	1084	1090	1094	1099

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-24-90

ROUTING PARAMETERS

CP43-00 to CP43

METHOD USED - NORMAL DEPTH

Assume Vel = 4.0 ft/sec

CROSS-SECTION DATA

Travel Time = .035 Time Int = 5 min

NSTPS = 1

NSTPS $.625 \leq \frac{\text{Travel Time} \times 60}{\text{Time Int.} \times \text{NSTPS}} \leq 25$ Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .06 Length = 500

Channel n = .03 Slope = .008

Right Overbank n = .04

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
800	850	930	965	1000	1020	1030	1040

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1096	1092	1090	1088	1088	1090	1096	1097.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-25-90

ROUTING PARAMETERS

CP43 TO WT4

METHOD USED – NORMAL DEPTH

Assume Vel = 80 ft/sec

CROSS-SECTION DATA

Travel Time = .133 Time Int = 5 min

NSTPS = 1

NSTPS .625 ≤ $\frac{\text{Travel Time} \times 60}{\text{Time Int} \times \text{NSTPS}}$ ≤ 25 Act Vel =

RS 1 — -1 0

RC

Left Overbank n = .05 Length = 4000

Channel n = .03 Slope = .0083 ft/ft

Right Overbank n = .05

RX

LOB	LOB	LB	CH	CH	RB	ROB	ROB
800	900	965	1000	1050	1100	1200	1300

RY

LOB	LOB	LB	CH	CH	RB	ROB	ROB
1076	1075	1075	1064	1064	1071	1071	1075

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP131 TO CP145

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{64.3}{5280} \times 43560 = 530$

$V = \frac{1138}{530} = 2.14$ ft/sec

∴ NSTPS = 6

Actual vel = 2.14 ft/sec

∴ NSTPS = 6.2

NSTPS	8	1	0
RS	6	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.040	.040	.075	5280	.00043

$= \frac{1220 - 1197}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1050	1820	2210	2230
RY	1213	1213	1213	1212	1212	1214	1216	1218

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP131 TO CP132

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

$A = \frac{29}{2150} \times 43560 = 160 ft^2$

$\therefore$ NSTPS = 4

$V = \frac{266}{160} = 1.67$ ft/sec

Actual vel = 1.67 ft/sec

$\therefore$ NSTPS = 4.3 $\therefore$ ok

	NSTPS		-1	0
RS	4		-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	2150	.0028

$= \frac{1220 - 1214}{2150}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1370	1760	2150	2165	2173	2174	2175
RY	1224	1222	1220	1218	1218	1219	1219	1219

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP132 TO CP133

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec $\qquad A = \frac{16.4}{2640} \times 43560 = 270\,ft^2$

$\therefore$ NSTPS = 3 $\qquad V = \frac{435}{270} = 1.61\,ft/sec$

Actual vel = 1.61 ft/sec

$\therefore$ NSTPS = 5.5

NSTPS	~~5~~	1	0	
RS	~~3~~	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.08	.04	.04	2640	.0038

$$= \frac{1214 - 1206}{2640}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1400	1670	2050	2230	2258	2259	2260
RY	1218	1216	1214	1212	1212	1213	1213	1213

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10 - 9 - 90

ROUTING PARAMETERS

CP133 TO CP146

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

$$A = \frac{11.9}{5280} \times 43560 = 98\ ft^2$$

$\therefore$ NSTPS = 4

$$V = \frac{26}{98} = 2.2\ ft/sec$$

Actual vel = 2.2 ft/sec

$\therefore$ NSTPS = 8

	NSTPS			
RS	~~4~~ 8	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	5280	.0068

$$= \frac{1206 - 1170}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1015	1080	1440	1740	2130
RY	1187	1187	1187	1186	1186	1188	1190	1192

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP133 TO CP147

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

$A = \frac{39.72}{6552} \times 43560 = 261\ ft^2$

$V = \frac{104}{261} = .40\ ft/sec$

∴ NSTPS = 5

Actual vel = .40 ft/sec

∴ NSTPS = 55

	NSTPS		-1	0
RS	~~5~~ 55		-1	0

	N left	N chan	N right	Length	Slope
RC	.07	.07	.07	6552	.0063

$= \frac{1206 - 1165}{6552}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1720	1900	2290	2460	2619	2620
RY	1189	1189	1188	1187.5	1187.5	1188	1189	1189

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP133 TO CP134

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{5.4}{2640} \times 43560 = 89 ft^2$

$V = \frac{188}{89} = 2.11$ ft/sec

∴ NSTPS = 3

Actual vel = 2.11 ft/sec

∴ NSTPS = 4.2

	NSTPS				
RS	~~3~~ 4	—	-1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.06	.035	.035	2640	.0049

$= \frac{1206 - 1193}{2640}$

	LOB	LOB	UB	CH	CH	RB	ROB	ROB
RX	1600	1340	1600	1815	1860	1888	1889	1890
RY	1206	1204	1202	1200	1200	1203	1203	1203

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP134 TO CP147

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$$A = \frac{79.5}{5280} \times 43560 = 656\ ft^2$$

$$V = \frac{162}{656} = 2.47\ ft/sec$$

∴ NSTPS = 6

Actual vel = 2.47 ft/sec

∴ NSTPS = 21

	NSTPS			
	7		-1	0
RS	6	-	-1	0

	Ndeft	Nchan	Nright	Length	Slope
RC	.05	.05	.075	5280	.0053

$$= \frac{1193 - 1165}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1190	1580	2180	2700
RY	1187	1187	1187	1186	1186	1188	1190	1192

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP134 TO CP135

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = ft/sec

$A = \frac{8.3}{2640} \times 43560 = 136$

$V = \frac{553}{136} = 4.05$ ft/sec

∴ NSTPS = 3

Actual vel = 4.05 ft/sec

∴ NSTPS = 2.2

	NSTPS		-1	0
RS	~~3~~ 2		-1	0

	N left	N chan	N right	Length	Slope
RC	.06	.03	.03	2640	.0045

$= \frac{1193 - 1181}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1490	1950	2015	2040	2048	2049	2050
RY	1194	1192	1190	1188	1188	1189	1189	1189

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP135 TO CP148

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{9.7}{5280} \times 43560 = 80 ft^2$

$V = \frac{134}{80} = 1.68$ ft/sec

∴ NSTPS = 6

Actual vel = 1.68 ft/sec

∴ NSTPS = 10.5

	NSTPS			
RS	~~6~~ 10	—	-1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.075	5280	.00449

$= \frac{1181 - 1155}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1070	1130	1400	1780	2250
RY	1171	1171	1171	1170	1170	1172	1174	1176

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP135 TO CP136

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{172}{2640} \times 43560 = 284\ ft^2$

$V = \frac{629}{284} = 2.21\ ft/sec$

∴ NSTPS = 3

Actual vel = 2.21 ft/sec

∴ NSTPS = 4

NSTPS	—	1	0
RS	—	1	0

	NleftH	Nchan	Nright	Length	Slope
RC	.075	.035	.035	2640	.0038

$= \frac{1181 - 1171}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1430	1790	2250	2275	2298	2299	2300
RY	1182	1180	1178	1176	1176	1177	1177	1177

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP135 TO CP136

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{17.2}{2640} \times 43560 = 284\ ft^2$

$V = \frac{629}{284} = 2.21$ ft/sec

∴ NSTPS = 3

Actual vel = 2.21 ft/sec

∴ NSTPS = 4

NSTPS		-1	0	
RS	4	-1	0	

	NLeft	Nchan	Nright	Length	Slope
RC	.075	.035	.035	2640	.0038

$= \frac{1181 - 1171}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1430	1790	2250	2275	2298	2299	2300
RY	1182	1180	1178	1176	1176	1177	1177	1177

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP136 TO CP137

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{23.3}{2640} \times 43560 = 385\ ft^2$

$V = \frac{678}{385} = 1.76\ ft/sec$

∴ NSTPS = 3

Actual vel = 1.76 ft/sec

∴ NSTPS = 5

	NSTPS			
	5		1	0
RS	~~3~~		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.08	.035	.035	2640	.0042

$= \frac{1171 - 1160}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1370	1790	3210	3270	3298	3299	3300
RY	1170	1168	1166	1164	1164	1165	1165	1165

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP136 TO CP137

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{233}{2640} \times 43560 = 385 ft^2$

$\therefore$ NSTPS = 3

$V = \frac{678}{385} = 1.76$ ft/sec

Actual vel = 1.76 ft/sec

$\therefore$ NSTPS = 5

	NSTPS			
	5		1	0
RS	~~3~~		1	0

	N left	N chan	N right	Length	Slope
RC	.08	.035	.035	2640	.0042

$= \frac{1171 - 1160}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1370	1790	3210	3270	3298	3299	3300
RY	1170	1168	1166	1164	1164	1165	1165	1165

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP137 TO CP138

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec $\qquad A = \frac{54.6}{5280} \times 43560 = 450$

$\therefore$ NSTPS = 9 $\qquad V = \frac{354}{450} = .79$ ft/sec

Actual vel = .79 ft/sec

$\therefore$ NSTPS = 22.3

	NSTPS			
	22			
RS	~~9~~	–	–1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.08	.03	.03	~~5280~~ 2640	.0021

$$= \frac{1160 - 1149}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	2300	2310	2320	2340	2368	2369	2370
RY	1162	1156	1156.5	1156	1156	1157	1157	1157

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10 - 9 - 90

ROUTING PARAMETERS

CP137 TO CP149

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{11.3}{2640} \times 43560 = 186\ ft^2$

$V = \frac{371}{186} = 2.0\ ft/sec$

∴ NSTPS = 3

Actual vel = 2.0 ft/sec

∴ NSTPS = 4.4

NSTPS	4	1	0	
RS	~~3~~	1	0	

	N left	N chan	N right	Length	Slope
RC	.035	.035	.05	2640	.0038

$= \frac{1160 - 1150}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1015	1070	1470	1830	2350
RY	1157	1157	1157	1156	1156	1158	1160	1162

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP137 TO CP149

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

$A = \frac{11.3}{2640} \times 43560 = 186\ ft^2$

Assume V_{av} = 3.0 ft/sec

$V = \frac{371}{186} = 2.0\ ft/sec$

∴ NSTPS = 3

Actual vel = 2.0 ft/sec

∴ NSTPS = 4.4

NSTPS	4		1	0	
RS	~~3~~		1	0	

	N left	N chan	N right	Length	Slope
RC	.035	.035	.08	2640	.0038

$= \frac{1160 - 1150}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1015	1070	1470	1830	2350
RY	1157	1157	1157	1156	1156	1158	1160	1162

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP138 TO CP138A
~~CP137 TO CP138A~~

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA.

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

$A = \frac{54.6}{5280} \times 43560 = 450$

$V = \frac{354}{450} = .79$ ft/sec

∴ NSTPS = 9

Actual vel = .79 ft/sec
∴ NSTPS = 22.3

	NSTPS			
	22			
RS	~~9~~	-1	0	

	NleftH	Nchan	Nright	Length	Slope
RC	.08	.03	.03	~~5280~~ 2640	.0021

$= \frac{1160 - 1149}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	2300	2310	2320	2340	2368	2369	2370
RY	1162	1156	1156.5	1156	1156	1157	1157	1157

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP138A
~~CP138~~ TO CP154

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

$A = \frac{59.7}{2640} \times 43560 = 974$

$V = \frac{555}{974} = .57$ ft/sec

∴ NSTPS = 4

Actual vel = .57 ft/sec
∴ NSTPS = 15.4

	NSTPS				
	~~4~~ 15		1	0	
RS			1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.08	.08	.08	2640	.0026

$= \frac{1149 - 1142}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1025	1160	1840	2099	2100
RY	1145	1145	1145	1144	1144	1146	1148	1148

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10 - 9 - 90

ROUTING PARAMETERS

CP 138A
~~CP138~~ TO CP157

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{317}{6708} \times 43560 = 2064\ ft^2$

$V = \frac{315}{206} = 1.53$ ft/sec

∴ NSTPS = 7

Actual vel = 1.53 ft/sec
∴ NSTPS = 14.6

NSTPS	15	-1	0
RS	~~7~~	-1	0

	Ndeft	Nchan	Nright	Length	Slope
RC	.015	.014	.015	6708	.0051

$\frac{1149 - 1115}{6708}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1580	2290	2450	2710	2199	2200
RY	1140	1140	1138	1136	1136	1138	1140	1140

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COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 10-28-91

STAGE - STORAGE - DISCHARGE TABLE

CP 139

ELEV. (FT)	AREA (AC)	VOLUME (AC-FT)	DISCHARGE (CFS)
1046.2	0	0	0
1047.2 * Weir Flow	2.27	1.14	0
1047.5		3.12	170
1048	10.95	6.43	1037
1049	34.89	29.35	5977

Weir Flow $Q = CLH^{3/2}$ $C = 2.5$

at 1047.5 $L = 315 + \frac{200}{2} = 415$ $H = .3$ $Q = 2.5(415)(.3)^{3/2} = 170$

at 1048 $L = 315 + \frac{530}{2} = 580$ $H = .8$ $Q = 2.5(580)(.8)^{3/2} = 1037$

at 1049 $L = 315 + \frac{1350}{2} = 990$ $H = 1.8$ $Q = 2.5\ 990(1.8)^{3/2} = 5977$

Form 209

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-9-90

ROUTING PARAMETERS

CP139 TO CP156

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA.

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{26.9}{2028} \times 43560 = 577\ ft^2$

$V = \frac{435}{577} = .75\ ft/sec$

∴ NSTPS = 2

Actual vel = .75 ft/sec

∴ NSTPS = 9

	NSTPS				
	9				
RS	~~2~~	–	–1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	2028	.0059

$= \frac{1148 - 1136}{2028}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1310	1500	1610	1850	2020	3199	3200
RY	1147	1146	1144	1143	1143	1144	1146	1146

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. ADUD Date 10-10-90

ROUTING PARAMETERS

CP142 TO CP143

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

$$A = \frac{38.5}{2640} \times 43560 = 635\ ft^2$$

$$V = \frac{728}{635} = 1.15\ ft/sec$$

∴ NSTPS = 2

Actual vel = 1.15 ft/sec

∴ NSTPS = 7.6

	NSTPS		-1	0
RS	~~2~~ 8		-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.07	.022	.022	2640	.0075

$$= \frac{1260 - 1240}{2640}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1800	2235	2250	2275	2288	2289	2290
RY	1250	1245	1247	1246	1246	1247	1247	1247

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP143 TO CP144

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec $\qquad A = \frac{99}{2640} \times 43560 = 164$

$\therefore$ NSTPS = 2 $\qquad V = \frac{738}{164} = 4.5$ ft/sec

Actual vel = 4.5 ft/sec

$\therefore$ NSTPS = 1.9 $\therefore$ OK

NSTPS		1	0	
RS	2	1	0	

	N left	N chan	N right	Length	Slope
RC	.02	.03	.03	2640	.0072

$$= \frac{1240 - 1221}{2640}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1490	2250	2370	2380	2398	2394	2400
RY	1238	1236	1234	1232	1232	1233	1233	1233

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUD Date 10-10-90

ROUTING PARAMETERS

CP144 TO CP145A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{285}{5640} \times 43560 =$ ft^2

$V = \frac{1149}{940} = 2.44$ ft/sec

∴ NSTPS = 3

Actual vel = 1.22 ft/sec

∴ NSTPS = 7.2

	NSTPS			
	7			
RS	3	—	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.04	.04	2640	.0045

$= \frac{1221 - 1209}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1630	2095	2150	2198	2199	2200
RY	1220	1216	1216	1214	1214	1215	1215	1215

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP144 TO CP164A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA.

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

$A = \frac{424}{6400} \times 43560 = 2880 ft^2$

$V = \frac{98}{300} = .36 ft/sec$

∴ NSTPS = 5

Actual vel = .36 ft/sec

∴ NSTPS = 63

NSTPS	68	—	1	0
RS	5	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.07	.07	.07	6400	.0058

$= \frac{1221 - 1164}{6400}$

	LOB	LOB	LB	CH	CH	RB	ROB	RØB
RX	1000	1001	1002	1400	1910	2610	2669	2670
RY	1203	1203	1203	1202	1202	1204	1205	1205

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP145 TO CP146

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{296}{4850} \times 43560 = 266\ ft^2$

$V = \frac{824}{266} = 3.1$ ft/sec

∴ NSTPS = 5

Actual vel = 3.1 ft/sec
∴ NSTPS = 5 OK

	NSTPS			
RS	5		-1	0
			-1	0

	NLeft	Nchan	Nright	Length	Slope
RC	~~.035~~	.035	.035	4850	.00056

$= \frac{1137 - 1170}{4850}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1320	1650	1930	1955	1968	1969	1970
RY	1192	1190	1188	1186	1186	1187	1187	1187

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP145 TO CP164

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{26.9}{5280} \times 43560 = 222 ft^2$

$\therefore$ NSTPS = 6

$V = \frac{548}{222} = 2.5 ft/sec$

Actual vel = 2.5 ft/sec

$\therefore$ NSTPS = 7.1

	NSTPS			
RS	~~6~~ 7	-1	-1	0
				0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.0075	5280	.0058

$= \frac{1197 - 1166}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1040	1170	1520	1910	2190
RY	1185	1185	1185	1184	1184	1186	1188	1190

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP145 TO CP165

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

$A = \frac{1255}{1500} \times 43560 = 728 ft^2$

Assume V_{av} = 480 ft/sec

$V = \frac{480}{728} = .66 ft/sec$

∴ NSTPS = 6

Actual vel = .66 ft/sec

∴ NSTPS = 38

	NSTPS			
		1	0	
RS	~~6~~ 38			
		-1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.08	.08	.08	7500	.0069

$= \frac{1197 - 1145}{7500}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1420	1730	2220	2470	2999	3000
RY	1177	1177	1176	1175	1175	1176	1177	1177

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-31-90

ROUTING PARAMETERS

CP145A TO CP145

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{2640}{3 \times 300} = 3$$

Time Interval = 5 min Assumed Vel = 3.0 ft/sec

Actual Vel. = 1.22 ft/sec

	NSTPS			
RS	7	—	—1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.075	.04	.041	2640	.0045

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1630	2095	2150	2198	2199	2200
RY	1220	1216	1216	1214	1214	1215	1215	1215

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP146 TO CP165

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

$A = \frac{543}{5280} \times 43560 = 448\ ft^2$

Assume V_{av} = 3.0 ft/sec

$V = \frac{1093}{448} = 2.44\ ft/sec$

∴ NSTPS = 6

Actual vel = 2.44 ft/sec

∴ NSTPS = 7.2

	NSTPS			
	7 ~~6~~	1	0	
RS		1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.04	.04	.075	5280	.0047

$= \frac{1170-1145}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1035	1085	1570	2180	2500
RY	1159	1159	1159	1158	1158	1160	1162	1163

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. ADUHD Date 10-10-90

ROUTING PARAMETERS

CP147 TO CP148

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{L}{2640} \times 43560 = 19\ ft^2$

$V = \frac{38}{19} = 2.0$ ft/sec

∴ NSTPS = 3

Actual vel = 2.0 ft/sec

∴ NSTPS = 4

NSTPS	4	1	0
RS	~~3~~	1	0

	N left	N chan	N right	Length	Slope
RC	.035	.04	.04	2640	.0038

$= \frac{1165-1155}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1420	1800	2230	2340	2368	2369	2370
RY	1164	1162	1160	1158	1158	1159	1159	1159

eec

Project Title Loop 303 White Tanks Update Project No. 99551 Date 2/26/01

Subject Route Prepared By MJR Checked By _____ Page _____

Subbasin 147

Route DI166 as R147

Use Normal Depth

$NSTPS = \frac{\text{Reach Length}}{\text{Avg. Vel.} * \text{Time Inc.}}$ Time = 3000s

Route data taken from Dysart Drain Rpt. by WhB

KK R147

RS 29 -1 0

RC 0.08 0.08 0.08 6240 0.0042

RX 1000 1001 1220 1720 2460 2498 2990 3000

RY 1155 1155 1154 1152 1152 1153.5 1153.5 1153.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP148 TO CP166

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec $\qquad A = \frac{10.14}{5280} \times 43560 = 85\ ft^2$

$\therefore$ NSTPS = 6 $\qquad V = \frac{259}{85} = 3.03$ ft/sec

Actual vel = 3.03 ft/sec

$\therefore$ NSTPS = 6 $\therefore$ OK

NSTPS		1	0
RS	6	1	0

	NLeft	NChan	NRight	Length	Slope
RC	.04	.04	.075	5280	.0030

$$= \frac{1155-1139}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1045	1380	2030	2380	2700
RY	1153	1153	1153	1152	1152	1154	1156	1157

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP148 TO CP150

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec $\qquad A = \frac{3}{2640} \times 43560 = 36\ ft^2$

$\therefore$ NSTPS = 4 $\qquad V = \frac{47}{36} = 1.31\ ft/sec$

Actual vel = 1.3 ft/sec

$\therefore$ NSTPS = 6.7

	NSTPS				
	7		1	0	
RS	~~4~~		1	0	

	N left	N chan	N right	Length	Slope
RC	.075	.035	.035	2640	.0026

$$= \frac{1155 - 1148}{2640}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1350	1830	2240	2340	2368	2369	2370
RY	1158	1156	1154	1152	1152	1153	1153	1153

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP149 TO CP151

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{17.4}{2640} \times 43560 = 287 ft^2$

$V = \frac{480}{287} = 1.7 ft/sec$

∴ NSTPS = 3

Actual vel = 1.70 ft/sec
∴ NSTPS = 5.2

	NSTPS			
	~~3~~ 5			
RS	~~3~~			

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.07	2640	.0038

$= \frac{1150 - 1140}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1080	1200	2050	2315	2350
RY	1143	1143	1143	1142	1142	1144	1146	1147

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP150 TO CP151

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{8.6}{2640} \times 43560 = 141\ ft^2$

$V = \frac{191}{141} = 1.35\ ft/sec$

NSTPS = 3

Actual vel = 1.35 ft/sec

∴ NSTPS = 6.5

	NSTPS			
	6			
RS	~~3~~	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.035	.035	2640	.0030

$\frac{1148 - 1140}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1250	1720	2110	2300	2348	2349	2350
RY	1149	1148	1146	1144	1144	1145	1145	1145

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP151 TO CP167

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

$A = \frac{16}{5280} \times 43560 = 132 ft^2$

$V = \frac{204}{132} = 1.55$ ft/sec

∴ NSTPS = 9

Actual vel = 1.55 ft/sec

∴ NSTPS = 114

	NSTPS				
	~~9~~ 11				
RS		1	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.07	5280	.0030

$= \frac{1140-1124}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1015	1085	1500	1770	2400
RY	1129	1129	1129	1128	1128	1130	1132	1134

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP151 TO CP152

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

$A = \frac{29}{2600} \times 43560 = 132\ ft^2$

$V = \frac{182}{132} = 1.38$ ft/sec

∴ NSTPS = 4

Actual vel = 1.38 ft/sec

∴ NSTPS = 6.3

	NSTPS			
	6			
RS	~~4~~	–	1	0

	N left	N chan	N right	Length	Slope
RC	.08	.035	.035	2600	.0027

$= \frac{1140 - 1133}{2600}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1090	1710	2160	2240	2268	2269	2270
RY	1141	1140	1138	1136	1136	1137	1137	1137

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP151 TO CP168

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{638}{5928} \times 43560 = 469$ ft²

$V = \frac{165}{469} = .35$ ft/sec

∴ NSTPS = 7

Actual vel = .35 ft/sec

∴ NSTPS = 56

	NSTPS			
	56		1	0
RS	7		1	0

	N left	N chan	N right	Length	Slope
RC	.075	.075	.075	5928	.0042

$= \frac{1140 - 1115}{5928}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1180	2100	2458	2459	2460
RY	1135	1139	1135	1134	1134	1135	1135	1135

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP152 TO CP168

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{19.5}{5280} \times 43560 = 161\ ft^2$

$V = \frac{292}{161} = 1.81$ ft/sec

∴ NSTPS = 6

Actual vel = 1.81 ft/sec

∴ NSTPS = 9.7

	NSTPS			
		-1	0	
RS	~~6~~ 10		-1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.035	5280	.0034

$= \frac{1133 - 1115}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1110	1450	1880	2100
RY	1123	1123	1123	1122	1122	1124	1126	1127

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP152 TO CP155

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval $\ell = 5$ min $= 300$ sec

$A = \frac{.2}{2640} \times 43560 = 3.1\ ft^2$

Assume $V_{avg} = 2.0$ ft/sec

$V = \frac{2}{3.1} = .65\ ft/sec$

$\therefore NSTPS = 4$

Actual vel $= .65$ ft/sec

$\therefore NSTPS = 13.6$

	NSTPS			
	14	—	1	0
RS	~~4~~	—	1	0

	N left	N chan	N right	Length	Slope
RC	.075	.04	.04	2640	.0019

$= \frac{1133 - 1128}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1040	1580	2090	2360	2363	2364	2365
RY	1135.2	1134	1132	1130	1130	1131	1131	1131

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP152 TO CP169

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{3.1}{5.928} \times 43560 = 22.8\ ft^2$

$V = \frac{2.3}{22.8} = .1\ ft/sec$

∴ NSTPS = 7

Actual vel = .1 ft/sec

∴ NSTPS = 225

NSTPS		1	0	
RS	7	1	0	

	Nleft	Nchan	Nright	Length	Slope	
RC	.08	.08	.08	5928	.0040	$= \frac{1133-1109}{5928}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1190	2910	2898	2899	2900
RY	1121	1121	1121	1120	1120	1121	1121	1121

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-10-90

ROUTING PARAMETERS

CP154 TO CP157

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{65.3}{5800} \times 43560 = 490 ft^2$

∴ NSTPS = 3

$V = \frac{498}{490} = 1.02 ft/sec$

Actual vel = 1.02 ft/sec

∴ NSTPS = 19

	NSTPS			
	~~3~~ 19			
RS		1	0	
		1	0	

	N left	N chan	N right	Length	Slope
RC	.07	.06	.07	5800	.0048

$= \frac{1142 - 1119}{5800}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1580	2290	2450	2710	3199	3200
RY	1140	1140	1138	1136	1136	1138	1140	1140

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP155 TO CP169

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{27.7}{5280} \times 43560 = 230\ ft^2$

$V = \frac{233}{230} = 1.01\ ft/sec$

∴ NSTPS = 6

Actual vel = 1.01 ft/sec

∴ NSTPS = 174

	NSTPS			
RS	~~6~~ 17	—	-1	0

	Ndeff	Nchan	Nright	Length	Slope
RC	.04	.04	.07	5280	.0036

$= \frac{1128-1109}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1690	2220	2269	2270
RY	1117	1117	1117	1116	1116	1118	1119	1119

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP156 TO CP157

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{376}{5850} \times 43560 = 660\ ft^2$

$\therefore$ NSTPS = 7

$V = \frac{376}{660} = .57\ ft^2$

Actual vel = .57 ft²

$\therefore$ NSTPS = 34.2

	NSTPS	—	1	0
RS	~~7~~ 34	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.05	.05	.075	5850	.0036

$= \frac{1136 - 1115}{5850}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1420	1110	1400	1900	2320
RY	1133	1133	1133	1132	1132	1133	1131	1133

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP156A TO CP158

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{79.6}{5400} \times 43560 = 642 ft^2$

$V = \frac{336}{642} = .52$ ft/sec

∴ NSTPS = 6

Actual vel = .52 ft/sec

∴ ~~NSTPS~~ = 34.4

NSTPS	34	1	0	
RS	~~6~~	1	0	

	N left	N chan	N right	Length	Slope
RC	.07	.07	.07	5400	.0030

$= \frac{1123 - 1107}{5400}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1380	2200	2838	2839	2840
RY	1117	1117	1117	1116	1116	1118	1118	1118

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP157 TO CP172

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{147}{1150} \times 43560 = 556 ft^2$

$V = \frac{Q}{A} = \frac{737}{556} = 1.33 ft/sec$

∴ NSTPS = 1

Actual vel = 1.33 ft/sec

∴ NSTPS = 2.9

	NSTPS			
	3			
RS	1	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.0122	.06	1150	.0035

$= \frac{1115 - 1111}{1150}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1020	1035	1075	1090	1210	1220
RY	1117	1117	1116	1114	1114	1115	1113	1117

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP158 TO CP173B

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

$A = \frac{27.7}{4524} \times 43560 = 267\ ft^2$

Assume V_{av} = 3.0 ft/sec

$V = \frac{645}{267} = 2.42\ ft/sec$

∴ NSTPS = 5

Actual vel = 2.42 ft/sec

∴ NSTPS = 6.2

	NSTPS			
	6		1	0
RS	5		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.07	.04	.07	4524	.0035

$= \frac{1107 - 1091}{4524}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1240	1360	1440	1500	1650	1750
RY	1113	1113	1112	1110	1110	1112	1114	1115

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP159 TO CP160

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

$A = \frac{29}{830} \times 43560 = 153\ ft^2$

Assume V_{av} = 3.0 ft/sec

$V = \frac{681}{153} = 4.44\ ft/sec$

∴ NSTPS = 1

Actual vel = 4.44 ft/sec

∴ NSTPS = 16 ∴ OK

	NSTPS	1	0	
RS	1	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.022	.022	.025	830	.0036

$= \frac{1265 - 1262}{830}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1060	1150	1390	1440
RY	1265	1265	1265	1264	1264	1266	1268	1270

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP160 TO CP161

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{20.8}{2650} \times 43560 = 342\ ft^2$

$\therefore$ NSTPS = 3

$V = \frac{989}{342} = 29\ ft/sec$

Actual vel = 29 ft/sec

$\therefore$ NSTPS = 3.1 $\therefore$ OK

NSTPS		1	0	
RS	3	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.04	.04	2650	.0072

$= \frac{1262 - 1143}{2650}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1210	1630	1670	1688	1689	1690
RY	1259	1259	1258	1256	1256	1257	1257	1257

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP161 TO CP163

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec $\qquad A = \frac{41.0}{5280} \times 43560 = 338\ ft^2$

$\therefore$ NSTPS = 4 $\qquad V = \frac{920}{338} = 2.72\ ft/sec$

Actual vel = 2.72 ft/sec

$\therefore$ NSTPS = 6.5

	NSTPS			
RS	~~4~~ 6	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.08	.04	.04	5280	.00714

$$= \frac{1243 - 1204}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1900	1910	2455	2470	2488	2489	2490
RY	1226	1224	1222	1220	1220	1221	1221	1221

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP162 TO CP163

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

$A = \frac{39}{5460} \times 43560 = 31 ft^2$

Assume V_{av} = 4.0 ft/sec

$V = \frac{69}{31} = 2.22$ ft/sec

∴ NSTPS = 5

Actual vel = 2.22 ft/sec

∴ NSTPS = 8.2

	NSTPS			1	0				
	8								
RS	~~5~~			1	0				
	Nleft	Nchan	Nright	Length	Slope				
RC	.08	.04	.04	5460	.0062		$= \frac{1238-1204}{5460}$		
	LOB	LOB	LB	CH	CH	RB	ROB	ROB	
RX	1000	1500	1910	2455	2470	2488	2489	2490	
RY	1226	1224	1222	1220	1220	1221	1221	1221	

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP163 TO CP164A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

$A = \frac{162}{2640} \times 43560 = 267 ft^2$

$V = \frac{1016}{267} = 3.8$ ft/sec

∴ NSTPS = 2

Actual vel = 3.8 ft/sec

∴ NSTPS = 4.6

NSTPS		1	0	
	2			
RS	2	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.06	.035	.035	2640	.0078

$= \frac{1204 - 1184}{2640}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1410	1900	2110	2150	2168	2169	2170
RY	1188	1186	1184	1182	1182	1183	1183	1183

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP163 TO CP176A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec Q=0 A=0 V=0

∴ NSTPS = 6

Actual vel = 0
∴ OK

NSTPS		1	0	
RS	6	1	0	

	N left	N chan	N right	Length	Slope
RC	.035	.035	.075	5280	.0040

$$= \frac{1204 - 1183}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1010	1025	1320	1620	1845
RY	1197	1197	1197	1196	1196	1198	1200	1202

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 13-31-90

ROUTING PARAMETERS

CP 164 TO CP 164

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{2640}{5 \times 300} = 3$$

Time Interval = 5 min Assumed Vel = 3.0 ft/sec

Actual Vel. = 3.8 ft/sec $A = \frac{16.2}{2.40} \times \sqrt{3.50} = 26.7$

$V = \frac{101.6}{26.7} = 3.8$ ft/sec

	NSTPS			
RS	2	—	—	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.06	.035	.035	2640	.0072

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1410	1900	2110	2150	2168	2169	2170
RY	1188	1186	1184	1182	1182	1183	1183	1183

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP 164 TO CP 172

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec $\qquad A = \frac{102}{5280} \times 43560 = 843 ft^2$

$\therefore$ NSTPS = 6 $\qquad V = \frac{134}{843} = 1.6$ ft/sec

Actual vel = 1.6 ft/sec

$\therefore$ NSTPS = 11.1

NSTPS	~~6~~ 11	—	1	0
RS		—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.07	5280	.0032

$$= \frac{1166 - 1149}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1040	1290	1540	1810
RY	1159	1159	1159	1158	1158	1160	1162	1164

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP164 TO CP165

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{498.2}{4900} \times 43560 = 429 \text{ ft}^2$

$V = \frac{978}{429} = 2.28 \text{ (ft/sec)}$

∴ NSTPS = 5

Actual vel = 2.28 ft/sec

∴ NSTPS = 7.2

	NSTPS			
	7		1	0
RS	5		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.04	.04	.075	4900	.0043

$= \frac{1166 - 1145}{4900}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1250	1730	2220	2320	2338	2339	2340
RY	1164	1162	1160	1158	1158	1159	1159	1159

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-12-90

ROUTING PARAMETERS

CP165 TO CP179

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{639}{5280} \times 43560 = 692 \text{ ft}^2$

$V = \frac{1802}{692} = 2.6$ ft/sec

∴ NSTPS = 6

Actual vel = 2.6 ft/sec

∴ NSTPS = 6.8

NSTPS	7 ~~6~~	1	0	
RS		1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.022	.022	.04	5280	.0038

$= \frac{1145-1125}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1030	1075	1090	1250	2000
RY	1135	1135	1135	1134	1134	1135	1133	1137

eec

Project Title LOOP 303 White Tanks Update Project No. 99551 Date 7/26/01

Subject Route Prepared By MJP Checked By _____ Page _____

Subbasin 165

Route Divert DI180 as R165

Method: Normal Depth

$NSTPS = \frac{\text{Reach Length}}{\text{Avg - Vel} \times \text{Time Int.}}$ Time Int = 300s

Route data taken from Dry Sart Drain Rpt by WHB

RK	R165							
RS	8	-1	0					
RC	0.07	0.07	0.07	7470	0.0043			
RX	1000	1001	1420	1820	2510	2910	3299	3300
RY	1133	1133	1132	1131	1131	1132	1133	1133

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-11-90

ROUTING PARAMETERS

CP166 TO CP180

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

$A = \frac{7.6}{5280} \times 43560 = 63 ft^2$

Assume V_{av} = 3.0 ft/sec

$V = \frac{102}{63} = 1.63 ft/sec$

∴ NSTPS = 6

Actual vel = 1.63 ft/sec

∴ NSTPS = 10.8

	NSTPS			
RS	~~6~~ 11	–	1	0

	Nleft	Nchan	Nright	length	Slope
RC	.035	.035	.075	5280	.0051

$= \frac{1139 - 1112}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1060	1420	2010	2320
RY	1125	1125	1125	1124	1124	1126	1128	1130

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-12-90

ROUTING PARAMETERS

CP166 TO CP167

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

$A = \frac{39.8}{5280} \times 43560 = 329\ ft^2$

Assume V_{av} = 2.0 ft/sec

$V = \frac{1100}{329} = 3.35\ ft/sec$

∴ NSTPS = 9

Actual vel = 3.35 ft/sec

∴ NSTPS = 5.9

	NSTPS			
	5	1	0	
RS	~~9~~	1	0	

	N left	N chan	N right	Length	Slope
RC	.08	.025	.025	5280	.0028

$= \frac{1139 - 1224}{5280}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1510	2000	2250	2290	2318	2319	2320
RY	1136	1134	1132	1130	1130	1131	1131	1131

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-12-90

ROUTING PARAMETERS

CP167 TO CP181A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{20.25}{2400} \times 43560 = 368\ ft^2$

$V = \frac{814}{368} = 2.21\ ft/sec$

∴ NSTPS = 2

Actual vel = 2.21 ft/sec

∴ NSTPS = 3.6

NSTPS		1	0	
RS	~~2~~ 4	1	0	

	NLeft	Nchan	Nright	Length	Slope
RC	.035	.035	.08	2400	.0046

$= \frac{1124 - 1113}{2400}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1080	1740	2169	2170
RY	1119	1119	1119	1118	1118	1120	1119	1119

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-12-90

ROUTING PARAMETERS

CP167 TO CP168

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

$A = \frac{3.9}{2600} \times 43560 = 65\ ft^2$

$V = \frac{54}{65} = .83\ ft/sec$

∴ NSTPS = 2

Actual vel = .83 ft/sec

∴ NSTPS = 10.4

NSTPS		1	0	
RS	~~2~~ 10	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.04	.04	2600	.0035

$= \frac{1124 - 1115}{2600}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1060	1460	2050	2315	2328	2329	2330
RY	1125	1124	1122	1120	1120	1121	1121	1121

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-12-90

ROUTING PARAMETERS

CP167 TO CP183

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

$A = \frac{302}{2250} \times 43560 = 585 ft^2$

$V = \frac{285}{585} = .49$ ft/sec

∴ NSTPS = 2

Actual vel = .49 ft/sec

∴ NSTPS = 18.8

	NSTPS			
	19		1	0
RS	~~2~~		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	2250	.0071

$= \frac{1124 - 1108}{2250}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1210	2310	2558	2559	2560
RY	1115	1115	1115	1114	1114	1115	1115	1115

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 10-12-90

ROUTING PARAMETERS

CP168 TO CP183

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

$A = \frac{11.9}{2400} \times 43560 = 215\ ft^2$

$V = \frac{335}{215} = 1.55\ ft/sec$

∴ NSTPS = 4

Actual vel = 1.55 ft/sec

∴ NSTPS = 5.1

	NSTPS				
RS	~~4~~ 5	–	1	0	

	N left	N chan	N right	Length	Slope
RC	.04	.04	.075	2400	.0029

$= \frac{1115 - 1108}{2400}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1010	1030	1480	2259	2260
RY	1113	1113	1113	1112	1112	1114	1116	1116

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
February 28, 1991

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PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0009
Manning's Roughness Coefficient (n-value).....	0.0160
Channel Side Slope - Left Side (horizontal/vertical)....	2.00
Channel Side Slope - Right Side (horizontal/vertical)...	2.00
Channel Bottom Width (feet).....	10.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
1.0	29.5	2.46	0.468	0.094	1.094	12.0	14.0
2.0	101.2	3.62	0.511	0.203	2.203	28.0	18.0
3.0	215.8	4.50	0.536	0.314	3.314	48.0	22.0
4.0	377.5	5.24	0.555	0.427	4.427	72.0	26.0
5.0	591.1	5.91	0.571	0.543	5.543	100.0	30.0
6.0	861.3	6.52	0.584	0.661	6.661	132.0	34.0
7.0	1192.7	7.10	0.595	0.783	7.783	168.0	38.0
8.0	1589.9	7.64	0.605	0.907	8.907	208.0	42.0
9.0	2057.2	8.16	0.615	1.035	10.035	252.0	46.0
10.0	2598.9	8.66	0.623	1.165	11.165	300.0	50.0

==========

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1980
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A manual with equations & flow chart is available.

eec

Project Title Loop 303 White Tanks Project No. 99551 Date 2/26/01

Subject Route Prepared By MJR Checked By _____ Page _____

Subbasin 192

Route R 192 CP192 to DI211

Route is same as WHS model except length has changed (½). Original data not found.

∴ use input from HEC-1 model.

KK R 192

RS 5 -1 0

RC 0.08 0.025 0.022 2475 0.0044

RX 1000 1380 1800 2160 2195 2230 2275 2310

RY 1124 1122 1120 1118 1118 1119 1116 1116

eec

Project Title LOOP 303 White Tanks Update Project No. 99551 Date 2/26/01

Subject Route Prepared By MJK Checked By _____ Page _____

Subbasin 192 flow (opp is in 193)

Route DI 211 to CP 211 Overland Flow

Method Normal Depth

NSTPS Reach Length / Avg. Vel * Time Int. Time Int = 300 s

Avg. Vel ~ 1 fps

USE NSTPS 17.0

KK R193

RS 17 -1 0

RC 0.15 0.15 0.15 5300 0.003

RX 1000 1001 1002 1050 2400 2548 2549 2550

RY 1113.5 1113 1113 1112 1112 1113 1113 1113.5

eec

Project Title Loop 303 White Tanks Project No. 99551 Date 2/26/01

Subject Route Prepared By MJR Checked By _____ Page _____

Subbasin 192

Route R192 DI211 to CP193

Route is same as WRB model except length has changed (½). Original data not found.

∴ USE input from HEC-1 model.

KK R192

RS 5 -1 0

RC 0.08 0.025 0.022 2475 0.0044

RX 1000 1380 1800 2160 2195 2230 2275 2310

RY 1124 1122 1120 1118 1118 1119 1116 1116

eec

Project Title Loop 303 White Tanks Update Project No. 99551 Date 2/27/01

Subject Route Prepared By MJR Checked By _____ Page _____

Sub basin 194B Route ID R194B

Dysert Drain Routes

```
KK R194B
KM      ROUTE DETENTION BASIN FLOWS FROM CP194B TO CP194C
RS     7                -1        0
RC  .016     .016     .016     2640    .0011
RX  2000     2007     2013     2020     2030     2037     2043     2050
RY1099.5  1096.2   1092.8   1089.5   1089.5   1092.8   1096.2   1099.5
*
```

eec

Project Title LOOP 303 White Tanks Update Project No. 99551 Date 2/27/01

Subject Route Prepared By MJR Checked By _____ Page _____

Sub basin 194C Route ID R194C

Dysart Drain Routings As used by SFC in Design Model

```
HC      2    37.33
KK R194C
KM       ROUTE FLOW FROM CP194C TO CP195
RS     2              -1       0
RC  .016     .016     .016    3750    .0011
RX  2000     2007     2013    2020     2030     2037     2043     2050
RY1094.5   1091.2   1087.8  1084.5   1084.5   1087.8   1091.2   1094.5
KK  R180
```

eec

Project Title 200P303 White Tanks Update Project No. 99551 Date 2/27/01

Subject Route Prepared By MJR Checked By _____ Page _____

Sub basin 195 Route ID R195

Dysart Drain Routings As used by SFC in Design Model

```
HC      3    41.02
KK  R195
KM        ROUTE FLOW FROM CP195 TO CP196
RS     1                -1        0
RC  .016     .016     .016     2800    .0011
RX  1000     1006     1013     1020     1030     1037     1043     1050
RY  1085     1082     1078     1074     1074     1078     1082     1085
KK  R182
```

eec

Project Title LOOP 303 White Tanks Update Project No. 99551 Date 2/27/01

Subject Route Prepared By MJR Checked By _____ Page _____

Sub basin 196 Route ID R196

Dysart Drain Routings as used by SFC in Design Model

```
KK   R196
KM        ROUTE FLOW FROM CP196 TO CP202
RS     2                -1        0
RC   .02      .016      .02     5460    .0015
RX  1000      1001     1008     1020     1030     1042     1074     1075
RY  1085      1078     1076     1070     1070     1076     1078     1085
*
```

eec

Subject Title LOOP 303 White Tanks Update Project No. 99551 Date 2/27/01

Subject Route Prepared By MJR Checked By _____ Page _____

Sub basin 202 Route ID R202

Dysart Drain Routings As used by SFC in Design Model

```
KK  R202
KM        ROUTE FLOW FROM CP202 TO CP204
RS     2              -1       0
RC  .022     .016    .022    4200    .0009
RX  1000     1001    1008    1020    1030    1042    1074    1075
RY  1093     1083    1079    1073    1073    1079    1083    1093
KK  CP204
```

eec

Project Title LOOP 303 White Tanks Update Project No. 99551 Date 2/27/01

Subject Route Prepared By MJR Checked By _____ Page _____

Sub basin 204 Route ID R204

Dysart Drain Routings As used by SFC in Design Model

```
KK   R204
KM        ROUTE FLOW FROM CP204 TO CP205
RS     1                -1       0
RC   .022     .016     .022    1050   0.0009
RX   1000     1001     1008    1020     1030     1042     1074     1075
RY   1080     1080     1073    1067     1067     1073     1073     1078
*
```

eec

Project Title LOOP 303 White Tanks Update Project No. 99551 Date 2/27/01

Subject Route Prepared By MJR Checked By _____ Page _____

Sub basin 205 Route ID R205

Dysart Drain Routings As used by SFC in Design Model

```
KK  R205
KM        ROUTE FLOW FROM CP205 TO CP206
RS     1                -1        0
RC  .022     .016     .022     1100     .0009
RX  1000     1001     1008     1020     1030     1042     1074     1075
RY  1080     1080     1072     1066     1066     1072     1080     1080
*
```

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CP242A TO CP242

METHOD USED: NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel. x Time Interval}} = \frac{5240}{4 \times 300} = 4$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 4.4

	NSTPS			
RS	4	—	—1	0

	N LEFT	N CHAN	N RIGHT	LENGTH	SLOPE
RC	.04	.022	.04	5240	.0036 1/1

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	970	975	980	1000	1020	1040	1045	1050
RY	1056	1056	1055	1050	1050	1055	1056	1056

Assume rock channel with 4:1 side slopes = 5 ft deep

Form 200

eec

Project Title LOOP 303 White Tanks ADMS Project No. 99551 Date 2/11/01

Subject Routing Prepared By MJR Checked By _____ Page _____

Routing Parameters R242B

CP242B to CP243B

method used Normal Depth
Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg Vel.} \times \text{Time Interval}} = \frac{1600}{4 \times 300} = 1.3$$

say 2

Avg. Vel. = 4 fps

RS	2		-1	0				
	nL	nCh	nRt	L	S			
RC	0.05	0.03	0.05	1600	0.002			
	LOB	LOB	LB	Ch	Ch	RB	ROB	ROB
RY	1001	998	998	995	995	998	998	1001
RX	1000	1004	1018	1022	1028	1034	1046	1050

Assumed Channel Section.

eec

Project Title LOOP 303 WhiteTAndes ADMS Project No. 99551 Date 2/11/01

Subject Routing Prepared By MJR Checked By _____ Page _____

Routing Parameters R243

CP243 to CP245A

method used Normal Depth
Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg Vel.} \times \text{Time Interval}} = \frac{2200}{4 \times 300} = 1.8$$

say 2

Avg. Vel. = 4 fps

RS	2		-1	0				
	nL	nCh	nRt	L	S			
RC	0.05	0.03	0.05	2200	0.002			
	LOB	LOB	LB	ch	ch	RB	ROB	ROB
RY	1001	998	998	995	995	998	998	1001
RX	1000	1004	1018	1022	1028	1034	1046	1050

Assumed Channel Section.

eec

Project Title LOOP 303 WhiteTanks ADMS Project No. 99551 Date 2/11/01

Subject Routing Prepared By MJR Checked By _____ Page _____

Routing Parameters R243B

CP243B to CP243

method used Normal Depth
Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg Vel.} \times \text{Time Interval}} = \frac{3600}{4 \times 300} = 3$$

Avg. Vel. = 4 fps

RS	3		-1	0				
	nL	nCh	nRt	L	S			
RC	0.05	0.03	0.05	3600	0.002			
	LOB	LOB	LB	Ch	Ch	RB	ROB	ROB
RY	1001	998	998	995	995	998	998	1001
RX	1000	1004	1018	1022	1028	1034	1046	1050

Assumed Channel Section.

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 12-20-00

Subject Routing Parameters Prepared By KMH Checked By _____ Page 1

Routing Parameters

CP 242 TO CP 243A

Method Used: Normal Method

Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{2640}{4 \times 300} = 2.2 = 2$$

Time Interval = 5 min Assumed Vel. = 4 ft/sec

Actual Vel. =

	NSTPS			
RS	2	—	-1	0

	N Left	N. Chan.	N. Rt.	Length	Slope
RC	.04	.025	.04	2640	0.0036

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1007	1014	1050	1095	1131	1138	1145
RY	1000	1000	998	997	997	998	1000	1000

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CP243B TO ~~CP243A~~ CP 243

METHOD USED: NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{\cancel{50}\ 3600}{4 \times 300} = 1$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 7.5

	NSTPS			
RS	1	—	—1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.04	.022	.04	~~50~~ 3000	~~.0036~~ 0.002

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	970	975	980	1000	1030	1050	1055	1060
RY	1044	1044	1043	1038	1038	1043	1044	1044

Form 209

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 12-20-00

Subject Routing Parameters Prepared By KNH Checked By _____ Page 1

Routing Parameters

CP 243A TO CP 244

Method Used: Normal Method

Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg. Vel.} * \text{Time Int.}} = \frac{2640}{4 \times 300} = 2$$

Time Interval = 5 min Assumed Vel. = 4 ft/sec

Actual Vel. =

	NSTPS			
RS	2	—	-1	0

	N. Left	N. Chan.	N. Rt.	Length	Slope
RC	.04	.025	.04	2640	~~0.0029~~ .0036

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
Rx	1000	1007	1014	1048	1093	1127	1134	1141
Ry	1000	1000	998	997	997	998	1000	1000

eec

Subject Title Loop 303 Drainage Master Study Project No. 99551 Date 12-20-00

Subject Routing Parameters Prepared By KMH Checked By _____ Page 1

Routing Parameters

CP 244 To CP 245

Method Used: Normal Depth

Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg. Vel.} \times \text{Time Int.}} = \frac{2640}{4 \times 300} = 2$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. =

	NSTPS			
RS	2	—	-1	0

	N. Left	N. Ch.	N. Rt.	Length	Slope
RC	.04	.025	.04	2640	.0036

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1007	1014	1048	1093	1127	1134	1141
RY	1000	1000	796	795	795	796	1000	1000

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CP244A TO CP244

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{1650}{4 \times 300} = 1.4 = 1$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 1.1

	NSTPS			
RS	15	—	-1	0

	N LEFT	N CHAN.	N RIGHT	LENGTH	SLOPE
RC	.05	.05	.05	1650	.00625

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1200	1400	1900	2175	3000	3160	3300
RY	40	39	38	36	36	38	39	40

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-21-91

ROUTING PARAMETERS

RIVER ROUTE
RC 245A
~~RCP 245~~ TO RCP 258
KMH
12-20-00
METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} \quad \frac{2800}{6 \times 300} = 1.5$$

Time Interval = 5 min Assumed Vel = 6 ft/sec

Actual Vel. = 3.1

	NSTPS			
RS	23	—	—1	0

	N LEFT	N CHAN	N RIGHT	LENGTH	SLOPE
RC	.035	.035	.035	2800	.0025

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1042	2042	2082	2083	2084
RY	1051	1051	1051	1035	1035	1051	1051	1051

Form 209

eec

Project Title: White Tanks/Agua Fria ADMS Project No. 99551 Date

Subject: Update Prepared By: MJC Checked By: Page

~~RDI252~~ Routing Parameters R239

Method Normal Depth Route Direct from 239 to CP252.

Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg Vel} \times \text{Time Interval (s)}}$$

Time Interval = 5 min × 60 s/min = 300 s

Assume V_{avg} = 1.48 ft/s

∴ Nstps = 14

HEC-1 Operation

RS	14	-1	~~.035~~	~~2900~~	~~.0028~~			
RC	0.075	0.075	0.075	6000	0.0033			
Rx	1000	1010	1075	1525	2010	2025	2035	2035.5
Ry	1010	1010	1008.5	1008.5	1008.5	1010	1010	1010

DI252

Worksheet for Irregular Channel

R DI252

Overland Sheet Flow

L ~ 6000' Slope ~ 0.33%

Project Description	
Project File	untitled.fm2
Worksheet	1D252
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Channel Slope	0.003300	ft/ft
Water Surface Elevation	1,010.00	ft

Elevation range: 1,008.50 ft to 1,010.00 ft.

Station (ft)	Elevation (ft)	Start Station	End Station	Roughness
1,000.00	1,010.00	1,000.00	2,035.50	0.075
1,010.00	1,010.00			
1,025.00	1,008.50			
1,525.00	1,008.50			
2,010.00	1,008.50			
2,025.00	1,010.00			
2,035.00	1,010.00			
2,035.50	1,010.00			

Results		
Wtd. Mannings Coefficient	0.075	
Discharge	2,214.74	cfs
Flow Area	1,500.00	ft²
Wetted Perimeter	1,015.15	ft
Top Width	1,015.00	ft
Height	1.50	ft
Critical Depth	1,009.04	ft
Critical Slope	0.100927	ft/ft
Velocity	1.48	ft/s
Velocity Head	0.03	ft
Specific Energy	1,010.03	ft
Froude Number	0.21	
Flow is subcritical.		

$$NSTPS = \frac{6000}{300(1.48} = 13.5 \text{ say } 14$$

eec

Project Title White Tanks/Agua Fria ADMS Project No. 44551 Date

Subject UPDate Prepared By MJR Checked By Page

Routing Parameters

R253 Route through Pebble Creek Phase 1 wide Golf course channel

Method: Normal Depth

Cross Section Data

$$NSTPS = \frac{\text{Reach length (ft)}}{\text{Avg. Vel.} \times \text{Time Interval (s)}}$$

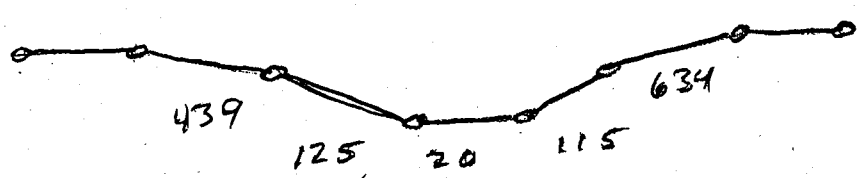
Time Interval = 5 min × 60 s/min = 300 s

Assumed V = 3 fps Actual V = Avg Vel. ~ 3 fps

∴ NSTPS = 6 $NSTPS_a$ =

HEC-1 Opperations

RS	NSTPS ~~4~~ 6		-1					
	N-Left	N-Chan	N-Right	Length	Slope			
RC	0.075	0.03	0.075	5500	0.0039			
	LOB	LOB	LB	Ch	Ch	RB	ROB	ROB
Rx	1000	1001	1440	1565	1585	1700	2324	2325
Ry	1031	1030	1028	1026	1026	1028	1030	1031



From Palm Valley MDS (WhB)

eec

Project Title: White Tanks/Agua Fria ADMS Project No. 94551 Date

Subject: Update Prepared By: MJL Checked By: Page

Routing Parameters

R254 Sub basin 254 to CP 254B

(sheet flow)

Cross section Data

$$NSTPS = \frac{\text{Reach Length (ft)}}{\text{Avg. Vel} \times \text{Time (s)}}$$

Time Interval = 5 min × 60 s/min = 300 sec

Assumed V = 3.0 fps

$$\therefore NSTPS = \frac{1600}{3\,(300)} = 2.0$$

RS	2.0		-1	0	
	n-left	n-ch	n-Rt	L	S
RC	0.05	0.04	0.05	1600	0.005

	LOB	LOB	LB	Ch	Ch	RB	ROB	ROB
KX	0	1	21	41	51	71	91	92
RY	1030	1029	1029	1028	1028	1029	1029	1030

eec

Project Title: White Tanks/Agua Fria ADMS Project No. 44551 Date

Subject: UPDate Prepared By: MJR Checked By: Page

Routing Parameters

RD257

Method: Normal Depth

Route Diverted flow around Sage Creek Development.

Cross Section Data

$$NSTPS = \frac{\text{Reach length (ft)}}{\text{Avg. Vel.} \times \text{Time Interval (s)}}$$

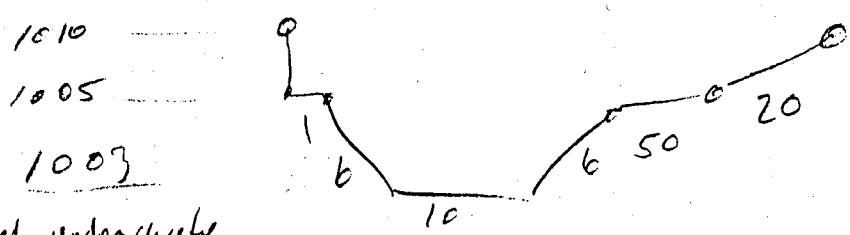
Time Interval = 5 min × 60 s/min = 300 s

Assumed V = ~~4~~ 3.5 fps Actual V =

∴ NSTPS = 4.6 → 5 $NSTPS_a$ =

HEC-1 Opperation

RS	NSTPS 5		-1	0				
RC	N-Left 0.03	N-Chan 0.03	N-Right 0.05	Length .4800	Slope 0.002			
Rx	LOB 0	LOB .1	LB 1	Ch 7	Ch 17	RB 23	ROB 73	ROB 73
Ry	1010	1005	1005	1003	1003	1005	1008	1010



RID canal underchute Revision (Sage Creek)

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-21-91

ROUTING PARAMETERS

RIVER ROUTE

RCP258 TO RCP272

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{4500}{6 \times 300} = 2.5$$

Time Interval = 5 min Assumed Vel = 6 ft/sec

Actual Vel. = 3.1

	NSTPS			
RS	27	—	-1	0

	N LEFT	N CHAN	N RIGHT	LENGTH	SLOPE
RC	.035	.035	.035	4500	.0025

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1042	2042	2082	2083	2084
RY	1015	1015	1015	1000	1000	1015	1015	1015

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP2584 TO CP2710

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .80

	NSTPS	—	1	0
RS	19	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.025	.025	.025	2180	.0041

$= \frac{1019 - 1010}{2180}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1040	1150	1200	1300	1328	1329	1330
RY	1019	1018	1016	1015	1015	1016	1016	1016

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/21 /91

ROUTING PARAMETERS

CP258A TO CP272

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = 1.0

	NSTPS	—	-1	0
RS	5	—	-1	0

	N left	N chan	N right	Length	Slope
RC	.04	.04	.04	1600	.0019

$= \frac{3}{1600}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1030	1320	1329	1330	1340
RY	1019.5	1019	1019	1018	1018	1020	1020	1020

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/14/91

ROUTING PARAMETERS

CP258 ATO CP259

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.0

	NSTPS			
RS	~~1~~ 4	–	–1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.03	.025	.025	1300	.0054

$$= \frac{1019 - 1012}{1300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1250	1390	1418	1419	1420
RY	1017	1017	1017	1016	1016	1016.5	1016.5	1016.5

Form 209

eec

Project Title: White Tanks/Agua Fria ADMS Project No. 99551 Date

Subject: UP Data Prepared By: MJR Checked By: Page

Routing Parameters
KDI 265

Method: Normal Depth

Cross Section Data

Route Divert from 250 to Cp 265.

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg. Vel.} \times \text{Time (s)}}$$

Time Interval = 5 min x 60 sec = 300 sec

Assumed V = 3 fps

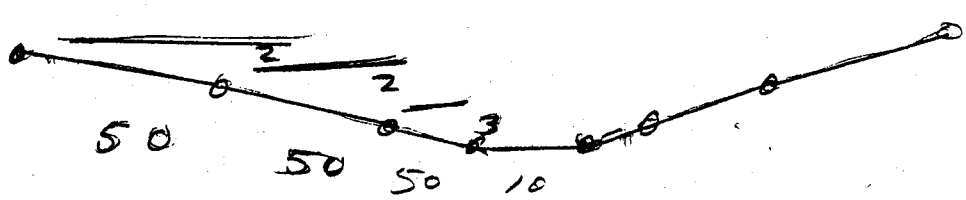
∴ NSTPS =

HEC-1 Opperation

$$\frac{1056 - 1038}{5400'} = 0.3\%$$

RS	6		-1	0				
RC	N left ~~0.05~~ LOB	N chan 0.035 LOB	N right ~~0.05~~ LB	Length 5400' Ch	Slope ~~0.033~~ 0.0033 Ch	RB	ROB	ROB
RY	1056	1054	1052	1049	1049	1052	1054	~~1056~~
RX	0	50	100	150	160	210	260	310

Assumed section



The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/14/91

ROUTING PARAMETERS

~~CP269~~ TO CP284
~~CP266~~

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = 2.3

NSTPS		-1	0	
RS	~~2097~~ 6	-1	0	

	N left	N chan	N right	Length	Slope
RC	.025	.025	.05	~~6080~~ 4000	.0015

$$= \frac{1015 - 1010}{6080}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	598	599	600	610	1060	1190	1740	1940
RY	1013	1013	1013	1012	1012	1014	1016	1017

Form 209

eec

Project Title White Tanks/Agua Fria ADMS Project No. 44551 Date

Subject UPDate Prepared By MJR Checked By Page

Routing Parameters

R268 CP268 to CP28813

Method: Normal Depth

Cross Section Data

$$NSTPS = \frac{\text{Reach length (ft)}}{\text{Avg. Vel.} \times \text{Time Interval (s)}}$$

Reach R268 to CP28813

Time Interval = 5 min × 60 s/min = 300 s

Assumed V = 3 fps

Actual V =

∴ NSTPS = 1.6

$NSTPS_a$ =

HEC-1 Opperations

	NSTPS							
RS	3		-1	0				
	N-Left	N-Chan	N-Right	Length	Slope			
RC	0.035	0.035	0.035	2200	0.013			
	LOB	LOB	LB	Ch	Ch	RB	ROB	ROB
RX	72	73	74	90	117	153	221	222
RY	1000	1000	1000	996.6	996.6	1003.1	1003.3	1003.3

Section 17 from P.V. Phase 2 LOMR

eec

Project Title White Tanks/Agua Fria ADMS Project No. 94551 Date

Subject UPDate Prepared By MJR Checked By Page

Routing Parameters

R26913

Route CP269B to CP268
Land scaped channel

Method: Normal Depth

Cross Section Data

$$NSTPS = \frac{\text{Reach length (ft)}}{\text{Avg. Vel.} \times \text{Time Interval (s)}}$$

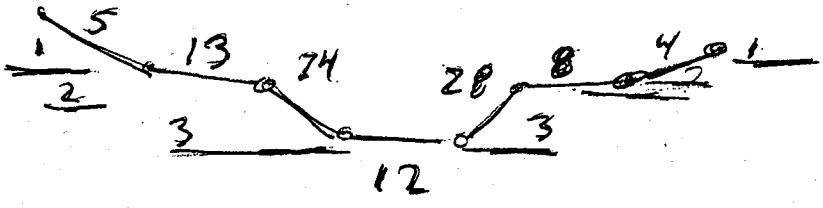
Time Interval = 5 min × 60 s/min = 300 s

Assumed V = 3 fps Actual V =

∴ NSTPS = 1.8 - 2 $NSTPS_a$ =

HEC-1 Opperations

	NSTPS							
RS	2		-1	0				
	N-Left	N-Chan	N-Right	Length	Slope			
RC	0.035	0.035	0.035	1700	0.002			
	LOB	LOB	LB	Ch	Ch	RB	ROB	ROB
Rx	0	5	18	42	54	62	60	64
Ry	1010	1009	1007	1005	1005	1007	1009	1010



RID Canal channel

from RID Canal D.R. WLS 1996

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CD225TO 1 < CD242

METHOD USED: NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{6480}{4 \times 300} = 5$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 20

	NSTPS			
RS	~~8~~ 11	—	— 1	0

	N LEFT	N CHAN	N RIGHT	LENGTH	SLOPE
RC	.06	.03	.06	6480	.0053 1/1

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	800	930	955	995	1005	1020	1360	1525
RY	1064	1060	1058	1057	1057	1058	1060	1064

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CD228 TO 229 CP

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTAS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{3550}{4 \times 300} = 2.95$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 2.4

	NSTAS			
RS	3.5	—	-1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.02	.045	.07	3550	.00614

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1010	1020	1040	1055	1150	1275	1325
RY	1050.9	1050.5	1050.5	1050	1050	1052	1054	1056

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CP 229 TO CP 230A

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{2100}{4 \times 300} = 1.75$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 2.0

	NSTPS			
RS	4	—	-1	0

	N LEFT	N CHAN	N RIGHT	LENGTH	SLOPE
RC	.03	.05	.07	2100	.0011

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1005	1010	1020	1040	1050	1060	1040
RY	47	47	46.5	46	46	47	48	50

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CP 229 TO CP 230

METHOD USED: NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{1850}{4 \times 300} = 1.54$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 2.8

	NSTPS			
RS	2	—	—1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.02	.045	.06	1850	.005 1/1

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	980	985	990	1000	1020	1040	1100	1150
RY	1044	1043.5	1042.5	1042	1042	1044	1044.5	1045

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CD229 TO CD231

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{2400}{3 \times 400} = 2$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 1.1

	NSTPS			
RS	27	—	—	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.07	.05	.07	2400	.0020 ft/ft

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1010	1040	1075	1110	1340	1400	1430
RY	1038.5	1038	1036	1035	1035	1036	1038	1038.5

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-1-90

ROUTING PARAMETERS

CP230TO CP244

METHOD USED: NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel. x Time Interval}} = \frac{1450}{4 \times 300} = 1.2 = 1$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 2.7

	NSTPS				
RS	1 2	—	—1	0	

	N LEFT	N CHAN	N RIGHT	LENGTH	SLOPE
RC	.03	.04	.05	1450	.0027 ft/ft

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1010	1020	1030	1050	1110	1250	1475
RY	1034.5	1034	1034	1032.5	1032.5	1034	1035	1036

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CP230 TO CP230

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel. } \times \text{Time Interval}} = \frac{1000}{4 \times 300} = 1$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 3.7

	NSTPS			
RS	1	—	—1	0

	N LEFT	N CHAN	N RIGHT	LENGTH	SLOPE
RC	.05	.035	.03	1000	.0091 1/1

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
							1100	1300
RX	1000	1005	1015	1020	1040	1060	~~1080~~	~~1100~~
							1038	
RY	1041	1041	1040.5	1040	1040	1040.25	~~1040.6~~	~~1040.6~~

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CP230A TO CP244A

METHOD USED: NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel. x Time Interval}} = \frac{1400}{4 \times 300} = 1$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = .46

	NSTPS			
RS	~~1~~ 10	—	—1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.07	.07	.07	1400	.00035

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1005	1010	1040	1110	1150	1295	1400
RY	46	46	46	44	44	46	47	48

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CP231 TO CP245

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel. x Time Interval}} \qquad \frac{6300}{4 \times 300} = 5$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 1.1

	NSTPS			
RS	~~8~~ 19	—	— 1	0

	N LEFT	N CHAN	N RIGHT	LENGTH	SLOPE
RC	.07	.05	.07	6300	.0020

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1010	1040	1075	1110	1340	1600	1830
RY	10325	1032	1030	1029	1029	1030	1032	10325

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-11-90

ROUTING PARAMETERS

CP242B
~~CP242~~ TO CP243B
KMH
12-20-00
METHOD USED: NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel. x Time Interval}} = \frac{1500}{4 \times 300} = 1$$

Time Interval = 5 min Assumed Vel = 4 ft/sec

Actual Vel. = 7.4

	NSTPS			
RS	1	—	—1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.04	.022	.04	1500	.0036 ft/ft

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	970	975	980	1000	1030	1050	1055	1060
RY	1045	1045	1044	1039	1039	1044	1045	1045

Form 209

eec

Subject Title Loop 303 Drainage Master Study Project No. 99551 Date 12-20-00

Subject Routing Parameters Prepared By KMH Checked By _____ Page 1

Routing Parameters

CP 242 TO CP 243A

Method Used: Normal Method

Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{2640}{4 \times 300} = 2.2 = 2$$

Time Interval = 5 min Assumed Vel. = 4 ft/sec

Actual Vel. =

	NSTPS			
RS	2	—	-1	0

	N Left	N. Chan.	N. Rt.	Length	Slope
RC	.04	.025	.04	2640	.0036

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1007	1014	1050	1095	1131	1138	1145
RY	1000	1000	998	997	997	998	1000	1000

eec

Project Title LOOP 303 White Tanks ADMS Project No. 99551 Date 2/11/01

Subject Routing Prepared By MJR Checked By _____ Page _____

Routing Parameters R242A

CP242A to CP242B

method used Normal Depth
Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg Velo} \times \text{Time Interval}} = \frac{5000}{4 \times 300} = 4.2$$

Avg. Vel. = 4 fps

RS	4		-1	0				
	nL	nCh	nRt	L	S			
RC	0.05	0.03	0.05	5000	0.002			
	LOB	LOB	LB	ch	ch	RB	ROB	ROB
RY	1001	998	998	995	995	998	998	1001
RX	1000	1004	1018	1022	1028	1034	1046	1050

Assumed Channel Section.

eec

Project Title White Tanks/Agua Fria ADMS Project No. 44551 Date

Subject UPDate Prepared By MJR Checked By Page

Routing Parameters
~~Reach~~ R2712

KID Canal Over Chute to CP289C

Method: Normal Depth

Cross Section Data

$$NSTPS = \frac{\text{Reach length (ft)}}{\text{Avg. Vel.} \times \text{Time Interval (}}$$ [redacted]

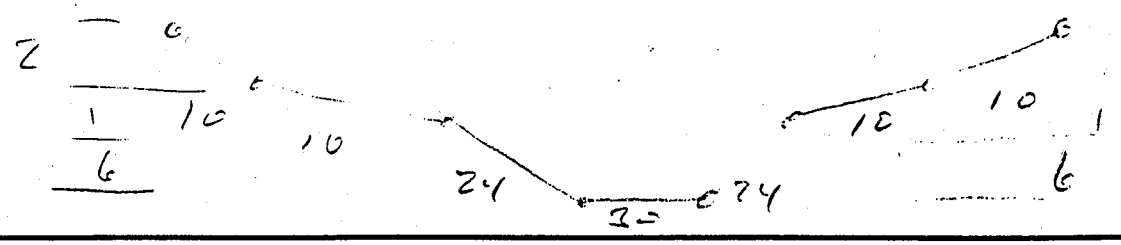
Time Interval = 5 min x 60 s/min = 300 s

Assumed V = 3 fps Actual V = [illegible]

∴ NSTPS = 6.4 -> 7. $NSTPS_a$ =

HEC-1 Operation

	NSTPS							
RS	4.0		-1	0				
	N-Left	N-Chan	N-Right	Length	Slope			
RC	0.045	0.03	0.045	~~5000~~ 3200	0.0025			
	LOB	LOB	LB	Ch	Ch	RB	ROB	ROB
RX	1009	1007	1006	1000	1000	1006	1007	1009
RY	0	10	20	44	74	98	108	118



The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/16/91

ROUTING PARAMETERS

CP273 TO CP292

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 5.2

	NSTPS	–	1	0
RS	16	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.025	.02	.025	9670	.0042

$$= \frac{1054 - 1013}{9670}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1025	1050	1150	1450	1630
RY	1028	1027	1027	1026	1026	1028	1030	1031

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/16/91

ROUTING PARAMETERS

CP274 TO CP292

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 4.9

	NSTPS		1	0
RS	~~4~~ 3		1	0

	N left	N chan	N right	Length	Slope
RC	.025	.025	.025	4300	.0070

$$\text{Slope} = \frac{1043 - 1013}{4300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1025	1050	1150	1450	1630
RY	1028	1027	1027	1026	1026	1028	1030	1031

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/17/91

ROUTING PARAMETERS

CP275 TO CP293

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = .59

NSTPS		-1	0
RS	~~4~~ 24	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	4210	.0074

$$= \frac{1038 - 1007}{4210}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1090	1420	2090	2299	2300
RY	1019	1019	1019	1018	1018	1020	1021	1021

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/17/91

ROUTING PARAMETERS

CP276 TO CP293

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.40 ft/sec

Actual vel = .59

	NSTPS	–	1	0
RS	4214	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	4210	.0066

$$= \frac{1035 - 1007}{4210}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1090	1420	2090	2299	2300
RY	1019	1019	1019	1018	1018	1020	1021	1021

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/17/91

ROUTING PARAMETERS

CP277 TO CP293

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 2.45

	NSTPS		1	0
RS	67		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	5460	.0031

$$= \frac{1024 - 1007}{5460}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1040	1110	1150	1750	2130
RY	1014	1011	1011	1010	1010	1012	1014	1016

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/17/91

ROUTING PARAMETERS

CP279 CTO CP294

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .48

	NSTPS	—	1	0
RS	~~14~~ 24	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.03	.03	.03	3400	.0038

$$= \frac{1020 - 1007}{3400}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1060	1080	2250	2270	2290	2310
RY	1019	1019	1018	1016	1016	1018	1020	1021

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/16/91

ROUTING PARAMETERS

CP279B TO CP279A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .44

	NSTPS	–	1	0
RS	~~3~~12	–	1	0

	N left	N chan	N right	Length	Slope
RC	.075	.035	.035	1541	.00023

$$\text{Slope} = \frac{1020 - 1016.5}{1541}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1130	1520	1860	1875	1899	1900
RY	1025	1025	1024	1022	1022	1024	1025	1025

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/17/91

ROUTING PARAMETERS

CP279 TO CP294

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .48

NSTPS	_	1	0
RS	1/24	_	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.03	.03	.03	3400	.0038

$$= \frac{1020 - 1007}{3400}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1060	1080	2250	2270	2290	2310
RY	1019	1019	1018	1016	1016	1018	1020	1021

Form 200

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/16/91

ROUTING PARAMETERS

CP279K TO CP279B

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = No Flow

	NSTPS	–	1	0
RS	1	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	840	.0074

$$= \frac{1022 - 1020}{840}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1130	1520	1860	1875	1899	1900
RY	1025	1025	1024	1022	1022	1024	1025	1025

Form 200

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/17/91

ROUTING PARAMETERS

CP279D TO CP294

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .40

	NSTPS	–	–1	0
RS	N/A	–	–1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.03	.03	.03	3400	.0047

$$= \frac{1023 - 1007}{3400}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1060	1080	2250	2270	2290	2310
RY	1019	1019	1018	1016	1016	1018	1020	1021

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/16/91

ROUTING PARAMETERS

CP2790 TO CP2790

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = No Flow

NSTPS	—	1	0
RS 2	—	1	0

	N left	N chan	N right	Length	Slope
RC	.075	.035	.035	900	.0011

$$\text{Slope} = \frac{1023 - 1022}{900}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1130	1520	1860	1875	1899	1900
RY	1025	1025	1024	1022	1022	1024	1025	1025

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/16/91

ROUTING PARAMETERS

CP280 TO CP280A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = .77

NSTPS		1	0	
RS	~~8~~ 10	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.06	.06	.06	2400	.0020

$= \frac{15.0}{2400}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1050	1090	1120	1410	1498	1499	1500
RY	1026	1020	1010	1008	1008	1008.5	1008.5	1009

eec

Project Title LOOP 303 Project No. 99551 Date 12/27/00

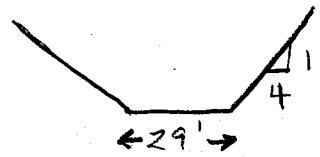
Subject Channel Routing Prepared By LAV Checked By _____ Page _____

CP 280A TO CP 296

$n = 0.030$
$S = 0.001$ ft/ft

Trapezoidal Channel

Design Discharge = 343 cfs*



*per CVL for Canyon Trails

Velocity = 2.74 ft/s Time interval = 5 min L_{reach} = 4200 ft

$$NSTPS = \frac{\text{Reach Length}}{(\text{Ave } V) \times \text{Time interval}}$$

$$= \frac{4200 \text{ ft}}{(2.74 \text{ ft/s})\left(5 \text{ min} \times 60 \frac{\text{sec}}{\text{min}}\right)} = 5.10 \simeq 5 \text{ steps}$$

RS	5	—	-1	0	
	n left	n channel	n right	Length	slope
RC	0.05	0.03	0.05	4200	0.001

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1050	1100	1116	1145	1161	1211	1261
RY	998	997.5	997	993	993	997	997.5	998

SB 296, Channel Route
Worksheet for Trapezoidal Channel

Project Description	
Worksheet	Trapezoidal Channel - 1
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Mannings Coefficient	0.030	
Slope	0.001000	ft/ft
Left Side Slope	4.00	H : V
Right Side Slope	4.00	H : V
Bottom Width	29.00	ft
Discharge	343.00	cfs

Results		
Depth	3.04	ft
Flow Area	125.2	ft^2
Wetted Perimeter	54.07	ft
Top Width	53.32	ft
Critical Depth	1.52	ft
Critical Slope	0.012184	ft/ft
Velocity	2.74	ft/s
Velocity Head	0.12	ft
Specific Energy	3.16	ft
Froude Number	0.32	
Flow Type	Subcritical	

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 2/21 /91

ROUTING PARAMETERS

CP281 TO CP280

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .94

	NSTPS	—	1	0
RS	1	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.07	.05	.07	380	.0039

$$= \frac{1009 - 1007.5}{380}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1050	1080	1120	1170	1320	2010
RY	1010	1010	1008	1007.5	1007.5	1008	1009	1010

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/21 /91

ROUTING PARAMETERS

CP281 TO CP280

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .94

	NSTPS	–	–1	0
RS	1	–	–1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.07	.05	.07	380	.0039

$$= \frac{1009 - 1007.5}{380}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1050	1080	1120	1170	1320	2010
RY	1010	1010	1008	1007.5	1007.5	1008	1009	1010

eec

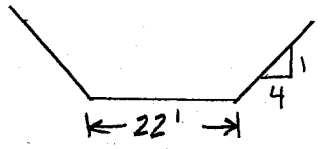
Project Title Loop 303 Project No. 99551 Date 12/27/00

Subject Channel Route Prepared By LAV Checked By _____ Page _____

CP282 TO CP296A

TRAPEZOIDAL Channel

Design Discharge 499 cfs *



n = 0.030
S = 0.0011

*per CVL for Canyon Trails

Velocity = 3.25 ft/s Time Interval = 5 min L reach = 5000 ft

$$NSTPS = \frac{\text{Reach Length}}{(V_{AVE})\,(\text{Time interval})}$$

$$= \frac{5000\ ft}{(3.25\ ft/s)\left(5\ min \times 60\ \frac{sec}{1\ min}\right)} = 5.13 \simeq 5 \text{ steps}$$

RS	5	—	-1	0	
	nleft	nchannel	nRight	Length	Slope
RC	0.05	0.03	0.05	5000	0.0011

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1050	1100	1120	1142	1162	1212	1262
RY	998	997.5	997	992	992	997	997.5	998

SB 296A, Channel Route
Worksheet for Trapezoidal Channel

Project Description	
Worksheet	Trapezoidal Channel - 2
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Mannings Coefficient	0.030	
Slope	0.001100	ft/ft
Left Side Slope	4.00	H : V
Right Side Slope	4.00	H : V
Bottom Width	22.00	ft
Discharge	499.00	cfs

Results		
Depth	4.03	ft
Flow Area	153.6	ft²
Wetted Perimeter	55.23	ft
Top Width	54.24	ft
Critical Depth	2.19	ft
Critical Slope	0.011178	ft/ft
Velocity	3.25	ft/s
Velocity Head	0.16	ft
Specific Energy	4.19	ft
Froude Number	0.34	
Flow Type	Subcritical	

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/17/91

ROUTING PARAMETERS

CP283 TO CP285B

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .76

	NSTPS	–	1	0
RS	~~15~~	–	1	0

	N left	N chan	N right	Length	Slope
RC	.075	.075	.075	1100	.0045

$$= \frac{1014 - 1009}{1100}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1070	1700	1848	1849	1850
RY	1001	1001	1001	1000	1000	1001	1001	1001

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/16/91

ROUTING PARAMETERS

CP284 TO CP285A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 2.0

	NSTPS			
			-1	0
RS	~~+2~~		-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	1050	.0076

$$= \frac{1010 - 1002}{1050}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1440	1448	1449	1450
RY	1009.5	1009	1009	1008	1008	1009	1009	1009.5

Form 200

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/16/91

ROUTING PARAMETERS

CP285 TO CP287

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 5.0

	NSTPS	—	-1	0
RS	2	—	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.025	.025	2460	.0061

$$\text{Slope} = \frac{1003 - 988}{2460}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1530	1540	1550	1560	1570	1610
RY	999	999	998	996	996	998	1000	1010

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/30/91

ROUTING PARAMETERS

CP285 TO CP297A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 2.7

NSTPS		-1	0	
RS	45	-1	0	

	N left	N chan	N right	Length	Slope
RC	.03	.03	.07	3950	.0030

$$= \frac{1002 - 990}{3950}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1050	1460	1819	1820
RY	997.5	997	997	996	996	998	999	999

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/16/91

ROUTING PARAMETERS

CP285 TO CP285 sec - as for CP285 → CP287

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 2.7

	NSTPS	—	1	0
RS	2	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.07	.02	.025	1745	.0029

$$= \frac{1007 - 1002}{1745}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1530	1540	1550	1560	1570	1610
RY	999	999	998	996	996	998	1000	1010

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP 285 ATO CP297A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 2.1

	NSTPS	—	-1	0
RS	~~5~~ 7	—	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.03	.03	.07	4370	.0041

$$\text{Slope} = \frac{1008 - 990}{4370}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1050	1460	1819	1820
RY	997.5	997	997	996	996	998	999	999

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 1/16/91

ROUTING PARAMETERS

CP285B TO CP285A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = .48

NSTPS	–	1	0
RS	47	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.035	.035	1072	.0009

$$= \frac{1009 - 1008}{1072}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1280	1550	1598	1599	1600
RY	1011	1011	1011	1010	1010	1015	1015	1015

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP285B TO CP297

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .58

	NSTPS	—	1	0
RS	~~5~~ 24	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	4210	.00640

$$= \frac{1010 - 993}{4210}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1500	2200	2658	2659	2660
RY	998	998	998	996	996	998	998	998

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/16/91

ROUTING PARAMETERS

CP286 TO CP287

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 1.6

	NSTPS	–	–1	0
RS	2	–	–1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	1100	.0027

$$= \frac{991 - 988}{1100}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1210	1510	1950	2360	2529	2530
RY	993	993	992	990	990	992	993	993

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 8 /91

ROUTING PARAMETERS

CP 287 TO CP 298

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 2.9

	NSTPS	_	1	0
RS	5	_	1	0

	Nleft	Nchan	Nright	Length	Slope	= 988 − 978 / 4370
RC	.05	.03	.05	4370	.0023	

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1200	1380	1500	1890	2090	2330	2560
RY	990	988	986	984	984	986	988	990

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/21 /91

ROUTING PARAMETERS

CP287A TO CP287B

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .57

NSTPS		1	0	
RS	47	1	0	

	N left	N chan	N right	Length	Slope
RC	.035	.035	.035	1200	.001

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1050	1060	1660	1760	1780	1800
RY	988	988	980	978	978	980	986	988

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/21 /91

ROUTING PARAMETERS

CP287B TO CP287C

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .63

	NSTPS	—	-1	0
RS	~~813~~	—	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.035	2450	.0010

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1030	1050	1670	1690	1719	1720
RY	986	986	980	978	978	980	986	986

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/21 /91

ROUTING PARAMETERS

CP287C TO CP287D

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = 1.1

	NSTPS	–	-1	0
RS	7	–	-1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.035	2150	.0009

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1040	1060	1070	1700	1740	1800
RY	988	988	980	974	974	980	986	990

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

ROUTING PARAMETERS

PIPE ROUTE

CP 2870 TO RCP 302

METHOD USED: KINEMATIC ROUTING

DATA

SIZE - 48" SD. LENGTH - 5620 ft.

SLOPE - .0006 %

MANNINGS N - .012

RK 5620 .0006 .012 CIRC 4

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-21-91

ROUTING PARAMETERS

RIVER ROUTE

RCP287E TO RCP302

METHOD USED: NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} = \frac{3200}{6 \times 300} = 1.8$$

Time Interval = 5 min Assumed Vel = 6 ft/sec

Actual Vel. = 3.10

	NSTPS			
RS	23	—	—1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.035	.035	.035	3200	.0026

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1042	2042	2082	2083	2084
RY	996	990	990	974	974	990	990	990

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP287E TO CP302

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .61

NSTPS		1	0	
RS	7/6	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.03	.03	.03	2960	.0041

$$= \frac{990 - 978}{2960}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1010	1300	1650	1799	1800
RY	986	986	986	978	978	980	982	982

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/16/91

ROUTING PARAMETERS

CP288 TO CP286

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.8

	NSTPS	–	1	0
RS	~~2~~ 3	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	1500	.0033

$$= \frac{996 - 991}{1500}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1040	1055	1280	1849	1850
RY	997	997	997	996	996	998	1000	1000

eec

Project Title WholeTanks/AGWA From ADMS Project No. 99551 Date

Subject UPDate Prepared By MJR Checked By Page

Routing Parameters

R288A

Method: Normal Depth

Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg. Vel.} \times \text{Time (s)}}$$

Time Interval = 5 min x 60 sec = 300 (s)

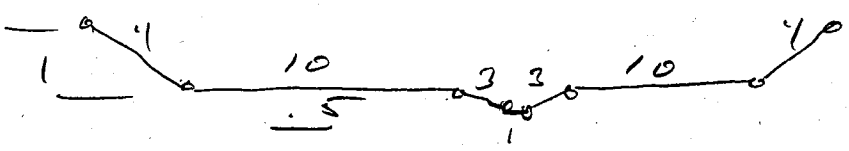
Assumed Vel = 3 fps

$$\therefore NSTPS = \frac{1500}{900} = 1.6 \text{ say } 2$$

HEC-1 Opperation

$$\frac{992 - 990}{1500} = 0.00133$$

	NTSPS 2		-1					
RS	n LOB	n CH	n ROB	Length	Slope			
RC	0.05	0.0115	0.05	1500	0.00133			
RX	0	4	14	17	18	21	31	35
RY	992	991	991	990	990	991	991	992



Assumed overland Flow wide shallow floodplain

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/21 /91

ROUTING PARAMETERS

CP288B TO CP287B

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .54

NSTPS		1	0	
RS	414	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.06	.06	.06	2200	.002

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1040	2090	2098	2099	2100
RY	991.5	991	991	990	990	991	991	991.5

eec

Project Title: White Tanks/Agua Fria ADMS Project No. 94551 Date

Subject: UPDate Prepared By: MJR Checked By: Page

Routing Parameters

$\boxed{R\ 289}$ Route CP289 to CP287C (after SR289)

Method: Normal Depth

Cross Section Data

$$NSTPS = \frac{\text{Reach length (ft)}}{\text{Avg. Vel.} \times \text{Time Interval (s)}}$$

Time Interval = 5 min × 60 s/min = 300 s

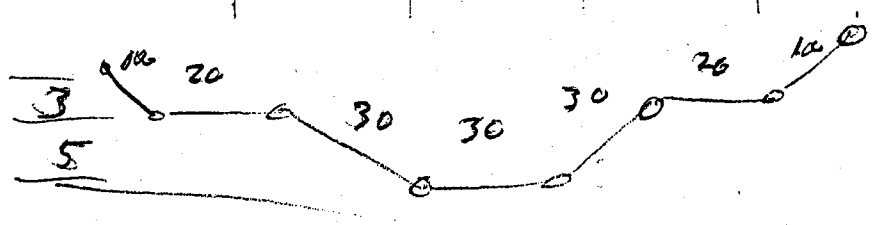
Assumed V = 3 fps Actual V =

∴ NSTPS = 1.8 → 2 $NSTPS_a$ = WSEL from Phoenix Link

$$\frac{985 - 983.9}{200}$$

HEC-1 Operations

RS	NSTPS 2		.035	.045	1000	.002		
RC	N-left 0.035	N-Chan 0.03	N-right 0.035	Length 1600'	Slope 0.005			
	LOB	LOB	LB	Ch	Ch	RB	ROB	ROB
RX	0	~~10~~ 20	~~20~~ 40	~~50~~ 90	~~80~~ 120	110	20	~~10~~ 21
RY	1010	1007	1007	1002	1002	1007	1007	1010



eec

Project Title White Tanks/Agua Fria ADMS Project No. 44551 Date

Subject UPDate Prepared By MJR Checked By Page

Routing Parameters

R289A

Method: Normal Depth

Route 289A to LP 284 B (Golf course)

Cross Section Data

$$NSTPS = \frac{\text{Reach length (ft)}}{\text{Avg. Vel.} \times \text{Time Interval (s)}}$$

Assume section EEC

Time Interval = 5 min × 60 s/min = 300 s

Assumed V = 3 fps

Actual V =

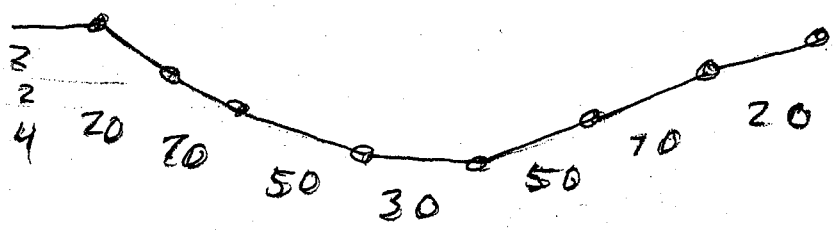
∴ NSTPS = 4.0

$NSTPS_a$ =

Assumed section through Golf Course (Palm Valley Phase 1)

HEC-1 Operation

	NSTPS							
RS								
	N-Left	N-Chan	N-Right	Length	Slope			
RC	0.05	0.035	~~0.05~~ .045	3800	0.002			
	LOB	LOB	LB	Ch	Ch	RB	ROB	ROB
Rx	0	20	40	90	120	170	190	210
Ry	1010	1008	1006	1002	1002	1006	1008	1010



eec

Project Title White Tanks/Agua Fria ADMS Project No. 44551 Date

Subject UPDate Prepared By MJR Checked By Page

Routing Parameters R2712
RLitch

Method: Normal Depth

RID Canal Over Chute to CP289C

Cross Section Data

$$NSTPS = \frac{\text{Reach length (ft)}}{\text{Avg. Vel.} \times \text{Time Interval (s)}} \quad 900$$

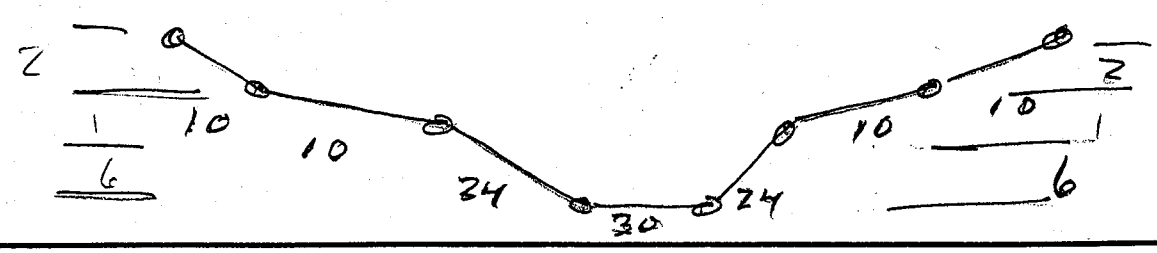
Time Interval = 5 min x 60 s/min = 300 s

Assumed V = 3 fps Actual V =

∴ NSTPS = 6.4 -> 7. $NSTPS_a$ =

HEC-1 Operation

	NSTPS							
RS	4.0		-1	0				
	N-Left	N-Chan	N-Right	Length	Slope			
RC	0.045	0.03	0.045	~~5000~~ 3200	0.0025			
	LOB	LOB	LB	Ch	Ch	RB	ROB	ROB
Rx	1009	1007	1006	1000	1000	1006	1007	1009
Ry	0	10	20	44	74	98	108	118



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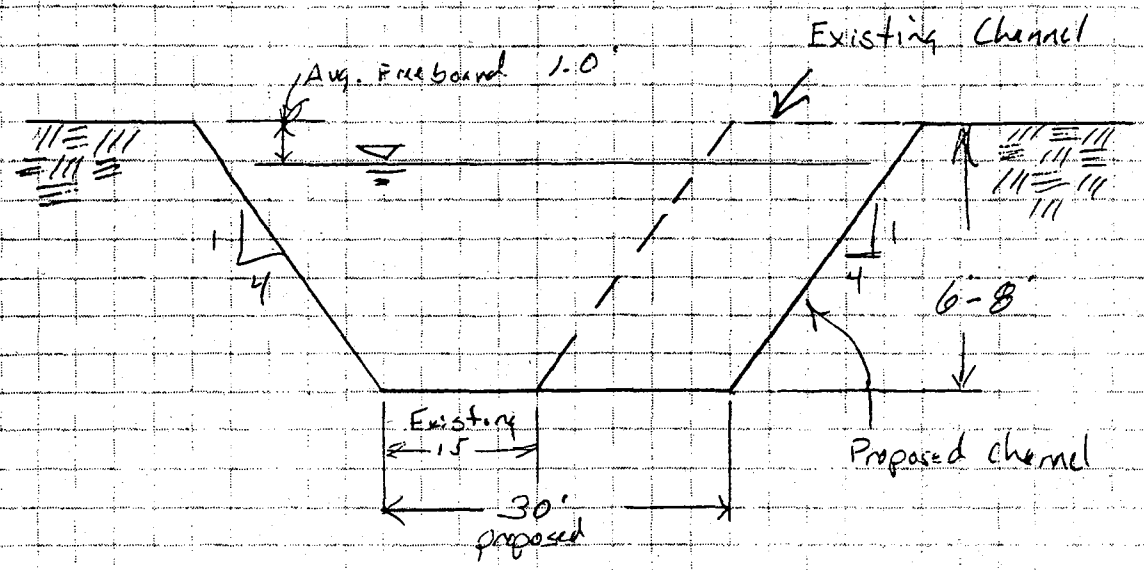
COMPUTATION DATA SHEET

Subject Channel Section From RID To Thomas Rd Prepared by MJL Date

R2712

Proposed channel from RID canal overchute to the Thomas Rd Culverts



Avg slope = 0.0025

n = 0.035

Q_{100} = 1500 cfs

Velocity 3.3 fps — 6.0 fps

From Palm Valley Phase I LOMR by WLB

eec

Project Title: White Tanks / Agua Fria AWMS Project No. 99551 Date

Subject: UPdate Prepared By: MJK Checked By: Page

Routing Parameters

R 289C Golf Course thru Palm Valley Phase 1 (Assumed section)

Cross Section Data

$$NSTPS = \frac{\text{Reach length (ft)}}{V\ (fps)\ \text{Time (s)}}$$

Time Interval = 5 min x 60 sec = 300 s

$$NSTPS = \frac{3500}{3\ (300)} = 3.9 \rightarrow 4.0$$

RS	4		-1		0			
	N-left	N-ch	N-Rt		L	S .002		
RC	0.045	0.035	0.045		3500	~~0.075~~		
	LOB	LOB	LB	ch	ch	RB	ROB	ROB
RX	0	50	100	200	300	400	450	500
RY	1010	1008	1005	1003	1003	1005	1008	1010

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-21-91

ROUTING PARAMETERS

RIVER ROUTE

RCP290 TO RCP287E

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel. x Time Interval}} \quad \frac{8700}{6 \times 300} = 4.8$$

Time Interval = 5 min Assumed Vel = 6 ft/sec

Actual Vel. = 2.8

	NSTPS			
RS	~~5~~10	—	—1	0

	N LEFT	N CHAN	N RIGHT	LENGTH	SLOPE
RC	.035	.035	.035	8700	.0018

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1042	2042	2082	2083	2084
RY	999	999	999	984	984	999	999	999

Form 200

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP290 TO CP291

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .43

	NSTPS	–	1	0
RS	~~1048~~	–	1	0

	N left	N chan	N right	Length	Slope
RC	.075	.075	.075	6240	.0026

$$\text{Slope} = \frac{996 - 980}{6240}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1160	2330	2350	2359	2360
RY	990	989	989	988	988	990	992	992

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP291 TO CP287E

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = .83

	NSTPS	–	1	0
RS	~~7~~9	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	2180	.0009

$$= \frac{z}{2180}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1260	1470	1530	1760
RY	990	990	990	984	984	986	988	989

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP292 TO CP306

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 2-3

	NSTPS		1	0
RS	34		1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.075	2500	.0032

$$= \frac{1013 - 1005}{2500}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1015	1035	1770	2009	2010
RY	1009	1009	1009	1008	1008	1010	1012	1012

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP292 TO CP293

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel. = 2.6

	NSTPS	—	1	0
RS	43	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.03	.03	2200	.0027

$$= \frac{1013 - 1007}{2200}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1140	1440	1730	1810	1828	1829	1830
RY	1015	1014	1012	1010	1010	1011	1011	1011

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP293 TO CP293A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 10 ft/sec

Actual vel = .82

NSTPS	—	-1	0
RS	9/11	—	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	2650	.0008

$$= \frac{1007 - 1005}{2650}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1090	1300	1430	1769	1770
RY	1008	1006	1006	1005	1005	1006	1008	1008

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP293 ATO CP306

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = 1.0

	NSTPS	–	1	0
RS	4	–	1	0

	Nleft	Nchan	Nright	Length	Slope = 1/1200
RC	.03	.03	.075	1200	.0008

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1030	1090	1200	1530	1760
RY	1007	1006	1006	1005	1005	1006	1008	1010

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP293A TO CP309

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.0

	NSTPS	1	0	
RS	~~7~~ 20	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	5930	.00057

$$= \frac{1005 - 971}{5930}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1270	2340	2598	2599	2600
RY	1083.5	1083	1083	1082	1082	1083	1083	1083.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/17/91

ROUTING PARAMETERS

CP294 TO CP309

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = No Flow

	NSTPS	—	-1	0
RS	5	—	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	6240	.0058

$$= \frac{1007 - 971}{6240}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1020	1230	1880	2300	2350	2440
RY	993	993	992	990	990	992	994	995

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/30/91

ROUTING PARAMETERS

CP294A TO CP295

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 4.7

NSTPS		1	0	
RS	42	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.025	.022	.025	3430	.0047

$$= \frac{1006 - 990}{3430}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1060	1120	1190	1220	1240	1270
RY	1103	1103	1102	1101	1101	1102	1104	1106

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP296 TO CP312

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 21

	NSTPS	1	0	
RS	~~7~~ 10	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.03	.075	6280	.0037

$$= \frac{987 - 964}{6280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1190	1620	1640	1660	1900	2620
RY	1077	1077	1076	1074	1074	1075	1074	1075

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP 295 TO CP 311

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 3.5

NSTPS	—	1	0
RS	65	—	1	0

	N left	N chan	N right	Length	Slope
RC	.03	.03	.075	5280	.0049

$$= \frac{990 - 964}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1025	1040	1370	2149	2150
RY	988	987	987	986	986	988	990	990

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP295A TO CP311A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.1

NSTPS		1	0
RS	~~616~~	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.035	.035	5280	.00049

$$= \frac{990 - 964}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1270	2180	2195	2210	2229	2230
RY	981	981	980	978	978	980	981	981

eec

Project Title Loop 303 Project No. 99551 Date 12/28/00

Subject Channel Route Prepared By LAV Checked By _____ Page _____

CP 297 to CP 313 R297

Trapezoidal Channel

design Discharge ≈ 600 cfs

Wildflower Ranch Subdivision

Velocity ≈ 3.05 ft/s Time interval = 5 min L_{reach} = 6200 ft

$$NSTPS = \frac{\text{Reach Length}}{(\text{Ave Velocity}) * \text{Time Interval}}$$

$$= \frac{6200}{(3.05\ ft/s)(5\ min \times 60\ \frac{sec}{min})} = 6.78 \simeq 7$$

RS	7	—	-1	0

	nleft	nchannel	nRight	Length	Slope
RC	0.05	0.03	0.05	6200	0.001

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1050	1100	1124	1152	1176	1226 ~~1176~~	1276 ~~1176~~
RY	~~985~~ ~~983~~ 983	~~984.5~~ 982.5	~~984~~ ~~982~~ 982	~~980~~ ~~978~~ 978	~~980~~ ~~978~~ 978	~~984~~ ~~984~~ 982	~~984.5~~ 982.5	~~985~~ 983

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by ~~G. AOUAD~~ LAV Date ~~1/10/91~~ 12/27/00

ROUTING PARAMETERS

296A
CP ~~296~~ TO CP 312

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 21

	NSTPS		1	0
RS	~~7~~ 10		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.03	.075	6880	.0037

$$= \frac{987 - 964}{6880}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1190	1620	1640	1660	1900	2620
RY	1077	1077	1076	1074	1074	1075	1074	1075

SB 313, Channel Route
Worksheet for Trapezoidal Channel

Project Description	
Worksheet	Trapezoidal Channel - 1
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.030	
Slope	0.001000	ft/ft
Depth	4.00	ft
Left Side Slope	6.00	H : V
Right Side Slope	6.00	H : V
Bottom Width	28.00	ft

Results		
Discharge	633.76	cfs
Flow Area	208.0	ft²
Wetted Perimeter	76.66	ft
Top Width	76.00	ft
Critical Depth	2.14	ft
Critical Slope	0.011243	ft/ft
Velocity	3.05	ft/s
Velocity Head	0.14	ft
Specific Energy	4.14	ft
Froude Number	0.32	
Flow Type	Subcritical	

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/8/91

ROUTING PARAMETERS

CP297 ATO CP315

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.0

	NSTPS	–	1	0
RS	~~6~~ 19	–	1	0

	N left	N chan	N right	Length	Slope
RC	.075	.075	.075	5620	.0032

$$= \frac{990 - 972}{5620}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1090	1910	2148	2149	2150
RY	985	985	985	984	984	985	985	985

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP298 TO CP316

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 3.1

	NSTPS	–	1	0
RS	6	–	1	0

	N left	N chan	N right	Length	Slope
RC	.05	.03	.05	5280	.0030

$$= \frac{978 - 962}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1100	1210	1410	1830	2030	2140	2310
RY	980	978	976	974	974	976	978	980

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP299 TO CP317

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .87

NSTPS	–	-1	0
RS	~~6~~ 21	–	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.06	.06	.06	5460	.0033

$$= \frac{987 - 969}{5460}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1420	1840	2220	2514	2515
RY	980	980	980	978	978	980	982	982

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP300 TO CP318

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .90

	NSTPS	–	–1	0
RS	~~0~~ 21	–	–1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.05	.05	.05	5620	.0028

$$= \frac{979-963}{5620}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1190	1800	2268	2269	2270
RY	975	975	975	974	974	976	976	976

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP301 TO CP319

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .85

	NSTPS	–	-1	0
RS	~~10~~24	–	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.05	.05	.05	6240	.0024

$$= \frac{979 - 964}{6240}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1250	2020	2280	2349	2350
RY	973	973	972	970	970	972	973	973

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/14/91

ROUTING PARAMETERS

CP302 TO CP320

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = No Flow

	NSTPS	_	-1	0
RS	9	_	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.03	.03	.035	5620	.0014

$$= \frac{977-969}{5620}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1030	1140	1640	1770	1820	1840
RY	1075	1075	1066	1065	1065	1066	1068	1070

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-21-91

ROUTING PARAMETERS

RIVER ROUTE

RCP 302 TO RCP 320

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTPS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} \qquad \frac{5280}{6 \times 300} = 2.9$$

Time Interval = 5 min Assumed Vel = 6 ft/sec

Actual Vel. = 3.1

	NSTPS			
RS	36	—	—	0

	N LEFT	N CHAN	N RIGHT	LENGTH	SLOPE
RC	.035	.035	.035	5280	.0026

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1042	2042	2082	2083	2084
RY	975	975	975	960	960	975	975	975

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 1/21/91

ROUTING PARAMETERS

CP303 TO CP321.

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 22

NSTPS	—	1	0
RS	~~4~~ 1	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.025	.025	.025	468	.0088

$= \frac{1040 - 999}{4680}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1100	2570	2648	2649	2650
RY	1019	1019	1019	1018	1018	1019	1019	1019

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP303A TO CP304

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 5.6

	NSTPS	1	0	
RS	~~5~~ 3	1	0	

	N left	N chan	N right	Length	Slope
RC	.025	.02	.025	5500	.0067

$$= \frac{1044 - 1007}{5500}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1015	1030	1055	1130	1490	2020
RY	1041	1041	1040	1038	1038	1040	1042	1044

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/21/91

ROUTING PARAMETERS

CP304 TO CP323

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 2.7

NSTPS	1	0	
RS	~~14~~ 1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.025	.025	.03	3280	.0018

$$= \frac{1007 - 1001}{3280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1090	1200	1270	1460	1750
RY	1003	1001.5	1001.5	1001	1001	1002	1004	1006

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP305 TO CP325

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 5.6

	NSTPS	–	1	0
RS	64	–	1	0

	N left	N chan	N right	Length	Slope
RC	.025	.025	.07	6880	.0067

$$= \frac{1002 - 956}{6880}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1030	1040	1070	1800	2100
RY	976	975	975	974	974	976	978	979

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP306 TO CP308

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 2.4

	NSTPS	–	1	0
RS	~~35~~	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	3740	.0072

$$= \frac{1005 - 978}{3740}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1410	1760	2059	2060
RY	997	997	997	996	996	998	999	999

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP307 TO CP326

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 1.8

NSTPS	—	1	0
RS	410	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	5280	.00066

$$= \frac{984-949}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1015	1040	1800	2094	2090
RY	962	961	961	960	960	962	963	963

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP308 TO CP327

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 4.0

	NSTPS			1	0				
RS	4			1	0				
	Nleft	Nchan	Nright	Length	Slope				
RC	.03	.03	.075	5280	.0070	$= \frac{978 - 941}{5280}$			
	LOB	LOB	LB	CH	CH	RB	ROB	ROB	
RX	1000	1001	1015	1020	1040	1260	1820	2050	
RY	957	957	956	954	954	956	958	959	

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/21/91

ROUTING PARAMETERS

CP309 TO CP328

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.1

	NSTPS		1	0
RS	017		1	0

	Ndeft	Nchan	Nright	Length	Slope
RC	.075	.07	.075	5770	.0047

$$= \frac{970 - 943}{5770}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1060	1060	1200	1460	2160	2838	2839	2840
RY	1063	1062	1060	1058	1058	1060	1060	1060

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/7/91

ROUTING PARAMETERS

CP310 TO CP329

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 4.5

NSTPS	—	1	0
RS	4	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.06	.025	.075	5280	.0070

$$= \frac{974 - 937}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1245	1250	1260	1350	1600	1820
RY	945	945	944	942	942	945	944	945

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP 311 TO CP330

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 3.8

NSTPS	—	1	0
RS	~~6.5~~	—	1	0

	N left	N chan	N right	Length	Slope
RC	.030	.030	.06	5280	.0051

$$= \frac{964 - 937}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
							1190	1240
RX	1000	1001	1002	1030	1060	1140	~~1350~~	1470
RY	948	947	947	946	946	948	~~950~~ 948.5	~~952~~ 949

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/7/91

ROUTING PARAMETERS

CP311A TO CP331

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 15

	NSTPS	_	1	0
RS	612	_	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.035	.035	5280	.0051

$$= \frac{964 - 937}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1180	1710	1720	1749	1750
RY	955	955	955	954	954	956	957	957

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/7/91

ROUTING PARAMETERS

1 CP312 TO CP331

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .77

NSTPS	—	1	0
RS	727	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	6240	.0043

$$= \frac{964 - 937}{6240}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1240	1920	2118	2119	2120
RY	951	951	951	950	950	951	951	951

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/14/91

ROUTING PARAMETERS

CP313 TO CP332

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.40

	NSTPS		1	0
RS	~~7~~ 14		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.035	.035	6000	.0042

$$= \frac{969 - 944}{6000}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1070	1390	1560	1870	1888	1894	1890
RY	965	964	962	960	960	961	961	961

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/21/91

ROUTING PARAMETERS

CP314 TO CP333

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .76

	NSTPS	–	1	0
RS	~~6~~ 25	–	1	0

	N left	N chan	N right	Length	Slope
RC	.075	.075	.075	5770	.0040

$$= \frac{974 - 951}{5770}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1200	1690	2400	2788	2789	2790
RY	967	967	966	964	964	966	966	966

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/14/91

ROUTING PARAMETERS

CP315 TO CP334

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.3

	NSTPS	–	1	0
RS	~~5~~ 11	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.06	.06	.06	4370	.0046

$$= \frac{972 - 952}{4370}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1130	2070	2208	2209	2210
RY	963	963	963	962	962	963	963	963

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/14/91

ROUTING PARAMETERS

CP316 TO CP334

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 3.10

	NSTPS	-1	0
RS	4	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.062	.03	.06	3280	.0030

$$= \frac{962 - 952}{3280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1360	1570	1590	1780	2070	2280	2400
RY	966	960.5	961	960	960	962	964	965

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/21/91

ROUTING PARAMETERS

CP317 TO CP336 section as CP335 → CP336

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 3.2

	NSTPS	–	-1	0
RS	~~14~~ 13	–	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.04	.02	.04	12170	.0032

$$= \frac{969 - 930}{12170}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1060	1070	1170	1210	1270	1290	1410	1450
RY	944	942	940	938	938	940	942	943

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/21/91

ROUTING PARAMETERS

CP318 TO CP332

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1 ft/sec

Actual vel = 1.5

	NSTPS	–	-1	0
RS	~~64~~	–	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.03	.03	.03	2000	.0029

$= \frac{963 - 957.2}{2000}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1061	1280	1440	2180	2420	2469	2470
RY	1063	1063	1062	1061	1061	1062	1063	1063

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/21/91

ROUTING PARAMETERS

CP319 TO CP337 as CP 318 → 337

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = 1.4

	NSTPS	–	1	0
RS	~~10~~ 6	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.03	.03	.03	2400	.0027

$$= \frac{983.8 - 952.4}{2400}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1280	1440	2180	2420	2469	2470
RY	1063	1063	1062	1061	1061	1062	1063	1063

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/14/91

ROUTING PARAMETERS

CP 320 TO CP 338A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = No Flow

	NSTPS	–	-1	0
RS	7	–	-1	0

	N left	N chan	N right	Length	Slope
RC	.03	.03	.03	6240	.0035

$$= \frac{969 - 947}{6240}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1060	1030	1150	1240	1600	1720	1999	2000
RY	1055	1048	1046	1045	1045	1046	1047	1047

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-21-91

ROUTING PARAMETERS

RIVER ROUTE

RCP320 TO RCP338

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$\frac{10000}{6 \times 300} = 5.6$$

$$NSTAS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}}$$

Time Interval = 5 min Assumed Vel = 6 ft/sec

Actual Vel. = 3-3

	NBTPS			
RS	1610	—	-1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.035	.035	.035	10000	.0033

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1042	2042	2082	2083	2084
RY	956	956	956	942	942	956	956	956

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/18/91

ROUTING PARAMETERS

CP321 TO CP322

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 3.3

NSTPS		1	0	
RS	34	1	0	

	N left	N chan	N right	Length	Slope
RC	.075	.035	.035	3900	.0064

$$= \frac{1000 - 975}{3900}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1760	1570	1600	1618	1619	1620
RY	995	995	994	992	992	993	993	993.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP322 TO CP339

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 52

NSTPS		1	0
RS	43	1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.075	5280	.0081

$$= \frac{974 - 931}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1015	1070	1790	2094	2100
RY	970	969	969	968	968	970	971	971

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/21/91

ROUTING PARAMETERS

CP323 TO CP321

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = .93

NSTPS		1	0	
RS	89	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.025	.025	.025	2500	.0008

$$= \frac{1001.5 - 999.5}{2500}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1260	1410	1660	1730
RY	1001	1001	1001	1000	1000	1002	1004	1006

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/21/91

ROUTING PARAMETERS

CP323 TO CP324

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = ~~1.45~~

	NSTPS			
		1	0	
RS	~~3~~ 9	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	3900	.00815

$$= \frac{1000 - 967}{3900}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1100	2055	2060	2069	2070
RY	991.5	991	991	990	990	992	993	993

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/7/91

ROUTING PARAMETERS

CP324 TO CP340

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 3.1

	NSTPS	–	1	0
RS	~~4~~6	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	5280	.0078

$$= \frac{967 - 926}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1030	1045	1770	2099	2100
RY	933	933	933	932	932	934	935	935

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP325 TO CP342

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 3.6

	NSTPS	–	1	0
RS	~~45~~	–	1	0

$$= \frac{956 - 917}{5280}$$

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	5280	.0074

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1040	1090	1800	1999	2000
RY	950	949	949	948	948	950	951	951

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP325A TO CP341

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = .95

NSTPS	—	1	0
RS	419	—	1	0

	N left	N chan	N right	Length	Slope
RC	.075	.075	.075	5300	.0072

$$= \frac{959 - 921}{5300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1060	2010	2310	2345	2350
RY	953	953	953	952	952	954	955	955

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/7/91

ROUTING PARAMETERS

CP 326 TO CP 342A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 2.3

	NSTPS	1	0	
RS	1/8	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	5280	.0068

$$= \frac{949 - 913}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1015	1100	1950	2219	2220
RY	934	933	933	932	932	934	935	935

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP327 TO CP343

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 5.8

NSTPS		–	1	0
RS	43	–	1	0

	N left	N chan	N right	Length	Slope
RC	.02	.02	.05	5280	.0061

$$= \frac{941 - 909}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1015	1020	1035	1045	1410	1820
RY	931	931	930	928	928	930	932	933

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP328 TO CP344

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 3.0

	NSTPS	—	-1	0
RS	7	—	-1	0

	Ndeft	Nchan	Nright	Length	Slope
RC	.06	.035	.075	6240	.0053

$$= \frac{942909}{6240}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1265	1270	1290	1400	1700	2150
RY	933	933	932	930	930	931	930	933

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP329 TO CP345

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 5.7

NSTPS	—	1	0
RS	43	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.012	.012	.014	5280	.0066

$$= \frac{938 - 903}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1035	1040	1130	1720
RY	931	931	931	930	930	931	930	932

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/7/91

ROUTING PARAMETERS

CP330 TO CP346A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 2.6

NSTPS		1	0	
RS	67	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	5280	.0045

$$= \frac{937 - 913}{5280}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1040	1250	1560	1730	1780
RY	927	927	927	926	926	928	930	931

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP331 TO CP347

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.9

	NSTPS	–	–1	0
RS	~~8~~ 13	–	–1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.035	.035	7490	.0039

$$= \frac{937 - 908}{7490}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1100	1510	2015	2100	2108	2109	2110
RY	1035	1034	1032	1030	1030	1031	1031	1031

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP332 TO CP347

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 1.0

NSTPS		1	0	
RS	~~5.0~~	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.06	.075	5770	.0062

$$= \frac{944 - 908}{5770}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1070	1300	2000	2150	2169	2170
RY	942	942	940	938	938	940	942	942

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/14/91

ROUTING PARAMETERS

CP333 TO CP348A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.1

	NSTPS	1	0
RS	8	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.06	.04	.06	2700	.0048

$= \frac{951 - 938}{2700}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1005	1600	2210	2560	2900	3020
RY	947	947	946	944	944	946	948	949

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/10/91

ROUTING PARAMETERS

CP334 TO CP335

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 5.7

NSTPS	–	-1	0
RS	~~4~~ 2	–	-1	0

	N left	N chan	N right	Length	Slope
RC	.04	.02	.04	3450	.0035

$$= \frac{952 - 940}{3450}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1380	1430	1450	1465	1470	1540	2040
RY	1054	1050	1051	1050	1050	1051	1050	1054

Project Title: Loop 303 White Tanks Project No. 99551 Date

Subject: Channel Route Prepared By: MJR Checked By: Page

CP335to CP335A R335

Method used: Normal Depth

Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg. Vel.} \times \text{Time Interval } (300)} = 1.6 \text{ say } 2.0$$

Avg. Vel = 4.5 fps

kk R335

	NSTPS							
RS	2.0		-1					
	NL	NC	NC	L	S			
RC	0.03	0.03	0.03	2200	0.00121			
	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1004	1005	1023	1103	1130	1131	1135
RY	997	996	996	987	987	996	996	997

Project Title Loop 303 White Tanks Project No. 99551 Date

Subject Channel Route Prepared By MJR Checked By Page

CP335A to CP336 R335A

Method used: Normal Depth

Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg. Vel.} \times \text{Time Interval } (300)} = 1.48 \sim 2.0$$

Avg. Vel = 4.5 fps

kk R335A

	NSTPS							
RS	2.0		-1					
	NL	NC	NC	L	S			
RC	0.03	0.03	0.03	2000	0.00121			
	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1004	1005	1023	1103	1130	1131	1135
RY	997	996	996	987	987	996	996	997

Project Title: Loop 303 White Tanks Project No. 99551 Date

Subject: Channel Route Prepared By: MJC Checked By: Page

CP336 to CP364A R336

Method used: Normal Depth

Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg. Vel.} \times \text{Time Interval } (300)} = 1.74 \sim 1.0$$

Avg. Vel = 4.5 fps

KK R336

	NSTPS							
RS	1.0		-1					
	NL	NC	NC	L	S			
RC	0.03	0.03	0.03	1000	0.00112			
	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1004	1005	1023	1103	1121	1122	1126
RY	997	996	996	987	987	996	996	997

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP337 TO CP336

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = No Flow

	NSTPS	1	0
RS	"	1	0

	N left	N chan	N right	Length	Slope
RC	.03	.03	.03	9830	.0034

$$= \frac{963 - 930}{9830}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1030	1130	1240	1660	1770	1810	1830
RY	1057	1056	1054	1052	1052	1054	1056	1057

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 2-21-91

ROUTING PARAMETERS

PIPE ROUTE

CP 337 TO CP 367

METHOD USED: KINEMATIC ROUTING

DATA

SIZE — 96" SD Length = 8500 ft

Slope — .0013

Manning n = .012

RK 8500 .0013 .012 CIRC 8

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-21-91

ROUTING PARAMETERS

RIVER ROUTE

RC0338 TO RCP367

METHOD USED : NORMAL DEPTH

CROSS SECTION DATA

$$NSTAS = \frac{\text{REACH LENGTH}}{\text{Avg. Vel.} \times \text{Time Interval}} \quad \frac{2800}{6 \times 300} = 1.6$$

Time Interval = 5 min Assumed Vel = 6 ft/sec

Actual Vel. = 3.5

	NSTPS			
RS	~~2~~ 3	—	—1	0

	N LEFT	NCHAN	N RIGHT	LENGTH	SLOPE
RC	.035	.035	.035	2800	.004

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1042	2042	2082	2083	2084
RY	946	946	946	928	928	946	946	946

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP338A TO CP 338

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 3.2

	NSTPS	–	–1	0
RS	4	–	–1	0

	N left	N chan	N right	Length	Slope
RC	.05	.03	.05	3900	.0038

$$= \frac{946 - 933}{3900}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1050	1001	1030	1040	1170	1185	1195	1260
RY	947	947	940	936	936	940	942	944

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP339 TO CP349

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 3

	NSTPS	—	1	0
RS	7	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	6550	.00053

$$= \frac{931 - 896}{6550}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1040	1820	2049	2050
RY	907.5	907	907	906	906	908	909	909

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP340 TO CP351

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 2.8

NSTPS	—	1	0
RS	45	—	1	0

	N left	N chan	N right	Length	Slope
RC	.075	.03	.075	4320	.0067

$= \frac{926-896}{4370}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1105	1110	1120	1780	2179	2180
RY	911	911	910	909	909	910	911	911

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP341 TO CP353

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 1.0

	NSTPS	1	0
RS	3/3	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	3910	.0064

$$= \frac{923 - 898}{3910}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1062	1150	2350	2398	2399	2400
RY	913	913	913	912	912	913	913	913

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP342 TO CP353

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 4.1

	NSTPS	1	0
RS	2	1	0

	N left	N chan	N right	Length	Slope
RC	.03	.03	.075	2850	.0067

$$= \frac{917 - 898}{2850}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1040	1280	1640	2100
RY	902	901	901	900	900	902	904	906

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP342A TO CP354

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.10 ft/sec

Actual vel = 1.8

NSTPS		1	0	
RS	25	1	0	

	Ndeft	Nchan	Nright	Length	Slope
RC	.05	.05	.075	2960	.0061

$$= \frac{913 - 895}{2960}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1010	1420	1878	1879	1880
RY	909	909	909	908	908	910	910	910

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 1/23/91

ROUTING PARAMETERS

CP 343 TO CP 356

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = ft/sec

Actual vel = 2.7

	NSTPS	_	1	0
RS	23	_	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.07	.035	.07	2100	.0048

$$= \frac{909 - 899}{2100}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1670	2250	2265	2400	2818	2819	2820
RY	1003	1002	1003	1002	1002	1003	1003	1003

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP345 TO CP357

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.0

	NSTPS	–	1	0
RS	Y4	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.07	.07	.07	1300	.0031

$$= \frac{902 - 898}{1300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	2100	2238	2239	2240
RY	901	901	901	900	900	901	901	901

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 1/7/91

ROUTING PARAMETERS

CP346A TO CP347

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = .58

	NSTPS	1	0	
RS	~~12~~ 20	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.035	.035	3500	.0009

$$= \frac{913 - 908}{3500}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1520	2090	2210	2228	2229	2230
RY	914	914	912	910	910	911	911	911

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP346 TO CP359

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = ft/sec

Actual vel = .77

	NSTPS	1	0	
RS	16	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.07	.07	.07	1300	.0031

$$= \frac{902-898}{1300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1300	2170	2198	2199	2200
RY	902	902	902	900	900	901	901	901

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/30/91

ROUTING PARAMETERS

CP346B TO CP359

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.9

	NSTPS	—	1	0
RS	~~3~~ 5	—	1	0

	N left	N chan	N right	Length	Slope
RC	.035	.035	.07	2600	.0038

$$= \frac{908 - 898}{2600}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1310	2038	2039	2040
RY	904	903	903	901.5	901.5	904	904	904

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/22/91

ROUTING PARAMETERS

CP346B TO CP360

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 1.1

	NSTPS	1	0	
RS	815	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	4990	.0028

$$= \frac{908 - 894}{4990}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1025	1035	1120	1250	1520	1650
RY	903	903	902	900	900	902	904	905

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP347 TO CP362

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 1.03

NSTPS		1	0	
RS	~~49~~	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	2650	.0026

$$= \frac{906 - 899}{2650}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1300	2040	2628	2629	2630
RY	903	903	903	902	902	904	904	904

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 1/30/91

ROUTING PARAMETERS

CP348 TO CP347

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = No Flow

	NSTPS	—	-1	0
RS	7	—	-1	0

	Nleft	Nchan	Nright	Length	Slope	—	.50
RC	.035	.035	.07	2000	.0003		2000

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1130	1260	1500	1919	1920
RY	911.8	911.8	911.8	908.8	908.8	910	912	912

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/14/91

ROUTING PARAMETERS

CP348 TO CP363

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = .71

	NSTPS		-1	0
RS	~~2~~ 8		-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.06	.075	1600	.0025

$$= \frac{908 - 904}{1600}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1040	1200	2040	2180	2239	2240
RY	907	907	906	905	905	906	907	907

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/11/91

ROUTING PARAMETERS

CP348A TO CP348B

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 4.0 ft/sec

Actual vel = 3.4

	NSTPS	–	1	0
RS	~~3~~4	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.03	.03	.075	4050	.0077

$$\text{Slope} = \frac{938 - 908}{3900}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1005	1010	1040	1100	1370	1450	1470
RY	1032.5	1032.5	1032	1030	1030	1032	1034	1034.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/30/91

ROUTING PARAMETERS

CP348B TO CP363

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 1.0

NSTPS		1	0
RS	~~5~~ 10	1	0

	N left	N chan	N right	Length	Slope
RC	.075	.06	.075	3100	.0029

$$= \frac{914 - 905}{3100}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1040	1200	2040	2180	2239	2240
RY	907	907	906	905	905	906	907	907

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP349 TO CP350

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 1.6

NSTPS	–	1	0
RS	86	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.050	.075	2960	.0024

$$= \frac{896 - 889}{2960}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1100	1500	1620	1669	1670
RY	890.5	890	890	889	889	890	890	890

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP350 TO CP371

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual val = 20

	NSTPS		1	0
RS	87		1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.035	.035	4400	.0037

$$= \frac{888 - 863}{4400}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1160	2700	2900	2917	2918	2920
RY	881	881	880	878	878	879	879	879

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP351 TO CP352A

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = 1.4

	NSTPS	–	1	0
RS	~~14~~ 10	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.05	.075	4210	.0010

$$= \frac{894-890}{4210}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1010	1030	1050	1300	1650	1800
RY	1093	1093	1092	1090	1090	1092	1094	1095

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP352 TO CP372

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 10

NSTPS	—	-1	0
RS	~~17~~34	—	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	10300	.0022

$$= \frac{890 - 867}{10300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	2060	2238	2239	2240
RY	1073	1073	1073	1072	1072	1073	1073	1073

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 2/21 /91

ROUTING PARAMETERS

CP352A TO CP350 section as from CP349 → CP350

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1 ft/sec

Actual vel = .30

NSTPS		1	0	
RS	~~1860~~	1	0	

	N left	N chan	N right	Length	Slope
RC	.07	.07	.07	5400	.0001

$$= \frac{890 - 888}{5400}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1100	1500	1620	1669	1670
RY	890.5	890	890	889	889	890	890	890.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP352A TO CP372

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 3.0 ft/sec

Actual vel = 1.1

NSTPS	—	1	0
RS	817	—	1	0

$$\text{Slope} = \frac{890 - 867}{5460}$$

	N left	N chan	N right	Length	Slope
RC	.075	.075	.075	5460	.00042

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1260	1950	1988	1989	1990
RY	875	875	875	874	874	875	875	875

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP353 TO CP352

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 1.9

	NSTPS	–	1	0
RS	5	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.05	.075	3120	.0019

$$= \frac{858 - 892}{3120}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1030	1440	1520	1619	1620
RY	895	895	895	892	892	894	895	895

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP354 TO CP355 sec. as for CP356 → 355

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = .58

NSTPS		1	0	
RS	600	1	0	

	Nleft	Nchan	Nright	Length	Slope	= 1.50 / 1700
RC	.07	.07	.07	1700	.0009	

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1040	2290	2348	2349	2350
RY	895.5	895	895	894	894	895	895	895.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP355 TO CP373

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .90

	NSTPS	—	1	0
RS	5/12	—	1	0

	NLeft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	3120	.0022

$$= \frac{890 - 883}{3120}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1060	1061	1020	1240	2190	2500	2639	2640
RY	887	887	886	885	885	886	887	887

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP355 ATO CP373

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = No Flow

NSTPS	—	1	0	
IRS	6	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	3590	.0025

$$= \frac{892 - 883}{3590}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1400	1570	1588	1589	1590
RY	889	889	889	888	888	889	889	889

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP356 TO CP355

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = .84

	NSTPS	—	1	0
RS	~~45~~	—	1	0

	Ndeft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	1300	.0015

$$= \frac{2}{1300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1040	2290	2348	2349	2350
RY	895	895	895	894	894	895	895	895

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP 357 359 TO CP 360

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .59

	NSTPS	—	1	0				
RS	710	—	1	0				
	Ndeft	Nchan	Nright	Length	Slope			
RC	.075	.075	.075	1790	.0022		$= \frac{898-894}{1790}$	
	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1220	2380	2758	2759	2760
RY	897	897	897	896	896	897	897	897

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP358 TO CP355 sec. as for CP356 → 355

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = .52

NSTPS		1	0
RS	13	1	0

	Nleft	Nchan	Nright	Length	Slope	= .50 / 550
RC	.075	.075	.075	550	.0009	

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1040	2290	2348	2349	2350
RY	895	895	895	894	894	895	895	895

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP360 TO CP358

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = .72

NSTPS		1	0
RS	14 19	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	4060	.0007

$= \frac{3}{4060}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	1420	1580	1979	1980
RY	896	896	896	894	894	896	898	898

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP361 TO CP377

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = No Flow

	NSTPS	—	-1	0
RS	7	—	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	2150	.0005

$$= \frac{896 - 895}{2150}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1070	2070	2089	2099	2100
RY	895	895	895	894	894	896	897	897

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP362 TO CP378

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA

$$NSTPS = \frac{\text{Reach Length}}{\text{Average Velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 1.03

NSTPS	—	-1	0
RS	~~1~~ 20	—	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	6400	.0017

$$= \frac{901 - 890}{6400}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1200	2950	2978	2979	2980
RY	897	897	897	896	896	897	897	897

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/ 7 /91

ROUTING PARAMETERS

CP363 TO CP362

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 1.1

	NSTPS	_	1	0
RS	~~6~~ 10	_	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	3350	.0015

$$= \frac{904 - 899}{3350}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1300	2040	2628	2629	2630
RY	904	903	903	902	902	904	904	904

Project Title Loop 303 White Tanks Project No. 99551 Date

Subject Channel Route Prepared By MJR Checked By Page

CP364A to CP R364A

Method used: Normal Depth

Cross Section Data

$$NSTPS = \frac{\text{Reach Length}}{\text{Avg. Vel. x Time Interval (300)}} = 2.4 \sim 3.0$$

Avg. Vel = 4.5 fps

kk R364A

	NSTPS				
RS	3.0		-1		
	NL	NC	NC	L	S
RC	0.03	0.03	0.03	3300	0.00146

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
Rx	1000	1004	1005	1023	1103	1121	1122	1126
Ry	997	996	996	987	987	996	996	997

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/14/91

ROUTING PARAMETERS

CP3648
~~CP364~~ TO CP363

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 1.2

NSTPS	–	1	0
RS	~~10~~ 16	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.06	.075	5770	.0016

$$= \frac{913 + 904}{5770}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1040	1200	2040	2180	2239	2240
RY	~~907~~ 950	967	906	905	905	906	907	~~907~~ 950

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 1/14/91

ROUTING PARAMETERS

CP365 TO CP364

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .90

	NSTPS	–	-1	0
RS	~~12~~ 26	–	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.035	.035	.075	7020	.0017

$$= \frac{922 - 910}{7020}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1015	1140	1560	1700	2009	2010
RY	915	915	914	913.5	913.5	914	915	915

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP366 TO CP368

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .50

NSTPS	—	1	0
RS	~~10~~ 40	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	6080	.0025

$$= \frac{929 - 914}{6080}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1021	1040	1300	2340	2650	2699	2700
RY	923	923	922	921	921	922	923	923

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP371 TO CP379

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual val = 57

	NSTPS	1	0	
RS	1/21	1	0	

	Nleft	Nchan	Nright	Length	Slope	
RC	.075	.075	.075	3600	.00006	$= \frac{863 - 861}{3600}$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1280	2080	2348	2349	2350
RY	862	862	862	860.5	860.5	861	861	861

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 1/23/91

ROUTING PARAMETERS

CP372 TO CP382

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .50

NSTPS		1	0	
RS	X5	1	0	

	Ndeft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	750	.0013

$$= \frac{868 - 867}{750}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1240	1350	1680	1778	1779	1780
RY	1068.5	1068.5	1068	1067	1067	1067.5	1067.5	1067.5

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP372 TO CP371

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = .66

NSTPS	–	1	0
RS	~~18~~ 27	–	1	0

	N left	N chan	N right	length	slope
RC	.075	.075	.075	5300	.0009

$$= \frac{868 - 863}{5300}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1020	1200	1870	2020	2169	2170
RY	865	865	864	863	863	864	865	865

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AQUAD Date 1/23/91

ROUTING PARAMETERS

CP372 TO CP379

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = 1.0

	NSTPS	-1	0
RS	25	-1	0

	N left	N chan	N right	Length	Slope
RC	.075	.075	.075	7490	.0009

$$= \frac{868-861}{7490}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1280	2080	2348	2349	2350
RY	862	862	862	860.5	860.5	861	861	861

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP373 TO CP374

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .81

	NSTPS		-1	0
RS	713		-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	3900	.0013

$$= \frac{882-879}{3900}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1060	1180	1660	1840	2099	2100
RY	881	881	880	879	879	880	881	881

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP371 TO CP372

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = 1.30

NSTPS		-1	0	
RS	~~1525~~	-1	0	

	N left	N chan	N right	Length	Slope	= 872 - 867 / 8890
RC	.075	.075	.075	10800	.0011	

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1020	2060	2238	2239	2240
RY	1073.5	1073	1073	1072	1072	1073	1073	1073.5

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP375 TO CP374 sec. as from CP 376 → 374

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .51

NSTPS		1	0	
RS	~~10~~ 39	1	0	

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	5930	.0017

$$= \frac{887 - 877}{5930}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1170	2040	2298	2299	2300
RY	884	884	884	883	883	884	884	884

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/24/91

ROUTING PARAMETERS

CP376 TO CP374

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .56

NSTPS		-1	0
RS	832	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	5460	.0016

$$= \frac{886 - 877}{5460}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1170	2040	2298	2299	2300
RY	884	884	884	883	883	884	884	884

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP377 TO CP377B

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = No Flow

	NSTPS	–	-1	0
RS	19	–	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	5620	.0009

$$= \frac{895-890}{5620}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1050	1740	1758	1759	1760
RY	1095.5	1095	1095	1094	1094	1095	1095	1095.5

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP381 TO CP380

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .30

	NSTPS	—	-1	0
RS	638	—	-1	0

	N left	N chan	N right	Length	Slope
RC	.075	.075	.075	3430	.0015

$$= \frac{866 - 861}{3430}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1240	2120	2358	2359	2360
RY	1064	1064	1064	1062.5	1062.5	1063	1063	1063

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP381A TO CP379

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = No Flow

	NSTPS	–	–1	0
RS	19	–	–1	0

	N left	N chan	N right	Length	Slope
RC	.075	.075	.075	5620	.0011

$$= \frac{862 - 861}{5620}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1280	2080	2348	2349	2350
RY	862	862	862	860.5	860.5	861	861	861

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP382 TO CP379

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 1.0 ft/sec

Actual vel = .4

	NSTPS	–	1	0
RS	2459	–	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	7170	.0008

$$= \frac{867 - 861}{7170}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1280	2080	2348	2349	2350
RY	862	862	862	860.5	860.5	861	861	861

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP384 TO CP372

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .50

NSTPS		-1	0
RS	~~9~~ 36	-1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	5460	.0018

$$= \frac{974 - 867}{5460}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1010	1025	1980	2188	2189	2190
RY	1075	1075	1074	1072	1072	1073	1073	1073

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by G. AOUAD Date 1/23/91

ROUTING PARAMETERS

CP385 TO CP384

METHOD USED: NORMAL DEPTH

CROSS-SECTION DATA:

$$NSTPS = \frac{\text{Reach Length}}{\text{Average velocity} \times \text{Time Interval}}$$

Time Interval = 5 min = 300 sec

Assume V_{av} = 2.0 ft/sec

Actual vel = .49

NSTPS	—	1	0
RS	~~5~~ 20	—	1	0

	Nleft	Nchan	Nright	Length	Slope
RC	.075	.075	.075	2960	.0014

$$= \frac{878 - 874}{2960}$$

	LOB	LOB	LB	CH	CH	RB	ROB	ROB
RX	1000	1001	1002	1050	2100	2228	~~2229~~	2230
RY	1078	1078	1078	1076	1076	1077	1077	1077

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 41

SEE STAGE-STORAGE-DISCHARGE TABLE FOR DIVERT DATA

DT 70 303

DI	0	8	11	15	24	30	36	42	43	400	1219
DQ	0	8	11	15	24	30	36	42	43	46	50

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 44A

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT 40303

DI	0	10	36	44	45	312	799	1429	2047
DQ	0	10	36	44	45	47	49	51	52

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 41-1

SEE STAGE-STORAGE-DISCHARGE TABLE FOR DIVERT DATA

DT SD303

DI	0	10	36	44	489	1300	2348
DQ	0	10	36	44	47	50	52

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 41-2

SEE STAGE-STORAGE-DISCHARGE TABLE FOR DIVERT DATA

DT 6D303

DI	0	10	14	18	23	29	35	42	50	56	201	419	469	1836
DQ	0	10	14	18	23	29	35	42	50	56	59	61	64	68

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 41A1

SEE STAGE-STORAGE-DISCHARGE TABLE FOR DIVERT DATA

DT ID 303

DI	0	14	23	33	869	6050
DQ	0	14	23	33	35	42

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 4/A2

SEE STAGE-STORAGE-DISCHARGE TABLE FOR DIVERT DATA

DT 2D 303

DI	0	8	19	24	624	2104
DQ	0	8	19	24	30	36

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 4A3

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT 30 303

DI	0	10	14	18	23	29	32	254	659	1896
DQ	0	10	14	18	23	29	32	33	34	35

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 43-1

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT 1D 303A

DI	0	32	60	102	120	220	260	301	357	501	1057
DQ	0	32	60	102	120	220	260	301	357	378	417

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 43-2

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT 2D303A

DI	0	8	12	15	20	24	36	38	128	222
DQ	0	8	12	15	20	24	36	38	40	43

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 43-3

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT 3D 303A

DI	0	27	36	48	63	78	93	165	364	951
DQ	0	0	0	0	0	0	0	63	250	816

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 43-4

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT ~~DI43-4~~ 10 ~7 ~4

DI	0	18	24	32	42	52	62	131	326	906
DQ	0	18	24	32	42	52	62	68	76	90

Form 200

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN H3-5

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT ~~DI43-5~~ 2DWT #4

DI	0	9	13	17	22	27	34	40	42	44	134	276
DQ	0	9	13	17	22	27	34	40	42	44	46	48

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 43-6

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT ~~DI43-6~~ 3DWT #4

DI	0	9	13	17	22	27	33	39	47	55	56	141	325	811	1440		27HH
DQ	0	9	13	17	22	27	33	39	47	55	56	58	60	61	62		64

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 43-7

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT DI43-7 4D UT #4

DI	0	10	13	18	23	29	35	38	101	892
DQ	0	10	13	18	23	29	35	38	40	42

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 43-8

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT DI 43-8 5 D W 1 #4

DI	0	8	12	15	20	24	30	36	39	129	186
DQ	0	8	12	15	20	24	30	36	39	41	43

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA AOMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 43

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT ~~DI43~~ 6DWT #4

DI	0	920	1824	2976	3396	3713	4176	4734	6464
DQ	0	0	0	0	0	177	500	918	2096

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 45-1

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT ~~DI45-1~~ 1D WT #4

DI	0	51	156	1200	3130	4161	5509
DQ	0	51	156	305	480	543	610

Form 209

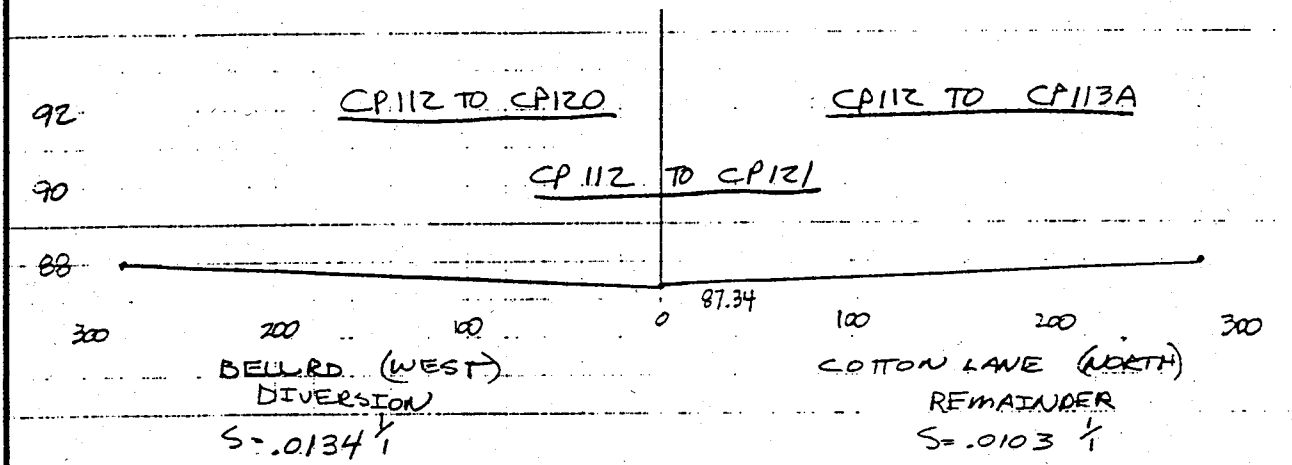
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 11-28-90

DIVERSION TABLES

INTERSECTION OF BELLRD AND COTTON LANE



Since this is a fairly uniform cross section, we will assume a 1/3 split for each branch

DT DI120

DI	0	48	165	355	625	981	1434	1990
DQ	0	16	55	118	208	327	478	663

DT 1D121A KMH 11-8-00

DI	0	32	110	237	417	654	956	1327
DQ	0	16	55	118	208	327	478	663

CP112 TO CP120

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot) .0134
Manning's Roughness Coefficient (n-value) .025
Channel Side Slope - Left Side (horizontal/vertical) 0
Channel Side Slope - Right Side (horizontal/vertical) 100
Channel Bottom Width (feet) 50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.20	25.4	2.12	0.902	0.07	0.27	12.00	70.00
0.40	88.2	3.15	0.995	0.15	0.55	28.00	90.00
0.60	189.3	3.94	1.052	0.24	0.84	48.00	110.00
0.80	332.7	4.62	1.094	0.33	1.13	72.00	130.00
1.00	522.8	5.23	1.128	0.42	1.42	100.00	150.00
1.20	763.7	5.79	1.157	0.52	1.72	132.00	170.00
1.40	1059.7	6.31	1.182	0.62	2.02	168.00	190.00
1.60	1414.9	6.80	1.204	0.72	2.32	208.00	210.00

CP112 TO CP113A

Enter Depth of Flow, or Press the (Esc) Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot) .0103
Manning's Roughness Coefficient (n-value) .025
Channel Side Slope - Left Side (horizontal/vertical) 100
Channel Side Slope - Right Side (horizontal/vertical) 0
Channel Bottom Width (feet) 50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.20	22.3	1.86	0.791	0.05	0.25	12.00	70.00
0.40	77.3	2.76	0.872	0.12	0.52	28.00	90.00
0.60	166.0	3.46	0.922	0.19	0.79	48.00	110.00
0.80	291.7	4.05	0.959	0.25	1.05	72.00	130.00
1.00	458.3	4.58	0.989	0.33	1.33	100.00	150.00
1.20	669.5	5.07	1.014	0.40	1.60	132.00	170.00
1.40	929.1	5.53	1.036	0.47	1.87	168.00	190.00
1.60	1240.5	5.96	1.056	0.55	2.15	208.00	210.00

Enter Depth of Flow, or Press the (Esc) Key to End

STANLEY CONSULTANTS

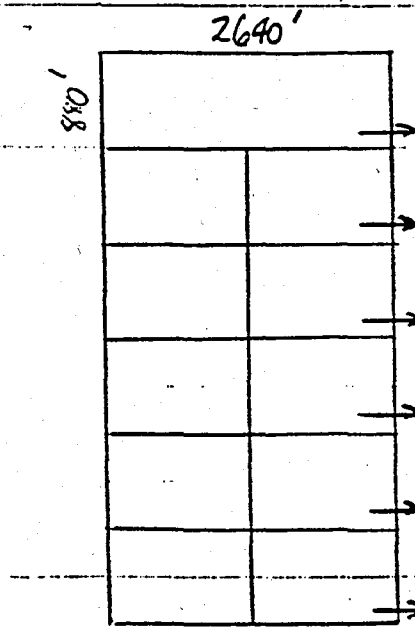
DT 20121A

MH 11-8-00

Computed by JRM Date 10/8/94
Checked by JRB Date 12/13/94
Reviewed by _____ Date _____
Approved by _____ Date _____

Job No. 12291-3-700 Page No. _____
Subject FLOW DIVERSION S113A TO S113
Sheet No. 1 of 7

S113A:



CULVERT #	Q (cfs)	
39	16	
37	14	
35	16	
33	15	
31	16	$Q_T = 77$ cfs
969+00	12.4	(FULL FLOW)

TOTAL Q = 89.4 cfs

1D113A
Q=46

2D113A
Q=15

3D113A
Q=28

NOTE: Q_{PEAK} AT CROSS CULVERTS GREATER THAN CAPACITY.

$$Q_{PEAK} = 0.25(2.8)(52) \simeq 36 \text{ cfs}$$

IRRIGATION CHANNELS ASSUMED FULL!

ASSUME:
1. OVERTOPPING CAPACITY OF CROSS-CULVERTS FLOW EAST. REMAINING RUNOFF FLOWS SOUTH.
2. OVERTOPPING ELEVATION DEFINED AS TOP OF IRRIGATION DITCH AND NOT ROADWAY PROFILE.

STANLEY CONSULTANTS

DT 2D121A KMH 11-8-00

Job No. 12291-3-700 Page No. _____

Computed by JRM Date 10/21/94

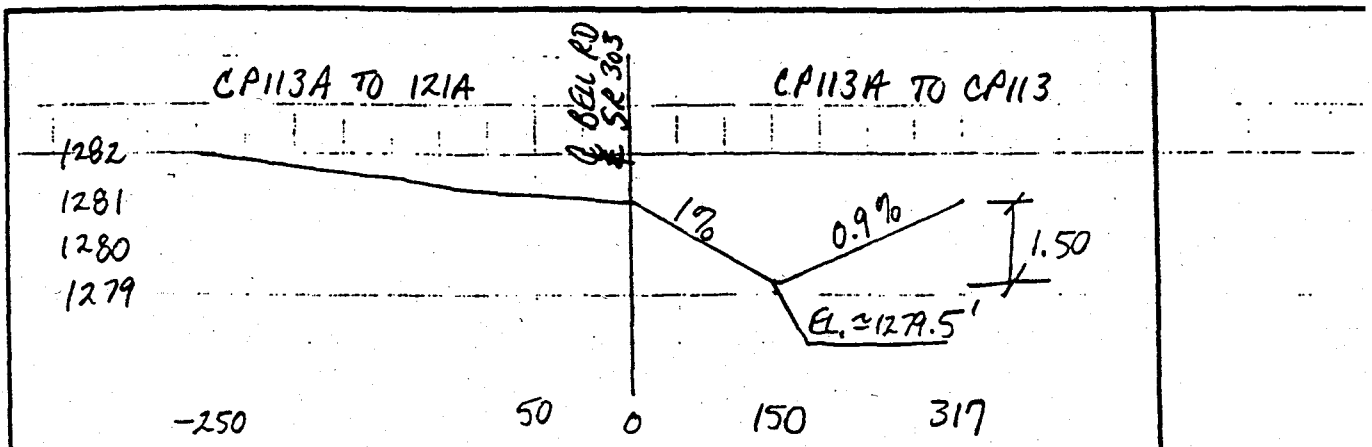
Checked by _____ Date _____

Reviewed by _____ Date _____

Approved by _____ Date _____

Subject FLOW DIVERSION @ BELL RD. & SR303

Sheet No. 2 of 7



S = 0.01 ft/ft
DIVERSION
(WEST)

S = 0.002 ft/ft
n = 0.025
REMAINDER
(NORTH)

DT 2D113A

DI	0	165	545	642	893	1913
DQ	0	0	0	12	74	467

SC 3004 R1 691

Triangular Channel Analysis & Design
Open Channel - Uniform flow

Worksheet Name: DIVERSION CP113A
Description: CP113A TO CP113
Solve For Discharge
Given Constant Data;
Z-Left..... 111.00
Z-Right..... 110.00
Mannings 'n'..... 0.025
Channel Slope..... 0.0020

Z-Left (H:V)	Z-Right (H:V)	Mannings 'n'	Channel Slope ft/ft	VARIABLE Channel Depth ft	COMPUTED Channel Discharge cfs	COMPUTED Velocity (fps)
111.00	110.00	0.025	0.0020	0.25	4.59	0.66
111.00	110.00	0.025	0.0020	0.50	29.14	1.05
111.00	110.00	0.025	0.0020	0.75	85.92	1.38
111.00	110.00	0.025	0.0020	1.00	185.04	1.67
111.00	110.00	0.025	0.0020	1.25	335.49	1.94
111.00	110.00	0.025	0.0020	1.50	545.55	2.19

Given Constant Data;
Bottom Width..... 317.00
Z-Left..... 111.00
Z-Right..... 0.00
Mannings 'n'..... 0.025
Channel Slope..... 0.0020

Bottom Width ft	Z-Left (H:V)	Z-Right (H:V)	Mannings 'n'	Channel Slope ft/ft	VARIABLE Channel Depth ft	COMPUTED Channel Discharge cfs	COMPUTED Velocity fps
317.00	111.00	0.00	0.025	0.0020	0.25	84.86	1.03
317.00	111.00	0.00	0.025	0.0020	0.50	273.89	1.59
317.00	111.00	0.00	0.025	0.0020	0.75	547.85	2.04
317.00	111.00	0.00	0.025	0.0020	1.00	901.22	2.42

Description: CP113A TO S121A
Given Constant Data;
Z-Left..... 0.00
Z-Right..... 250.00
Mannings 'n'..... 0.025
Channel Slope..... 0.0100

Z-Left (H:V)	Z-Right (H:V)	Mannings 'n'	Channel Slope ft/ft	VARIABLE Channel Depth ft	COMPUTED Channel Discharge cfs	COMPUTED Velocity (fps)
0.00	250.00	0.025	0.0100	0.25	11.58	1.48
0.00	250.00	0.025	0.0100	0.50	73.52	2.35
0.00	250.00	0.025	0.0100	0.75	216.76	3.08
0.00	250.00	0.025	0.0100	1.00	466.81	3.73

Open Channel Flow Module, Version 3.21 (c)

Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708

VERTICAL CURVE CALCULATION		
LENGTH OF CURVE - 200	VERT CORR AT PI - +0.472	
BACK GRADE IN % - -1.000	AHEAD GRADE IN % - +0.889	
STATION AT PI - 96975.00	PI TANGENT ELEV - 1278.98	
LOW STATION - 96980.85	LOW ELEVATION - 1279.45	

STATION -	ELEV	STATION -	ELEV	STATION -	ELEV
96875.00	-1279.98	96950.00	-1279.50	97025.00	-1279.54
96880.00	-1279.93	96955.00	-1279.48	97030.00	-1279.56
96885.00	-1279.88	96960.00	-1279.47	97035.00	-1279.59
96890.00	-1279.84	96965.00	-1279.46	97040.00	-1279.62
96895.00	-1279.80	96970.00	-1279.46	97045.00	-1279.65
96900.00	-1279.76	96975.00	-1279.45	97050.00	-1279.68
96905.00	-1279.72	96980.00	-1279.45	97055.00	-1279.71
96910.00	-1279.69	96985.00	-1279.45	97060.00	-1279.75
96915.00	-1279.66	96990.00	-1279.45	97065.00	-1279.79
96920.00	-1279.63	96995.00	-1279.46	97070.00	-1279.83
96925.00	-1279.60	97000.00	-1279.47	97075.00	-1279.87
96930.00	-1279.57	97005.00	-1279.48		
96935.00	-1279.55	97010.00	-1279.49		
96940.00	-1279.53	97015.00	-1279.51		
96945.00	-1279.51	97020.00	-1279.52		

<Shift> <Prt Sc> print <Return> repeat <Space Bar> back to menu

5/7

CURRENT DATE: 10-08-1994
CURRENT TIME: 18:46:31

FILE DATE: 10-08-1994
FILE NAME: 96900

FHWA CULVERT ANALYSIS
HY-8, VERSION 4.0

CULV #	SITE DATA: INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (FT)	RISE (FT)	MANNING n	INLET TYPE
1	1275.50	1274.90	180.00	1 RCP	2.00	2.00	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (CFS) FILE: 96900 DATE: 10-08-1994

ELEV (FT)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1279.00	0	0	0	0	0	0	0	0	1
1279.03	5	2	0	0	0	0	0	3	14
1279.05	10	3	0	0	0	0	0	7	11
1279.07	15	4	0	0	0	0	0	11	9
1279.09	20	4	0	0	0	0	0	16	7
1279.11	25	5	0	0	0	0	0	20	7
1279.12	30	5	0	0	0	0	0	25	6
1279.14	35	5	0	0	0	0	0	30	6
1279.15	40	5	0	0	0	0	0	34	5
1279.16	45	6	0	0	0	0	0	39	5
1279.18	50	6	0	0	0	0	0	44	5
1279.00	0	0	0	0	0	0	0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: 96900 DATE: 10-08-1994

HEAD ELEV(FT)	HEAD ERROR(FT)	TOTAL FLOW(CFS)	FLOW ERROR(CFS)	% FLOW ERROR
1279.00	0.00	0	0	0.00
1279.03	-0.00	5	0	0.54
1279.05	-0.00	10	0	0.89
1279.07	-0.00	15	0	0.78
1279.09	-0.00	20	0	0.97
1279.11	-0.00	25	0	0.71
1279.12	-0.00	30	0	0.64
1279.14	-0.00	35	0	0.57
1279.15	-0.00	40	0	0.82
1279.16	-0.00	45	0	0.62
1279.18	-0.00	50	0	0.58

<1> TOLERANCE (FT) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 10-08-1994 FILE DATE: 10-08-1994
CURRENT TIME: 18:46:31 FILE NAME: 96900

PERFORMANCE CURVE FOR CULVERT # 1 - 1 (2 BY 2) RCP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRITICAL DEPTH (ft)	OUTLET VEL. (fps)	OUTLET DEPTH (ft)	TAILWATER VEL. (fps)	TAILWATER DEPTH (ft)
0	1279.00	0.00	3.50	0-NF	0.00	0.00	0.00	0.00	0.00	4.10
2	1279.02	0.64	3.52	4-FFt	0.53	0.51	0.71	2.00	0.00	4.10
3	1279.04	0.78	3.54	4-FFt	0.62	0.60	0.95	2.00	0.00	4.10
4	1279.07	0.90	3.57	4-FFt	0.69	0.67	1.18	2.00	0.00	4.10
4	1279.09	0.98	3.59	4-FFt	0.75	0.72	1.35	2.00	0.00	4.10
5	1279.11	1.05	3.61	4-FFt	0.79	0.75	1.48	2.00	0.00	4.10
5	1279.12	1.09	3.62	4-FFt	0.82	0.78	1.59	2.00	0.00	4.10
5	1279.13	1.12	3.63	4-FFt	0.84	0.80	1.65	2.00	0.00	4.10
5	1279.14	1.15	3.64	4-FFt	0.85	0.82	1.72	2.00	0.00	4.10
6	1279.16	1.19	3.66	4-FFt	0.88	0.84	1.82	2.00	0.00	4.10
6	1279.17	1.22	3.67	4-FFt	0.90	0.86	1.89	2.00	0.00	4.10

El. inlet face invert 1275.50 ft El. outlet invert 1274.90 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION (FT)	0.00
INLET ELEVATION (FT)	1275.50
OUTLET STATION (FT)	180.00
OUTLET ELEVATION (FT)	1274.90
NUMBER OF BARRELS	1
SLOPE (V-FT/H-FT)	0.0033
CULVERT LENGTH ALONG SLOPE (FT)	180.00

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	2.00 FT
BARREL MATERIAL	CONCRETE
BARREL MANNING'S N	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	BEVELED EDGE (1:1)
INLET DEPRESSION	NONE

CURRENT DATE: 10-08-1994
CURRENT TIME: 18:46:31

FILE DATE: 10-08-1994
FILE NAME: 96900

TAILWATER

CONSTANT WATER SURFACE ELEVATION
1279.00

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH (FT)	180.00
CREST LENGTH (FT)	200.00
OVERTOPPING CREST ELEVATION (FT)	1279.00

The WLB Group Inc. WLB

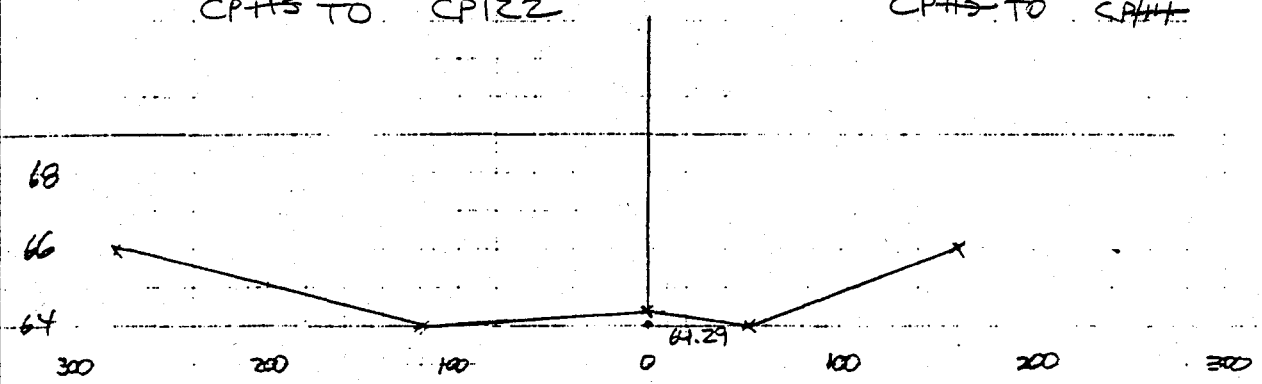
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 11-29-90

DIVERSION TABLES

INTERSECTION OF BELL RD. AND ~~SARIVAL AVE.~~ SUNRISE AVE

114 CP~~113~~ TO CP122 114 CP~~113~~ TO 115 CP~~114~~



BELL RD (WEST) DIVERSION S=.016 1/1

SARIVAL AVE. (NORTH) REMAINDER S=-.0056 1/1

DT	1D122						
DI	0	79	257	523	872	1307	1829
DQ	0	63	205	416	692	1033	1422

CP ~~113~~ 114 TO CP ~~114~~ 115

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot) .0056
Manning's Roughness Coefficient (n-value) .025
Channel Side Slope - Left Side (horizontal/vertical) 50
Channel Side Slope - Right Side (horizontal/vertical) 0
Channel Bottom Width (feet) 50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.20	15.8	1.43	0.589	0.03	0.23	11.00	60.00
0.40	52.1	2.17	0.653	0.07	0.47	24.00	70.00
0.60	106.9	2.74	0.692	0.12	0.72	39.00	80.00
0.80	180.5	3.22	0.720	0.16	0.96	56.00	90.00
1.00	273.5	3.65	0.742	0.21	1.21	75.00	100.00
1.20	387.1	4.03	0.761	0.25	1.45	96.00	110.00
1.40	522.3	4.39	0.777	0.30	1.70	119.00	120.00
1.60	680.1	4.72	0.791	0.35	1.95	144.00	130.00

CP113 TO CP122

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot) .016
Manning's Roughness Coefficient (n-value) .025
Channel Side Slope - Left Side (horizontal/vertical) 0
Channel Side Slope - Right Side (horizontal/vertical) 80
Channel Bottom Width (feet) 120

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.20	63.2	2.47	1.002	0.09	0.29	25.60	136.00
0.40	205.8	3.78	1.114	0.22	0.62	54.40	152.00
0.60	416.0	4.81	1.183	0.36	0.96	86.40	168.00
0.80	691.6	5.69	1.233	0.50	1.30	121.60	184.00
1.00	1033.2	6.46	1.272	0.65	1.65	160.00	200.00
1.20	1442.2	7.15	1.305	0.79	1.99	201.60	216.00
1.40	1920.7	7.80	1.333	0.94	2.34	246.40	232.00
1.60	2470.9	8.39	1.358	1.09	2.69	294.40	248.00

Enter Depth of Flow, or Press the <Esc> Key to End

eec

Project Title Loop 303 Drainage Master Study Project No. 99551 Date 10-17-00

Subject Diverts in SUB-2A Prepared By KMH Checked By _____ Page 1

DI119 Divert from 111 to 119

Subbasin 111 was subdivided into subbasins 111 and 111A to reflect the change in the drainage pattern due to development - Arizona Traditions. With the drainage improvements, all flow is routed to subbasin 111A from subbasin 111, as provided by the Master Drainage Study for Arizona Traditions prepared by Clouse Engineering, Inc. (1/12/96). This was field-verified by EEC staff on 10-13-00.

DI119 was removed from the model.

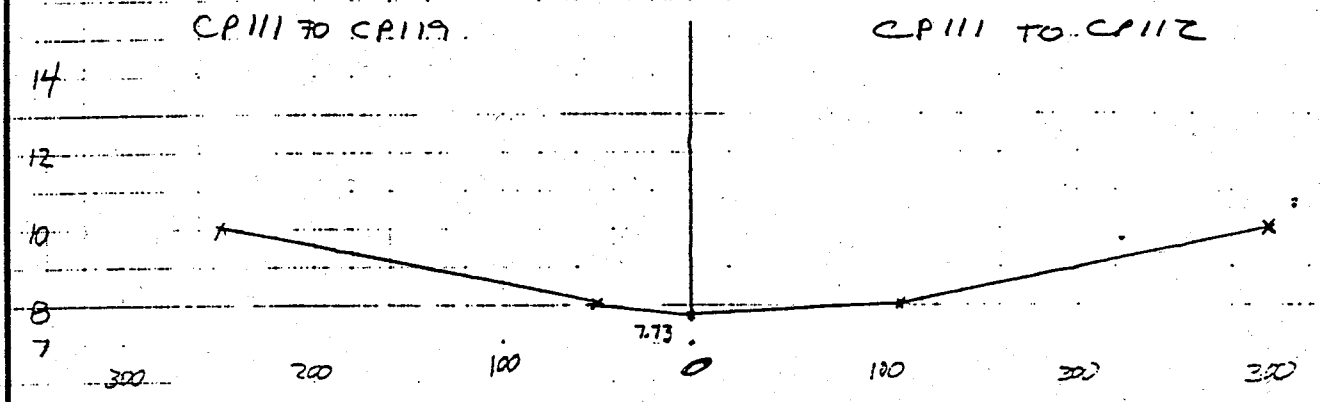
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS/AGUA FRIA ADMS Prepared by JSE Date 11-28-90

DIVERSION TABLES

INTERSECTION OF BELL RD & CITRUS RD.



BELL RD (WEST) DIVERSION — INT. — CITRUS RD. (NORTH) REMAINDER

S= .004 1/1 S= .005 1/1

DT DI119

DI	0	32	109	228	389	599	858	1170	1539	1967
DQ	0	11	39	83	145	228	333	462	617	799

CP111 to CP112

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
November 28, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0050
Manning's Roughness Coefficient (n-value).....	0.0350
Channel Side Slope - Left Side (horizontal/vertical)....	100.00
Channel Side Slope - Right Side (horizontal/vertical)...	0.00
Channel Bottom Width (feet).....	100.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.2	21.3	0.97	0.398	0.015	0.215	22.0	120.0
0.4	70.5	1.47	0.442	0.033	0.433	48.0	140.0
0.6	144.7	1.85	0.468	0.053	0.653	78.0	160.0
0.8	244.3	2.18	0.487	0.074	0.874	112.0	180.0
1.0	370.5	2.47	0.503	0.095	1.095	150.0	200.0
1.2	524.5	2.73	0.515	0.116	1.316	192.0	220.0
1.4	707.8	2.97	0.526	0.137	1.537	238.0	240.0
1.6	921.8	3.20	0.536	0.159	1.759	288.0	260.0
1.8	1168.2	3.42	0.545	0.181	1.981	342.0	280.0
2.0	1448.3	3.62	0.553	0.204	2.204	400.0	300.0
2.2	1763.6	3.82	0.560	0.226	2.426	462.0	320.0

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A manual with equations & flow chart is available.

CP111 to CP119

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
November 28, 1990

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.005
Manning's Roughness Coefficient (n-value).....	0.035
Channel Side Slope - Left Side (horizontal/vertical)....	0.00
Channel Side Slope - Right Side (horizontal/vertical)...	100.00
Channel Bottom Width (feet).....	50.0

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.2	11.1	0.92	0.394	0.013	0.213	12.0	70.
0.4	38.5	1.37	0.434	0.029	0.429	28.0	90.
0.6	82.6	1.72	0.459	0.046	0.646	48.0	110.
0.8	145.2	2.02	0.477	0.063	0.863	72.0	130.
1.0	228.1	2.28	0.492	0.081	1.081	100.0	150.
1.2	333.2	2.52	0.505	0.099	1.299	132.0	170.
1.4	462.4	2.75	0.516	0.118	1.518	168.0	190.
1.6	617.3	2.97	0.526	0.137	1.737	208.0	210.
1.8	799.9	3.17	0.534	0.156	1.956	252.0	230.
2.0	1011.6	3.37	0.542	0.177	2.177	300.0	250.
2.2	1254.3	3.56	0.550	0.197	2.397	352.0	270.

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 198
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 7709
(713) 895-8322. A manual with equations & flow chart is available.

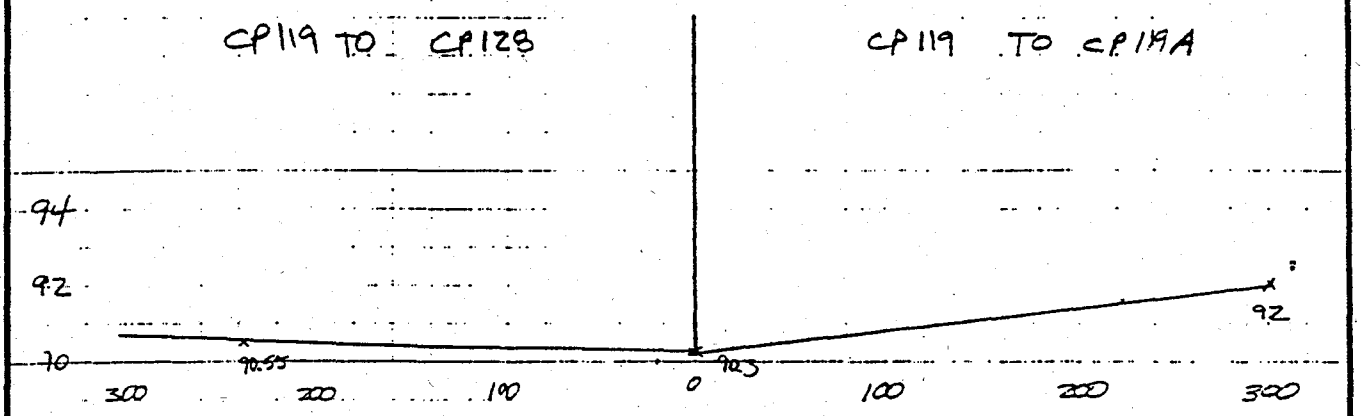
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 11-30-90

DIVERSION TABLES

CITRUS ROAD AND GREENWAY ROAD



GREENWAY ROAD (WEST)
DIVERSION
S= .0067 ½

CITRUS RD (NORTH)
REMAINDER
S= .0053 ½

DT	DI 128							
DI	0	42	139	286	485	739	1052	1425
DQ	0	25	81	167	283	429	607	819

CP119 TO CP128

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.20	24.6	1.12	0.461	0.02	0.22	22.00	120.00
0.40	81.6	1.70	0.511	0.04	0.44	48.00	140.00
0.60	167.5	2.15	0.542	0.07	0.67	78.00	160.00
0.80	282.8	2.53	0.564	0.10	0.90	112.00	180.00
1.00	428.9	2.86	0.582	0.13	1.13	150.00	200.00
1.20	607.1	3.16	0.597	0.16	1.36	192.00	220.00
1.40	819.3	3.44	0.609	0.18	1.58	238.00	240.00
1.60	1067.1	3.71	0.620	0.21	1.81	288.00	260.00

CP119 TO CP119A

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0053
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	76

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.20	16.9	0.98	0.408	0.01	0.21	17.20	96.00
0.40	56.7	1.48	0.452	0.03	0.43	38.40	116.00
0.60	118.1	1.86	0.478	0.05	0.65	63.60	136.00
0.80	202.2	2.18	0.498	0.07	0.87	92.80	156.00
1.00	310.5	2.46	0.513	0.09	1.09	126.00	176.00
1.20	444.6	2.72	0.526	0.12	1.32	163.20	196.00
1.40	606.3	2.97	0.537	0.14	1.54	204.40	216.00
1.60	797.2	3.19	0.547	0.16	1.76	249.60	236.00

Enter Depth of Flow, or Press the <Esc> Key to End

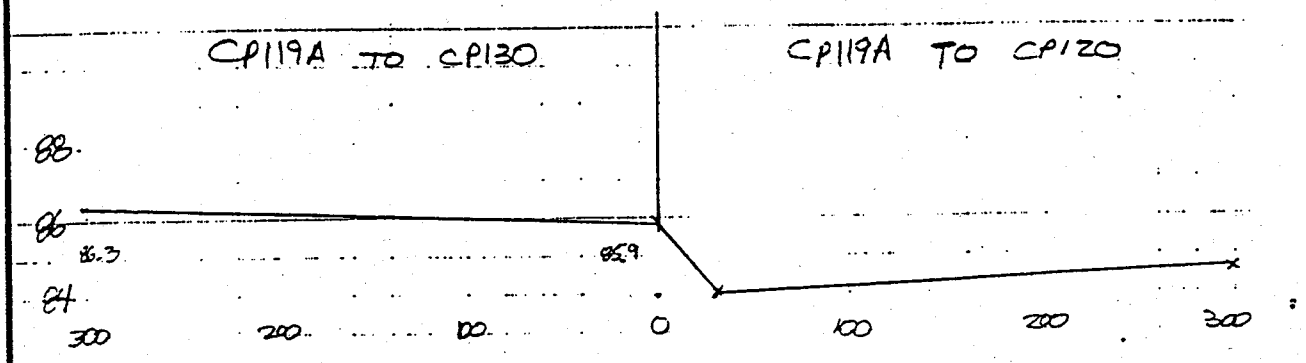
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 11-30-70

DIVERSION TABLES

GREENWAY ROAD AND ½ MILE EAST OF CITRUS RD.



GREENWAY ROAD (WEST)
DIVERSION
S = .0033 1/1

½ MILE EAST OF CITRUS ROAD
REMAINDER
S = .0067 1/1

DT DI 130

DI	0	13	46	100	177	281	413	577	774	1007	1279
DQ	0	0	0	0	0	0	0	0	0	0	0
DI	1500	1978									
DQ	9	31									

CP119A TO CP150

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0033
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.20	9.0	0.75	0.320	0.01	0.21	12.00	70.00
0.40	31.3	1.12	0.353	0.02	0.42	28.00	90.00
0.60	67.1	1.40	0.373	0.03	0.63	48.00	110.00
0.80	117.9	1.64	0.388	0.04	0.84	72.00	130.00
1.00	185.3	1.85	0.400	0.05	1.05	100.00	150.00
1.20	270.7	2.05	0.410	0.07	1.27	132.00	170.00
1.40	375.6	2.24	0.419	0.08	1.48	168.00	190.00
1.60	501.5	2.41	0.427	0.09	1.69	208.00	210.00

CP119A TO CP120

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	15
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.20	13.0	1.06	0.455	0.02	0.22	12.30	73.00
0.40	45.9	1.57	0.502	0.04	0.44	29.20	96.00
0.60	99.8	1.97	0.531	0.06	0.66	50.70	119.00
0.80	177.1	2.31	0.553	0.08	0.88	76.80	142.00
1.00	280.7	2.61	0.570	0.11	1.11	107.50	165.00
1.20	413.1	2.89	0.585	0.13	1.33	142.80	188.00
1.40	576.7	3.16	0.598	0.15	1.55	182.70	211.00
1.60	774.1	3.41	0.609	0.18	1.78	227.20	234.00
1.80	1007.5	3.65	0.620	0.21	2.01	276.30	257.00
2.00	1279.4	3.88	0.629	0.23	2.23	330.00	280.00
2.20	1591.8	4.10	0.638	0.26	2.46	388.30	303.00
2.40	1947.0	4.32	0.646	0.29	2.69	451.20	326.00

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

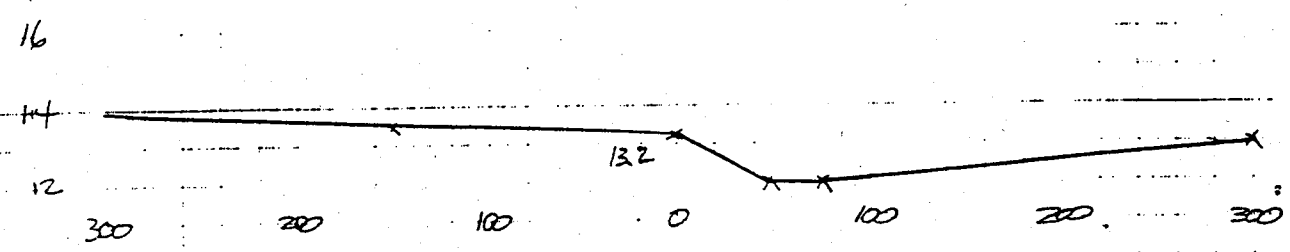
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 11-30-90

DIVERSION TABLE

GREENWAY ROAD AND ½ MILE EAST OF REEMS ROAD

CP123 TO CP134 CP123 TO CP124



GREENWAY ROAD (WEST)
REMAINDER
S = .016 ft

½ MILE EAST OF REEMS ROAD
DIVERSION
S = -.0128 ft

DT DI124

DI	0	94	177	293	448	683	1014	1440	1964	~~2593~~
DQ	0	94	177	293	448	448	448	448	448	448

DT DI 134

DI	0	94	177	293	448	683	1014	1440	1964	2593
DQ	0	0	0	0	0	235	566	992	1516	2145

LTV
10/01/00

Remainder to 124

The WLB Group Inc. WLB

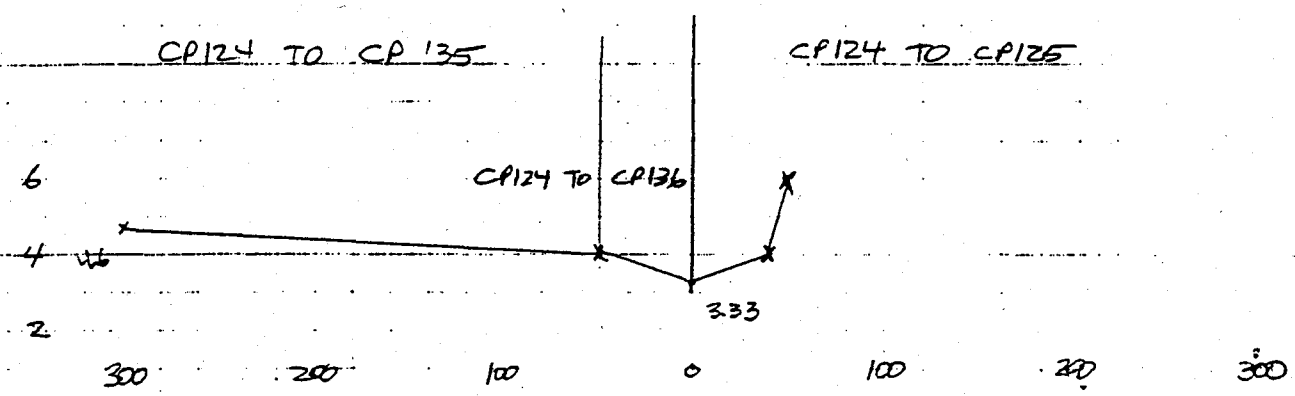
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 11-30-90

DIVERSION TABLES

GREENWAY ROAD AND BULLARD AVE

CP124 TO CP 135 CP124 TO CP125



GREENWAY ROAD (WEST) INT. BULLARD AVE (NORTH)

REMAINDER DIVERSION ① DIVERSION ②

S= .0050 1/1 S=.01 1/1 S=.0061 1/1

DT DI 136

DI	0	42	84	232	605	1435	2923
DQ	0	25	51	128	292	519	798

DT DI 125

DI	0	17	33	104	313	916	2125
DQ	0	17	33	82	189	341	534

Remainder to 125

DT DI 135

DI	0	17	33	104	313	916	2125
DQ	0	0	0	22	124	575	1591

LHW 11/01/00

CP123 TO CP124

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0128
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	25
Channel Bottom Width (feet)	25

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.60	93.7	2.50	0.719	0.10	0.70	37.50	100.00
0.80	176.7	2.94	0.749	0.13	0.93	60.00	125.00
1.00	293.4	3.35	0.774	0.17	1.17	87.50	150.00
1.20	448.2	3.73	0.795	0.22	1.42	120.00	175.00
1.40	645.1	4.10	0.813	0.26	1.66	157.50	200.00
1.60	888.0	4.44	0.830	0.31	1.91	200.00	225.00
1.80	1180.8	4.77	0.845	0.35	2.15	247.50	250.00
2.00	1526.9	5.09	0.859	0.40	2.40	300.00	275.00
2.20	1930.0	5.40	0.871	0.45	2.65	357.50	300.00
2.40	2393.3	5.70	0.883	0.50	2.90	420.00	325.00
2.60	2920.2	5.99	0.894	0.56	3.16	487.50	350.00
2.80	3513.9	6.27	0.905	0.61	3.41	560.00	375.00
3.00	4177.6	6.55	0.915	0.67	3.67	637.50	400.00

Enter Depth of Flow, or Press the <Esc> Key to End

CP123 TO CP134

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.016
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.20	38.1	1.73	0.713	0.05	0.25	22.00	120.00
0.40	126.0	2.63	0.790	0.11	0.51	48.00	140.00
0.60	258.8	3.32	0.838	0.17	0.77	78.00	160.00
0.80	437.1	3.90	0.872	0.24	1.04	112.00	180.00
1.00	662.8	4.42	0.899	0.30	1.30	150.00	200.00
1.20	938.2	4.89	0.922	0.37	1.57	192.00	220.00
1.40	1266.1	5.32	0.941	0.44	1.84	238.00	240.00
1.60	1649.0	5.73	0.959	0.51	2.11	288.00	260.00
1.80	2089.7	6.11	0.974	0.58	2.38	342.00	280.00

Enter Depth of Flow, or Press the <Esc> Key to End

CP 124 TO CP135

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.005
Manning`s Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	22.0	1.46	0.494	0.03	0.53	15.00	55.00	4.5	22
1.00	124.4	2.26	0.551	0.08	1.08	55.00	105.00	5.0	124

CP 124 TO CP 135

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.005
Manning`s Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	400

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	451.0	2.12	0.544	0.07	0.57	212.50	450.00	5.5	575
1.00	1467.3	3.26	0.606	0.17	1.17	450.00	500.00	6.0	1591
1.50	2960.2	4.15	0.643	0.27	1.77	712.50	550.00	6.5	3084
2.00	4912.6	4.91	0.671	0.37	2.37	1000.00	600.00	7.0	5036
2.50	7325.2	5.58	0.692	0.48	2.98	1312.50	650.00	7.5	7449

Enter Depth of Flow, or Press the <Esc> Key to End

CP124 TO CP125

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot) .0061

Manning's Roughness Coefficient (n-value) .03

Channel Side Slope - Left Side (horizontal/vertical) 60

Channel Side Slope - Right Side (horizontal/vertical) 0

Channel Bottom Width (feet) 5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	16.6	1.66	0.548	0.04	0.54	10.00	35.00	3.83	17
0.67	33.3	1.98	0.572	0.06	0.73	16.82	45.20	4.0	33

CP124 TO CP125

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot) .0061

Manning's Roughness Coefficient (n-value) .03

Channel Side Slope - Left Side (horizontal/vertical) 5

Channel Side Slope - Right Side (horizontal/vertical) 0

Channel Bottom Width (feet) 40

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	48.9	2.37	0.599	0.09	0.59	20.63	42.50	4.5	82
1.00	155.7	3.66	0.665	0.21	1.21	42.50	45.00	5.0	189
1.50	307.8	4.69	0.703	0.34	1.84	65.63	47.50	5.5	341
2.00	500.6	5.56	0.731	0.48	2.48	90.00	50.00	6.0	534

Enter Depth of Flow, or Press the <Esc> Key to End

CP124 TO CP136

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	75
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	24.9	2.10	0.700	0.07	0.57	11.88	42.50	3.83	25
0.67	50.7	2.51	0.732	0.10	0.77	20.18	55.25	4.0	51

CP124 TO CP136

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	77.0	3.08	0.767	0.15	0.65	25.00	50.00	4.5	128
1.00	241.3	4.83	0.850	0.36	1.36	50.00	50.00	5.0	292
1.50	468.3	6.24	0.898	0.61	2.11	75.00	50.00	5.5	579
2.00	747.0	7.47	0.931	0.87	2.87	100.00	50.00	6.0	798

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

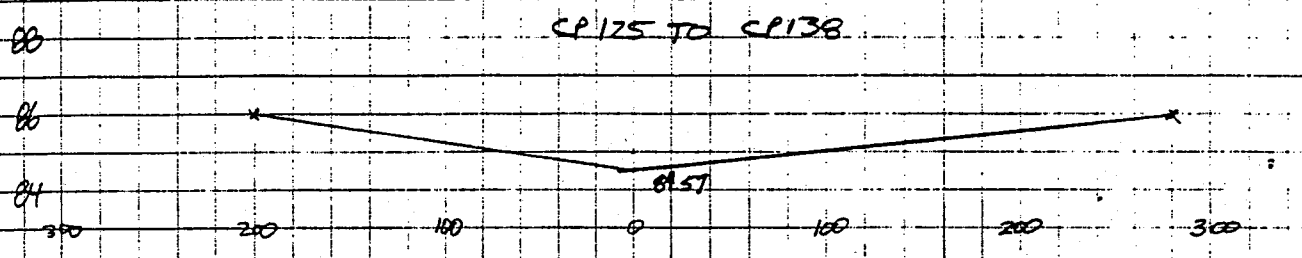
Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

GREENWAY ROAD AND LITCHFIELD ROAD

CP125 TO CP137 CP125 TO CP126

CP125 TO CP138



GREENWAY ROAD (WEST)
REMAINDER
S=.0044 1/1

LITCHFIELD ROAD (NORTH)
DIVERSION
S=.0044 1/1

This is a fairly uniform cross section therefore a 1/3 split is assumed in each direction.

DT DI126

DI	0	29	228	748	1285	2526	4403	6923	10115
DQ	0	10	76	249	428	842	1468	2308	3372

DT DI138

DI	0	19	152	499	857	1684	2935	4615	6743
DQ	0	10	76	249	428	842	1468	2308	3372

DT DI137

DI	0	29	228	748	1285	2526	4403	6923	10115
DQ	0	10	76	249	428	842	1468	2308	3372

CP125 TO CP137, CP125 TO CP138, and CP125 TO CP126

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	500

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	537.1	1.95	0.508	0.06	0.56	275.00	600.00	86.5	1285
1.00	1778.9	2.96	0.564	0.14	1.14	600.00	700.00	87.0	2526
1.50	3655.1	3.75	0.598	0.22	1.72	975.00	800.00	87.5	4403
2.00	6175.5	4.41	0.623	0.30	2.30	1400.00	900.00	88.0	6923
2.50	9367.4	5.00	0.643	0.39	2.89	1875.00	1000.00	88.5	10115

Enter Depth of Flow, or Press the <Esc> Key to End

CP 125 TO CP137, CP 125 TO CP138, and CP125 TO CP126

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	10

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.43	28.7	1.26	0.456	0.02	0.45	22.79	96.00	85.0	29

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	170

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	198.6	1.81	0.499	0.05	0.55	110.00	270.00	85.5	228.
1.00	719.0	2.66	0.549	0.11	1.11	270.00	370.00	86.0	748

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITETANKS / AGUA FRIA ADMS Prepared by JSE Date 10-28-91

DIVERSION TABLES

CP126

This area diverts approximately 80% of the flow to CP139 and the remainder flows to CP138.

based on this

DT	DI139								
DI	100	200	400	800	1200	1600	2000	2400	2800
DQ	80	160	320	640	960	1280	1600	1920	2240

RLW 11/01/00

The WLB Group Inc. WLB

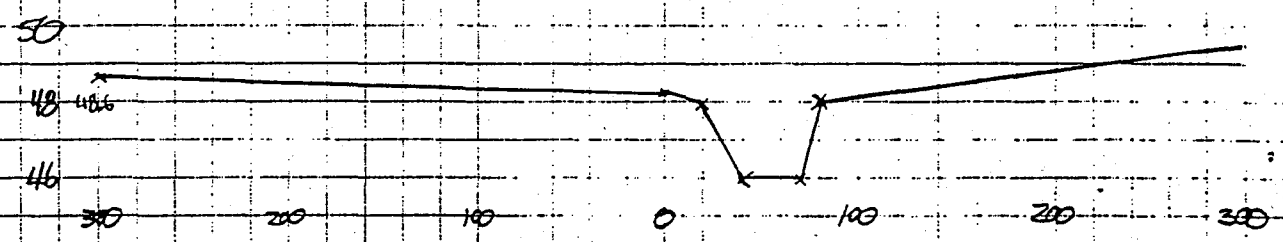
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 11-30-90

DIVERSION TABLES

WADDELL ROAD AND AT&SF RR AT COTTON LANE

CP130 TO CP144 CP130 TO CP131



WADDELL ROAD (WEST)
DIVERSION
S= .0036 ft/ft

AT&SF RR (NORTH)
REMAINDER
S= .0057 ft/ft

DT	DI144									
DI	0	37	124	257	440	743	1487	2233	3928	6436
DQ	0	0	0	0	0	196	657	1133	2198	3747

CP130 TO CP144

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0036
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	196.1	1.74	0.458	0.05	0.55	112.50	250.00	48.5	196
1.00	656.5	2.63	0.507	0.11	1.11	250.00	300.00	49.0	657

CP130 TO CP144

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0036
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	500

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	476.2	1.81	0.463	0.05	0.55	262.50	550.00	49.5	1133
1.00	1540.8	2.80	0.516	0.12	1.12	550.00	600.00	50.0	2198
1.50	3090.5	3.58	0.548	0.20	1.70	862.50	650.00	50.5	3747
2.00	5098.7	4.25	0.572	0.28	2.28	1200.00	700.00	51.0	5756

Enter Depth of Flow, or Press the <Esc> Key to End

CP130 TO CP131

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0057
Manning`s Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	220

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	270.2	2.21	0.577	0.08	0.58	122.50	270.00	49.5	1100
1.00	899.7	3.33	0.639	0.17	1.17	270.00	320.00	50.0	1730
1.50	1859.4	4.20	0.677	0.27	1.77	442.50	370.00	50.5	2689
2.00	3159.3	4.94	0.705	0.38	2.38	640.00	420.00	51.0	3989
2.50	4817.5	5.59	0.727	0.48	2.98	862.50	470.00	51.5	5647

Enter Depth of Flow, or Press the <Esc> Key to End

CP 130 TO CP131

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0057
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	5
Channel Side Slope - Right Side (horizontal/vertical)	10
Channel Bottom Width (feet)	30

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	37.0	2.19	0.576	0.07	0.57	16.88	37.50	46.5	37
1.00	123.9	3.30	0.638	0.17	1.17	37.50	45.00	47.0	124
1.50	257.4	4.16	0.675	0.27	1.77	61.88	52.50	47.5	257
2.00	439.6	4.88	0.703	0.37	2.37	90.00	60.00	48.0	440

CP130 TO CP131

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0057
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	80

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	107.0	2.04	0.565	0.06	0.56	52.50	130.00	48.5	547
1.00	389.9	3.00	0.622	0.14	1.14	130.00	180.00	49.0	830

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

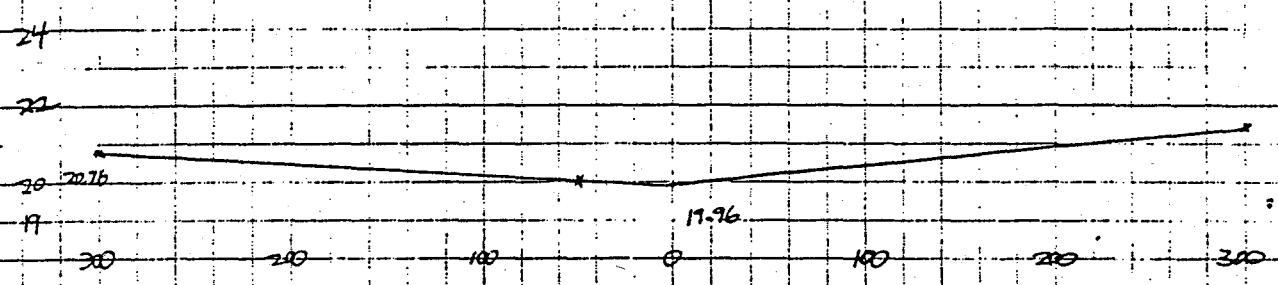
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

WADDELL ROAD AND SARIVAL AVENUE

CP131 TO CP145 CP131 TO CP132



WADDELL ROAD (WEST)
DIVERSION
S = .016 ft/ft

SARIVAL AVENUE (NORTH)
REMAINDER
S = .0044 ft/ft

DT	DI145						
DI	0	60	608	1900	3801	6042	9665
DQ	0	39	491	1546	2353	4171	6841

CP131 TO CP132

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	20.6	1.37	0.463	0.03	0.53	15.00	55.00	20.5	21
1.00	116.7	2.12	0.517	0.07	1.07	55.00	105.00	21.0	117

CP131 TO CP132

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	220

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	237.4	1.94	0.507	0.06	0.56	122.50	270.00	21.5	354
1.00	790.5	2.93	0.562	0.13	1.13	270.00	320.00	22.0	1448

Enter Depth of Flow, or Press the <Esc> Key to End

CP131 TO CP132

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	400

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.50	423.1	1.99	0.511	0.06	0.56	212.50	450.00	225	1871
1.00	1376.4	3.06	0.568	0.15	1.15	450.00	500.00	230	2824
1.50	2776.9	3.90	0.603	0.24	1.74	712.50	550.00	235	4225
2.00	4608.4	4.61	0.629	0.33	2.33	1000.00	600.00	240	6056

Enter Depth of Flow, or Press the <Esc> Key to End

CP 131 TO CP 145

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.016
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	39.3	2.62	0.884	0.11	0.61	15.00	55.00	20.5	39

CP 131 TO CP 145

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.016
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	220

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	452.6	3.69	0.967	0.21	0.71	122.50	270.00	21.0	491
1.00	1507.4	5.58	1.071	0.48	1.48	270.00	320.00	21.5	1546

Enter Depth of Flow, or Press the <Esc> Key to End

CP131 TO CP145

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.016
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	400

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.50	806.8	3.80	0.974	0.22	0.72	212.50	450.00	22.0	2353
1.00	2624.7	5.83	1.083	0.53	1.53	450.00	500.00	22.5	4171
1.50	5295.4	7.43	1.151	0.86	2.36	712.50	550.00	23.0	6841

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

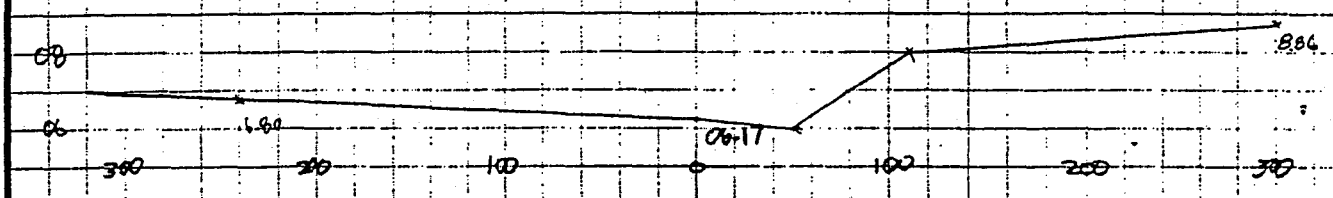
Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

WADDELL ROAD AND REEMS ROAD

CP133 TO CP146 CP133 TO CP134

CP133 TO CP 147



WADDELL ROAD (WEST) INTERSECTION REEMS ROAD (NORTH)

DIVERSION ① DIVERSION ② REMAINER

S= .01 % S= .01 % S= .0035 %

Split is distributed accordingly 40% 20% 40%

DT DI146

DI	0	80	341	1081	2600	4587	7337
DQ	0	32	136	432	1040	1835	2935

DT 1D147

DI	0	48	205	649	1560	2752	4402
DQ	0	16	68	216	520	917	1467

CP 133 TO CP146

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	31.1	2.07	0.699	0.07	0.57	15.00	55.00	6.5	31
1.00	175.9	3.20	0.779	0.16	1.16	55.00	105.00	7.0	176

CP133 TO CP146

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	350

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	560.0	2.99	0.769	0.14	0.64	187.50	400.00	7.5	736
1.00	1829.0	4.57	0.855	0.32	1.32	400.00	450.00	8.0	2005
1.50	3705.5	5.81	0.907	0.52	2.02	637.50	500.00	8.5	3881
2.00	6175.5	6.86	0.945	0.73	2.73	900.00	550.00	9.0	6352

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
February 28, 1991

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PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0009
Manning's Roughness Coefficient (n-value).....	0.0160
Channel Side Slope - Left Side (horizontal/vertical)....	2.00
Channel Side Slope - Right Side (horizontal/vertical)...	2.00
Channel Bottom Width (feet).....	10.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
1.0	29.5	2.46	0.468	0.094	1.094	12.0	14.0
2.0	101.2	3.62	0.511	0.203	2.203	28.0	18.0
3.0	215.8	4.50	0.536	0.314	3.314	48.0	22.0
4.0	377.5	5.24	0.555	0.427	4.427	72.0	26.0
5.0	591.1	5.91	0.571	0.543	5.543	100.0	30.0
6.0	861.3	6.52	0.584	0.661	6.661	132.0	34.0
7.0	1192.7	7.10	0.595	0.783	7.783	168.0	38.0
8.0	1589.9	7.64	0.605	0.907	8.907	208.0	42.0
9.0	2057.2	8.16	0.615	1.035	10.035	252.0	46.0
10.0	2598.9	8.66	0.623	1.165	11.165	300.0	50.0

==========

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A manual with equations & flow chart is available.

CP133 TO CP134

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0035
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	30
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	48.7	1.69	0.448	0.04	0.54	28.75	65.00	6.5	49
1.00	164.5	2.53	0.495	0.10	1.10	65.00	80.00	7.0	165
1.50	345.1	3.17	0.523	0.16	1.66	108.75	95.00	7.5	345
2.00	594.6	3.72	0.543	0.21	2.21	160.00	110.00	8.0	595

CP133 TO CP134

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0035
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	110

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	111.0	1.64	0.446	0.04	0.54	67.50	160.00	8.5	706
1.00	389.9	2.44	0.492	0.09	1.09	160.00	210.00	9.0	985
1.50	846.0	3.05	0.520	0.14	1.64	277.50	260.00	9.5	1441
2.00	1500.5	3.57	0.541	0.20	2.20	420.00	310.00	10.0	2095

Enter Depth of Flow, or Press the <Esc> Key to End

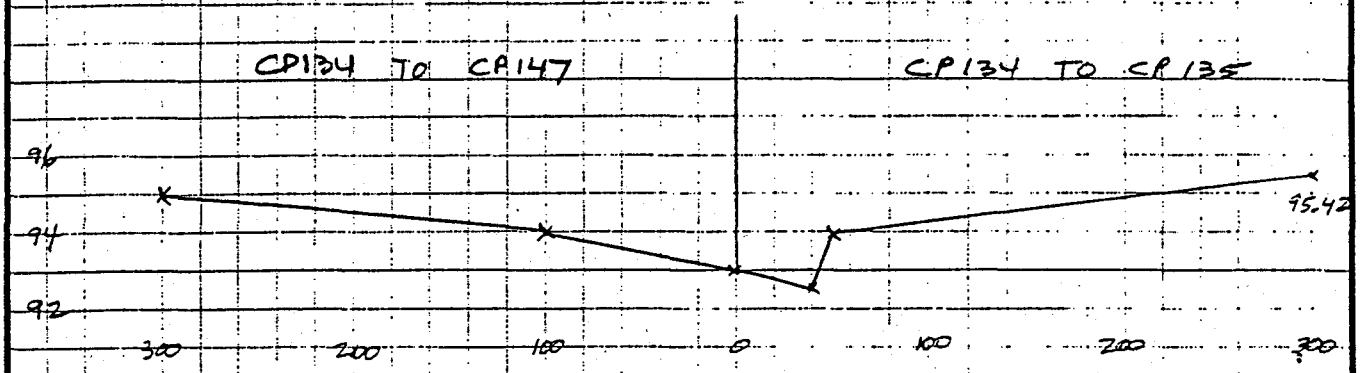
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

WADDEL ROAD AND ½ MILE EAST OF REEMS RD.



WADDELL ROAD (WEST) DIVERSION S= .04 ft/ft

½ MILE EAST OF REEMS RD. (NORTH) REMAINDER S= .0089 ft/ft

DT ZD147

DI	0	26	162	614	1050	2192	3494	6483	10967
DQ	0	0	62	352	697	1575	2539	4742	8027

CP 134 TO CP 147

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.04
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	62.1	4.14	1.397	0.27	0.77	15.00	55.00	935	62
1.00	351.8	6.40	1.558	0.64	1.64	55.00	105.00	940	352

CP 134 TO CP 147

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.04
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	344.6	5.51	1.505	0.47	0.97	62.50	150.00	945	697
1.00	1222.6	8.15	1.659	1.03	2.03	150.00	200.00	950	1575

Enter Depth of Flow, or Press the <Esc> Key to End

CP134 TO CP147

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.04
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	964.3	5.93	1.535	0.55	1.05	162.50	350.00	95.5	2539
1.00	3166.7	9.05	1.705	1.27	2.27	350.00	400.00	96.0	4742
1.50	6451.9	11.47	1.808	2.04	3.54	562.50	450.00	96.5	8027
2.00	10812.7	13.52	1.883	2.84	4.84	800.00	500.00	97.0	12388

Enter Depth of Flow, or Press the <Esc> Key to End

CP 134 TO CP135

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0089
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	6
Channel Side Slope - Right Side (horizontal/vertical)	80
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	26.2	1.98	0.664	0.06	0.56	13.25	48.00	93.0	26

CP134 TO CP135

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0089
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	6
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.50	73.9	2.87	0.725	0.13	0.63	25.75	53.00	93.5	100
1.00	235.7	4.45	0.806	0.31	1.31	53.00	56.00	94.0	262

Enter Depth of Flow, or Press the <Esc> Key to End

CP134 TO CP135

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0089
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	90.8	2.42	0.697	0.09	0.59	37.50	100.00	94.5	353
1.00	355.0	3.55	0.766	0.20	1.20	100.00	150.00	95.0	617

CP134 TO CP135

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0089
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	220

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	337.6	2.76	0.721	0.12	0.62	122.50	270.00	95.5	955
1.00	1124.2	4.16	0.799	0.27	1.27	270.00	320.00	96.0	1741
1.50	2323.5	5.25	0.846	0.43	1.93	442.50	370.00	96.5	2940
2.00	3947.7	6.17	0.881	0.59	2.59	640.00	420.00	97.0	4565
2.50	6019.8	6.98	0.908	0.76	3.26	862.50	470.00	97.5	6637

Enter Depth of Flow, or Press the <Esc> Key to End

CP135 TO CP136

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	53
Channel Side Slope - Right Side (horizontal/vertical)	40
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	24.2	1.71	0.576	0.05	0.55	14.12	51.50	810	24
1.00	136.0	2.64	0.642	0.11	1.11	51.50	98.00	81.5	136

CP135 TO CP136

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	120

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	166.2	2.29	0.619	0.08	0.58	72.50	170.00	82.0	302
1.00	578.6	3.40	0.682	0.18	1.18	170.00	220.00	82.5	714
1.50	1246.3	4.26	0.721	0.28	1.78	292.50	270.00	83.0	1382

Enter Depth of Flow, or Press the <Esc> Key to End

CP135 TO CP136

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	394.7	2.43	0.628	0.09	0.59	162.50	350.00	83.5	1777
1.00	1296.0	3.70	0.698	0.21	1.21	350.00	400.00	84.0	2678
1.50	2640.6	4.69	0.740	0.34	1.84	562.50	450.00	84.5	4023
2.00	4425.3	5.53	0.771	0.48	2.48	800.00	500.00	85.0	5807
2.50	6661.8	6.27	0.795	0.61	3.11	1062.50	550.00	85.5	8044

Enter Depth of Flow, or Press the <Esc> Key to End

CP135 TO CP148

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	20.6	1.37	0.463	0.03	0.53	15.00	55.00	82.0	21

CP135 TO CP148

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	114.3	1.83	0.499	0.05	0.55	62.50	150.00	82.5	135
1.00	405.5	2.70	0.550	0.11	1.11	150.00	200.00	83.0	427

Enter Depth of Flow, or Press the <Esc> Key to End

CP 135 TO CP 148

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	319.8	1.97	0.509	0.06	0.56	162.50	350.00	83.5	747
1.00	1050.3	3.00	0.565	0.14	1.14	350.00	400.00	84.0	1477
1.50	2139.9	3.80	0.600	0.22	1.72	562.50	450.00	84.5	2056
2.00	3586.2	4.48	0.625	0.31	2.31	800.00	500.00	85.0	3013

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

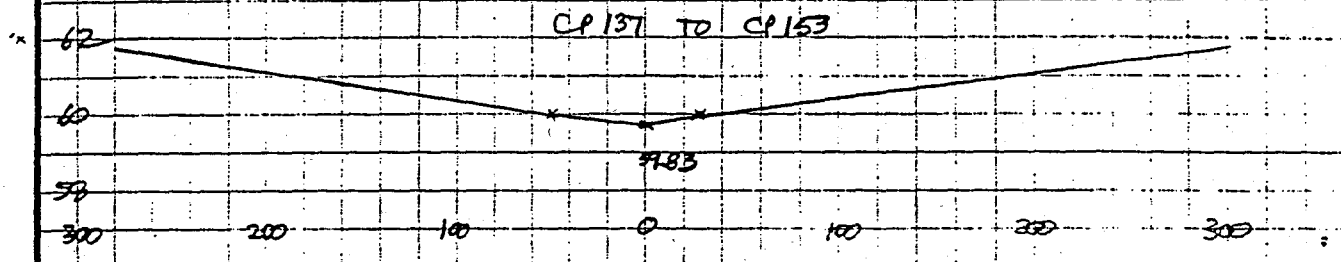
Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

WADDEL ROAD AND LITCHFIELD ROAD

CP137 TO CP149 CP137 TO CP138

CP137 TO CP153



WADDELL ROAD (WEST) DIVERSION ① S = .0046 ½

INT. DIVERSION ② S = .0081 ½

LITCHFIELD ROAD (NORTH) REMAINDER S = .022 ½

DT DI149

DI	0	6	169	684	1659	3199	5400	8353	12141
DQ	0	2	56	228	553	1066	1800	2784	4047

DT DI153

DI	0	4	113	456	1106	2133	3600	6553	8094
DQ	0	2	56	228	553	1066	1800	2784	4047

Form 200

CP137 TO CP138

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.022
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.17	3.7	1.62	0.884	0.04	0.21	2.29	22.00	400	4

CP137 TO CP138

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.022
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	30

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.50	98.7	3.59	1.079	0.20	0.70	27.50	80.00	405	102
1.00	423.1	5.29	1.188	0.43	1.43	80.00	130.00	410	427
1.50	1052.7	6.68	1.259	0.69	2.19	157.50	180.00	415	1057
2.00	2060.9	7.93	1.314	0.98	2.98	260.00	230.00	420	2065
2.50	3514.6	9.07	1.359	1.28	3.78	387.50	280.00	425	3518
3.00	5475.9	10.14	1.397	1.60	4.60	540.00	330.00	430	5480
3.50	8003.7	11.15	1.431	1.93	5.43	717.50	380.00	435	8008

Enter Depth of Flow, or Press the <Esc> Key to End

CP 137 TO CP149

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0046
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.17	1.7	0.74	0.404	0.01	0.18	2.29	22.00	40.0	2

CP137 TO CP149

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0046
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.50	65.3	1.74	0.501	0.05	0.55	37.50	100.00	40.5	67
1.00	255.2	2.55	0.551	0.10	1.10	100.00	150.00	41.0	257
1.50	600.4	3.20	0.583	0.16	1.66	187.50	200.00	41.5	602
2.00	1132.1	3.77	0.607	0.22	2.22	300.00	250.00	42.0	1134
2.50	1879.7	4.30	0.627	0.29	2.79	437.50	300.00	42.5	1882
3.00	2870.8	4.78	0.644	0.36	3.36	600.00	350.00	43.0	2873
3.50	4131.6	5.25	0.659	0.43	3.93	787.50	400.00	43.5	4133

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

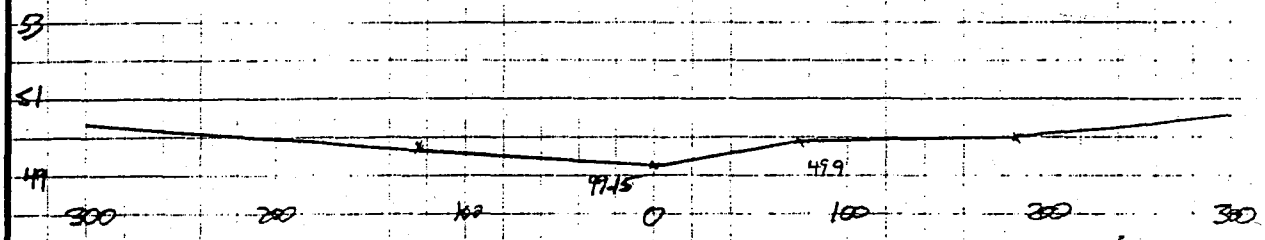
Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

WADDELL ROAD AND DYSART ROAD

CP138A ~~CP138~~ TO CP154

CP138A ~~CP138~~ TO CP157



WADDELL ROAD (WEST)
DIVERSION
S = .053 ½

DYSART ROAD (NORTH)
REMAINDER
S = .0128 ½

DT	DI 154							
DI	0	44	392	1366	3326	6347	10546	16046
DQ	0	30	268	874	1974	3682	6100	9324

CP138A
~~CP138~~ TO CP154

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.053
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.35	30.2	3.84	1.524	0.23	0.58	7.87	40.00	49.5	30
0.85	268.1	6.64	1.747	0.68	1.53	40.37	90.00	50.0	268
1.35	873.5	8.92	1.881	1.24	2.59	97.87	140.00	50.5	874
1.85	1974.0	10.94	1.979	1.86	3.71	180.37	190.00	51.0	1974
2.35	3681.8	12.79	2.058	2.54	4.89	287.87	240.00	51.5	3682
2.85	6099.9	14.51	2.124	3.27	6.12	420.37	290.00	52.0	6100
3.35	9323.7	16.13	2.181	4.04	7.39	577.87	340.00	52.5	9324

Enter Depth of Flow, or Press the <Esc> Key to End

CP 138A
~~CP 138~~ TO CP 157

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0128
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	93
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.35	14.1	1.89	0.749	0.06	0.41	7.45	37.55	49.5	14
0.85	123.8	3.27	0.859	0.17	1.02	37.85	84.05	50	124

CP 138A
~~CP 138~~ TO CP 157

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0128
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	93
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	368.4	3.30	0.864	0.17	0.67	111.62	246.50	50.5	492
1.00	1228.3	4.98	0.957	0.39	1.39	246.50	293.00	51.0	1352
1.50	2541.4	6.28	1.014	0.61	2.11	404.62	339.50	51.5	2665
2.00	4322.8	7.38	1.055	0.85	2.85	586.00	386.00	52.0	4446
2.50	6598.6	8.35	1.088	1.08	3.58	790.62	432.50	52.5	6722
3.00	9398.6	9.23	1.115	1.32	4.32	1018.50	479.00	53.0	9522

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

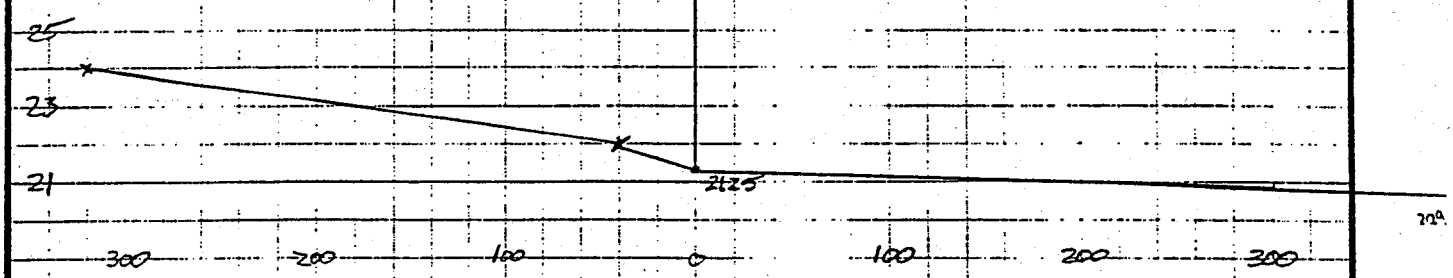
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

CACTUS ROAD AND COTTON LANE

CP144 TO CP164 CP144 TO CP165



S= .002

CACTUS ROAD (WEST) DIVERSION S= .021 1/1

COTTON LANE (NORTH) REMAINDER S= .005 1/1

DT ID 164

DI	0	407	1451	2130	3746	6248	9200	13452
DQ	0	0	123	241	602	1278	1864	3217

CP144 TO CP165

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.005
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	360

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	407.0	2.11	0.544	0.07	0.57	192.50	410.00	21.5	407
1.00	1328.1	3.24	0.605	0.16	1.16	410.00	460.00	22.0	1328

CP144 TO CP165

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.005
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	500

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	561.2	2.14	0.545	0.07	0.57	262.50	550.00	22.5	1889
1.00	1815.8	3.30	0.608	0.17	1.17	550.00	600.00	23.0	3144
1.50	3642.2	4.22	0.646	0.28	1.78	862.50	650.00	23.5	4970
2.00	6008.8	5.01	0.674	0.39	2.39	1200.00	700.00	24.0	7336
2.50	8907.2	5.70	0.696	0.50	3.00	1562.50	750.00	24.5	10235

Enter Depth of Flow, or Press the <Esc> Key to End

CP144 TO CP164

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.021
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	45.0	3.00	1.013	0.14	0.64	15.00	55.00	21.75	45
0.75	123.1	3.86	1.078	0.23	0.98	31.88	80.00	22.0	123

CP144 TO CP164

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.021
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	40

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	117.9	3.63	1.064	0.20	0.70	32.50	90.00	22.5	241
1.00	478.9	5.32	1.170	0.44	1.44	90.00	140.00	23.0	602
1.50	1154.9	6.69	1.238	0.70	2.20	172.50	190.00	23.5	1278

Enter Depth of Flow, or Press the <Esc> Key to End

CP 144 TO CP164

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.021
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	250

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	586.1	4.26	1.109	0.28	0.78	137.50	300.00	24.0	1864
1.00	1939.4	6.46	1.231	0.65	1.65	300.00	350.00	24.5	3217
1.50	3982.6	8.17	1.304	1.04	2.54	487.50	400.00	250	5260
2.00	6725.7	9.61	1.358	1.43	3.43	700.00	450.00	255	8004

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

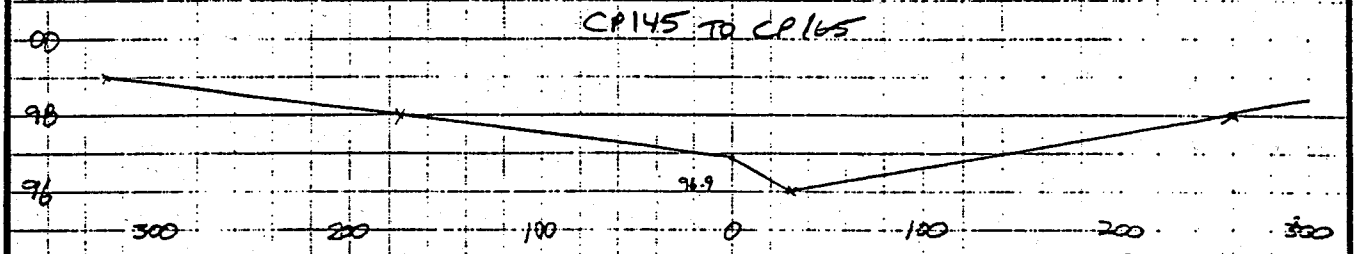
Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

CACTUS ROAD AND SARIVAL AVENUE

CP145 TO CP164 CP145 TO CP146

CP145 TO CP165



CACTUS ROAD (WEST) INT SARIVAL AVENUE (NORTH)

DIVERSION ① DIVERSION ② REMAINDER

S= .012 1/1 S= .02 1/1 S= .0091 1/1

DT ZD 164

DI	0	37	218	475	1177	1902	3592	5561	8738
DQ	0	0	0	34	193	517	1285	1864	3181

DT DI 165

DI	0	37	218	441	984	1385	2307	3697	5557
DQ	0	0	0	111	383	584	1044	1740	2670

CP 145 TO CP164

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot) .012
Manning's Roughness Coefficient (n-value) .03
Channel Side Slope - Left Side (horizontal/vertical) 0
Channel Side Slope - Right Side (horizontal/vertical) 100
Channel Bottom Width (feet) 5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	34.0	2.27	0.765	0.08	0.58	15.00	55.00	97.5	34
1.00	192.7	3.50	0.853	0.19	1.19	55.00	105.00	98.0	193

CP145 TO CP164

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot) .012
Manning's Roughness Coefficient (n-value) .03
Channel Side Slope - Left Side (horizontal/vertical) 0
Channel Side Slope - Right Side (horizontal/vertical) 100
Channel Bottom Width (feet) 180

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.50	324.0	3.16	0.835	0.16	0.66	102.50	230.00	98.5	517.
1.00	1092.0	4.75	0.923	0.35	1.35	230.00	280.00	99.0	1285

Enter Depth of Flow, or Press the <Esc> Key to End

CP145 TO CP164

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.012
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	330

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	579.3	3.26	0.842	0.17	0.67	177.50	380.00	99.5	1864
1.00	1895.9	4.99	0.935	0.39	1.39	380.00	430.00	100	3181
1.50	3848.8	6.34	0.992	0.62	2.12	607.50	480.00	100.5	5134

Enter Depth of Flow, or Press the <Esc> Key to End

CP 145 TO CP 146

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0091
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	33
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	37.5	1.96	0.668	0.06	0.56	19.12	71.50	96.5	37.
1.00	217.9	3.05	0.746	0.14	1.14	71.50	138.00	97.0	218

CP 145 TO CP 146

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0091
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	140

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	223.1	2.70	0.723	0.11	0.61	82.50	190.00	97.5	441
1.00	766.2	4.03	0.799	0.25	1.25	190.00	240.00	98.0	984

Enter Depth of Flow, or Press the <Esc> Key to End

CP145 TO CP146

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0091
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	260

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	400.6	2.81	0.731	0.12	0.62	142.50	310.00	98.5	1385
1.00	1323.4	4.27	0.811	0.28	1.28	310.00	360.00	99.0	2307
1.50	2712.6	5.40	0.859	0.45	1.95	502.50	410.00	99.5	3697
2.00	4573.0	6.35	0.895	0.63	2.63	720.00	460.00	100.0	5557

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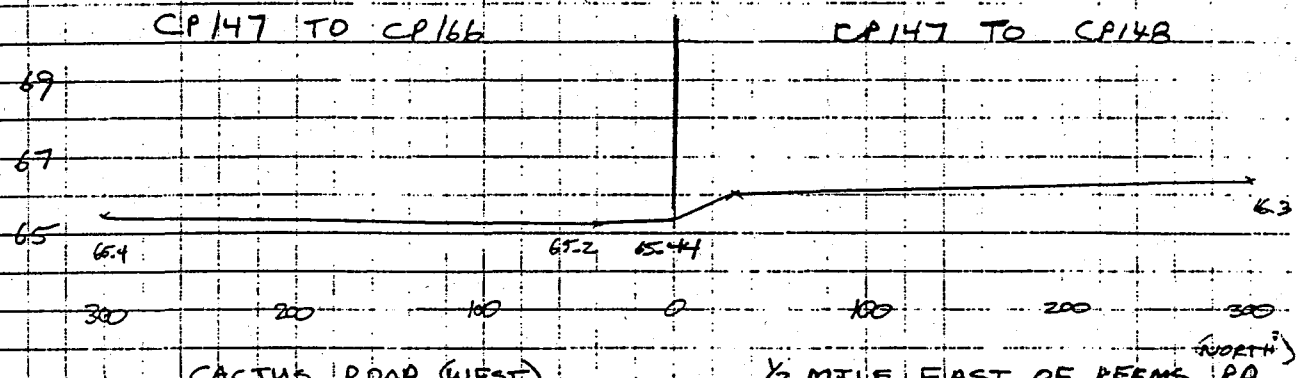
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

CACTUS ROAD AND ½ MILE EAST OF REEMS RD.



DT	DI 166						
DI	0	108	1147	2026	4338	8063	13066
DQ	0	108	1129	1961	3822	6531	10041

CP147 TO CP166

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.011
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.20	107.8	1.74	0.696	0.05	0.25	62.00	320.00	65.4	108
0.80	1129.1	4.15	0.865	0.27	1.07	272.00	380.00	66.0	1129

CP147 TO CP166

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.011
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	500

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	832.3	3.17	0.809	0.16	0.66	262.50	550.00	66.5	1961
1.00	2693.3	4.90	0.901	0.37	1.37	550.00	600.00	67.0	3822
1.50	5402.3	6.26	0.958	0.61	2.11	862.50	650.00	67.5	6531
2.00	8912.5	7.43	1.000	0.86	2.86	1200.00	700.00	68.0	10041

Enter Depth of Flow, or Press the <Esc> Key to End

CP147 TO CP148

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.005
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	54
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.56	18.3	1.62	0.505	0.04	0.60	11.27	35.24	66.0	18

CP147 TO CP148

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.005
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	30

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.50	47.1	1.71	0.514	0.05	0.55	27.50	80.00	66.5	65.

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CP147 TO CP148

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.005
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	400

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	451.0	2.12	0.544	0.07	0.57	212.50	450.00	67.0	576
1.00	1467.3	3.26	0.606	0.17	1.17	450.00	500.00	67.5	1532
1.50	2960.2	4.15	0.643	0.27	1.77	712.50	550.00	68.0	3025
2.00	4912.6	4.91	0.671	0.37	2.37	1000.00	600.00	68.5	4977

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

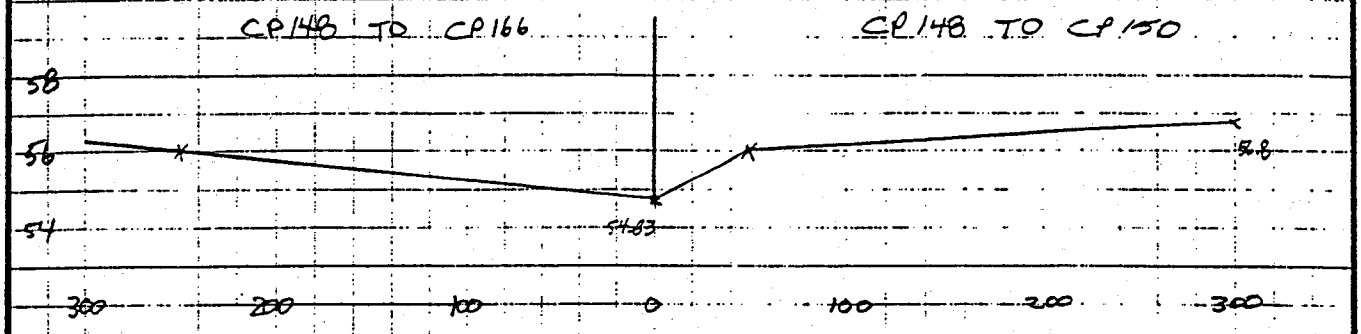
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

CACTUS ROAD AND BULLARD AVENUE

CP148 TO CP166 CP148 TO CP150



CACTUS ROAD (WEST)
REMAINDER
S = .008 ft/ft

BULLARD AVENUE (NORTH)
DIVERSION
S = .0023 ft/ft

DT DI150

DI	0	3	104	399	807	1777	2687	5053	8363
DQ	0	1	16	60	106	241	472	1000	1788

CP 148 TO CP166

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.17	2.2	0.98	0.533	0.01	0.18	2.29	22.00	55.0	2

CP 148 TO CP166

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	86.1	2.30	0.661	0.08	0.58	37.50	100.00	55.5	88
1.00	336.6	3.37	0.726	0.18	1.18	100.00	150.00	56.0	339

Enter Depth of Flow, or Press the <Esc> Key to End

CP148 TO CP166

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	250

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	361.7	2.63	0.685	0.11	0.61	137.50	300.00	56.5	701
1.00	1197.0	3.99	0.759	0.25	1.25	300.00	350.00	57.0	1536

C148 TO CP166

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	550

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	779.5	2.71	0.690	0.11	0.61	287.50	600.00	57.5	2315
1.00	2517.5	4.20	0.770	0.27	1.27	600.00	650.00	58.0	4053
1.50	5039.3	5.38	0.819	0.45	1.95	937.50	700.00	58.5	6575

Enter Depth of Flow, or Press the <Esc> Key to End

CP 148 TO CP 150

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0023
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	42
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.17	0.8	0.57	0.291	0.01	0.18	1.46	12.14	55.0	1
0.67	15.9	1.24	0.352	0.02	0.69	12.78	33.14	~~55.5~~	16
1.17	60.1	1.74	0.383	0.05	1.22	34.60	54.14	56.0	60

CP 148 TO CP 150

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0023
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	46.2	1.23	0.354	0.02	0.52	37.50	100.00	56.5	106
1.00	180.5	1.80	0.390	0.05	1.05	100.00	150.00	57.0	241

Enter Depth of Flow, or Press the <Esc> Key to End

CP148 TO CP150

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0023
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	231.2	1.42	0.368	0.03	0.53	162.50	350.00	57.5	472
1.00	759.3	2.17	0.409	0.07	1.07	350.00	400.00	58.0	1000
1.50	1547.1	2.75	0.434	0.12	1.62	562.50	450.00	58.5	1788
2.00	2592.8	3.24	0.452	0.16	2.16	800.00	500.00	59.0	2833
2.50	3903.1	3.67	0.466	0.21	2.71	1062.50	550.00	59.5	4144

Enter Depth of Flow, or Press the <Esc> Key to End

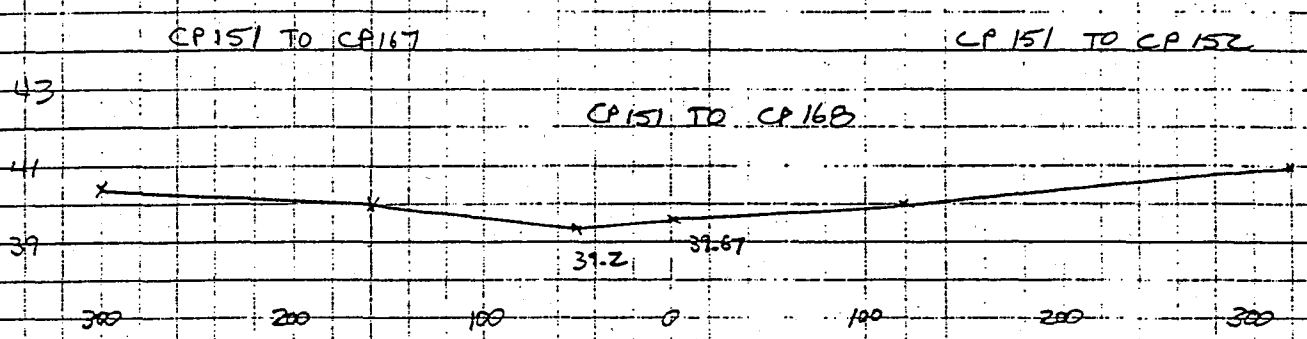
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

CACTUS ROAD AND LITCHFIELD ROAD



CACTUS ROAD (WEST) REMAINDER S= .0021 ft/ft

INT. DIVERSION ① S= .0033 ft/ft

LITCHFIELD ROAD (NORTH) DIVERSION ② S= .0025 ft/ft

DT ID168

DI	0	22	73	360	833	1579	2881	4702	7044
DQ	0	0	17	113	270	519	953	1560	2341

DT DI152

DI	0	22	56	247	563	1060	1928	3142	4703
DQ	0	0	17	113	270	519	953	1560	2341

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0025
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	11.6	0.78	0.262	0.01	0.51	15.00	55.00	13.0	12

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0025
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	64.6	1.03	0.282	0.02	0.52	62.50	150.00	13.5	77
1.00	229.2	1.53	0.311	0.04	1.04	150.00	200.00	14.0	241

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0025
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	350

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	210.0	1.12	0.288	0.02	0.52	187.50	400.00	14.5	451
1.00	685.9	1.71	0.321	0.05	1.05	400.00	450.00	15.0	927
1.50	1389.6	2.18	0.340	0.07	1.57	637.50	500.00	15.5	1631
2.00	2315.8	2.57	0.354	0.10	2.10	900.00	550.00	16.0	2557
2.50	3467.4	2.92	0.366	0.13	2.63	1187.50	600.00	16.5	3709
3.00	4850.6	3.23	0.375	0.16	3.16	1500.00	650.00	17.0	5092

Enter Depth of Flow, or Press the <Esc> Key to End

CP151 TO CP167

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0021
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.47	21.8	0.89	0.317	0.01	0.48	24.44	99.00	39.67	22

CP151 TO CP167

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0021
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	120

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.33	45.2	1.00	0.326	0.02	0.35	45.04	153.00	40.0	67
0.83	230.1	1.72	0.372	0.05	0.88	134.04	203.00	40.5	252

Enter Depth of Flow, or Press the <Esc> Key to End

CP151 TO CP167

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0021
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	221.0	1.36	0.352	0.03	0.53	162.50	350.00	41.0	473
1.00	725.6	2.07	0.391	0.07	1.07	350.00	400.00	41.5	978
1.50	1478.3	2.63	0.414	0.11	1.61	562.50	450.00	42.0	1730
2.00	2477.5	3.10	0.431	0.15	2.15	800.00	500.00	42.5	2729
2.50	3729.6	3.51	0.445	0.19	2.69	1062.50	550.00	43.0	3981

Enter Depth of Flow, or Press the <Esc> Key to End

CP151 TO CP152

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0025
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.33	5.7	0.80	0.328	0.01	0.34	7.09	38.00	40.0	6

CP151 TO CP152

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0025
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	120

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	101.5	1.40	0.378	0.03	0.53	72.50	170.00	40.5	108
1.00	353.5	2.08	0.417	0.07	1.07	170.00	220.00	41.0	360

Enter Depth of Flow, or Press the <Esc> Key to End

CP 151 TO CP 152

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0025
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	241.1	1.48	0.384	0.03	0.53	162.50	350.00	41.5	601
1.00	791.7	2.26	0.426	0.08	1.08	350.00	400.00	42.0	1151
1.50	1613.0	2.87	0.452	0.13	1.63	562.50	450.00	42.5	1973
2.00	2703.2	3.38	0.471	0.18	2.18	800.00	500.00	43.0	3063
2.50	4069.3	3.83	0.486	0.23	2.73	1062.50	550.00		
3.00	5721.9	4.24	0.498	0.28	3.28	1350.00	600.00		

Enter Depth of Flow, or Press the <Esc> Key to End

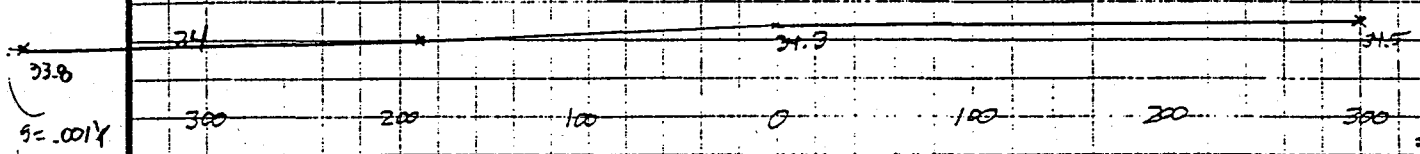
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

CACTUS ROAD AND ½ MILE EAST OF LITCHFIELD RD.
(AT+SF RR)



DT ID169

DI	0	334	482	1536	3908	6291	9848	14192
DQ	0	0	49	400	1058	1986	3171	4619

DT PI155

DI	0	334	433	1136	2450	4305	6677	9573
DQ	0	0	49	400	1058	1986	3171	4619

CP152 TO CP155

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.004
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.20	43.6	1.04	0.419	0.02	0.22	42.00	220.00	34.5	44

CP152 TO CP155

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.004
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.50	304.9	1.88	0.485	0.05	0.55	162.50	350.00	35.0	349
1.00	1001.4	2.86	0.539	0.13	1.13	350.00	400.00	35.5	1045
1.50	2040.3	3.63	0.572	0.20	1.70	562.50	450.00	36.0	2088
2.00	3419.3	4.27	0.595	0.28	2.28	800.00	500.00	36.5	3463
2.50	5147.3	4.84	0.614	0.36	2.86	1062.50	550.00	37.0	5191
3.00	7237.7	5.36	0.630	0.45	3.45	1350.00	600.00	37.5	7281

Enter Depth of Flow, or Press the <Esc> Key to End

CP 152 TO CP 168

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0026
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	400

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	333.7	1.48	0.390	0.03	0.53	225.00	500.00	34.3	334

CP152 TO CP 168

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0026
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	600

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.20	104.2	0.85	0.339	0.01	0.21	122.00	620.00	34.5	438
0.70	853.4	1.92	0.415	0.06	0.76	444.50	670.00	35.0	1187
1.20	2129.2	2.69	0.452	0.11	1.31	792.00	720.00	35.5	2463
1.70	3869.4	3.32	0.476	0.17	1.87	1164.50	770.00	36.0	4203
2.20	6051.5	3.87	0.495	0.23	2.43	1562.00	820.00	36.5	6385
2.70	8667.4	4.37	0.510	0.30	3.00	1984.50	870.00	37.0	9001
3.20	11716.2	4.82	0.522	0.36	3.56	2432.00	920.00	37.5	12050

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-27-91

DIVERSION TABLES

SUBBASIN 158A

Weir Flow East Into Agua Fria River

$Q = CLH^{3/2}$ $C = 2.6$

Q at 1124 = 592 cfs L = 275/2 H = 1.4

Q at 1126 = 10186 cfs L = 1750/2 H = 3.4

Q at 1128 = 30995 cfs L = 1900/2 H = 5.4

SEE STAGE-STORAGE-DISCHARGE TABLE FOR FLOW UNDER BRIDGE

DT DI158A

DI	0	1687	3972	6993	8033	11282
DQ	0	0	0	0	0	592

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANK/AGUA FRIA ADMS Prepared by JSE Date 2-27-91

STAGE - STORAGE - DISCHARGE TABLE

SUBBASIN (SBA)

BW = 120' TW = 180' LSS = 1.5 RSS = 1.5
S = .0028 % n = .035

ELEV. (FT)	AREA (AC)		VOLUME (AC-FT)		DISCHARGE (CFS)
1101.5	0		0		0
		5.23			
1108	1.61		5.23		0
		4.0			
1110	2.39		9.23		0
		19.7			
1114	7.46		28.93		0
		7.86			
1115 * Invert of Bridge	8.26		36.79		0
		37.25			
1118	16.57		74.04		1687
		36.55			
1120	19.98		110.59		3972
		48.81			
1122	28.83		159.4		6993
		17.99			
1122.6 * Weir Flow	31.14		177.39		8033
		48.54			
1124	33.20		225.93	592 + 10690	11282

Form 209

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION
February 27, 1991

==========

PROGRAM INPUT DATA:

DESCRIPTION	VALUE
Channel Bottom Slope (feet per foot).....	0.0028
Manning's Roughness Coefficient (n-value).....	0.0350
Channel Side Slope - Left Side (horizontal/vertical)....	1.50
Channel Side Slope - Right Side (horizontal/vertical)...	1.50
Channel Bottom Width (feet).....	120.0

==========

PROGRAM RESULTS:

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
1.0	269.9	2.22	0.394	0.077	1.077	121.5	123.0
2.0	857.8	3.49	0.440	0.189	2.189	246.0	126.0
3.0	1688.8	4.52	0.468	0.317	3.317	373.5	129.0
4.0	2732.8	5.42	0.489	0.457	4.457	504.0	132.0
5.0	3972.1	6.23	0.505	0.603	5.603	637.5	135.0
6.0	5395.0	6.97	0.519	0.754	6.754	774.0	138.0
7.0	6992.9	7.66	0.530	0.910	7.910	913.5	141.0
7.6	8033.0	8.04	0.536	1.005	8.605	998.6	142.8
8.0	8759.5	8.30	0.540	1.068	9.068	1056.0	144.0
9.0	10690.2	8.90	0.548	1.229	10.229	1201.5	147.0
10.0	12781.1	9.47	0.556	1.392	11.392	1350.0	150.0

==========

TRAPEZOIDAL CHANNEL ANALYSIS COMPUTER PROGRAM, Version 1.1 (c) 1986
Dodson & Associates, Inc., 7015 W. Tidwell, #107, Houston, TX 77092
(713) 895-8322. A manual with equations & flow chart is available.

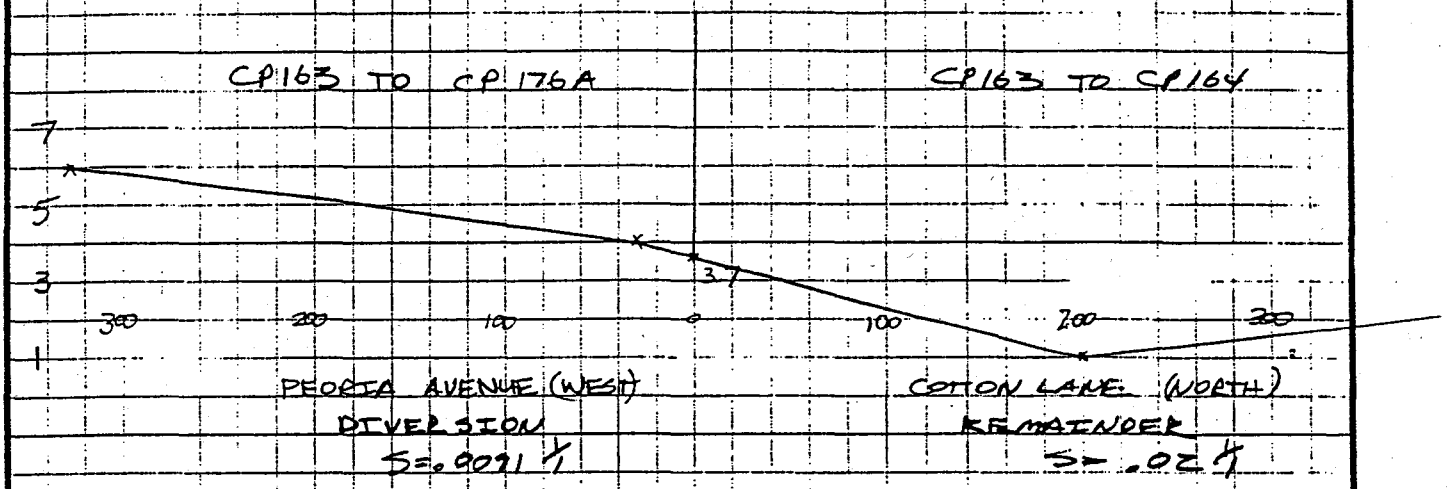
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

PEORIA AVENUE AND COTTON LANE



DT	DI176A									
DI	0	72	427	1229	2615	4708	5777	6545	8336	11092
DQ	0	0	0	0	0	0	9	95	329	762

CP163 TO CP176A

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0091
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.30	8.7	1.45	0.617	0.03	0.33	6.00	35.00	4.0	9
0.80	95.3	2.65	0.717	0.11	0.91	36.00	85.00	4.5	95
1.30	328.5	3.61	0.775	0.20	1.50	91.00	135.00	5.0	329
1.80	761.8	4.45	0.817	0.31	2.11	171.00	185.00	5.5	762
2.30	1442.3	5.23	0.850	0.42	2.72	276.00	235.00	6.0	1442
2.80	2413.0	5.94	0.878	0.55	3.35	406.00	285.00	6.5	2413

Enter Depth of Flow, or Press the <Esc> Key to End

CP163 TO CP164

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	80
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	71.9	2.88	0.988	0.13	0.63	25.00	95.00	1.5	72
1.00	426.7	4.49	1.105	0.31	1.31	95.00	185.00	2.0	427
1.50	1229.0	5.85	1.180	0.53	2.03	210.00	275.00	2.5	1229
2.00	2615.4	7.07	1.237	0.78	2.78	370.00	365.00	3.0	2615
2.50	4708.0	8.19	1.284	1.04	3.54	575.00	455.00	3.5	4708
2.70	5768.1	8.61	1.300	1.15	3.85	669.60	491.00	4.0	5768

CP163 TO CP164

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	681.9	4.20	1.085	0.27	0.77	162.50	350.00	4.5	6450
1.00	2239.2	6.40	1.205	0.64	1.64	350.00	400.00	5.0	8007
1.50	4562.2	8.11	1.278	1.02	2.52	562.50	450.00	5.5	10330
2.00	7645.8	9.56	1.332	1.42	3.42	800.00	500.00	6.0	13413

Enter Depth of Flow, or Press the <Esc> Key to End

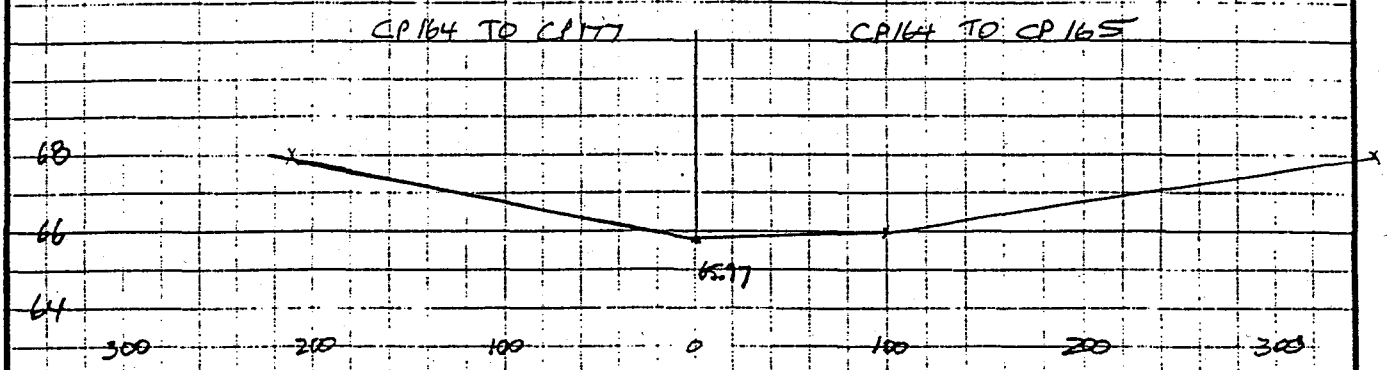
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

PEORIA AVENUE AND SARIVAL AVENUE



DT	DI177						
DI	0	295	1091	2467	4521	7345	11030
DQ	0	22	124	352	743	1329	2143

Form 209

CP164 TO CP165

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.025
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	272.5	4.36	1.190	0.30	0.80	62.50	150.00	66.5	273
1.00	966.5	6.44	1.311	0.64	1.64	150.00	200.00	67.0	967
1.50	2115.4	8.06	1.386	1.01	2.51	262.50	250.00	67.5	2115
2.00	3778.2	9.45	1.442	1.39	3.39	400.00	300.00	68.0	3778
2.50	6015.7	10.69	1.487	1.78	4.28	562.50	350.00	68.5	6016
3.00	8887.0	11.85	1.525	2.18	5.18	750.00	400.00	69.0	8887

CP164 TO CP177

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.005
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	22.0	1.46	0.494	0.03	0.53	15.00	55.00	66.5	22
1.00	124.4	2.26	0.551	0.08	1.08	55.00	105.00	67.0	124
1.50	352.1	2.93	0.588	0.13	1.63	120.00	155.00	67.5	352
2.00	742.6	3.54	0.616	0.19	2.19	210.00	205.00	68.0	743
2.50	1329.4	4.09	0.639	0.26	2.76	325.00	255.00	68.5	1329
3.00	2143.3	4.61	0.658	0.33	3.33	465.00	305.00	69.0	2143

Enter Depth of Flow, or Press the <Esc> Key to End

eec

Project Title Loop 303 White Tanks update Project No. 99551 Date 2/24

Subject Diversion Prepared By MJR Checked By _____ Page _____

Subbasin 165

Divert DI180 Reems Road and Peoria

(Divert data taken from Dysart Drain Rpt by WhB 1993, Survey data not available)

Reems Road capacity ~1000 cfs (Inverted Crown)

KK D165

DT DI 180

DI	0	1000	5000
DQ	0	0	4000

The WLB Group Inc. WLB

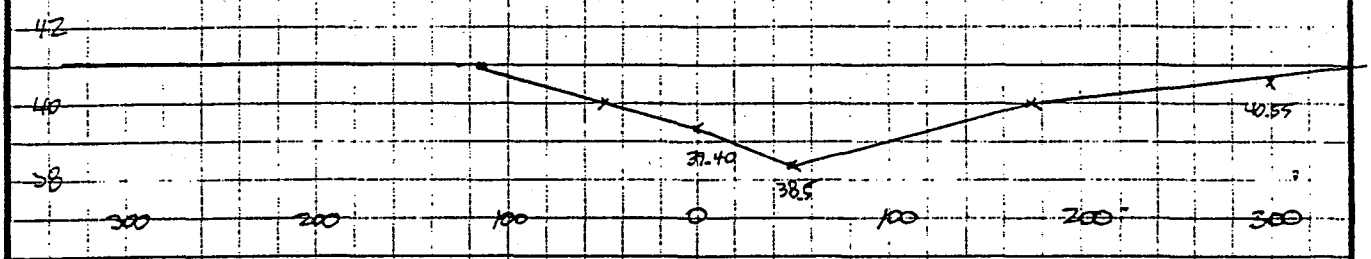
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

PEORIA AVENUE AND BULLARD AVENUE

CP166 TO CP180 CP166 TO CP167



PEORIA AVENUE (WEST) REMAINDER (BERM)
S = .02 %

BULLARD AVENUE (NORTH) DIVERSION
S = .028 %

DT DI167

DI	0	67	296	813	1921	3730	6346	9869
DQ	0	67	296	765	1709	3184	5250	7966

CP166 TO CP180

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	63
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.60	48.0	3.35	1.019	0.17	0.77	14.34	42.80	400	48
1.10	212.1	4.86	1.119	0.37	1.47	43.61	74.30	405	212
1.60	546.3	6.16	1.187	0.59	2.19	88.64	105.80	410	546
2.10	1096.1	7.34	1.239	0.84	2.94	149.41	137.30	415	1096
2.60	1902.7	8.42	1.283	1.10	3.70	225.94	168.80	420	1903
3.10	3003.8	9.44	1.320	1.38	4.48	318.21	200.30	425	3004

Enter Depth of Flow, or Press the <Esc> Key to End

CP166 TO CP167

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.028
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	80
Channel Side Slope - Right Side (horizontal/vertical)	55
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	66.6	3.44	1.172	0.18	0.68	19.38	72.50	39.0	67
0.90	295.5	4.99	1.287	0.39	1.29	59.17	126.50	39.4	296

CP166 TO CP167

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.028
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	120

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.60	468.9	5.21	1.298	0.42	1.02	90.00	180.00	40.0	765
1.10	1412.5	7.34	1.413	0.84	1.94	192.50	230.00	40.5	1709
1.60	2888.2	9.03	1.488	1.26	2.86	320.00	280.00	41.0	3184
2.10	4954.0	10.48	1.544	1.71	3.81	472.50	330.00	41.5	5250
2.60	7670.5	11.80	1.590	2.16	4.76	650.00	380.00	42.0	7966

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

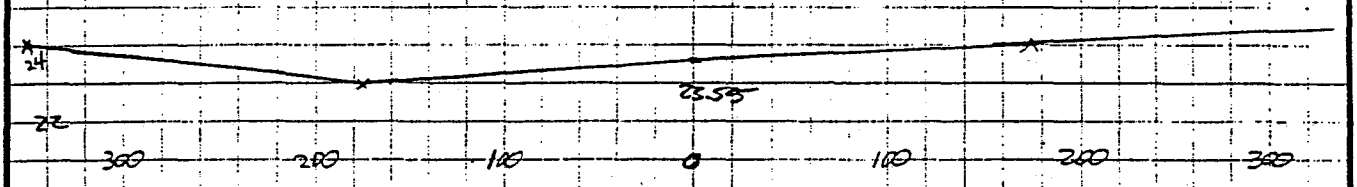
Subject WHITE TANKS Prepared by JSE Date 12-3-90

DIVERSION TABLES

PEORIA AVENUE AND LITCHFIELD ROAD

CP167 TO CP181A CP167 TO CP168

CP167 TO CP183



PEORIA AVENUE (WEST) INT LITCHFIELD ROAD (NORTH)

REMAINDER DIVERSION ① DIVERSION ②

S = .053 1/1 S = .031 1/1 S = .0044 1/1

DT 1 D 183

DI	0	274	1281	3337	6703	11624	18322
DQ	0	0	335	1021	2143	3783	6016

DT 2D 168

DI	0	274	946	2316	4560	7841	12306
DQ	0	0	14	250	587	1107	1838

CP167 TO CP181A

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.053
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	274.1	5.48	1.673	0.47	0.97	50.00	150.00	23.5	274
1.00	1216.8	8.11	1.846	1.02	2.02	150.00	250.00	24.0	1217
1.50	3086.8	10.29	1.959	1.64	3.14	300.00	350.00	24.5	3087
2.00	6116.4	12.23	2.045	2.32	4.32	500.00	450.00	25.0	6116
2.50	10516.8	14.02	2.116	3.05	5.55	750.00	550.00	25.5	10517
3.00	16484.0	15.70	2.177	3.83	6.83	1050.00	650.00	26.0	16484

CP167 TO CP168

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	63.9	1.70	0.490	0.05	0.55	37.50	100.00	24.0	64
1.00	249.6	2.50	0.539	0.10	1.10	100.00	150.00	24.5	250
1.50	587.2	3.13	0.570	0.15	1.65	187.50	200.00	25.0	587
2.00	1107.2	3.69	0.594	0.21	2.21	300.00	250.00	25.5	1107
2.50	1838.3	4.20	0.613	0.27	2.77	437.50	300.00	26.0	1838
3.00	2807.7	4.68	0.630	0.34	3.34	600.00	350.00	26.5	2808

Enter Depth of Flow, or Press the <Esc> Key to End

eec

Project Title Loop 303 White Tanks Update Project No. 99551 Date 2/21/01

Subject Diversion Prepared By MJR Checked By MJR Page

Subbasin 146

Divert DI166 Reems Road + Cactus Road

(Divert data taken from Dysart Drain Rpt. WMS 1993 survey data not available.)

Reems Rd capacity ~240 cfs excess spills to the southeast.

KK D146
DT DI166
DI 0 240 5000
DQ 0 0 4760

The WLB Group Inc. WLB

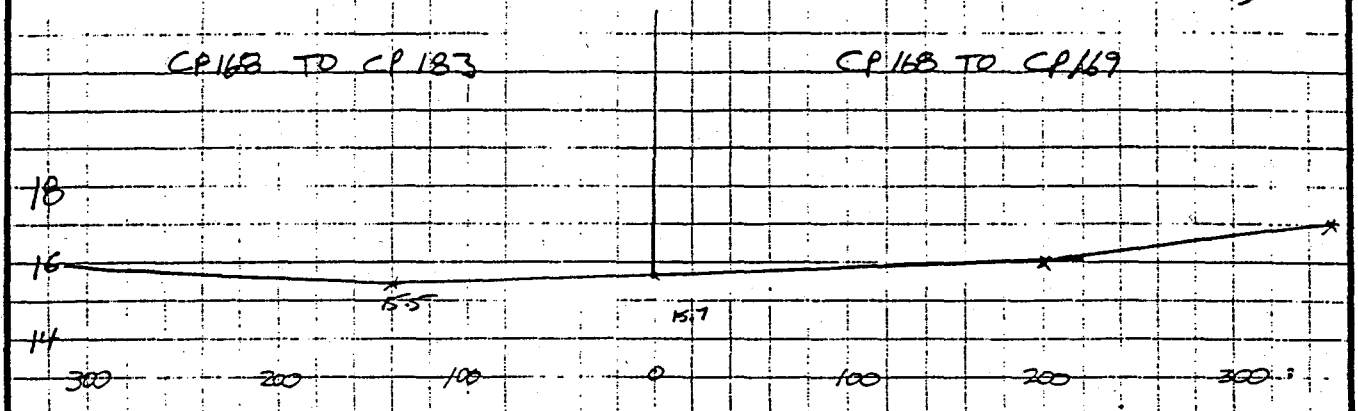
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

PEORIA AVENUE AND ½ MILE EAST OF LITCHFIELD RD.
(AT+SF RR)

CP168 TO CP183 | CP168 TO CP169



PEORIA AVENUE (WEST) REMAINDER S = .0045 ½

AT+SF RR (NORTH) DIVERSION S = .0071 ½

DT 2D169

DI	0	4	282	1072	2510	4582	7322	10770
DQ	0	0	59	334	981	1974	3330	5068

CP168 TO CP183

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0045
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.20	3.8	0.77	0.406	0.01	0.21	5.00	45.00	157	4

CP168 TO CP183

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0045
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.50	219.2	1.95	0.512	0.06	0.56	112.50	250.00	16.0	223
1.00	734.0	2.94	0.567	0.13	1.13	250.00	300.00	16.5	738
1.50	1524.9	3.70	0.600	0.21	1.71	412.50	350.00	17.0	1527
2.00	2603.7	4.34	0.624	0.29	2.29	600.00	400.00	17.5	2608
2.50	3988.3	4.91	0.644	0.37	2.87	812.50	450.00	18.0	3992
3.00	5698.6	5.43	0.660	0.46	3.46	1050.00	500.00	18.5	5702
3.50	7755.0	5.91	0.674	0.54	4.04	1312.50	550.00	19.0	7759

Enter Depth of Flow, or Press the <Esc> Key to End

CP 168 TO CP169

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0071
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.30	59.4	1.72	0.589	0.05	0.35	34.50	130.00	16.0	59

CP 168 TO CP169

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0071
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	275.4	2.45	0.643	0.09	0.59	112.50	250.00	16.5	334
1.00	922.0	3.69	0.712	0.21	1.21	250.00	300.00	17.0	981
1.50	1915.5	4.64	0.754	0.33	1.83	412.50	350.00	17.5	1974
2.00	3270.6	5.45	0.784	0.46	2.46	600.00	400.00	18.0	3330
2.50	5009.7	6.17	0.809	0.59	3.09	812.50	450.00	18.5	5068
3.00	7157.9	6.82	0.829	0.72	3.72	1050.00	500.00	19.0	7217

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

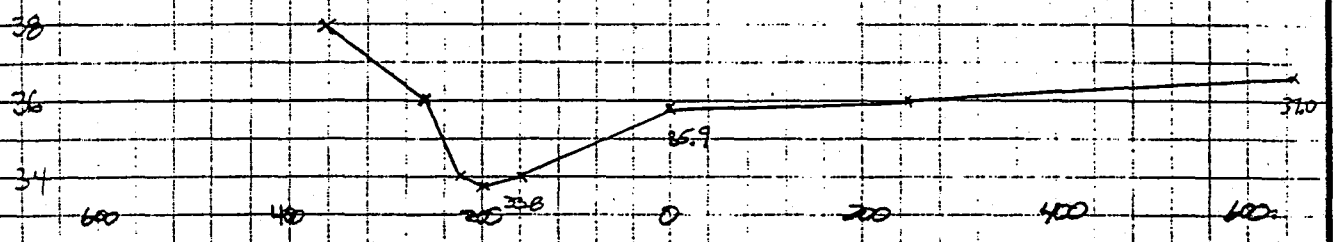
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-4-90

DIVERSION TABLES

OLIVE AVENUE AND ½ MILE WEST OF CITRUS ROAD

CP175 TO CP175A CP175 TO CP176



OLIVE AVENUE (WEST) DIVERSION S= .0022 ft

½ MILE WEST OF CITRUS RD (NORTH) REMAINDER S= .008 ft

DT	DI175A									
DI	0	53	200	459	854	1367	2544	4308	6658	9613
DQ	0	53	200	459	854	1047	1448	2105	2915	3906

CP175 TO CP175A

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0022
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	80
Channel Side Slope - Right Side (horizontal/vertical)	20
Channel Bottom Width (feet)	60

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	52.4	1.23	0.349	0.02	0.52	42.50	110.00	34.5	53
1.00	199.0	1.81	0.385	0.05	1.05	110.00	160.00	35.0	200
1.50	459.1	2.27	0.407	0.08	1.58	202.50	210.00	35.5	459
2.00	853.7	2.67	0.424	0.11	2.11	320.00	260.00	36.0	854

CP175 TO CP175A

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0022
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	50
Channel Bottom Width (feet)	260

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	193.3	1.42	0.362	0.03	0.53	136.25	285.00	36.5	1047
1.00	624.7	2.19	0.403	0.07	1.07	285.00	310.00	37.0	1478
1.50	1251.4	2.80	0.428	0.12	1.62	446.25	335.00	37.5	2105
2.00	2061.9	3.33	0.447	0.17	2.17	620.00	360.00	38.0	2915
2.53	3117.9	3.81	0.462	0.23	2.76	817.82	386.50	38.5	3906
2.50	3052.8	3.79	0.461	0.22	2.72	806.25	385.00		
3.00	4224.1	4.20	0.473	0.27	3.27	1005.00	410.00		

Enter Depth of Flow, or Press the <Esc> Key to End

CP175 TO CP176

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	220

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.50	320.1	2.61	0.684	0.11	0.61	122.50	270.00	36.5	320
1.00	1065.9	3.95	0.757	0.24	1.24	270.00	320.00	37.0	1066
1.50	2202.9	4.98	0.802	0.38	1.88	442.50	370.00	37.5	2203
2.00	3742.8	5.85	0.835	0.53	2.53	640.00	420.00	38.0	3743
2.50	5707.3	6.62	0.861	0.68	3.18	862.50	470.00	38.5	5707
3.00	8121.5	7.32	0.883	0.83	3.83	1110.00	520.00		
3.50	11011.7	7.97	0.901	0.99	4.49	1382.50	570.00		

Enter Depth of Flow, or Press the <Esc> Key to End

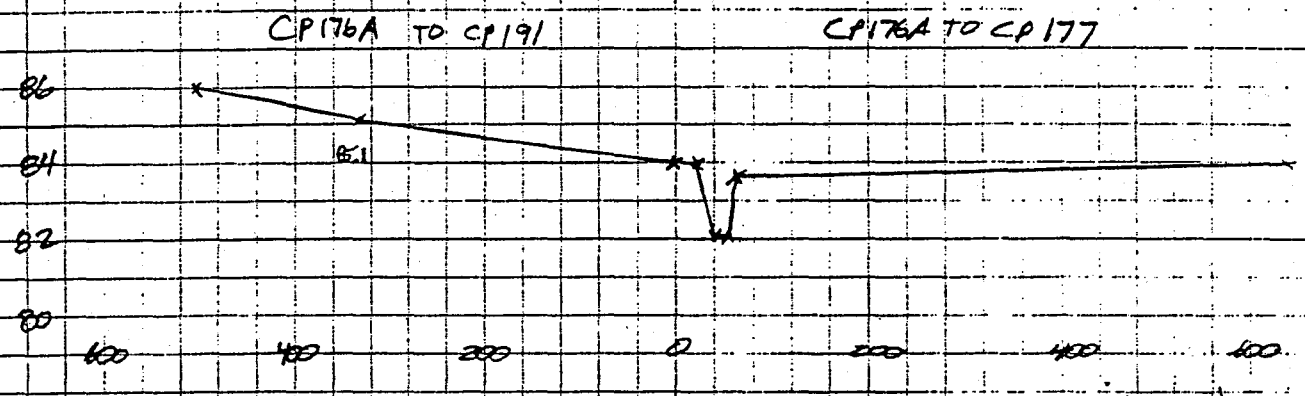
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-4-90

DIVERSION TABLES

OLIVE AVENUE AND COTTON LANE (AT+SF R.R.)



DT	DI 191								
DI	0	47	164	349	497	1107	2599	4968	8289
DQ	0	0	0	0	0	60	278	719	1444

CP176A TO CP191

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	20

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	60.0	2.67	0.829	0.11	0.61	22.50	70.00	84.5	60
1.00	277.6	3.97	0.915	0.24	1.24	70.00	120.00	85.0	278
1.50	719.4	5.05	0.972	0.40	1.90	142.50	170.00	85.5	719
2.00	1444.1	6.02	1.015	0.56	2.56	240.00	220.00	86.0	1444
2.50	2504.6	6.91	1.051	0.74	3.24	362.50	270.00	86.5	2505

Enter Depth of Flow, or Press the <Esc> Key to End

CP176A TO CP177

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	5
Channel Side Slope - Right Side (horizontal/vertical)	10
Channel Bottom Width (feet)	20

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	47.4	3.99	1.071	0.25	0.75	11.88	27.50	825	47
1.00	163.6	5.95	1.182	0.55	1.55	27.50	35.00	830	164
1.50	349.3	7.45	1.250	0.86	2.36	46.88	42.50	835	349
1.80	496.9	8.24	1.282	1.05	2.85	60.30	47.00	840	497

CP176A TO CP177

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	240

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	550.0	4.15	1.082	0.27	0.77	132.50	290.00	845	1047
1.00	1823.5	6.29	1.200	0.61	1.61	290.00	340.00	850	2321
1.50	3751.9	7.94	1.271	0.98	2.48	472.50	390.00	855	4249
2.00	6348.0	9.34	1.323	1.35	3.35	680.00	440.00	860	6845

Enter Depth of Flow, or Press the <Esc> Key to End

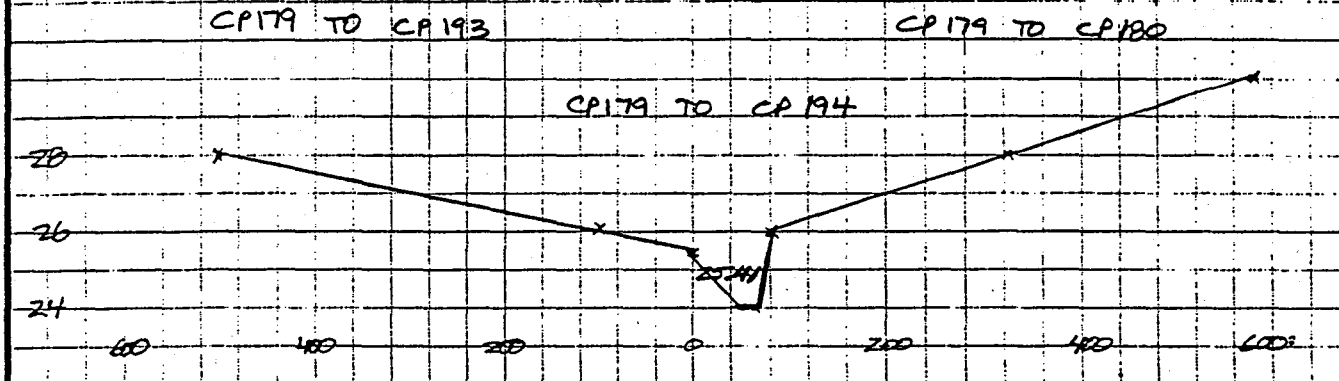
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

OLIVE AVENUE AND REEMS ROAD



OLIVE AVENUE (WEST) INT. REEMS ROAD (NORTH ALONG EAST BERM)

DIVERSION ① DIVERSION ② REMAINDER

S = .0128 1/1 S = .0114 1/1 S = .029 1/1

3 ft Berm exists on Southeast corner at Int. Flows will not go overland to the southeast until Water Depth > 3.0 ft.

DT DI 193

DI	0	77	285	644	1182	1466	2284	3759	6020
DQ	0	0	0	0	0	754	1254	2185	3642

DT DI 194

DI	0	77	285	644	1182	712	1030	1574	2378
DQ	0	0	0	0	0	0	0	0	0

CP 179 TO CP 193 + CP 179 to CP 194

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0128
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	10

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.
0.50	42.9	2.45	0.800	0.09	0.59	17.50	60.00	26.5
1.00	223.1	3.72	0.887	0.21	1.21	60.00	110.00	27.0
1.50	610.3	4.79	0.945	0.36	1.86	127.50	160.00	27.5
2.00	1263.7	5.74	0.989	0.51	2.51	220.00	210.00	28.0
2.50	2236.3	6.63	1.025	0.68	3.18	337.50	260.00	
3.00	3577.1	7.45	1.055	0.86	3.86	480.00	310.00	
3.50	5331.9	8.23	1.082	1.05	4.55	647.50	360.00	

Enter Depth of Flow, or Press the <Esc> Key to End

CP 179 TO CP180

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.029
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	25
Channel Side Slope - Right Side (horizontal/vertical)	10
Channel Bottom Width (feet)	25

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	76.9	4.55	1.274	0.32	0.82	16.88	42.50	24.5	77
1.00	284.6	6.70	1.402	0.70	1.70	42.50	60.00	25.0	285
1.50	644.4	8.38	1.483	1.09	2.59	76.87	77.50	25.5	644
2.00	1181.7	9.85	1.544	1.51	3.51	120.00	95.00	26.0	1182
2.50	1921.2	11.18	1.594	1.94	4.44	171.88	112.50		
3.00	2886.5	12.42	1.636	2.39	5.39	232.50	130.00		
3.50	4100.2	13.58	1.673	2.86	6.36	301.87	147.50		

CP179 TO CP 180 & CP179 TO CP194

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.029
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	80

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	241.3	4.60	1.275	0.33	0.83	52.50	130.00	26.5	1423
1.00	879.4	6.76	1.403	0.71	1.71	130.00	180.00	27.0	2061
1.50	1966.8	8.46	1.483	1.11	2.61	232.50	230.00	27.5	3149
2.00	3573.5	9.93	1.543	1.53	3.53	360.00	280.00	28.0	4756
2.50	5768.3	11.26	1.592	1.97	4.47	512.50	330.00		

Enter Depth of Flow, or Press the <Esc> Key to End

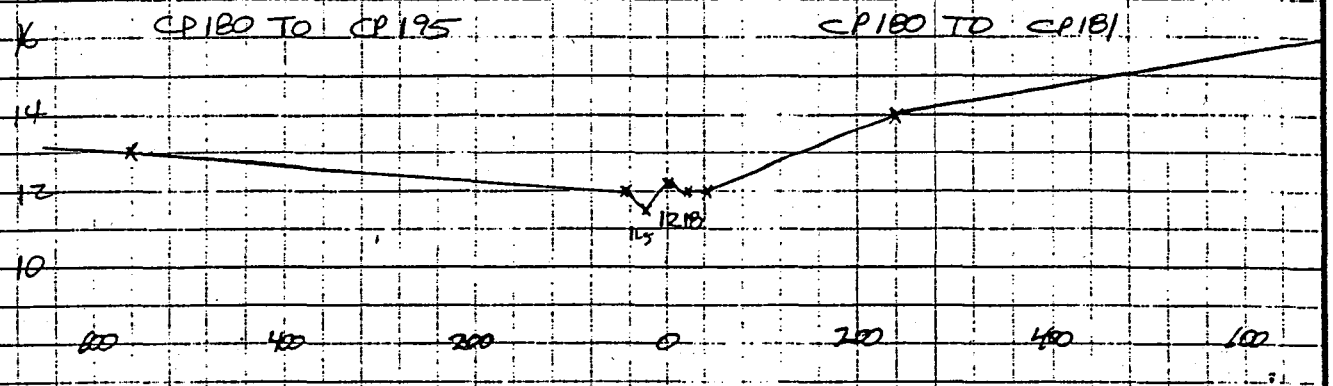
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

OLIVE AVENUE AND BULLARD AVENUE



OLIVE AVENUE (WEST) DIVERSION S = .0064 Y/1

BULLARD AVE (NORTH) REMAINDER S = .0012 Y/1

DT 1D195

DT	0	6	234	802	1724	3040	4789
DQ	0	6	206	687	1448	2560	3899

CP 180 TO CP 181

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0012
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	40

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	28.2	0.87	0.254	0.01	0.51	32.50	90.00	12.5	28
1.00	114.5	1.27	0.280	0.03	1.03	90.00	140.00	13.0	115
1.50	276.1	1.60	0.296	0.04	1.54	172.50	190.00	13.5	276
2.00	529.5	1.89	0.309	0.06	2.06	280.00	240.00	14.0	530
2.50	890.1	2.16	0.319	0.07	2.57	412.50	290.00	14.5	890
3.00	1372.2	2.41	0.328	0.09	3.09	570.00	340.00	15.0	1372

Enter Depth of Flow, or Press the <Esc> Key to End

CP180 TO CP195

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0064
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	10
Channel Side Slope - Right Side (horizontal/vertical)	10
Channel Bottom Width (feet)	2

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	6.1	1.74	0.567	0.05	0.55	3.50	12.00	12.0	6

CP180 TO CP195

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0064
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	150

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	199.5	2.28	0.607	0.08	0.58	87.50	200.00	12.5	206
1.00	681.2	3.41	0.671	0.18	1.18	200.00	250.00	13.0	687
1.50	1441.8	4.27	0.710	0.28	1.78	337.50	300.00	13.5	1448
2.00	2503.6	5.01	0.738	0.39	2.39	500.00	350.00	14.0	2510
2.50	3892.7	5.66	0.761	0.50	3.00	687.50	400.00	14.5	3899

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

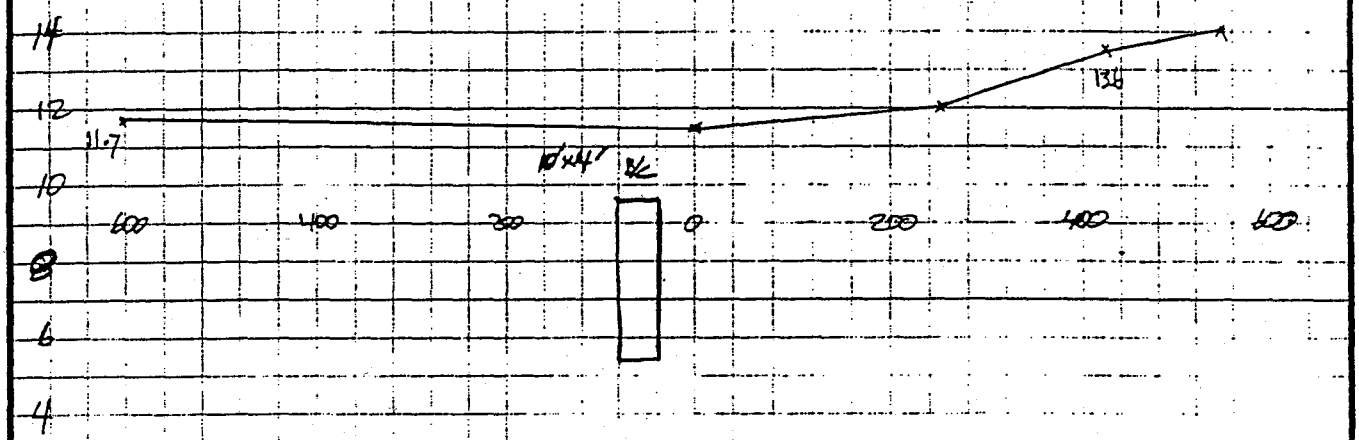
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

OLIVE AVENUE AND ½ MILE EAST OF BULLARD AVENUE (AT SFRR)

CP 181 TO CP 195 CP 181 TO CP 182



OLIVE AVENUE (WEST) DIVERSION S = .005 ft/ft

½ MILE EAST OF BULLARD AVE (AT SFRR) REMAINDER S = .004 ft/ft

DT	20 195							
DI	0	100	200	328	500	1251	3000	6011
DQ	0	100	200	328	500	1026	2250	4208

$Q = CLH^{3/2}$ C = 2.5 L = 850

at D = .5 Q = 2.5 (850)(.5)^3/2 = 751 cfs

at D = 1.0 L = 1000 Q = 2500 cfs

at D = 1.5 L = 1200 Q = 5511 cfs

CP181 TO CP195

BOX CULVERT ANALYSIS

COMPUTATION OF PERFORMANCE CURVE

Culvert Span (Width of Opening) (feet)	10
Culvert Rise (Height of Opening) (feet)	4
FHWA Chart Number (8,9,10,11,12 or 13)	8
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.012
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (feet)	80
Culvert Slope (feet per foot)	.005

Flow Rate (cfs)	Tailwater Depth(ft)	..Headwater (ft).. In.Ctrl.	Out.Ctrl.	Normal Depth(ft)	Critical Depth(ft)	Depth at Outlet(ft)	Outlet Vel.(fps)
100.00	1.00	2.32	2.50	1.18	1.46	1.46	6.85
200.00	1.50	3.73	3.42	1.86	2.32	1.86	10.74
328.00	2.00	5.83	4.99	2.61	3.22	2.61	12.55
500.00	2.50	9.26	7.74	3.52	4.00	3.52	14.20

Enter Flow Rate and Tailwater, or Press the <Esc> Key to End

CP181 TO CP195

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.005
Manning's Roughness Coefficient (n-value)	.025
Channel Side Slope - Left Side (horizontal/vertical)	5
Channel Side Slope - Right Side (horizontal/vertical)	5
Channel Bottom Width (feet)	20

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.50	27.7	2.46	0.647	0.09	0.59	11.25	25.00
1.00	92.6	3.71	0.715	0.21	1.21	25.00	30.00
1.50	192.4	4.66	0.757	0.34	1.84	41.25	35.00
2.00	328.3	5.47	0.787	0.46	2.46	60.00	40.00
2.50	502.7	6.19	0.811	0.59	3.09	81.25	45.00
3.00	718.0	6.84	0.832	0.73	3.73	105.00	50.00
3.50	976.9	7.44	0.849	0.86	4.36	131.25	55.00
4.00	1281.9	8.01	0.865	1.00	5.00	160.00	60.00
4.50	1635.6	8.55	0.879	1.14	5.64	191.25	65.00
5.00	2040.5	9.07	0.891	1.28	6.28	225.00	70.00
5.50	2499.1	9.57	0.903	1.42	6.92	261.25	75.00
6.00	3013.7	10.05	0.914	1.57	7.57	300.00	80.00
6.50	3586.9	10.51	0.924	1.72	8.22	341.25	85.00

Enter Depth of Flow, or Press the <Esc> Key to End

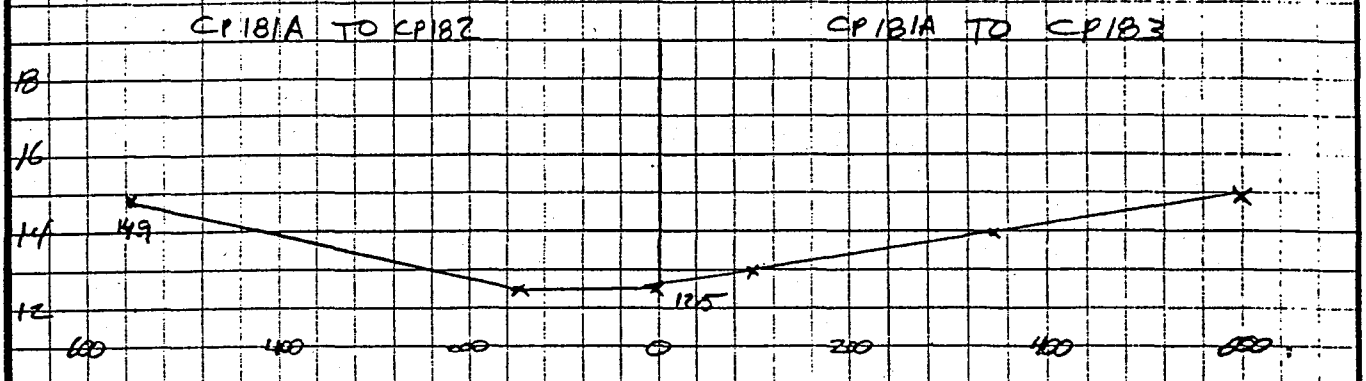
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSF Date 12-3-90

DIVERSION TABLES

LITCHFIELD ROAD AND ATYSF RAILROAD



ATSF RR (WEST) REMAINDER
S = .0042%

LITCHFIELD ROAD (NORTH) DIVERSION
S = 1/400 = .0025%

DT	2D/83								
DI	0	153	491	1117	1637	2812	4542	6810	9620
DQ	0	12	77	241	457	727	1631	2557	3709

Form 209

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0042
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	150

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	121.2	1.39	0.369	0.03	0.53	87.50	200.00	13.0	121
1.00	413.9	2.07	0.408	0.07	1.07	200.00	250.00	13.5	414
1.50	876.0	2.60	0.431	0.10	1.60	337.50	300.00	14.0	876

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0042
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	400

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	310.0	1.46	0.374	0.03	0.53	212.50	450.00	14.5	1186
1.00	1008.6	2.24	0.416	0.08	1.08	450.00	500.00	15.0	1885
1.50	2034.8	2.86	0.442	0.13	1.63	712.50	550.00	15.5	2911
2.00	3376.9	3.38	0.461	0.18	2.18	1000.00	600.00	16.0	4253
2.50	5035.3	3.84	0.476	0.23	2.73	1312.50	650.00	16.5	5911

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

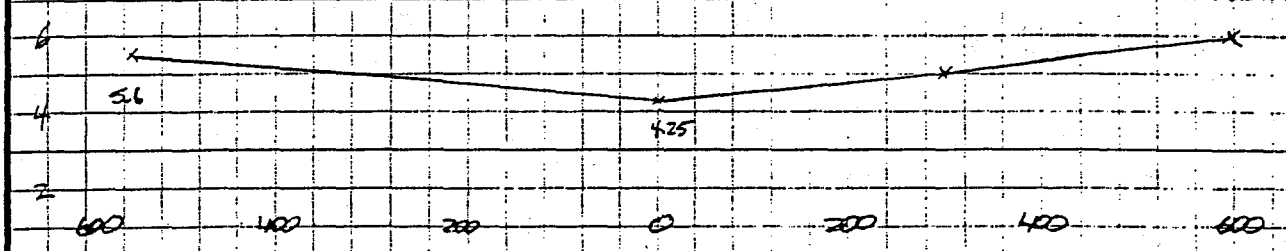
COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-90

DIVERSION TABLES

OLIVE AVENUE AND LITCHFIELD ROAD

CP 182 TO CP196 CP 182 TO CP 184



OLIVE AVENUE (WEST) DIVERSION S= .0035 1/1

LITCHFIELD ROAD (NORTH) REMAINDER S= .0033 1/1

DT	DI 196					
DI	0	173	611	1337	2388	3802
DQ	0	88	310	659	1212	1929

CP 182 TO CP 196

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0035
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.50	87.4	1.40	0.382	0.03	0.53	62.50	150.00
1.00	310.0	2.07	0.421	0.07	1.07	150.00	200.00
1.50	678.4	2.58	0.444	0.10	1.60	262.50	250.00
2.00	1211.7	3.03	0.462	0.14	2.14	400.00	300.00
2.50	1929.3	3.43	0.477	0.18	2.68	562.50	350.00

CP 182 TO CP 184

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0033
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)
0.50	84.8	1.36	0.371	0.03	0.53	62.50	150.00
1.00	301.0	2.01	0.408	0.06	1.06	150.00	200.00
1.50	658.8	2.51	0.432	0.10	1.60	262.50	250.00
2.00	1176.6	2.94	0.449	0.13	2.13	400.00	300.00
2.50	1873.4	3.33	0.463	0.17	2.67	562.50	350.00

Enter Depth of Flow, or Press the <Esc> Key to End

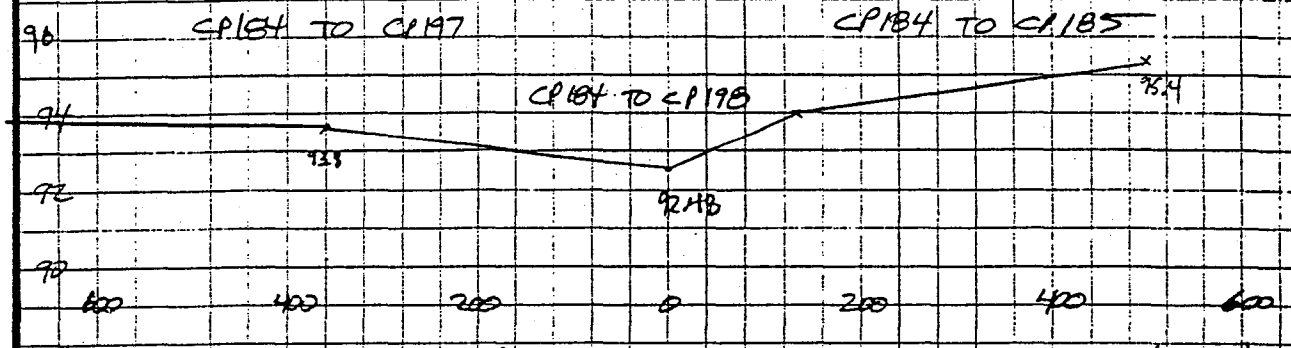
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-3-80

DIVERSION TABLES

OLIVE AVENUE AND DYSART ROAD



Assume Approximately 40% 40% 20% Split

DT DI 197

DI	0	350	1274	2834	4789	7664
DQ	0	140	509	1134	1916	3066

DT DI 198

DI	0	210	765	1700	2873	4598
DQ	0	140	509	1134	1916	3066

Form 209

CP192 TO CP209

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot) .02
Manning's Roughness Coefficient (n-value) .035
Channel Side Slope - Left Side (horizontal/vertical) 100
Channel Side Slope - Right Side (horizontal/vertical) 100
Channel Bottom Width (feet) 200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.25	124.9	2.22	0.825	0.08	0.33	56.25	250.00	26.25	125
0.50	418.7	3.35	0.914	0.17	0.67	125.00	300.00	26.50	419

CP192 TO CP209

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot) .02
Manning's Roughness Coefficient (n-value) .035
Channel Side Slope - Left Side (horizontal/vertical) 0
Channel Side Slope - Right Side (horizontal/vertical) 100
Channel Bottom Width (feet) 220

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	433.8	3.54	0.926	0.19	0.69	122.50	270.00	27.0	853
1.50	2985.4	6.75	1.087	0.71	2.21	442.50	370.00	27.5	3404
2.00	5072.4	7.93	1.131	0.98	2.98	640.00	420.00	28.0	5491
2.50	7734.9	8.97	1.167	1.25	3.75	862.50	470.00	28.5	8154
3.00	11006.8	9.92	1.196	1.53	4.53	1110.00	520.00	29.0	11426

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot) .02
Manning's Roughness Coefficient (n-value) .035
Channel Side Slope - Left Side (horizontal/vertical) 0
Channel Side Slope - Right Side (horizontal/vertical) 100
Channel Bottom Width (feet) 220

*** RESULTS ***

Depth Flow Rate Velocity Froude Velocity Energy Flow Area Top Width

CP 192 TO CP 193

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	120

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.25	60.5	1.83	0.674	0.05	0.30	33.13	145.00	26.50	61

CP192 TO CP193

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	20

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	51.4	2.29	0.711	0.08	0.58	22.50	70.00	27	112
1.00	238.0	3.40	0.784	0.18	1.18	70.00	120.00	27.5	299
1.50	616.7	4.33	0.833	0.29	1.79	142.50	170.00	28	678
2.00	1237.8	5.16	0.870	0.41	2.41	240.00	220.00	28.5	1299
2.50	2146.8	5.92	0.901	0.54	3.04	362.50	270.00	29	2208
3.00	3385.9	6.64	0.927	0.68	3.68	510.00	320.00	29.5	3447

Enter Depth of Flow, or Press the <Esc> Key to End

eec

Project Title Loop 303 White Tanks update Project No. 99551 Date 2/26/01

Subject Diversion Prepared By MJR Checked By _____ Page _____

Subbasin 193 1

Divert DI211 Northern Ave + Alsup Alignment

Survey data not available. Assume 80/20 split

80% spills to the south

20% concentrates at Reems + Northern

KK D193

DT DI211

DI	0	100	200	400	600	800	1000	2000
DQ	0	80	160	320	420	640	800	1600

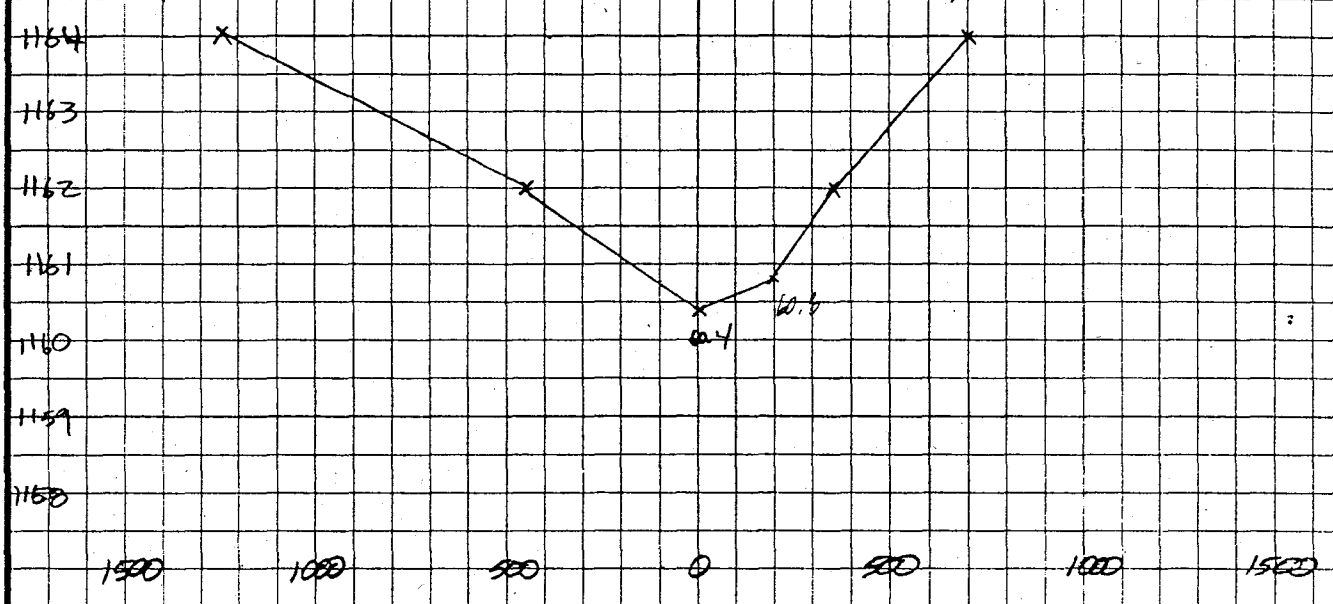
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN 207 GLENDALE AVE AND CITRUS ROAD



DT 2D208

DI 0 1709 12182

DQ 0 1314 6607

Form 209

CP207 TO CP208

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	350

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	CR.
2.00	5293.3	5.88	0.810	0.54	2.54	900.00	550.00	1164	6607

Enter Depth of Flow, or Press the <Esc> Key to End

C1207 TO C1208

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.40	15.5	1.55	0.579	0.04	0.44	10.00	45.00	1162.8	15

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.20	1299.2	4.16	0.743	0.27	1.47	312.00	320.00	1162	1314

Enter Depth of Flow, or Press the <Esc> Key to End

CP 207 TO CP 217

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.60	394.7	2.90	0.563	0.13	1.73	136.00	165.00	1162	395

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	450

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
2.00	5179.9	4.71	0.638	0.34	2.34	1100.00	650.00	1164	5575

Enter Depth of Flow, or Press the <Esc> Key to End

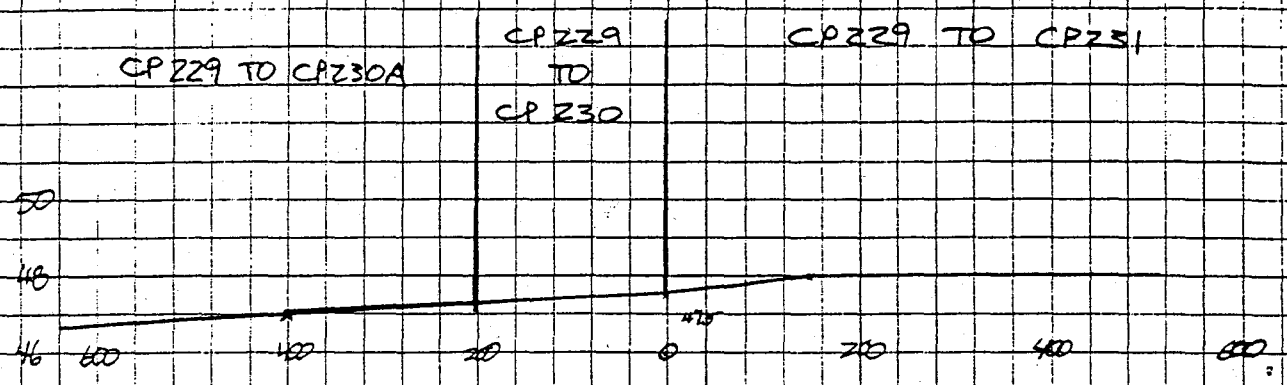
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-12-90

SUBBASIN 229 DIVERSION TABLES

INTERSECTION OF AIRLINE CANAL AND EL MIRAGE ROAD



ESTIMATE WIER FLOW OVER AIRLINE CANAL

$Q = CLH^{3/2}$

DT	ID230					
DI	0	612	1224	2470	3990	4952
DQ	0	89	177	500	919	1414

DT	DI231					
DI	0	523	1047	1970	3071	3538
DQ	0	24	47	133	244	375

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

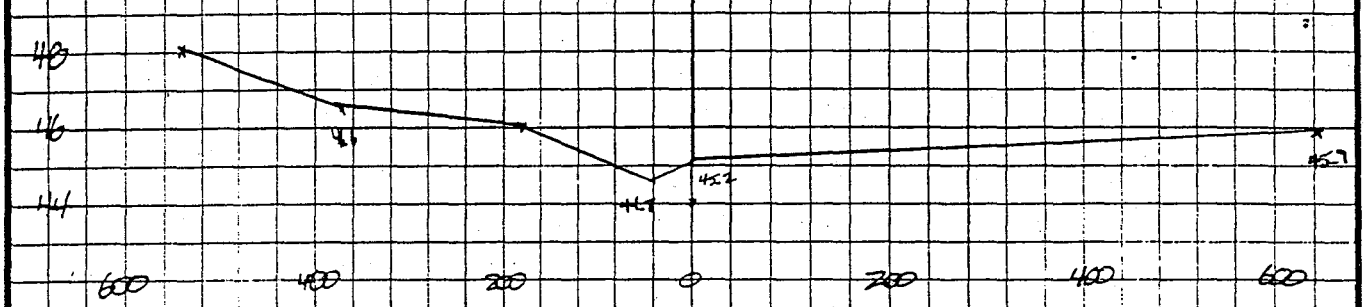
Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 12-12-90

DIVERSION TABLES

SUBBASIN 230A

INTERSECTION OF BETHANY HOME RD AND AIRLINE CANAL

CP 230A TO CP 244A CP 230A TO CP 230



BETHANY HOME RD (WEST)
REMAINDER
S = .00043 ft/ft

AIRLINE CANAL (NORTH)
DIVERSION
S = .025 ft/ft

DT	20230						
DI	0	26	221	743	1717	3247	5429
DQ	0	17	190	653	1575	2869	4799

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.00043
Manning's Roughness Coefficient (n-value)	.04
Channel Side Slope - Left Side (horizontal/vertical)	80
Channel Side Slope - Right Side (horizontal/vertical)	80
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.50	7.1	0.32	0.109	0.00	0.50	22.50	85.00	45.2	7

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.00043
Manning's Roughness Coefficient (n-value)	.04
Channel Side Slope - Left Side (horizontal/vertical)	80
Channel Side Slope - Right Side (horizontal/vertical)	80
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.30	2.0	0.23	0.100	0.00	0.30	8.70	53.00	45.5	9
0.80	23.7	0.43	0.117	0.00	0.80	55.20	133.00	50.0	31
1.30	83.2	0.59	0.127	0.01	1.31	141.70	213.00	54.5	90
1.80	194.8	0.73	0.134	0.01	1.81	268.20	293.00	57.0	202
2.30	370.8	0.85	0.139	0.01	2.31	434.70	373.00	57.5	378
2.80	622.7	0.97	0.144	0.01	2.81	641.20	453.00	52.0	630

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.025
Manning's Roughness Coefficient (n-value)	.025
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.30	17.3	2.88	1.227	0.13	0.43	6.00	35.00	45.5	17
0.80	189.6	5.27	1.426	0.43	1.23	36.00	85.00	50.0	190
1.30	653.3	7.18	1.541	0.80	2.10	91.00	135.00	50.5	653
1.80	1515.1	8.86	1.624	1.22	3.02	171.00	185.00	51.0	1515
2.30	2868.7	10.39	1.690	1.68	3.98	276.00	235.00	51.5	2869
2.80	4799.4	11.82	1.745	2.17	4.97	406.00	285.00	52.0	4799
3.30	7386.5	13.17	1.793	2.69	5.99	561.00	335.00	52.5	7387

Enter Depth of Flow, or Press the <Esc> Key to End

• Divert Removed from Model
KMH
12-20-00

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

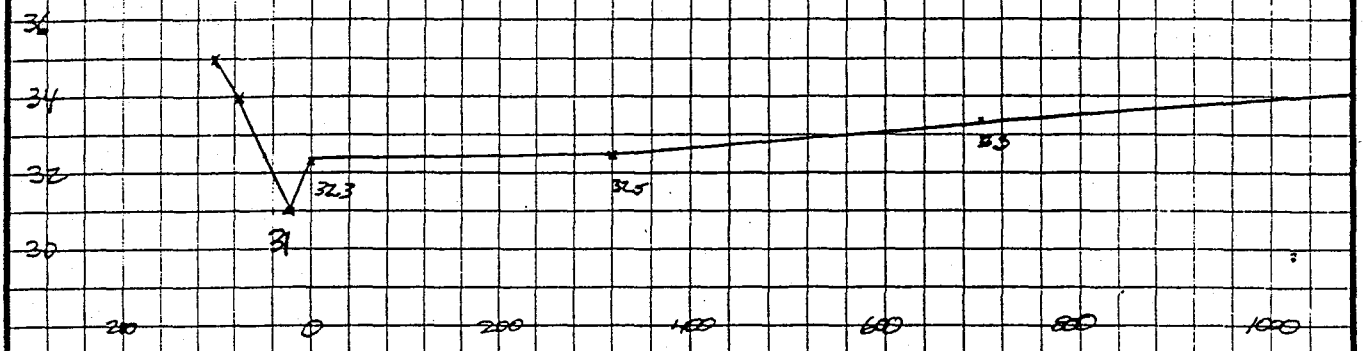
Subject WHITE TANKS ADMS Prepared by JSE Date 12-12-90

DIVERSION TABLES

SUBBASIN 244 → Removed from Model due to Cotter Channel

EL MIRAGE ROAD AND ½ MILE NORTH OF CAMELBACK ROAD

CP244 TO CP243 CP244 TO CP245



DRAINAGE DITCH (WEST) REMAINDER
S = .001 %

EL MIRAGE RD (NORTH) DIVERSION
S = .0053 %

DT	DI 245						
DI	0	4	20	37	409	1849	4296
DQ	0	0	0	0	354	1750	4133

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.001
Manning's Roughness Coefficient (n-value)	.04
Channel Side Slope - Left Side (horizontal/vertical)	23
Channel Side Slope - Right Side (horizontal/vertical)	16
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	3.9	0.53	0.169	0.00	0.50	7.38	24.50	315	4
1.00	19.5	0.79	0.188	0.01	1.01	24.50	44.00	320	20
1.30	36.8	0.93	0.195	0.01	1.31	39.45	55.70	32.3	37

<Enter>: Repeat, <R>eport, <S>creen Graph, <P>rint Graph, or <Esc>: End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.001
Manning's Roughness Coefficient (n-value)	.04
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	16
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	18.9	0.70	0.181	0.01	0.51	27.00	58.00	328	56
1.00	61.9	1.07	0.201	0.02	1.02	58.00	66.00	33.3	99
1.50	125.5	1.35	0.212	0.03	1.53	93.00	74.00	32.8	162

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

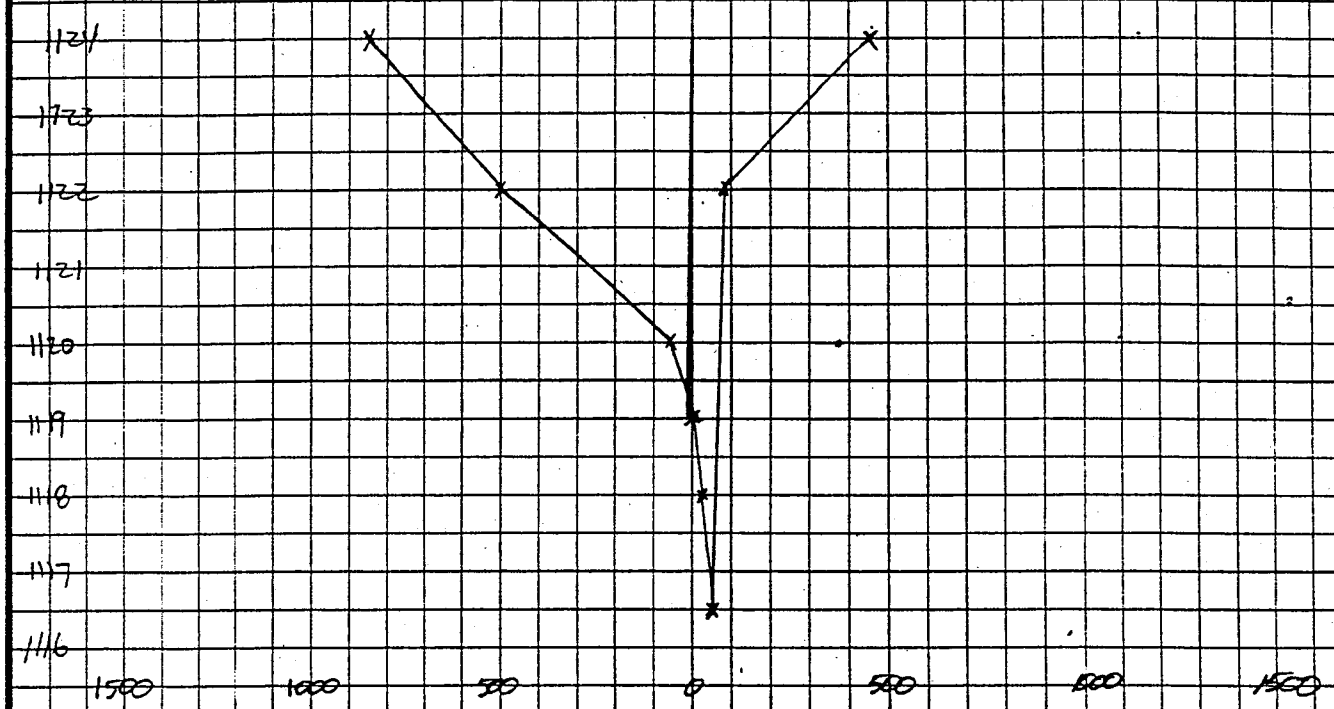
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN 234 CAMELBACK ROAD AND ½ MILE EAST OF PERRYVILLE ROAD

CP 234 TO CP 248 CP 234 TO CP 235



CAMELBACK ROAD (WEST) DIVERSION S=.0133%

½ MILE EAST OF PERRYVILLE ROAD - BERM REMAINDER S=.0067% (NORTH)

DT	10248				
DI	0	290	677	3521	13393
DQ	0	0	174	1824	10224

CP234 TO CP248

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	173.9	3.16	0.770	0.16	1.16	55.00	105.00	1120	174

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
2.00	1649.9	5.50	0.885	0.47	2.47	300.00	250.00	1122	1824

Enter Depth of Flow, or Press the <Esc> Key to End

CP 234 TO CP 248

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	500

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
2.00	8400.1	7.00	0.942	0.76	2.76	1200.00	700.00	1124	10224

Enter Depth of Flow, or Press the <Esc> Key to End

CP234 TO CP235

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	25
Channel Side Slope - Right Side (horizontal/vertical)	10
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	289.9	3.62	0.618	0.20	2.20	80.00	75.00	1119	290

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	10
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	60

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.00	212.9	3.28	0.599	0.17	1.17	65.00	70.00	1120	503
3.00	1407.7	6.26	0.697	0.61	3.61	225.00	90.00	1122	1697

Enter Depth of Flow, or Press the <Esc> Key to End

CP 234 TO CP 235

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	80

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
2.00	1472.3	4.09	0.636	0.26	2.26	360.00	280.00	1124	3169

Enter Depth of Flow, or Press the <Esc> Key to End

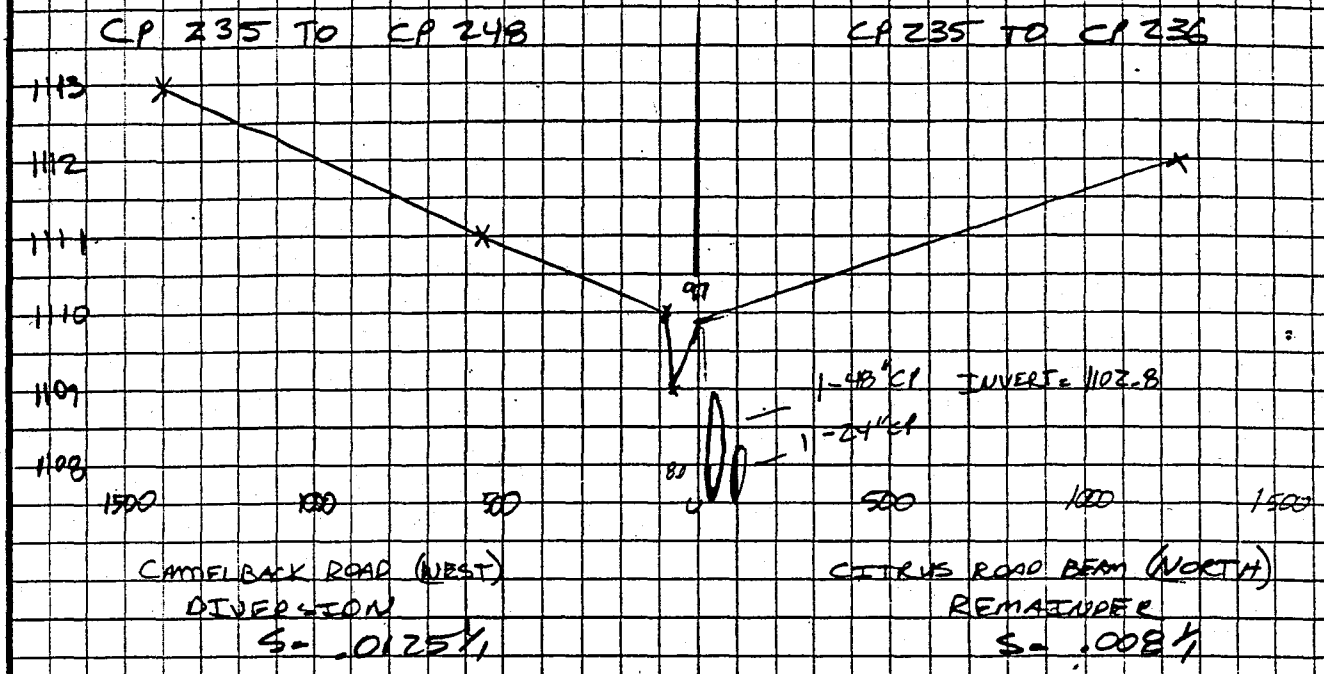
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN 235 CAMELBACK ROAD AND CITRUS ROAD



DT ID 248

DI	0	158	313	4490	9737
DQ	0.0	0	155	2380	5077

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 7-26-91

DIVERSION TABLE

CP 193 INTERSECTION OF REEMS ROAD AND NORTHERN AVE.

WEIR FLOW SOUTH OVER NORTHERN AVENUE
COMPUTED BY HEC-2 SIDE WEIR ANALYSIS.

DT DI 211

DI 0 500 520 580 650 1000 1500 2000 2347 3000

DQ 0 0 4 27 67 332 768 1219 1535 2139

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-29-91

DIVERSION TABLE

CP 195 WEST OF 2-10'x5' BOX CULVERTS ON DYSART DRAIN

WEIR FLOW SOUTH OVER NOTCH IN DIKE
COMPUTED BY HEC-2 SIDE WEIR ANALYSIS

DT 1D201

DI	0	410	430	500	1000	1500	2000	2500	3000
DQ	0	0	13	67	543	991	1491	1991	2491

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 7-29-91

DIVERSION TABLE

CP 196 JUST EAST OF LITCHFIELD ROAD ON DYSART DRAIN

WEIR FLOW SOUTH OVER SOUTH BANK OF CHANNEL
COMPUTED BY HEC-2 SIDE WEIR ANALYSIS

DT ID 226

DI	0	100	250	300	500	1000	1500	2000
DQ	0	0	0	27	199	650	1100	1448

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 202 S=.0009% N=.016 BW=10

CAPACITY OF DYSART DRAIN AT DYSART ROAD

DT 2D226

DI	0	500	1000	2000	2599	5604	10604
DQ	0	0	0	0	0	3005	8005

Form 209

The WLB Group Inc. WLB

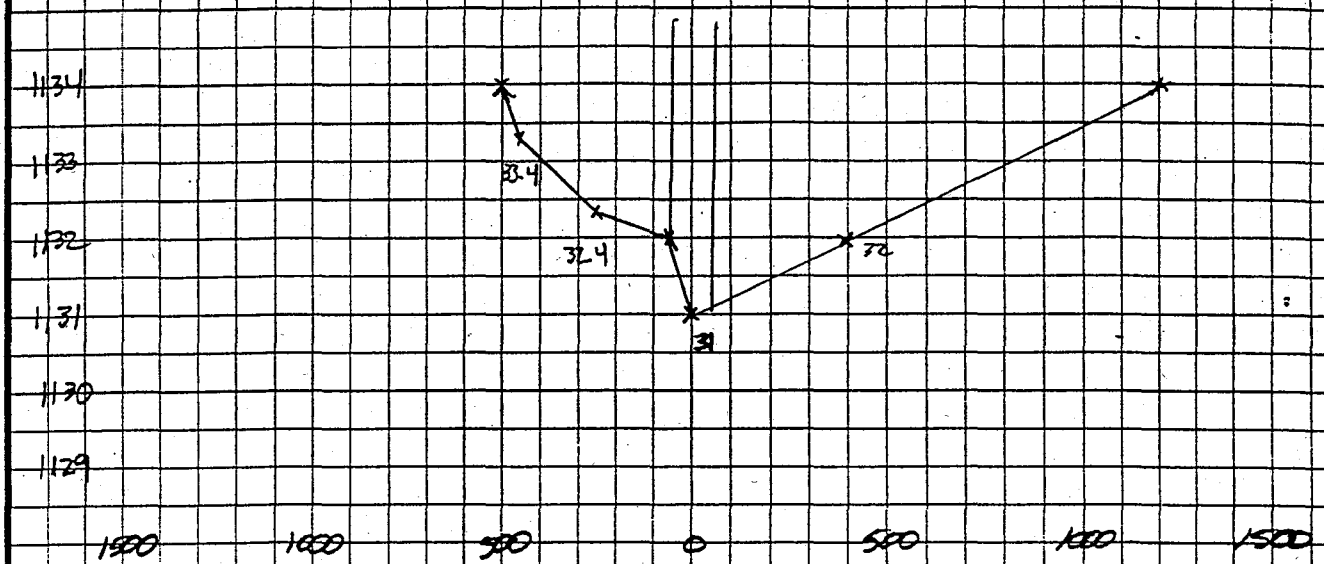
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN 208 GLENDALE AVENUE AND COTTON LANE

CP 208 TO CP 218 CP 208 TO CP 219 CP 208 TO CP 209A



DT 10219

DT	0	599	5129	9299
DQ	0	406	1039	1295

DT DI209A

DT	0	193	4090	8004
DQ	0	193	4066	7610

CP 208 TO CP 218

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.50	23.8	1.59	0.536	0.04	0.54	15.00	55.00	1132.5	24

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	369.6	2.27	0.588	0.08	0.58	162.50	350.00	1133.0	394

Enter Depth of Flow, or Press the <Esc> Key to End

CP208 TO CP218

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	400

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.00	1590.8	3.54	0.657	0.19	1.19	450.00	500.00	1134.0	1985

Enter Depth of Flow, or Press the <Esc> Key to End

CP208 TO CP219

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.00	406.1	3.87	0.952	0.23	1.23	105.00	205.00	1132.0	406

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.40	1039.2	7.42	1.106	0.86	2.26	140.00	100.00	1132.5	1039

Enter Depth of Flow, or Press the <Esc> Key to End

CP208 TO CP219

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.60	255.8	4.26	0.970	0.28	0.88	60.00	100.00	1133	1295

Enter Depth of Flow, or Press the <Esc> Key to End

CP 208 TO CP209A

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.012
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.00	192.7	3.50	0.853	0.19	1.19	55.00	105.00	1132	193

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.012
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	400

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.40	4066.1	6.18	0.987	0.59	1.99	658.00	540.00	1132.5	4066
2.00	7610.6	7.61	1.039	0.90	2.90	1000.00	600.00	1133.0	7610

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group inc. WLB

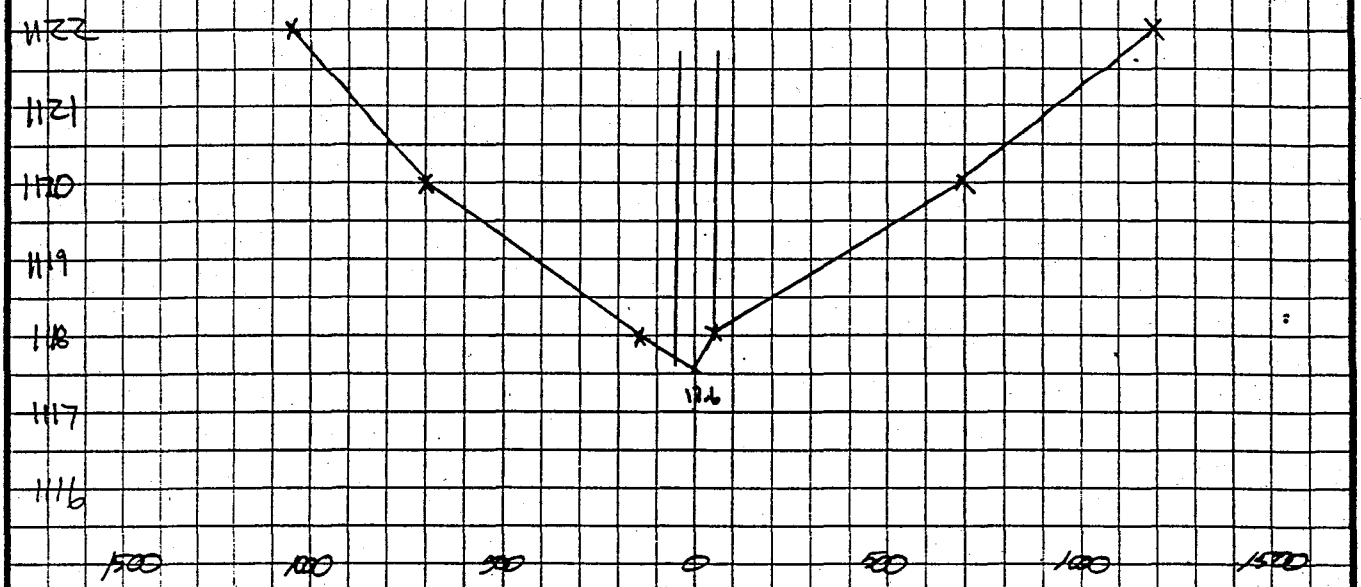
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN 209A GLENDALE AVENUE AND ½ MILE EAST OF COTTON LANE

CP 209A TO CP219 CP209A TO CP220 CP209A TO CP 209



DT	ID 220			
DI	0	57	5215	28650
DQ	0	39	1907	3775
DT	ID 209			
DI	0	18	3308	24875
DQ	0	0	900	10854

CP 209A TO CP 219

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.40	18.1	1.81	0.675	0.05	0.45	10.00	45.00	1118	18

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
2.00	2389.6	5.97	0.912	0.55	2.55	400.00	300.00	1120	2408

Enter Depth of Flow, or Press the <Esc> Key to End

CP 209A TO CP 2A

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	700

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
2.00	11613.3	7.26	0.959	0.82	2.82	1600.00	900.00	1122	1402

Enter Depth of Flow, or Press the <Esc> Key to End

CP 209A TO CP220

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.40	38.6	2.15	0.822	0.07	0.47	18.00	85.00	1118	39

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
2.00	1868.5	9.34	1.164	1.36	3.36	200.00	100.00	1120	1907

Enter Depth of Flow, or Press the <Esc> Key to End

CP209A TO CP220

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
2.00	1868.5	9.34	1.164	1.36	3.36	200.00	100.00	1122	3775

Enter Depth of Flow, or Press the <Esc> Key to End

CP209A TO CP209

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	900.2	4.29	0.746	0.29	2.29	210.00	205.00	1120	900

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	700

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	9954.3	6.22	0.822	0.60	2.60	1600.00	900.00	1122	10852

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

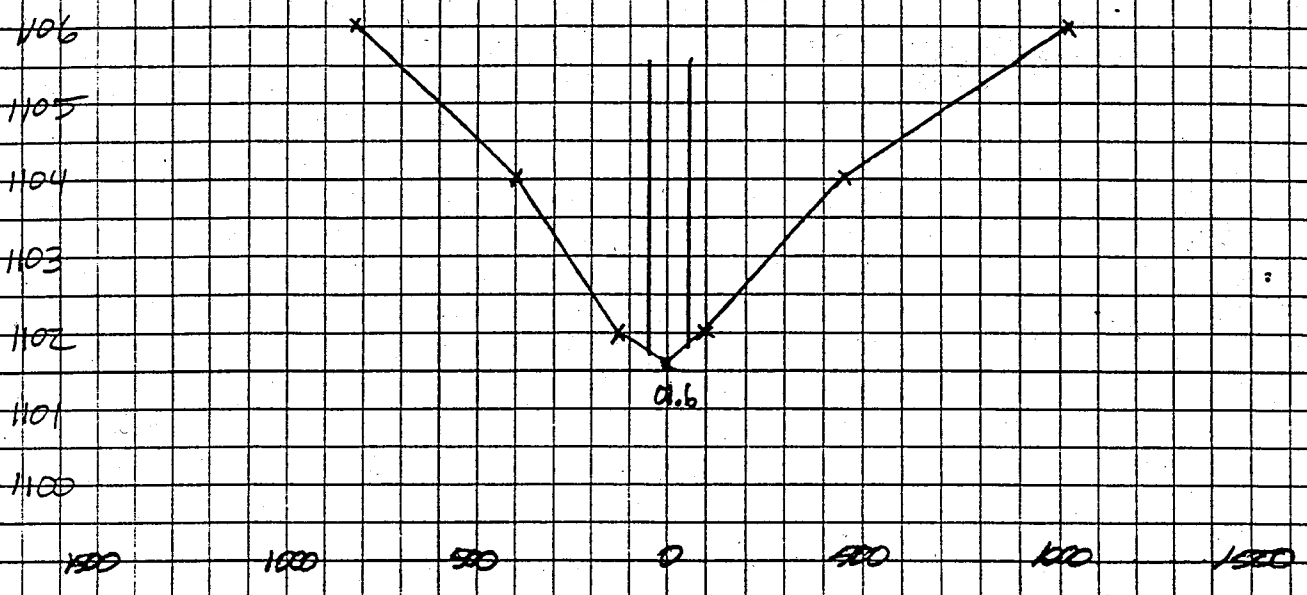
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN (209) GLENDALE AVENUE AND SARIVAL AVENUE

CP 209 TO CP 200 CP 209 TO CP 221 CP 209 TO CP 210



DT	1D221			
DI	0	39	3983	16787
DQ	0	34	1666	5085
DT	2D210			
DI	0	5	2317	11702
DQ	0	0	703	5354

CP209 TO CP220

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.25	4.6	1.05	0.483	0.02	0.27	4.38	30.00	1102	5

<Enter>: Repeat, <R>eport, <S>creen Graph, <P>rint Graph, or <Esc>: End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	80

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	1608.8	4.47	0.695	0.31	2.31	360.00	280.00	1104	1614

Enter Depth of Flow, or Press the <Esc> Key to End

CP209 TO CP220

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	350

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	4734.4	5.26	0.725	0.43	2.43	900.00	550.00	1106	6348

Enter Depth of Flow, or Press the <Esc> Key to End

CP 209 TO CP 221

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0061
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.40	33.7	1.87	0.718	0.05	0.45	18.00	85.00	1102	34

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0061
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
2.00	1631.6	8.16	1.017	1.03	3.03	200.00	100.00	1104	1666
4.00	5051.4	12.63	1.113	2.48	6.48	400.00	100.00	1106	5085

Enter Depth of Flow, or Press the <Esc> Key to End

CP 209 TO CP 210

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0061
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
2.00	703.1	3.35	0.583	0.17	2.17	210.00	205.00	1104	703

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0061
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	400

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
2.00	4651.0	4.65	0.635	0.34	2.34	1000.00	600.00	1106	5354

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

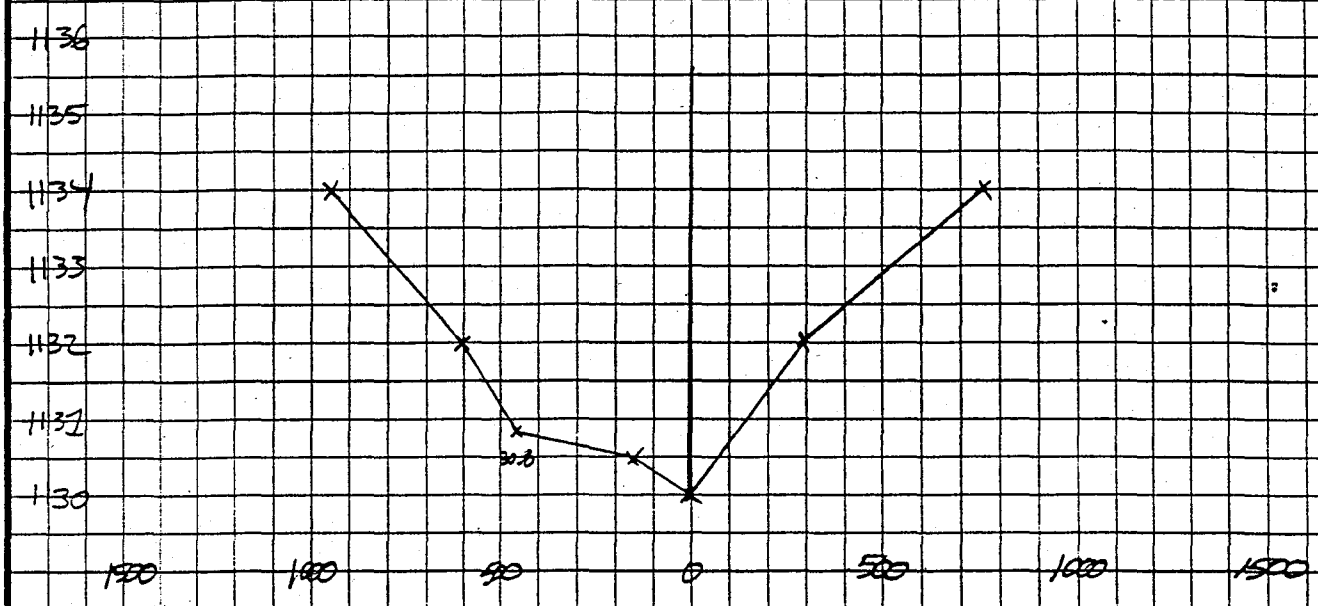
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN (217) BETHANY HOME ROAD AND CITRUS ROAD

CP 217 TO TO CP 235 CP 217 TO CP 218



BETHANY HOME ROAD (WEST) REMAINDER S = .016 %

CITRUS ROAD (NORTH) DIVERSION S = .026 > %

DT	DI 218				
DI	0	90	884	6576	28127
DQ	0	51	163	1840	10674

CP217 TO CP235

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.016
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	39.3	2.62	0.884	0.11	0.61	15.00	55.00	1132.5	39

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.016
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	150

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.80	720.9	4.74	1.028	0.35	1.15	152.00	230.00	1130.8	721

Enter Depth of Flow, or Press the <Esc> Key to End

CP217 TO CP235

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.016
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	450

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.20	4015.0	6.56	1.116	0.67	1.87	612.00	570.00	1132	4736

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.016
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	600

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	12717.0	9.08	1.210	1.28	3.28	1400.00	800.00	1134	17453

Enter Depth of Flow, or Press the <Esc> Key to End

CPZ 17 TO CPZ16

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0267
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	50.7	3.38	1.142	0.18	0.68	15.00	55.00	1130.5	51
0.80	163.3	4.54	1.228	0.32	1.12	36.00	85.00	1130.8	163

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0267
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	125

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.20	1677.0	7.55	1.399	0.89	2.09	222.00	245.00	1132	1840

<Enter>: Repeat, <R>eport, <S>creen Graph, <P>rint Graph, or <Esc>: End

CP217 TO CP218

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0267
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
2.00	8834.1	11.04	1.538	1.89	3.89	800.00	500.00	1134	10674

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group inc. WLB

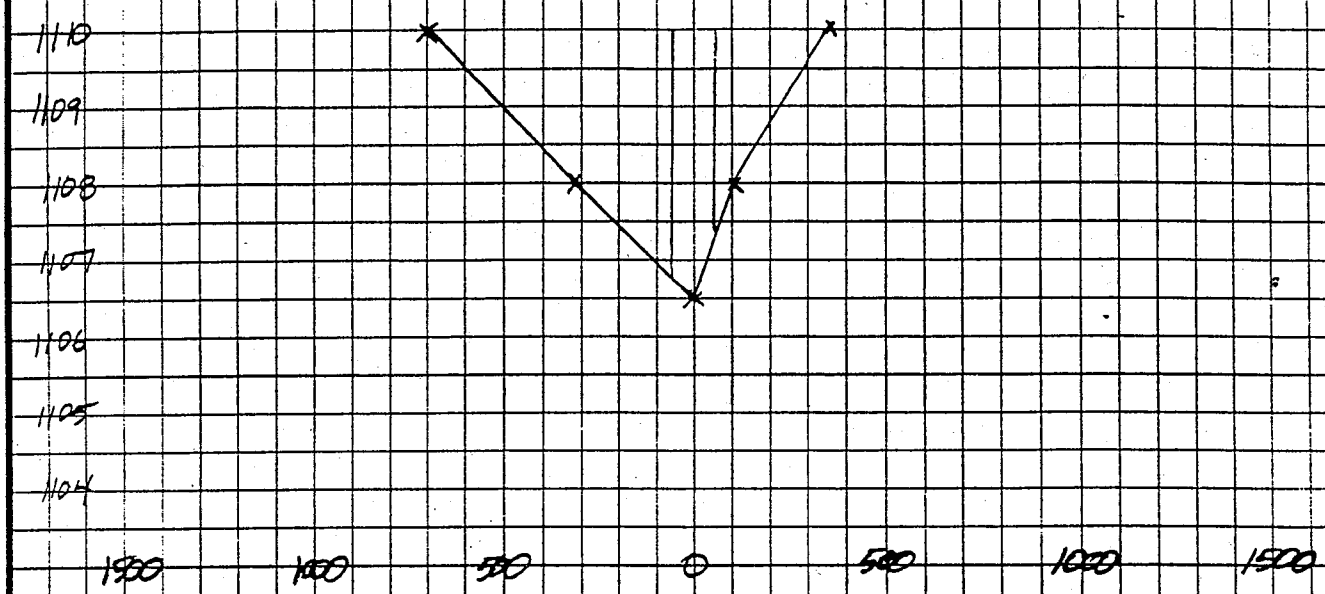
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN 218 BETHANY HOME ROAD AND COTTON LANE

CP218 TO CP236 CP218 TO CP237 CP218 TO CP219



BETHANY HOME ROAD (WEST) REMAINDER S = .0133½

INTERSECTION DIVERSION S = .0057

COTTON LANE - ATSF RR DIVERSION (NORTH) S = .0057½

DT	DI 237			
DI	0	68	1086	10670
DQ	0	68	664	2533
DT	2D 219			
DI	0	0	422	8137
DQ	0	0	99	2461

CP 218 TO CP236

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.20	323.3	4.14	0.925	0.27	1.47	78.00	125.00	1108	323

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	250

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
2.00	5352.5	7.65	1.080	0.91	2.91	700.00	450.00	1110	5676

Enter Depth of Flow, or Press the <Esc> Key to End

CP 218 TO CP237

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	68.0	2.47	0.852	0.09	0.59	27.50	105.00	1107	68

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.00	596.2	5.96	1.051	0.55	1.55	100.00	100.00	1108	664

Enter Depth of Flow, or Press the <Esc> Key to End

CP218 TO CP237

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
2.00	1868.5	9.34	1.164	1.36	3.36	200.00	100.00	1110	2533

Enter Depth of Flow, or Press the <Esc> Key to End

C12B TO CP 29

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.80	98.8	2.74	0.743	0.12	0.92	36.00	85.00	1108	99

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	2362.1	5.91	0.901	0.54	2.54	400.00	300.00	1110	2461

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

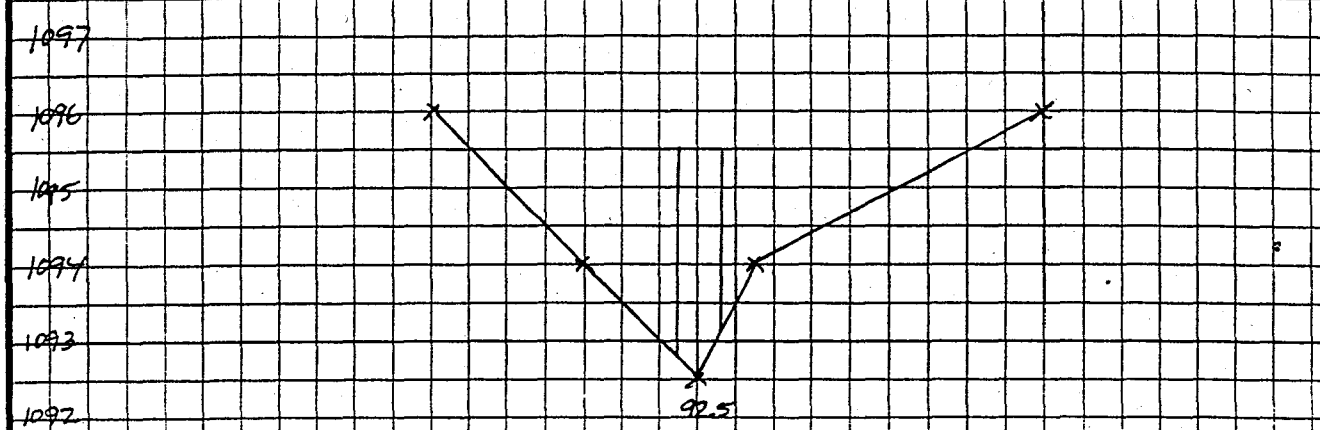
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN (219) BETHANY HOME ROAD AND ½ MILE EAST OF COTTON LANE

CP 219 TO CP237 CP 219 TO CP238 CP 219 TO CP220



BETHANY HOME ROAD (WEST) REMAINDER S= .0057 ft/ft

INTERSECTION DIVERSION S= .008 ft/ft

½ MILE EAST OF COTTON LANE BEAM - (NORTH) DIVERSION S= .0133 ft/ft

DT	DI238			
DI	0	70	1410	16774
DQ.	0	68	990	10452
DT	219220			
DI	0	2	420	6322
DQ	0	0	174	3073

CP219 TO CP237

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0057
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.20	2.3	0.78	0.395	0.01	0.21	3.00	25.00	1093	2

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0057
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.00	243.5	2.44	0.526	0.09	1.09	100.00	150.00	1094	246

Enter Depth of Flow, or Press the <Esc> Key to End

CP 219 TO CP237

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0057
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	250

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	3003.4	4.29	0.606	0.29	2.29	700.00	450.00	1096	3249

Enter Depth of Flow, or Press the <Esc> Key to End

CP 219 TO CP 238

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	68.0	2.47	0.852	0.09	0.59	27.50	105.00	1093	68

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.00	922.1	4.61	0.995	0.33	1.33	200.00	300.00	1094	990
3.00	10384.0	8.65	1.165	1.16	4.16	1200.00	700.00	1096	10452

Enter Depth of Flow, or Press the <Esc> Key to End

CP29 TO CP220

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.00	173.9	3.16	0.770	0.16	1.16	55.00	105.00	1094	174

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.00	604.3	4.03	0.820	0.25	1.25	150.00	200.00	1095	778

Enter Depth of Flow, or Press the <Esc> Key to End

CP219 TO CP220

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	450

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	~~FLOW~~	~~Q~~
1.00	2294.7	4.59	0.848	0.33	1.33	500.00	550.00	1096	3073

Enter Depth of Flow, or Press the <Esc> Key to End

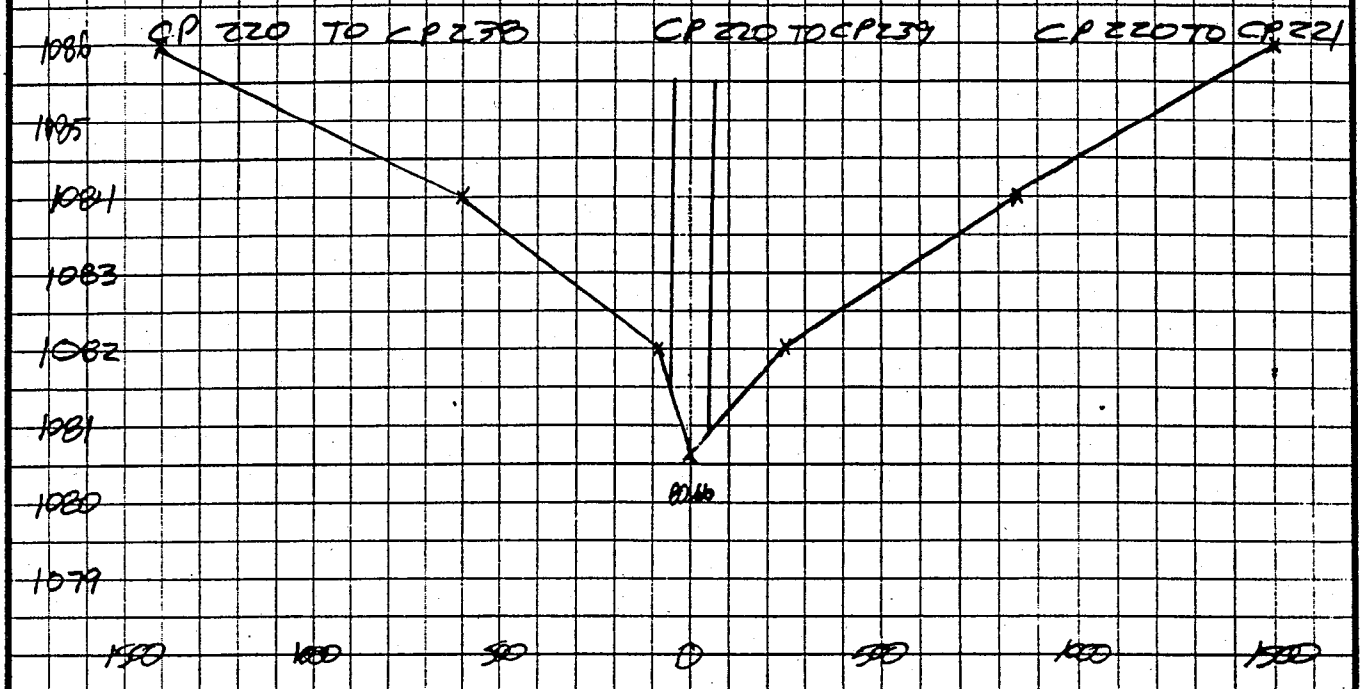
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN 220 BETHANY HOME ROAD AND SARIVAL AVENUE



DT DI 239

DI	0	735	9080	34764
DQ	0	537	3765	9314

DT 20 221

DI	0	198	5315	25450
DQ	0	174	4011	17035

CP 220 TO CP 238

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	23.8	1.59	0.536	0.04	0.54	15.00	55.00	1082	24

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	1279.6	4.27	0.686	0.28	2.28	300.00	250.00	1084	1304

Enter Depth of Flow, or Press the <Esc> Key to End

C1200 TO C1238

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	550

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
2.00	7110.8	5.47	0.732	0.46	2.46	1300.00	750.00	1086	8415

Enter Depth of Flow, or Press the <Esc> Key to End

CP 220 TO CP 239

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.80	293.3	4.31	1.184	0.29	1.09	68.00	165.00	1081.5	293

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	243.7	4.87	1.215	0.37	0.87	50.00	100.00	1082	537
2.50	3472.4	13.89	1.548	3.00	5.50	250.00	100.00	1084	3765
4.50	9021.1	20.05	1.665	6.24	10.74	450.00	100.00	1086	9314

Enter Depth of Flow, or Press the <Esc> Key to End

CP220 TO CP221

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.00	173.9	3.16	0.770	0.16	1.16	55.00	105.00	1082	174

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	3836.8	6.39	0.920	0.63	2.63	600.00	400.00	1084	4011

Enter Depth of Flow, or Press the <Esc> Key to End

CP220 TO CP221

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	800

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
2.00	13024.2	7.24	0.950	0.81	2.81	1800.00	1000.00	1086	17035

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS ADMS Prepared by JSE Date 12-12-90

SUBBASIN 224 DIVERSION TABLE

CP224 TO CP223

DIVERT FLOWS OUT OF SUBBASIN 223 TO SUBBASIN 224 AND ROUTE REMAINDER OF 42" PIPE FLOW TO SUBBASIN 225.

VOID

DT	DI 224					
DI	0	60	400	1000	4000	8000
DQ	0	0	340	940	3940	7940

This sheet was submitted to the County.

See Next sheet.

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHIT TANKS ADMS Prepared by G. AOUAD Date 1/21/92

SUBBASIN 223

DIVERSION TABLE

CP223 TO CP225

Divert through a 42" pipe.

DT DI225

DI	0	60	400	1000	4000	8000
DQ	0	0	340	940	3940	7940

CP235 TO CP248

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0125
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	70
Channel Side Slope - Right Side (horizontal/vertical)	20
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	154.7	3.09	0.751	0.15	1.15	50.00	95.00	1113	155

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0125
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	450

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
1.00	2224.6	4.45	0.822	0.31	1.31	500.00	550.00	1111	2380

Enter Depth of Flow, or Press the <Esc> Key to End

CP235 TO CP248

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0125
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	550

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.00	2697.3	4.50	0.825	0.31	1.31	600.00	650.00	1112	5077

Enter Depth of Flow, or Press the <Esc> Key to End

CP 235 TO CP 236

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	15
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.30	1951.9	4.01	0.678	0.25	1.55	487.17	449.50	1111	1952

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	15
Channel Bottom Width (feet)	650

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
1.00	2550.3	3.60	0.661	0.20	1.20	707.50	765.00	1112	4502

Enter Depth of Flow, or Press the <Esc> Key to End

PIPE CULVERT ANALYSIS

COMPUTATION OF CULVERT PERFORMANCE CURVE

Culvert Diameter (feet)	2
FHWA Chart Number (1,2 or 3)	1
Scale Number on Chart (Type of Culvert Entrance)	1
Manning`s Roughness Coefficient (n-value)	.012
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (feet)	60
Culvert Slope (feet per foot)	.008

*** RESULTS ***

Flow Rate (cfs)	Tailwater Depth(ft)	..Headwater (ft).. In.Ctrl.	Out.Ctrl.	Normal Depth(ft)	Critical Depth(ft)	Depth at Outlet(ft)	Outlet Vel.(fps)
33.00	3.40	5.73	6.57	2.00	1.90	2.00	10.50

Enter Flow Rate and Tailwater, or Press the <Esc> Key to End

PIPE CULVERT ANALYSIS

COMPUTATION OF CULVERT PERFORMANCE CURVE

Culvert Diameter (feet)	4
FHWA Chart Number (1,2 or 3)	1
Scale Number on Chart (Type of Culvert Entrance)	1
Manning`s Roughness Coefficient (n-value)	.012
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (feet)	60
Culvert Slope (feet per foot)	.008

*** RESULTS ***

Flow Rate (cfs)	Tailwater Depth(ft)	..Headwater (ft).. In.Ctrl.	Out.Ctrl.	Normal Depth(ft)	Critical Depth(ft)	Depth at Outlet(ft)	Outlet Vel.(fps)
125.00	3.40	6.62	5.89	2.96	3.36	2.96	12.52

Enter Flow Rate and Tailwater, or Press the <Esc> Key to End

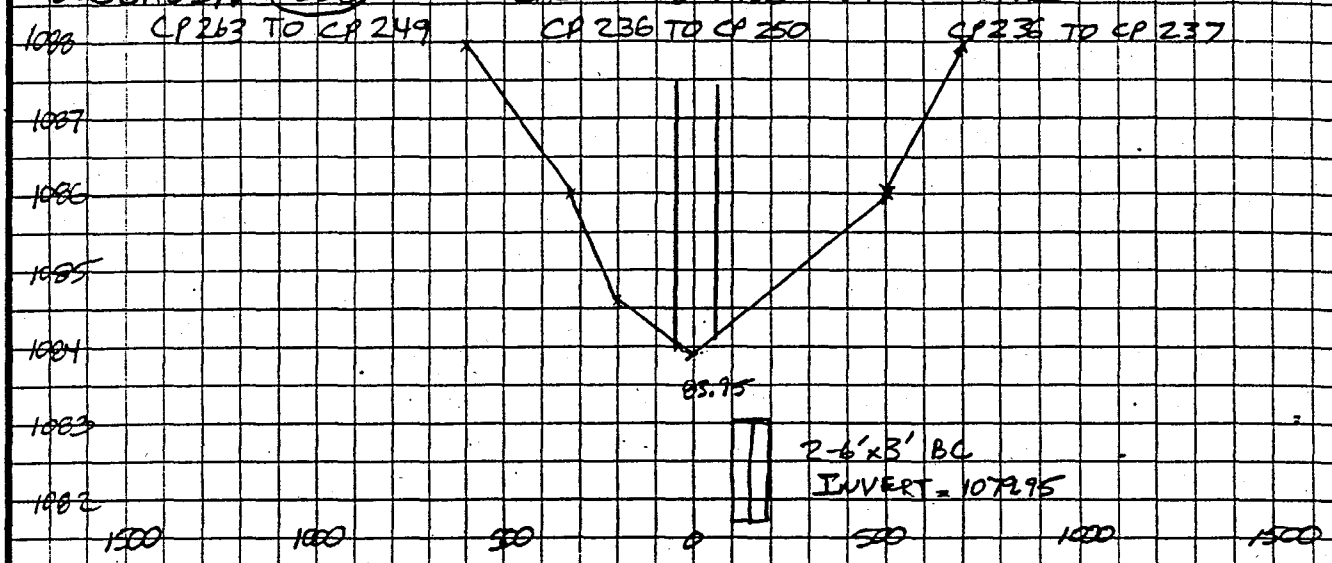
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN (236) CAMELBACK ROAD AND COTTON LANE



CAMELBACK ROAD (WEST) DIVERSION	INTERSECTION DIVERSION	COTTON LANE-RR (NORTH) REMAINDER
S = .02%	S = .02667%	S = .02667%

DT DI 249

DI	0	236	441	6597	30351
DQ	0	0	38	2223	8777

DT ID 250

DI	0	236	373	4374	21574
DQ	0	0	124	2251	8636

CP 236 TO CP 249

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	37.6	2.51	0.847	0.10	0.60	15.00	55.00	1084.5	38

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	150

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.50	2184.7	6.47	1.076	0.65	2.15	337.50	300.00	1086	7223

Enter Depth of Flow, or Press the <Esc> Key to End

CP236 TO CP249

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	6553.5	8.19	1.141	1.04	3.04	800.00	500.00	1088	6777

Enter Depth of Flow, or Press the <Esc> Key to End

CP 236 TO CP 250

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0267
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.50	124.2	4.52	1.556	0.32	0.82	27.50	105.00	1084.5	124

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0267
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
1.50	2127.1	14.18	2.040	3.12	4.62	150.00	100.00	1086	2251
3.50	8512.2	24.32	2.291	9.18	12.68	350.00	100.00	1088	8636

Enter Depth of Flow, or Press the <Esc> Key to End

C/236 TO CP 237

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0267
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.30	12.8	2.13	0.906	0.07	0.37	6.00	35.00	1084.5	13

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0267
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.50	1873.8	7.14	1.228	0.79	2.29	262.50	250.00	1086	1887

Enter Depth of Flow, or Press the <Esc> Key to End

CP 236 TO CP 237

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0267
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	450

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	~~ELEV~~	~~Q~~
2.00	10815.0	9.83	1.332	1.50	3.50	1100.00	650.00	1088	12702

Enter Depth of Flow, or Press the <Esc> Key to End

BOX CULVERT ANALYSIS

COMPUTATION OF PERFORMANCE CURVE

Culvert Span (Width of Opening) (feet)	6
Culvert Rise (Height of Opening) (feet)	3
FHWA Chart Number (8,9,10,11,12 or 13)	8
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.012
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (feet)	60
Culvert Slope (feet per foot)	.008

Flow Rate (cfs)	Tailwater Depth(ft)	..Headwater (ft).. In.Ctrl.	Out.Ctrl.	Normal Depth(ft)	Critical Depth(ft)	Depth at Outlet(ft)	Outlet Vel.(fps)
118.00	2.29	4.03	3.33	1.69	2.29	1.69	11.65

Enter Flow Rate and Tailwater, or Press the <Esc> Key to End

The WLB Group Inc. WLB

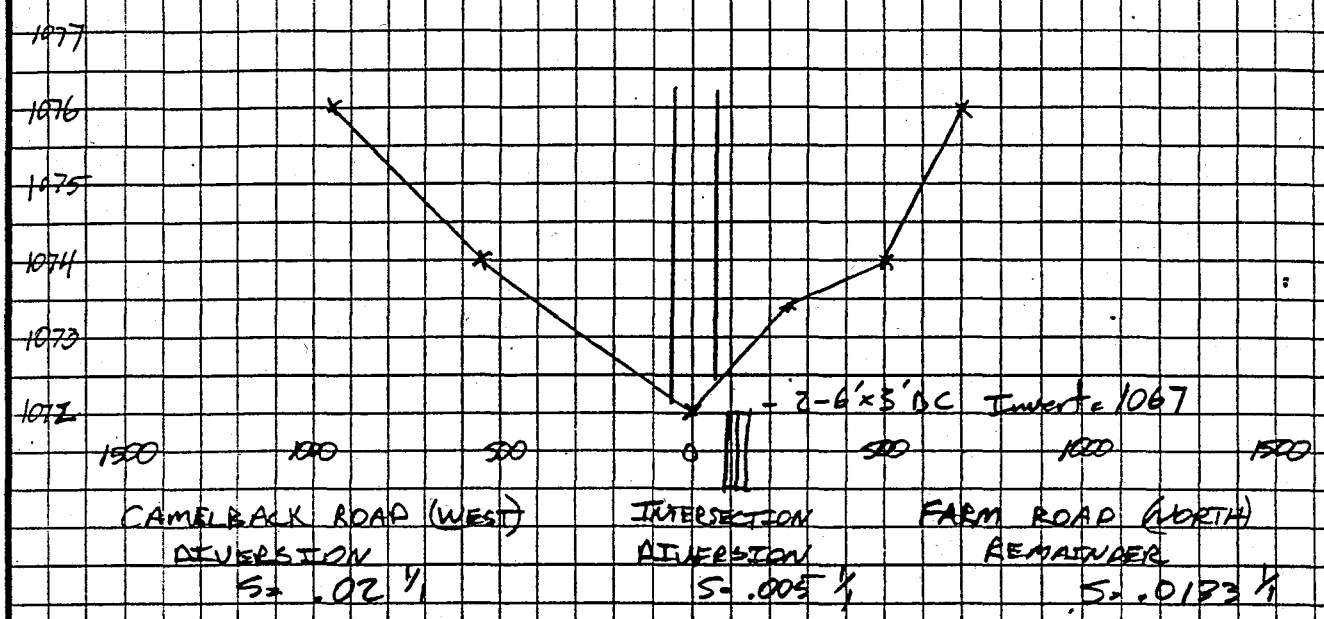
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN (237) CAMELBACK ROAD AND 1/2 MILE EAST OF COTTON LANE

CP 237 TO CP250 CP237 TO CP250A CP237 TO CP238



DT 2D250

DIO	292	346	629	3340	24038
DQO	0	0	103	1577	11878

DT 1D250A

DIO	292	346	526	1763	12160
DQO	0	54	203	974	3738

CP 237 TO CP250

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.75	103.0	3.23	0.902	0.16	0.91	31.88	80.00	1073	103

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	225

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.00	1474.1	5.36	1.027	0.45	1.45	275.00	325.00	1074	1577

Enter Depth of Flow, or Press the <Esc> Key to End

CP237 TO CP250

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	500

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	10300.8	8.58	1.155	1.14	3.14	1200.00	700.00	1076	11878

Enter Depth of Flow, or Press the <Esc> Key to End

CP 237 TO CP 250A

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.005
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	53.8	1.96	0.673	0.06	0.56	27.50	105.00	1072.5	54

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.005
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	149.4	2.99	0.745	0.14	0.64	50.00	100.00	1073	203
1.50	920.5	6.14	0.883	0.58	2.08	150.00	100.00	1074	974
3.50	3683.6	10.52	0.991	1.72	5.22	350.00	100.00	1076	3738

Enter Depth of Flow, or Press the <Esc> Key to End

CP237 TO CP238

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.50	30.7	2.05	0.691	0.07	0.57	15.00	55.00	1073	31

Enter Depth of Flow, or Press the <Esc> Key to End

CP237 TO CP238

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.00	173.9	3.16	0.770	0.16	1.16	55.00	105.00	10735	174

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	323.0	2.87	0.754	0.13	0.63	112.50	250.00	1074	497

Enter Depth of Flow, or Press the <Esc> Key to End

CP 237 TO CP 238

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0133
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	450

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	7633.0	6.94	0.940	0.75	2.75	1100.00	650.00	1076	8130

Enter Depth of Flow, or Press the <Esc> Key to End

BOX CULVERT ANALYSIS

COMPUTATION OF PERFORMANCE CURVE

Culvert Span (Width of Opening) (feet)	6
Culvert Rise (Height of Opening) (feet)	3
FHWA Chart Number (8,9,10,11,12 or 13)	8
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	0.012
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (feet)	60
Culvert Slope (feet per foot)	.008

Flow Rate (cfs)	Tailwater Depth(ft)	..Headwater (ft).. In.Ctrl.	Out.Ctrl.	Normal Depth(ft)	Critical Depth(ft)	Depth at Outlet(ft)	Outlet Vel.(fps)
146.00	3.00	4.96	4.31	1.96	2.64	1.96	12.41

Enter Flow Rate and Tailwater, or Press the <Esc> Key to End

The WLB Group Inc. WLB

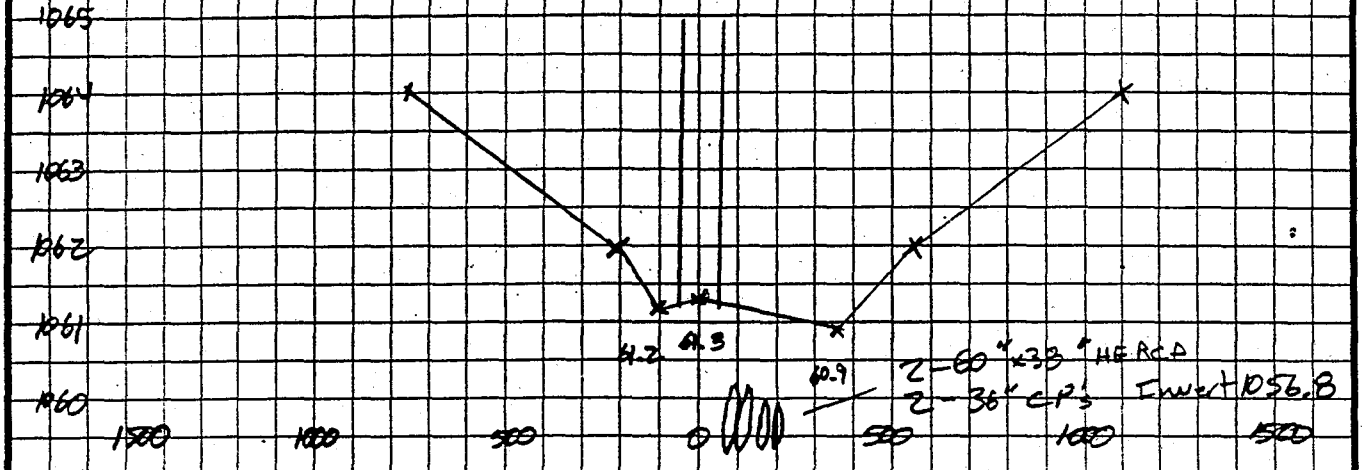
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN 238 CAMELBACK ROAD AND SARIVAL AVENUE

CP 238 TO CP 250A CP 238 TO CP 251 CP 238 TO CP 239



CAMELBACK ROAD (WEST) DIVERSION S = .008 ft/ft

INTERSECTION DIVERSION S = .02 ft/ft

SARIVAL AVENUE (NORTH) REMAINDER S = .025 ft/ft

DT 250A

DI	0	180	568	2711	8584	18252
DQ	0	0	0	184	837	2617

DT 1025 1

DI	0	180	568	2527	7747	15635
DQ	0	0	0	522	2262	4829

CP 238 TO CP 250A

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.80	183.6	2.55	0.604	0.10	0.90	72.00	130.00	1062	184

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	150

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.00	652.8	3.26	0.643	0.17	1.17	200.00	250.00	1063	837

Enter Depth of Flow, or Press the <Esc> Key to End

CP238 TO CP 250A

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	450

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	1779.7	3.56	0.658	0.20	1.20	500.00	550.00	1064	2617

Enter Depth of Flow, or Press the <Esc> Key to End

CP238 TO CP251

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.02
Manning's Roughness Coefficient (n-value)	.022
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.70	522.3	7.46	1.572	0.86	1.56	70.00	100.00	1062	522
1.70	2262.1	13.31	1.799	2.75	4.45	170.00	100.00	1063	2262
2.70	4828.6	17.88	1.918	4.97	7.67	270.00	100.00	1064	4829

Enter Depth of Flow, or Press the <Esc> Key to End

CP 238 TO CP 239

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.025
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	250

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.40	387.9	3.34	0.994	0.17	0.57	116.00	330.00	1061.3	388

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.025
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	375

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.70	1436.7	5.01	1.098	0.39	1.09	287.00	445.00	1062	1025

Enter Depth of Flow, or Press the <Esc> Key to End

CP 238 TO CP 239

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.025
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	500

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.00	3480.2	6.33	1.165	0.62	1.62	550.00	600.00	1063	5305

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.025
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	775

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
1.00	5321.2	6.45	1.171	0.65	1.65	825.00	875.00	1064	1062

Enter Depth of Flow, or Press the <Esc> Key to End

PIPE CULVERT ANALYSIS

COMPUTATION OF CULVERT PERFORMANCE CURVE

Culvert Diameter (feet)	3
FHWA Chart Number (1,2 or 3)	1
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	.012
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (feet)	60
Culvert Slope (feet per foot)	.005

*** RESULTS ***

Flow Rate (cfs)	Tailwater Depth(ft)	..Headwater (ft).. In.Ctrl.	Out.Ctrl.	Normal Depth(ft)	Critical Depth(ft)	Depth at Outlet(ft)	Outlet Vel.(fps)
40.00	3.50	3.30	4.13	2.00	2.06	3.00	5.66

Enter Flow Rate and Tailwater, or Press the <Esc> Key to End

CURRENT DATE: 02-12-1991
CURRENT TIME: 13:58:47

FILE DATE: 01-23-1991
FILE NAME: WT2

FHWA CULVERT ANALYSIS
HY-8, VERSION 3.2

CULV	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	BARRELS SHAPE MATERIAL	SPAN (FT)	RISE (FT)	MANNING n	INLET TYPE
1	1056.80	1056.60	60.00	2 RCPE	5.00	3.17	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (CFS) FILE: WT2 DATE: 01-23-1991

ELEV (FT)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1056.80	0	0	0	0	0	0	0	0	1
1059.47	100	100	0	0	0	0	0	0	1
1061.39	400	203	0	0	0	0	0	195	5
1061.57	600	173	0	0	0	0	0	424	6
1061.71	800	138	0	0	0	0	0	657	5
1061.83	1000	106	0	0	0	0	0	889	5
1062.02	1200	101	0	0	0	0	0	1105	8
1062.41	1400	101	0	0	0	0	0	1298	7
1062.81	1600	101	0	0	0	0	0	1499	8
1063.18	1800	102	0	0	0	0	0	1711	8
1063.53	2000	102	0	0	0	0	0	1910	8
1060.90	181	181	0	0	0	0	0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: WT2 DATE: 01-23-1991

HEAD ELEV(FT)	HEAD ERROR(FT)	TOTAL FLOW(CFS)	FLOW ERROR(CFS)	% FLOW ERROR
1056.80	0.00	0	0	0.00
1059.47	0.00	100	0	0.00
1061.39	-0.00	400	3	0.68
1061.57	-0.00	600	3	0.47
1061.71	-0.01	800	5	0.66
1061.83	-0.00	1000	5	0.50
1062.02	0.00	1200	-6	-0.49
1062.41	0.00	1400	1	0.09
1062.81	0.00	1600	-1	-0.04
1063.18	0.00	1800	-12	-0.69
1063.53	-0.00	2000	-12	-0.60

<1> TOLERANCE (FT) = 0.010 <2> TOLERANCE (%) = 1.000

RRENT DATE: 02-12-1991
ENT TIME: 13:58:47

FILE DATE: 01-23-1991
FILE NAME: WT2

CULVERT # 1

PERFORMANCE CURVE FOR 2 BARREL(S)

Q (cfs)	HWE (ft)	TWE (ft)	ICH (ft)	OCH (ft)	FLOW TYPE	CCE (ft)	FCE (ft)	TCE (ft)	VO (fps)
0	1056.80	1056.60	0.00	-0.20	0-NF	0.00	1056.80	0.00	0.00
100	1059.47	1057.97	2.59	2.67	4-FF	0.00	0.00	0.00	6.90
203	1061.38	1059.58	4.58	4.48	4-FF	0.00	0.00	0.00	8.19
173	1061.56	1060.32	3.93	4.76	4-FF	0.00	0.00	0.00	6.74
138	1061.72	1060.93	3.25	4.92	4-FF	0.00	0.00	0.00	5.38
106	1061.93	1061.46	2.69	5.13	4-FF	0.00	0.00	0.00	4.12
101	1062.36	1061.94	2.60	5.56	4-FF	0.00	0.00	0.00	3.92
101	1062.80	1062.38	2.61	6.00	4-FF	0.00	0.00	0.00	3.92
101	1063.21	1062.78	2.61	6.41	4-FF	0.00	0.00	0.00	3.94
102	1063.59	1063.16	2.62	6.79	4-FF	0.00	0.00	0.00	3.96
102	1063.95	1063.51	2.63	7.15	4-FF	0.00	0.00	0.00	3.98

El. inlet face invert 1056.80 ft El. outlet invert 1056.60 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

* SITE DATA ***** CULVERT INVERT **********

INLET STATION (FT)	0.00
INLET ELEVATION (FT)	1056.80
OUTLET STATION (FT)	60.00
OUTLET ELEVATION (FT)	1056.60
NUMBER OF BARRELS	2.00
SLOPE (V-FT/H-FT)	0.0033
CULVERT LENGTH ALONG SLOPE (FT)	60.00

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	ELLIPTICAL
BARREL SPAN	60.00 FT
BARREL RISE	38.00 FT
BARREL MATERIAL	CONCRETE
BARREL MANNING'S N	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQ. EDGE WITH HEADWALL
INLET DEPRESSION	NONE

RRENT DATE: 02-12-1991
ENT TIME: 13:58:47

FILE DATE: 01-23-1991
FILE NAME: WT2

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH (FT)	15.00
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (FT/FT)	0.006
MANNING'S N (.01-0.1)	0.030
CHANNEL INVERT ELEVATION (FT)	1056.60
CULVERT NO.1 OUTLET INVERT ELEVATION	1056.60 FT

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (CFS)	W.S.E. (FT)	FROUDE NUMBER	VEL. (FPS)	SHEAR (PSF)
0.00	1056.60	0.000	0.00	0.00
100.00	1057.97	0.623	4.13	0.49
400.00	1059.58	0.653	6.40	1.08
600.00	1060.32	0.658	7.20	1.34
800.00	1060.93	0.662	7.81	1.57
1000.00	1061.46	0.665	8.32	1.76
1200.00	1061.94	0.667	8.74	1.93
1400.00	1062.38	0.669	9.12	2.09
1600.00	1062.78	0.670	9.45	2.24
1800.00	1063.16	0.671	9.76	2.37
2000.00	1063.51	0.673	10.04	2.50

ROADWAY OVERTOPPING DATA

WEIR COEFFICIENT	2.60
EMBANKMENT TOP WIDTH (FT)	40.00

***** USER DEFINED ROADWAY PROFILE

CROSS-SECTION COORD. NO.	X (FT)	Y (FT)
1	0.00	1064.00
2	550.00	1062.00
3	650.00	1061.20
4	750.00	1061.30
5	1100.00	1060.90
6	1300.00	1062.00
7	1850.00	1064.00

The WLB Group Inc. WLB

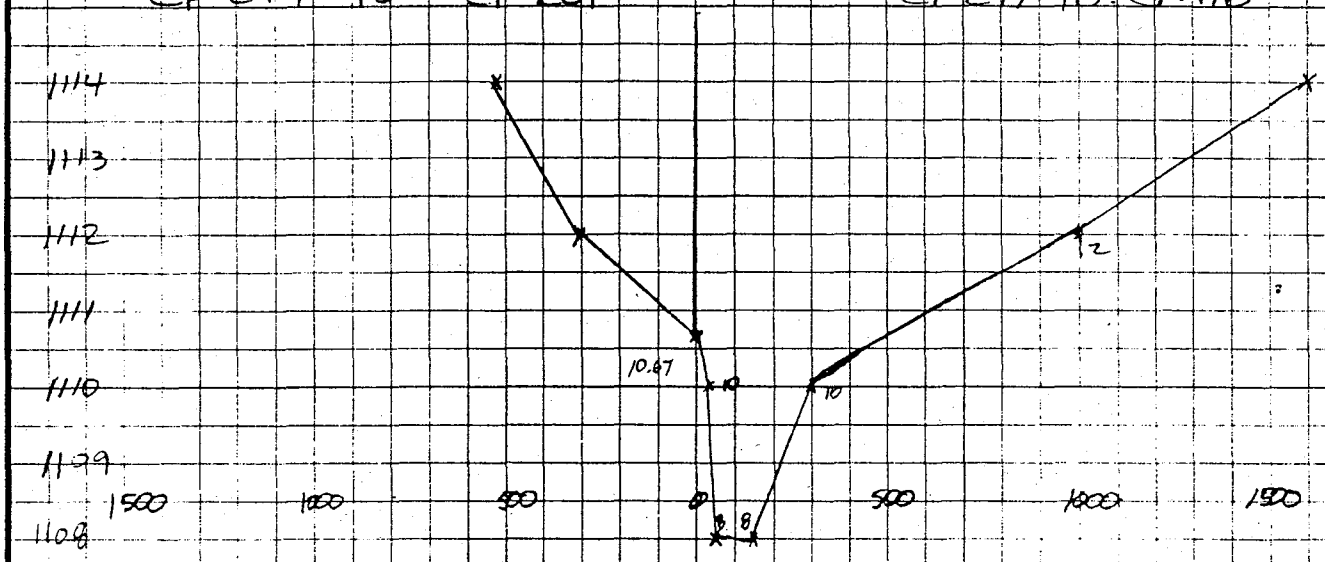
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 247 PERRYVILLE ROAD AND INDIAN SCHOOL ROAD

CP 247 TO CP 261 CP 247 TO CP 248



INDIAN SCHOOL ROAD (WEST)
DIVERSION
S = .0067 1/1

PERRYVILLE ROAD (NORTH)
REMAINDER
S = .0167 1/1

DT	DI 261				
DI	0	3183	4006	8756	30610
DQ	0	0	0	293	4086

Form 209

								ELEV	Q
1.30	4457.9	6.07	0.991	0.57	1.87	734.50	630.00	1112	846

CP 247 TO CP248

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0167
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	1000

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
2.00	18061.0	8.21	1.068	1.05	3.05	2200.00	1200.00	1114	26524

Enter Depth of Flow, or Press the <Esc> Key to End

CP247 TO CP248

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0167
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	50
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
2.00	3183.2	6.37	1.003	0.63	2.63	500.00	400.00	1110	3183

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0167
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	50
Channel Bottom Width (feet)	250

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.70	823.2	3.89	0.887	0.23	0.93	211.75	355.00	1110.7	4006

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0167
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	500

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)

CP 247 TO CP261

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.40	292.4	2.78	0.577	0.12	1.52	105.00	145.00	1112	293

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
2.00	3793.1	4.74	0.661	0.35	2.35	800.00	500.00	1114	4086

Enter Depth of Flow, or Press the <Esc> Key to End

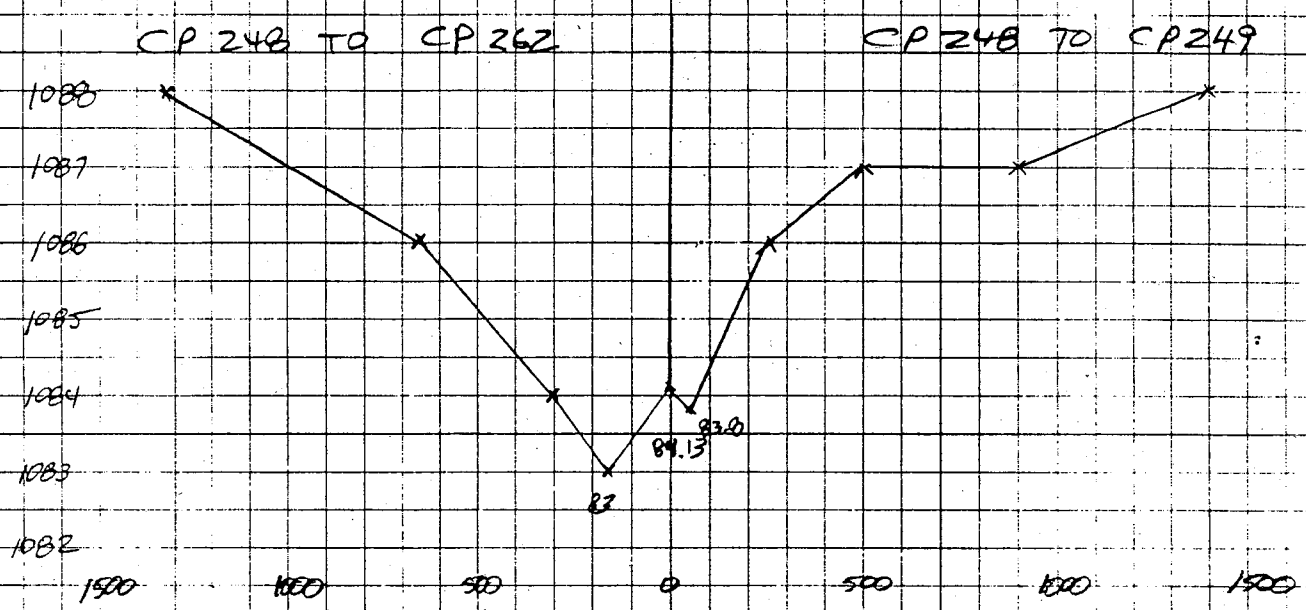
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 248 CITRUS ROAD AND INDIAN SCHOOL ROAD



INDIAN SCHOOL ROAD (WEST)
DIVERSION
S = .0111 ft/ft

CITRUS ROAD BERM (NORTH)
REMAINDER
S = .0025 ft/ft

DT	DI262			
DI	0	691	6380	18685
DQ	0	683	5565	15348

Form 209

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.022
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	350

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
2.00	6869.8	7.63	1.052	0.90	2.90	900.00	550.00	1054.0	7683

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.022
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	90
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.90	268.5	3.30	0.854	0.17	1.07	81.45	176.00	1051.4	269

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.022
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	220

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.60	544.4	3.63	0.874	0.20	0.80	150.00	280.00	1052	813

Enter Depth of Flow, or Press the <Esc> Key to End

CP263 TO CP278

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.033
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	250

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.40	376.9	3.49	1.008	0.19	0.59	108.00	290.00	1052.4	1630

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.033
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	1050

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.60	15933.3	8.81	1.270	1.21	2.81	1808.00	1210.00	1054	17563

Enter Depth of Flow, or Press the <Esc> Key to End

CP263 TO CP278

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.033
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	36
Channel Side Slope - Right Side (horizontal/vertical)	50
Channel Bottom Width (feet)	20

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.40	652.7	5.81	1.146	0.52	1.92	112.28	140.40	1051.4	653

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.033
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	75
Channel Bottom Width (feet)	200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.60	600.1	4.49	1.073	0.31	0.91	133.50	245.00	1052	1253

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

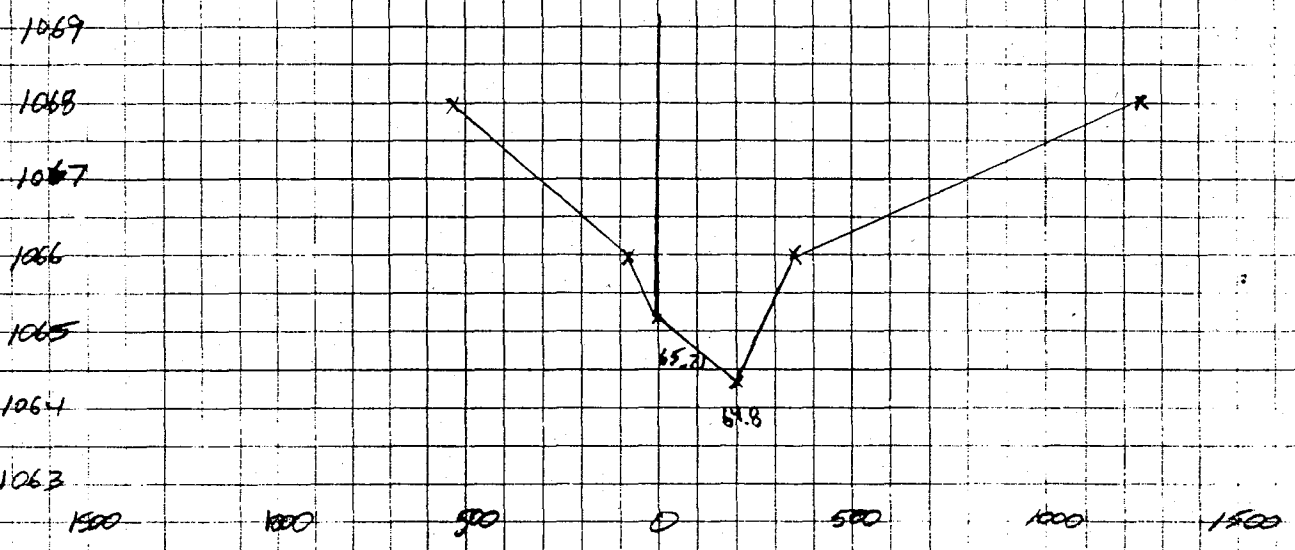
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 249 INDIAN SCHOOL ROAD AND COTTON LANE

CP 249 TO CP 264 CP 249 TO CP 250



INDIAN SCHOOL ROAD (WEST) DIVERSION S = .0088 ft/ft

COTTON LANE (NORTH) REMAINDER S = .0044 ft/ft

DT	DI264				
DI	0	72	654	2109	5685
DQ	0	0	66	481	1754

Form 209

CP249 TO CP250

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	350

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	1039.9	2.60	0.486	0.10	1.10	400.00	450.00	1087	1628

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	800

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	2302.6	2.71	0.491	0.11	1.11	850.00	900.00	1088	3931

Enter Depth of Flow, or Press the <Esc> Key to End

CP249 TO CP250

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.40	72.4	1.29	0.409	0.03	0.43	56.00	180.00	1065.2	72

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	250

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.80	515.8	2.22	0.467	0.08	0.88	232.00	330.00	1066	588

Enter Depth of Flow, or Press the <Esc> Key to End

CP249 TO CP 264

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0088
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	1273.1	3.64	0.685	0.21	1.21	350.00	400.00	268	1754

Enter Depth of Flow, or Press the <Esc> Key to End

CP249 TO CP 264

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0088
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	80
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.80	66.5	2.25	0.605	0.08	0.88	29.60	69.00	1066	66

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0088
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	80

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.00	415.2	3.19	0.662	0.16	1.16	130.00	180.00	1067	481

Enter Depth of Flow, or Press the <Esc> Key to End

CP248 TO CP249

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0025
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	250

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	573.6	1.91	0.364	0.06	1.06	300.00	350.00	1087	1389

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0025
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	900

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
1.00	1947.6	2.05	0.371	0.07	1.07	950.00	1000.00	1088	3337

Enter Depth of Flow, or Press the <Esc> Key to End

CP 248 TO CP 249

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0025
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	10

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.30	7.9	0.66	0.279	0.01	0.31	12.00	70.00	1084.1	8

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0025
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	80

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.90	807.2	2.43	0.385	0.09	1.99	332.50	270.00	1086	815

Enter Depth of Flow, or Press the <Esc> Key to End

CP248 TO CP262

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0111
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	650

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	~~ELEV~~	~~Q~~
2.00	9782.9	6.52	0.865	0.66	2.66	1500.00	850.00	1088	15348

Enter Depth of Flow, or Press the <Esc> Key to End

CP248 TO CP262

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0111
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	682.7	3.41	0.737	0.18	1.18	200.00	300.00	1034	683

<Enter>: Repeat, <R>eport, <S>creen Graph, <P>rint Graph, or <Esc>: End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0111
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
2.00	4882.3	6.10	0.850	0.58	2.58	800.00	500.00	1036	5565

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

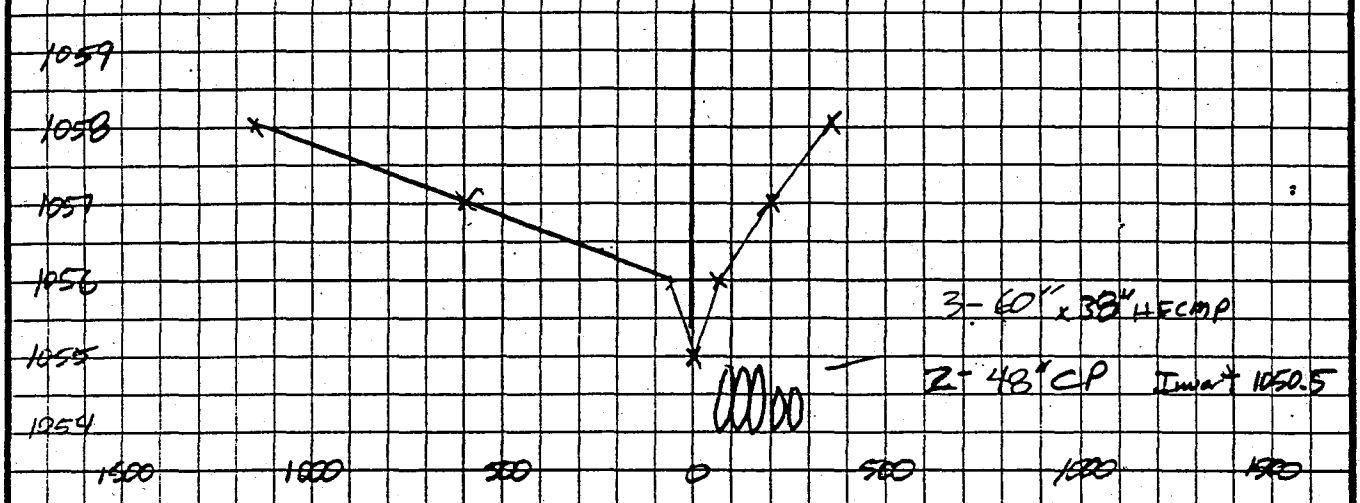
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-4-91

DIVERSION TABLES

SUBBASIN (239) CAMELBACK ROAD AND ½ MILE EAST OF SARIVAL AVE.

CP 239 TO CP 251 CP 239 TO CP 240



CAMELBACK ROAD (WEST) DIVERSION S= S=.0067 %

½ MILE EAST OF SARIVAL AVE (NORTH) REMAINDER S= .0009 %

DT 2D 251

DI	0	283	389	786	3215
DQ	0	0	69	333	2481

CP 239 TO CP 251

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	50
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	68.8	2.29	0.547	0.08	1.08	30.00	55.00	1056	69

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	50

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.00	264.0	2.64	0.570	0.11	1.11	100.00	150.00	1057	333

Enter Depth of Flow, or Press the <Esc> Key to End

CP 239 TO CP 251

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	600

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	2148.0	3.30	0.604	0.17	1.17	650.00	700.00	1058	2481

Enter Depth of Flow, or Press the <Esc> Key to End

CP 239 TO CP 240

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0009
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	80
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	37.2	0.83	0.200	0.01	1.01	45.00	85.00	1056	37

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0009
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	80

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	132.8	1.02	0.212	0.02	1.02	130.00	180.00	1057	170

Enter Depth of Flow, or Press the <Esc> Key to End

CP 239 TO CP 240

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0009
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
1.00	281.4	1.13	0.217	0.02	1.02	250.00	300.00	1058	451

Enter Depth of Flow, or Press the <Esc> Key to End

PIPE CULVERT ANALYSIS

COMPUTATION OF CULVERT PERFORMANCE CURVE

Culvert Diameter (feet)	4
FHWA Chart Number (1,2 or 3)	1
Scale Number on Chart (Type of Culvert Entrance)	1
Manning's Roughness Coefficient (n-value)	.012
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (feet)	60
Culvert Slope (feet per foot)	.005

*** RESULTS ***

Flow Rate (cfs)	Tailwater Depth(ft)	..Headwater (ft).. In.Ctrl.	Out.Ctrl.	Normal Depth(ft)	Critical Depth(ft)	Depth at Outlet(ft)	Outlet Vel.(fps)
70.00	4.00	3.92	4.54	2.32	2.53	4.00	5.57

Enter Flow Rate and Tailwater, or Press the <Esc> Key to End

CURRENT DATE: 02-12-1991
CURRENT TIME: 13:48:30

FILE DATE: 01-23-1991
FILE NAME: WT2

FHWA CULVERT ANALYSIS
HY-8, VERSION 3.2

CULV	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
	INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	BARRELS SHAPE MATERIAL	SPAN (FT)	RISE (FT)	MANNING n	INLET TYPE
1	1050.50	1050.30	60.00	3 RCPE	5.00	3.17	.012	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (CFS) FILE: WT2 DATE: 01-23-1991

ELEV (FT)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1050.50	0	0	0	0	0	0	0	0	1
1052.77	100	100	0	0	0	0	0	0	1
1055.68	400	339	0	0	0	0	0	59	5
1056.19	600	344	0	0	0	0	0	253	7
1056.45	800	315	0	0	0	0	0	481	7
1056.61	1000	282	0	0	0	0	0	712	6
1056.75	1200	246	0	0	0	0	0	949	6
1056.85	1400	206	0	0	0	0	0	1177	15
1056.87	1600	400	0	0	0	0	0	1214	8
1056.98	1800	400	0	0	0	0	0	1407	4
1057.25	2000	400	0	0	0	0	0	1612	6
1055.00	299	299	0	0	0	0	0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: WT2 DATE: 01-23-1991

HEAD ELEV(FT)	HEAD ERROR(FT)	TOTAL FLOW(CFS)	FLOW ERROR(CFS)	% FLOW ERROR
1050.50	0.00	0	0	0.00
1052.77	0.00	100	0	0.00
1055.68	-0.01	400	2	0.47
1056.19	-0.01	600	3	0.45
1056.45	-0.00	800	4	0.55
1056.61	-0.00	1000	7	0.68
1056.75	-0.00	1200	5	0.44
1056.85	0.00	1400	16	1.17
1056.87	0.00	1600	-14	-0.87
1056.98	0.00	1800	-7	-0.40
1057.25	0.00	2000	-12	-0.58

<1> TOLERANCE (FT) = 0.010 <2> TOLERANCE (%) = 1.000

RENT DATE: 02-12-1991
RENT TIME: 13:48:30

FILE DATE: 01-23-1991
FILE NAME: WT2

CULVERT # 1

PERFORMANCE CURVE FOR 3 BARREL(S)

Q (cfs)	HWE (ft)	TWE (ft)	ICH (ft)	OCH (ft)	FLOW TYPE	CCE (ft)	FCE (ft)	TCE (ft)	VO (fps)
0	1050.50	1050.30	0.00	-0.20	0-NF	0.00	1050.50	0.00	0.00
100	1052.77	1051.67	2.00	2.27	4-FF	0.00	0.00	0.00	6.03
339	1055.67	1053.28	5.17	4.90	4-FF	0.00	0.00	0.00	9.14
344	1056.20	1054.02	5.26	5.70	4-FF	0.00	0.00	0.00	8.93
315	1056.45	1054.63	4.75	5.95	4-FF	0.00	0.00	0.00	8.16
282	1056.62	1055.16	4.24	6.12	4-FF	0.00	0.00	0.00	7.30
246	1056.76	1055.64	3.74	6.26	4-FF	0.00	0.00	0.00	6.38
206	1056.86	1056.08	3.24	6.36	4-FF	0.00	0.00	0.00	5.35
400	1059.43	1056.48	6.35	8.93	4-FF	0.00	0.00	0.00	10.38
400	1059.80	1056.86	6.35	9.30	4-FF	0.00	0.00	0.00	10.38
400	1060.16	1057.21	6.35	9.66	4-FF	0.00	0.00	0.00	10.38

El. inlet face invert 1050.50 ft El. outlet invert 1050.30 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

* SITE DATA ***** CULVERT INVERT **********

INLET STATION (FT)	0.00
INLET ELEVATION (FT)	1050.50
OUTLET STATION (FT)	60.00
OUTLET ELEVATION (FT)	1050.30
NUMBER OF BARRELS	3.00
SLOPE (V-FT/H-FT)	0.0033
CULVERT LENGTH ALONG SLOPE (FT)	60.00

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	ELLIPTICAL
BARREL SPAN	60.00 FT
BARREL RISE	38.00 FT
BARREL MATERIAL	CONCRETE
BARREL MANNING'S N	0.012
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQ. EDGE WITH HEADWALL
INLET DEPRESSION	NONE

RRENT DATE: 02-12-1991
RENT TIME: 13:48:30

FILE DATE: 01-23-1991
FILE NAME: WT2

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH (FT)	15.00
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (FT/FT)	0.006
MANNING'S N (.01-0.1)	0.030
CHANNEL INVERT ELEVATION (FT)	1050.30
CULVERT NO.1 OUTLET INVERT ELEVATION	1050.30 FT

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

FLOW (CFS)	W.S.E. (FT)	FROUDE NUMBER	VEL. (FPS)	SHEAR (PSF)
0.00	1050.30	0.000	0.00	0.00
100.00	1051.67	0.623	4.13	0.49
400.00	1053.28	0.653	6.40	1.08
600.00	1054.02	0.658	7.20	1.34
800.00	1054.63	0.662	7.81	1.57
1000.00	1055.16	0.665	8.32	1.76
1200.00	1055.64	0.667	8.74	1.93
1400.00	1056.08	0.669	9.12	2.09
1600.00	1056.48	0.670	9.45	2.24
1800.00	1056.86	0.671	9.76	2.37
2000.00	1057.21	0.673	10.04	2.50

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH (FT)	40.00

***** USER DEFINED ROADWAY PROFILE

CROSS-SECTION COORD. NO.	X (FT)	Y (FT)
1	0.00	1058.00
2	550.00	1057.00
3	1100.00	1056.00
4	1150.00	1055.00
5	1230.00	1056.00
6	1350.00	1057.00
7	1500.00	1058.00

eec

Project Title: Loop 303 Master Drainage study Project No. 99551 Date

Subject: Diverts Prepared By: MJR Checked By: Page

DI252

Divert at Camelback Rd + Alsup Ave.

The channel along the north side at Camelback has approximately 300 - 1000 cfs capacity.

Divert appernation

KK2D239
KM Divert flow from CP239 to CP252
DT DI252

DI	0	283	320	632	3061
DQ	0	0	0	179	2327

eec

Project Title Loop 303 Master Drainage Study Project No. 94551 Date 12-26-00

Subject Diverts Prepared By MJL Checked By _____ Page _____

Sub 7 out

Divert opperation developed by the FCDMC for the RID canal over chute drainage study.

This divert is a 50/50 split.

The WLB Group Inc. WLB

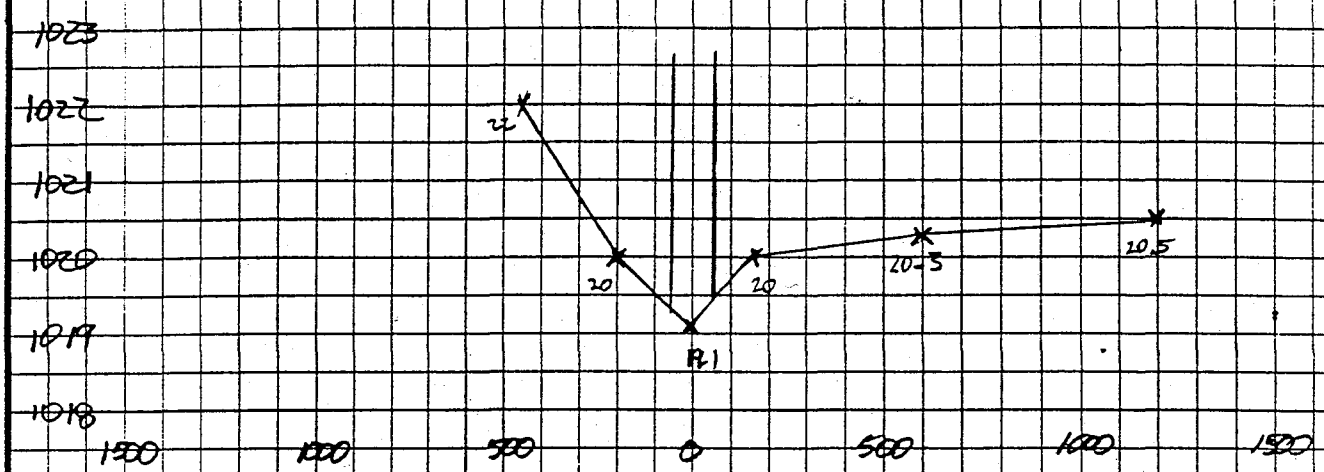
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 258A INDIAN SCHOOL ROAD AND AIRLINE CANAL

CP 258A TO CP 271C CP258A TO CP272 CP258A TO CP259



INDIAN SCHOOL ROAD (WEST) REMAINDER S=.0014 ½

INTERSECTION DIVERSION S=.01 ½

AIRLINE CANAL BEAM (NORTH) DIVERSION S=.003 ½

DT	DI272			
DI	0	39	236	1644
DQ	0	39	187	1186

DT	DI259			
DI	0	0	49	458
DQ	0	0	33	169

CP 258A TO CP 271C

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0014
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.60	15.6	0.74	0.230	0.01	0.61	21.00	65.00	1020	16

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0014
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	150

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
1.00	273.1	1.37	0.269	0.03	1.03	200.00	250.00	1021	289

Enter Depth of Flow, or Press the <Esc> Key to End

CP258A TO CP27K

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0014
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	275

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
1.00	468.5	1.44	0.273	0.03	1.03	325.00	375.00	1022	757

Enter Depth of Flow, or Press the <Esc> Key to End

CP 2584 TO CP 272

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	20

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.40	39.4	1.64	0.590	0.04	0.44	24.00	100.00	1019.5	39

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	147.7	2.36	0.645	0.09	0.59	62.50	150.00	1020	187
1.50	1146.7	4.37	0.751	0.30	1.80	262.50	250.00	1021	1186
2.50	3261.2	5.80	0.806	0.52	3.02	562.50	350.00	1022	3300

Enter Depth of Flow, or Press the <Esc> Key to End

CP 258A TO CP259

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0033
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	30

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
0.50	32.8	1.19	0.358	0.02	0.52	27.50	80.00	1020	33

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0033
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.30	34.7	1.01	0.344	0.02	0.32	34.50	130.00	1020.3	68

Enter Depth of Flow, or Press the <Esc> Key to End

CP258A TO CP259

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0033
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	600

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.20	100.6	0.82	0.328	0.01	0.21	122.00	620.00	10225	169

Enter Depth of Flow, or Press the <Esc> Key to End

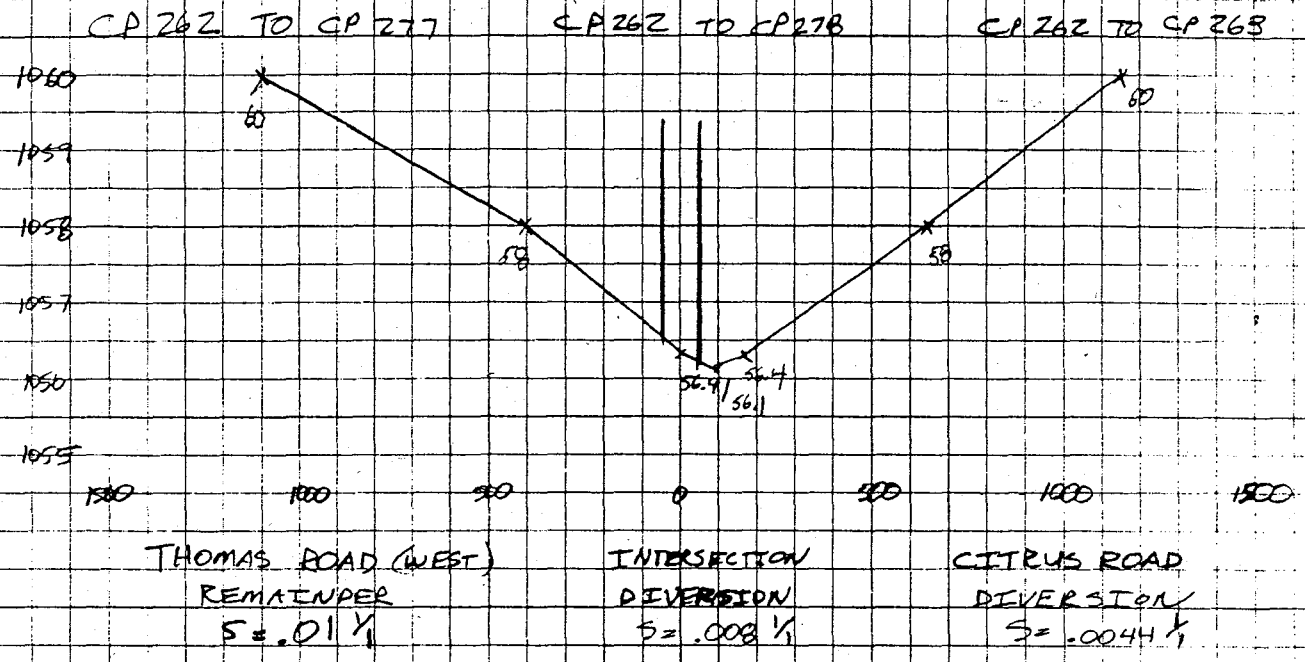
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 262 THOMAS ROAD AND CITRUS ROAD



DT 10278

DI	0	8	12	1885	12547
DQ	0	0	4	644	1672

DT DI263

DI	0	8	8	1241	10875
DQ	0	8	8	867	5869

Form 209

CP262 TO CP263

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	600

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
2.00	5001.6	3.57	0.476	0.20	2.20	1400.00	800.00	1060	5967

Enter Depth of Flow, or Press the <Esc> Key to End

CP 262 TO CP 263

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
0.30	7.7	0.73	0.320	0.01	0.31	10.50	65.00	1056.4	8

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS

RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0044
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	120

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
1.60	858.7	2.68	0.442	0.11	1.71	320.00	280.00	1058	367

Enter Depth of Flow, or Press the <Esc> Key to End

CP262 TO CP278

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
2.00	1027.7	5.14	0.640	0.41	2.41	200.00	100.00	1060	1672

Enter Depth of Flow, or Press the <Esc> Key to End

CP262 TO CP278

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.25	4.0	0.92	0.422	0.01	0.26	4.38	30.00	1056.5	4

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.008
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q
1.50	640.4	4.27	0.614	0.28	1.78	150.00	100.00	1058	644

Enter Depth of Flow, or Press the <Esc> Key to End

CP 262 TO CP277

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	5

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.50	373.5	3.11	0.623	0.15	1.65	120.00	155.00	1058	374

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.01
Manning's Roughness Coefficient (n-value)	0.040
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	350

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
2.00	4631.6	5.15	0.709	0.41	2.41	900.00	550.00	1060	5006

Enter Depth of Flow, or Press the <Esc> Key to End

The WLB Group Inc. WLB

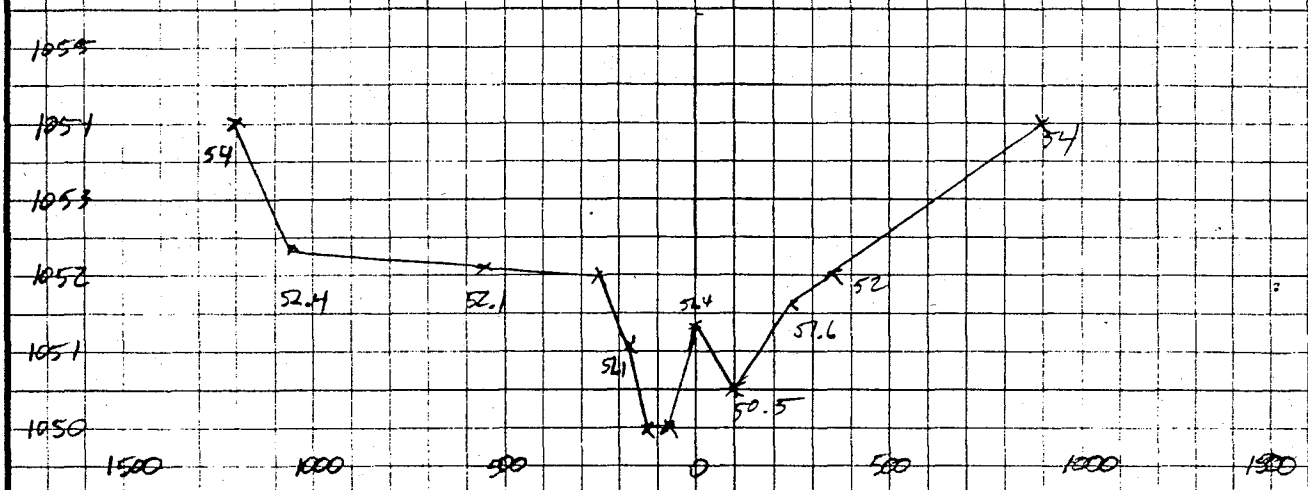
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 263 THOMAS ROAD AND ½ MILE EAST OF CITRUS ROAD

CP 263 TO CP278 CP 263 TO CP264



THOMAS ROAD (WEST)
DIVERSION
S = .033 ½

½ MILE EAST OF CITRUS RD (NORTH)
REMAINDER
S = .022 ½

DT	2D278			
DI	0	922	2066	25246
DQ	0	653	1253	17563

eec

Project Title LOOP 303 White Tanks Project No. 99551 Date

Subject Divert Prepared By MJR Checked By Page

DI 265

Divert at Ind. Sch. + Loop 303. 4-24" & 5 RCP's (one on southside)

See attached Rating Curve. Site should be surveyed to verify split.

Loop 303 acts as the divert the pipes flow east while the rest flows south.

KK D250

OT DI265

DI	0	64	200	400	500	1000
DQ	0	0	136	336	436	936

DI265

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

March 12, 2001

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Culvert Diameter (ft)	2.0
FHWA Chart Number	3
FHWA Scale Number (Type of Culvert Entrance)	2
Manning's Roughness Coefficient (n-value)	0.012
Entrance Loss Coefficient of Culvert Opening	0.5
Culvert Length (ft)	120.0
Invert Elevation at Downstream end of Culvert (ft)	1,056.0
Invert Elevation at Upstream end of Culvert (ft)	1,056.33
Culvert Slope (ft/ft)	0.0028
Starting Flow Rate (cfs)	5.0
Incremental Flow Rate (cfs)	1.0
Ending Flow Rate (cfs)	25.0
Starting Tailwater Depth (ft)	1.0
Incremental Tailwater Depth (ft)	0.1
Ending Tailwater Depth (ft)	3.0

COMPUTATION RESULTS

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
5.0	1.0	1.08	1.21	0.87	0.79	1.0	3.18
6.0	1.1	1.2	1.34	0.96	0.87	1.1	3.39
7.0	1.2	1.31	1.46	1.05	0.94	1.2	3.56
8.0	1.3	1.42	1.58	1.14	1.01	1.3	3.7
9.0	1.4	1.52	1.7	1.23	1.07	1.4	3.83
10.0	1.5	1.62	1.82	1.33	1.13	1.5	3.96
11.0	1.6	1.72	1.94	1.42	1.19	1.6	4.08
12.0	1.7	1.81	2.08	1.53	1.24	1.7	4.22
13.0	1.8	1.91	2.22	1.66	1.3	1.8	4.37
14.0	1.9	2.01	2.39	2.0	1.35	1.9	4.54
15.0	2.0	2.11	2.65	2.0	1.4	2.0	4.77
16.0	2.1	2.25	2.89	2.0	1.44	2.0	5.09
17.0	2.2	2.38	3.13	2.0	1.49	2.0	5.41
18.0	2.3	2.45	3.38	2.0	1.53	2.0	5.73
19.0	2.4	2.55	3.64	2.0	1.57	2.0	6.05
20.0	2.5	2.64	3.91	2.0	1.61	2.0	6.37
21.0	2.6	2.74	4.19	2.0	1.64	2.0	6.68
22.0	2.7	2.85	4.48	2.0	1.68	2.0	7.0
23.0	2.8	2.96	4.78	2.0	1.71	2.0	7.32
24.0	2.9	3.08	5.08	2.0	1.74	2.0	7.64
25.0	3.0	3.2	5.39	2.0	1.76	2.0	7.96

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4 pipes H.W ~ 3' ∴ 4 x 16 = 64 cfs flows east

Recomend detailed survey to verify split.

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 273 I-10 & DIKE

5-10' x 3' BC

CP273 TO CP292 CP273 TO CP274

I-10 (WEST) DIVERSION DIKE (NORTH) REMAINDER

WEIR FLOW EAST OVER DIKE (SEE STORAGE-DISCHARGE TABLE FOR BOX CULVERT FLOW)

$Q = CLH^{3/2}$

C = 2.6 L = 500/2 H = 1.0

at 1058 Q = 650

DT	10	292			
DI	0	40	525	850	1700
DQ	0	40	525	850	1050

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN (274) I-10 & PERRYVILLE ROAD

PERRYVILLE ROAD BRIDGE BW=68 SS=2:1 n=0.067 L=165'

CP 274 TO CP292 CP274 TO CP275

I-10 (WEST) DIVERSION

PERRYVILLE ROAD (NORTH) REMAINDER

WEIR FLOW EAST OVER PERRYVILLE ROAD (SEE STORAGE-DISCHARGE TABLE FOR FLOW UNDER PERRYVILLE ROAD BRIDGE)

$Q = CLH^{3/2}$

$C = 2.6$ $L = 300/2$ $H = 1.0$

at 1048 $Q = 390$

DT 2D292

DI	0	40	665	1100	490
DQ	0	40	665	1100	1100

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 275 I-10 + DIKE INTERSECTION

4-36" RCP

CP 275 TO CD 293

I-10 (WEST) DIVERSION

CP 275 TO CP 276

DIKE (NORTH) REMAINDER

Weir Flow East Over Dike Q = CLH^3/2

(See Storage - Discharge Table for Pipe Flow)

C = 2.6 H = .5 L = 30

at 1042 Q = 28 cfs

C = 2.6 H = 1.5 L = 550/2

at 1043 Q = 1313 cfs

AT 1D 293

DI	0	100	188	244	1303
DQ	0	100	188	216	260

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 276 I-10 + DIKE
3-36" CMP

CP 276 TO CP 293 | CP 276 TO CP 277

I-10 (WEST) DIVERSION | DIKE (NORTH) REMAINDER

WEIR FLOW EAST OVER DIKE (SEE STORAGE DISCHARGE TABLES FOR PIPE FLOW)
$Q = CLH^{3/2}$

C = 2.6 L = 30 H = .5
at 1036 Q = 28 cfs
C = 2.6 L = 400/2 H = .5
at 1037 Q = 9.5 cfs

DT 2D 293

DI	0	18	75	115	1063
DQ	0	18	75	87	108

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 277 I-10 & CITRUS RD

Citrus Rd Bridge BW = 68 SS = 2:1 S = .0105 L = 165'

CP 277 TO CP 293	CP 277 TO CP 279D
I-10 (WEST) DIVERSION	CITRUS ROAD (NORTH) REMAINDER

WEIR FLOW EAST OVER CITRUS ROAD (SEE STORAGE-DISCHARGE TABLE FOR FLOW UNDER BRIDGE)

$Q = CLH^{3/2}$

C = 2.6 L = 800/2 H = .7

at 1028 Q = 610 cfs

DT 30 293

DI	0	255	525	2380	3410
DQ	0	255	525	2380	2800

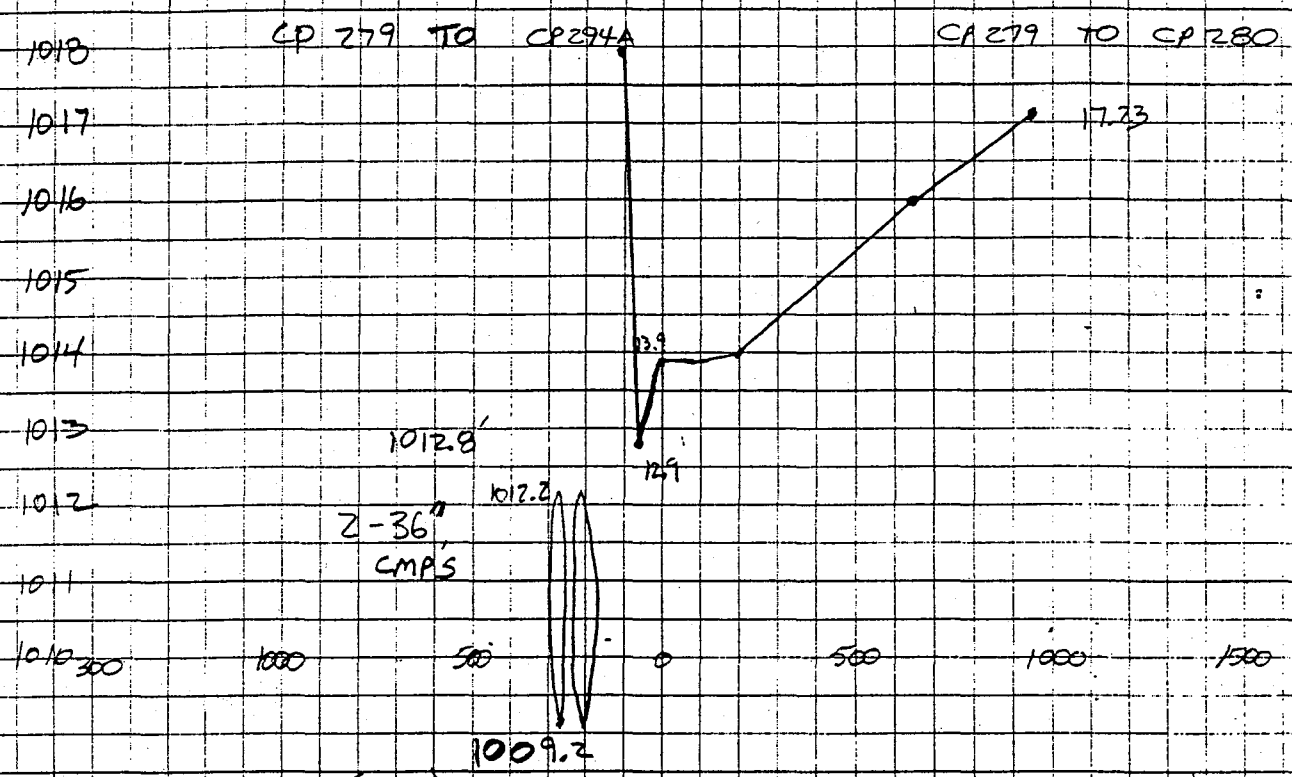
The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 9-26-91

DIVERSION TABLES

SUBBASIN 279 I-10 AND COTTON LANE



I-10 (WEST) DIVERSION S = .0026 %

COTTON LANE (NORTH) REMAINDER S = .02 %

DT	3D 294A						
DI	0	36	131	457	1087	3812	5907
DQ	0	36	131	306	562	1438	2092

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 279A I-10 + DIKE

5 - 29" x 45" HERCP 1-24" CMP

CP 279A TO CP 294A
I-10 (WEST)
DIVERSION

CP 279A TO CP 279
DIKE (NORTH)
REMAINDER

WEIR FLOW EAST OVER DIKE (SEE STORAGE-DISCHARGE TABLE FOR PIPE FLOW)

$Q = CLH^{3/2}$

C=2.6 L=150/2 H=1.0

at 1018 Q= 195 cfs

DT 20294A

DT	0	22	79	177	453
DQ	0	22	79	177	258

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 279B I-10 + DIKE
1-24" CMP

CP279B TO CP294A CP279B TO CP279A

I-10 (WEST) DIVERSION DIKE (NORTH) REMAINDER

WEIR FLOW EAST OVER DIKE (SEE STORAGE-DISCHARGE TABLE FOR PIPE FLOW)

$Q = CLH^{3/2}$

C = 2.6 L = 400/2 H = .5
at 1020.5 Q = 184
L = 600/2 H = 2
at 1022 Q = 2206

DT 1D294A

DI	0	10	195	2221
DQ	0	10	11	15

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 279D I-10 + DIKE
1-24" CMP

CP 279D TO CP 294 CP 279D TO CP 279C

I-10 (WEST) DIVERSION DIKE (NORTH) REMAINDER

WEIR FLOW EAST OVER DIKE (SEE STORAGE-DISCHARGE TABLE FOR PIPE FLOW)
$Q = CLH^{3/2}$

$C = 2.6$ $L = 350/2$ $H = 5$
at 1024 $Q = 160$ cfs

DT ID 294 * Pipe is Ineffective

DI	0	0	162	500	1000
DQ	0	0	160	440	980

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 279C I-10 + DIKE
4-36" CMP 1-24" CMP

CP 279C TO CP294 CP279C TO CP279B

I-10 (WEST) DIVERSION DIKE (NORTH) REMAINDER

WEIR FLOW EAST OVER DIKE (SEE STORAGE-DISCHARGE TABLE FOR PIPE FLOW)
$Q = CLH^{3/2}$

C = 2.6 L = 400/2 H = 1.5
at 1024 Q = 955

DT 2D 294

DI	0	89	1095
DQ	0	89	440

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-18-91

DIVERSION TABLES

SUBBASIN 281

CP 281 TO CP 280

Divert
Weir Flow
$Q = CLH^{3/2}$

C = 2.6
L = 300/2
H = 1.4

Qat 1010 = 646 cfs

Remainder
Weir Flow

C = 2.6
L = 3000/2
H = 1.6

Qat 1010 = 7893 cfs

DT DI280

DI 0 8539

DQ 0 646

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 285B I-10 & DIKE

5-29"x45" HERCP 2-24" RCP

CP 285B TO CP 297 CP285B TO CP 285A

I-10 (WEST) DIVERSION

DIKE (NORTH) REMAINDER

WEIR FLOW EAST OVER DIKE (SEE STORAGE-DISCHARGE TABLE FOR PIPE FLOW)

$Q = CLH^{3/2}$

$C = 2.6$ $L = 350/2$ $H = .5$

at 1010 $Q = 161$

DT ID 297

DI	0	16	227	435
DQ	0	16	227	274

eec

Project Title Loop 303 Wt. Upgrade Project No. 99551 Date 2-11-01

Subject Diversion Table Prepared By MJR Checked By _____ Page _____

Palm Valley Phase II Park Divert. DIZ881

Data provided in Palm Valley Phase 2 Mass Grading Drainage Report by WHB Aug 17, 1998 Revised November 23, 1998.

WHB used weir flow calculations + HEC-RAS to model divert. System is an off line storage basin. Channel begins spilling into basin when Q > 350 cfs. Weir length design ~200'

HEC-1 Input

KK DIZ88B

KM – see model

DT - D288B

DI	200	350	450	600	800	900
DQ	0	0	100	250	450	550

Divert has not been returned in Loop 303 model.

eec

Project Title Loop 303 Wt. update Project No. 99551 Date 2/11/01

Subject Diversion Table Prepared By MJR Checked By _____ Page _____

Palm Valley Phase II Driving Range Divert DI2882

Data provide in Palm Valley Phase 2 Mass Grading Drainage by WhB, Aug 17, 1998, Revised November 23, 1998.

WhB used weir flow + HEC-Ras to model divert. System is an off line basin. Channel begins spilling into basin when Q > 400cfs. Weir length is ~200ft.

HEC-1 Input

KK DI2882
KM – see HEC-1 model
DT D2882

DI	0	200	400	600	1000	1200
DQ	0	0	0	200	400	800

Divert has not been returned in Loop 303 model.

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 41-2

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT 6D303

DI	0	10	14	18	23	29	35	42	50	56	201	419	469	~~836~~ 1836
DQ	0	10	14	18	23	29	35	42	50	56	59	61	64	68

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 43-3

SEE STAGE - STORAGE - DISCHARGE TABLE FOR DIVERT DATA

DT 3D 303A

DI	0	27	36	48	63	78	93	165	364	951
DQ	0	~~0~~ 27	~~0~~ 36	~~0~~ 48	~~0~~ 63	~~0~~ 78	~~0~~ 93	~~63~~ 102	~~250~~ 114	~~846~~ 135

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 285 REEMS ROAD & I-10

REEMS RD BRIDGE BW=95' SS=2:1 S=.0028 L=600

CP 285 TO CP297A

I-10 (WEST) DIVERSION

CP 285 TO CP287

REEMS ROAD (NORTH) REMAINDER

SEE STORAGE - DISCHARGE TABLE FOR FLOW UNDER BRIDGE AND FLOW OVER REEMS ROAD

DT 2D297A

DI	0	82	694	1687
DQ	0	23	188	462

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2/-91

DIVERSION TABLES

SUBBASIN 285A I-10 & DIKE
1-30" RGRCP 6'x4' BC 1-30" RGRCP

CP285A TO CP 297A CP285A TO CP 285

I-10 (WEST) DIKE (NORTH)

WEIR FLOW EAST OVER DIKE (SEE STORAGE - DISCHARGE TABLE FOR PIPE FLOWS)

$Q = CLH^{3/2}$

C = 2.6 L = 30 H = .5
at 1006 Q = 28
L = 550 H = 1.0
at 1006.5 Q = 688 cfs

DT 1 D297A

DI	0	35	193	196	246	925
DQ	0	35	193	196	218	237

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 287E

CP 287E TO RC287E REMAINDER	CP 287E TO CP 502 DIVERSION

SEE STAGE-STORAGE-DISCHARGE TABLES FOR DIVERT DATA

PT DI 302

DI	0	19	58	717	13575
DQ	0	19	58	65	65

Form 000

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 290

CP 290 TO CP 291 — DIVERSION

CP290 TO RCP290 — REMAINER

SEE STAGE-STORAGE-DISCHARGE TABLES FOR DIVERT DATA

DT DI 291

DI	0	112	122	130	867	13222
DQ	0	0	0	0	725	13080

The WLB Group Inc. WLB

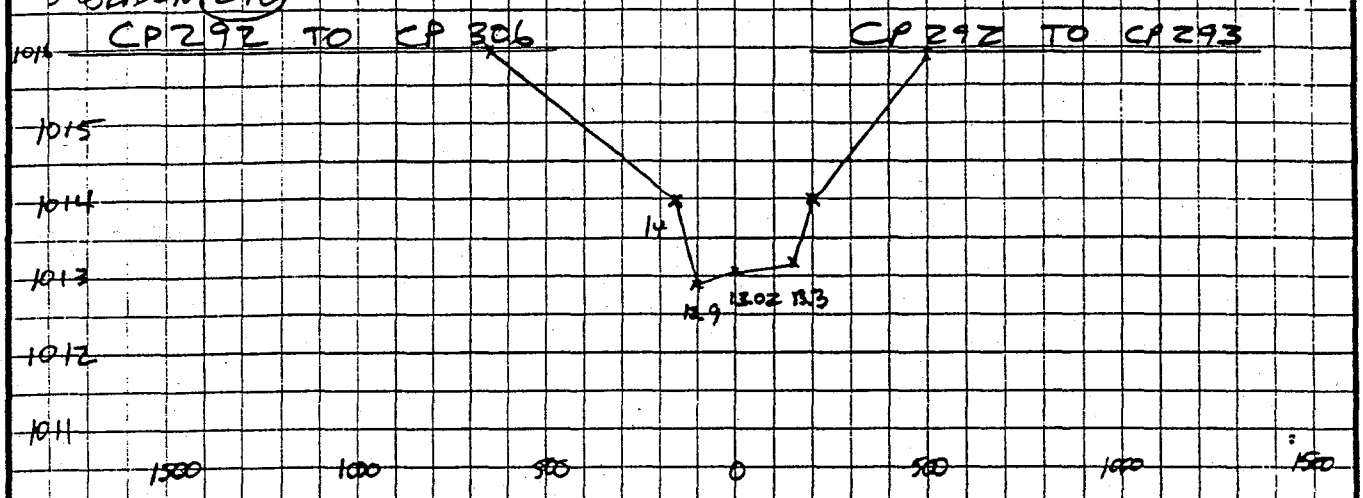
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-1-91

DIVERSION TABLES

SUBBASIN 292

CP292 TO CP 306 | CP292 TO CP293



VAN BUREN STREET (WEST) DIVERSION

PERRYVILLE ROAD (NORTH) REMAINDER

Weir Flow $Q = CLH^{3/2}$

at 10130z
H=.12 L=110/2 Q=6 | H=0 L=0 Q=0

at 10135
H=.6 L=120 Q=145 | H=.48 L=180 Q=156

at 1014
H=1.1 L=170 Q=510 | H=.98 L=200 Q=504

at 10145
H=1.6 L=300 Q=1579 | H=1.48 L=290 Q=1358

at 1015
H=2.0 L=400 Q=2942 | H=1.98 L=370 Q=2680

DT ID 306

DI	0	6	301	1014	2937	5622
DR	0	6	145	510	1579	2942

The WLB Group Inc. WLB

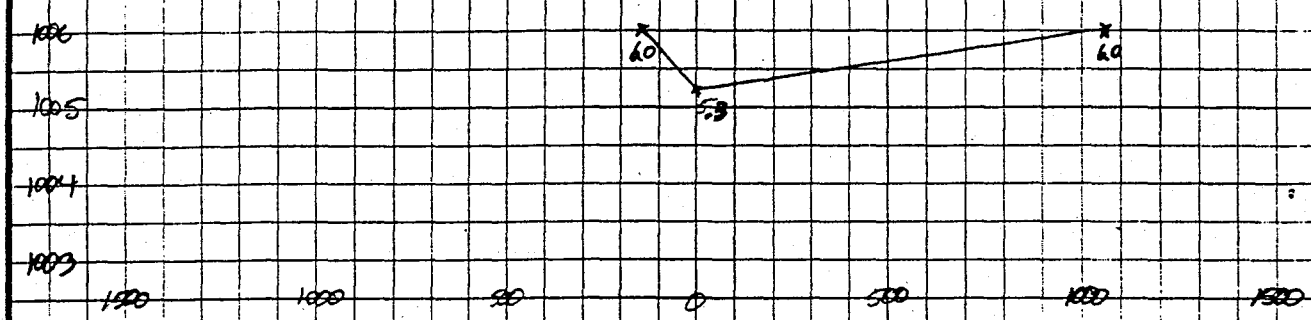
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 1-31-91

DIVERSION TABLES

SUBBASIN 293A

CP293A TO CP306 CP293A TO CP309



PERRYVILLE ROAD (NORTH) DIVERSION

ROOSEVELT CANAL (EAST) REMAINDER

Weir Flow $Q = CLH^{3/2}$
C = 2.6

at 1005.8 H=.5 L=90/2 Q= 41 cfs H=.5 L=800/2 Q= 368 cfs

at 1006 H=.7 L 120/2 Q= 91 cfs H=.7 L=1050/2 Q= 800 cfs

DT TO 306

DI 0 409 891

DQ 0 41 91

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 302

CP 302 TO RCP302 REMAINDER	CP 302 TO CP320 DIVERSION

SEE STAGE-STORAGE-DISCHARGE TABLE FOR DIVERT DATA

DT DI 320

DI	0	16	38	49	117	3687
DQ	0	0	0	0	66	3625

Form 209

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 320

CP 320 TO CP338A DIVERSION	CP 320 TO RCP 320 REMAINDER

SEE STAGE-STORAGE-DISCHARGE TABLE FOR DIVERT DATA

DT DI 338A

DI	0	16	50	71	87	100	112	114	7335	10496
DQ	0	0	0	0	0	0	0	0	1218	10373

The WLB Group Inc. WLB

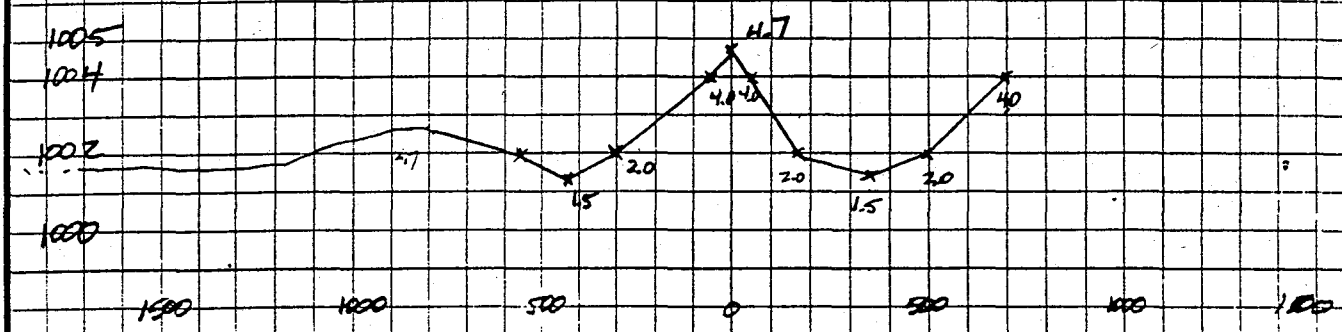
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 1-31-91

SUBBASIN 323 DIVERSION TABLES

INTERSECTION OF AIRPORT ROAD AND ROOSEVELT CANAL

CP 323 TO 324 CP 323 TO 321



ROOSEVELT CANAL (EAST) REMAINDER — INTERSECTION — AIRPORT ROAD (NORTH) DIVERSION

Weir Flow $Q = CLH^{3/2}$

C = 2.6 L = 300/2 H = .3

Q at 1001.8 = 64 cfs

Q at 1002 = 1838 cfs L = 300 H = .5

Weir Flow $Q = CLH^{3/2}$

C = 2.6 L = 300/2 H = .3

Q at 1001.8 = 64 cfs

Q at 1002 = 138 L = 300/2 H = .5

DT	DI 321		
DI	0	128	1976
DQ	0	64	138

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-18-91

DIVERSION TABLES

SUBBASIN 337

CP 337 TO CP 367 IN AGUA FRIA RIVER

96" SD FLOW

DT	DI 367										
				250	370	380	387	383	383	8428
DI	0	10	100	~~200~~	~~300~~	~~383~~	~~500~~	~~1000~~	~~5000~~	~~8000~~
				250	370	380				
DQ	0	10	100	~~200~~	~~300~~	383	383	383	383	383

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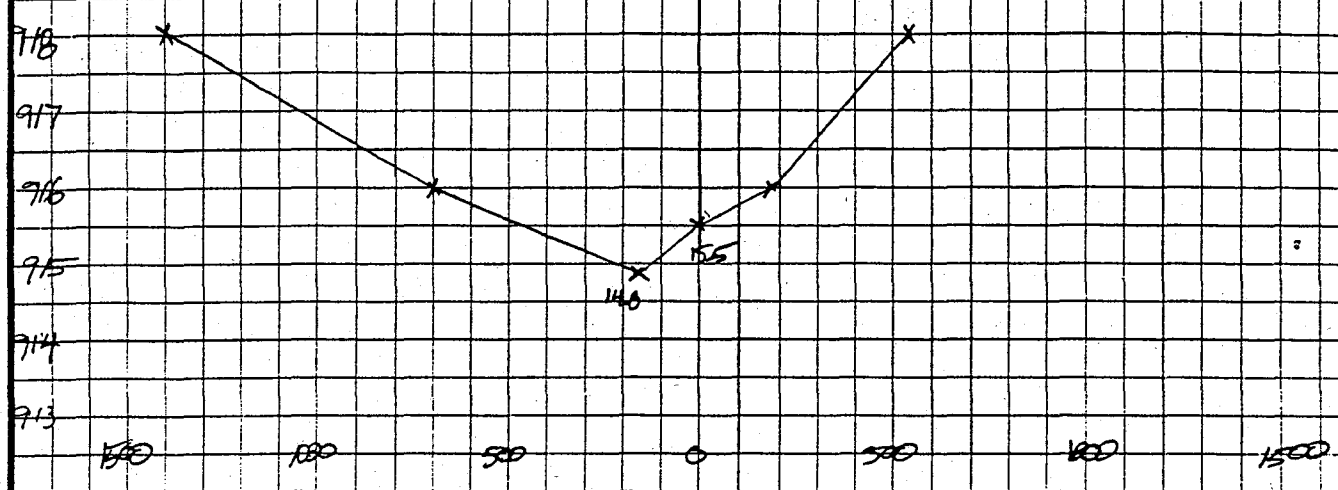
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-12-91

DIVERSION TABLES

SUBBASIN 346A COTTON LANE NORTH OF S.P.R.E.

CP 346A TO CP 346B CP 346A TO CP 347



FIELD WEST OF COTTON LANE
DIVERSION
S = .0047 ft/ft

COTTON LANE (BERM EAST)
REMAINDER
S = .0033 ft/ft

DT DI346B

DI	0	530	1173	4502	9188
DQ	0	530	1088	3758	7301

346A-2

CP346A TO CP346B

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0047
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	300

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.70	529.5	2.04	0.470	0.06	0.76	259.00	440.00	915.5	530

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0047
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	600

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
0.50	557.9	1.79	0.454	0.05	0.55	312.50	650.00	916	1088

Enter Depth of Flow, or Press the <Esc> Key to End

346A-3

CP 346A TO CP 346B

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0047
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	900

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.00	2670.4	2.81	0.508	0.12	1.12	950.00	1000.00	917	3758

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0047
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	0
Channel Side Slope - Right Side (horizontal/vertical)	100
Channel Bottom Width (feet)	1200

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV.	Q.
1.00	3542.7	2.83	0.509	0.12	1.12	1250.00	1300.00	918	7301

Enter Depth of Flow, or Press the <Esc> Key to End

346A-4

CP346A TO CP347

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0033
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
0.50	84.8	1.36	0.371	0.03	0.53	62.50	150.00	916	85

Enter Depth of Flow, or Press the <Esc> Key to End

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0033
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	250

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q.
1.00	659.0	2.20	0.418	0.07	1.07	300.00	350.00	917	744

Enter Depth of Flow, or Press the <Esc> Key to End

346-A5

CP 346 A TO CP 347

TRAPEZOIDAL CHANNEL ANALYSIS
RATING CURVE COMPUTATION

Channel Bottom Slope (feet per foot)	.0033
Manning's Roughness Coefficient (n-value)	.035
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	450

*** RESULTS ***

Depth (ft)	Flow Rate (cfs)	Velocity (fps)	Froude Number	Velocity Head(ft)	Energy Head(ft)	Flow Area (sq ft)	Top Width (ft)	ELEV	Q
1.00	1143.0	2.29	0.423	0.08	1.08	500.00	550.00	918	1887

Enter Depth of Flow, or Press the <Esc> Key to End

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COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 2-22-91

DIVERSION TABLES

SUBBASIN 346B WEST OF RUBBERMAID SITE

Weir Flow (West) REMAINDER

Weir Flow (South) DIVERSION

SEE STORAGE - DISCHAGE TABLE FOR DIVERT DATA

DT DI360

DI	0	27	349	1675	5428
DQ	0	0	69	423	2390

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

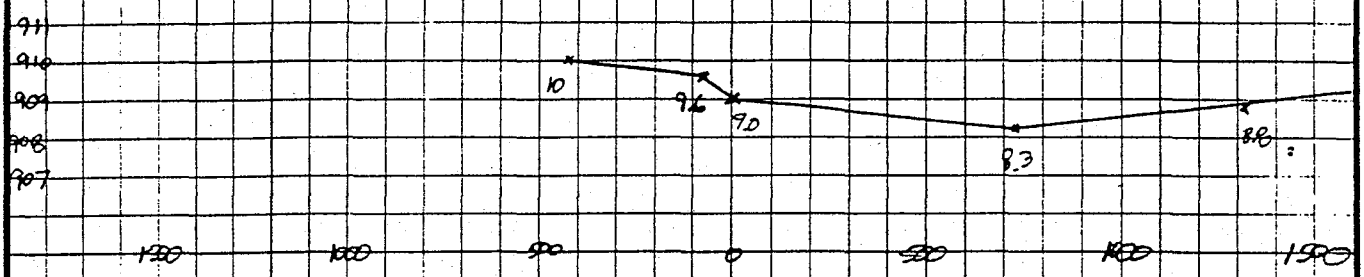
Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 1-31-91

DIVERSION TABLES

SUBBASIN 348

INTERSECTION OF S.P.R.R. AND SARIVAL AVENUE

CP 348 TO CP 347 | CP 348 TO CP 363



SARIVAL AVENUE (NORTH) INTERSECTION SOUTHERN PACIFIC RR (EAST)

DIVERSION

Weir Flow C=2.6

Q= CLH 3/2 L=500/2

H=.4

Q at 910 = 165

REMAINDER

Weir Flow C=2.6

L=1400/2

Q at 909.6 = 3083 H=1.3

L=1800/2

Q at 90 = 5475 H=1.7

DT	DI 347		
DI	0	3083	5640
DQ	0	0	165

The WLB Group Inc. WLB

COMPUTATION DATA SHEET

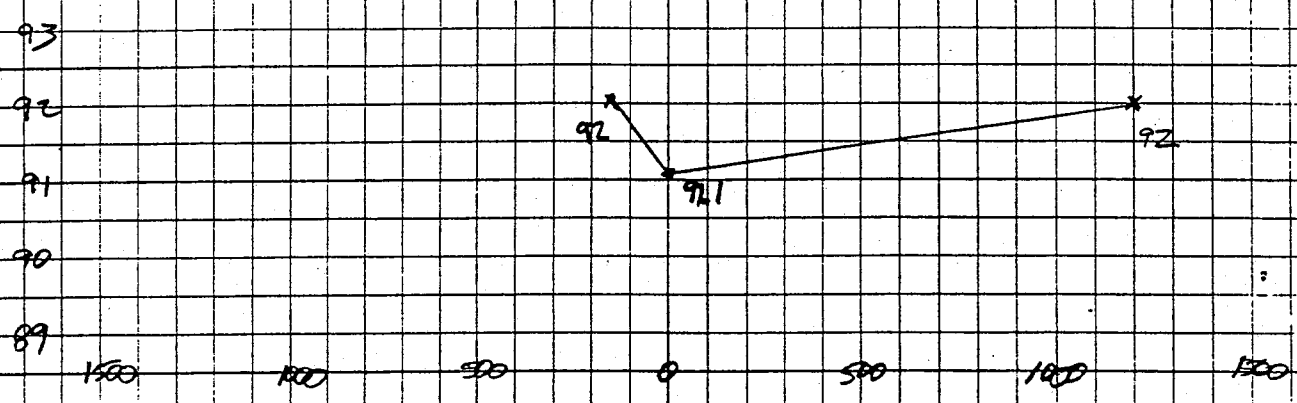
Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 1-31-91

DIVERSION TABLES

SUBBASIN 352A

Intersection of AIRPORT ROAD AND BUCKEYE CANAL

CP 352A TO CP 350 | CP 352A TO CP 372



AIRPORT ROAD (NORTH) DIVERSION

WEIR FLOW
$Q = CLH^{3/2}$
at H = .5 L = 75/2 Q = 35
at H = .9 L = 150/2 Q = 166

BUCKEYE CANAL (EAST) REMAINDER

WEIR FLOW
$Q = CLH^{3/2}$
at H = .5 L = 600/2 Q = 276
at H = .9 L = 1200/2 Q = 1332

DT	DI 350		
DI	0	311	1498
DQ	0	35	166

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COMPUTATION DATA SHEET

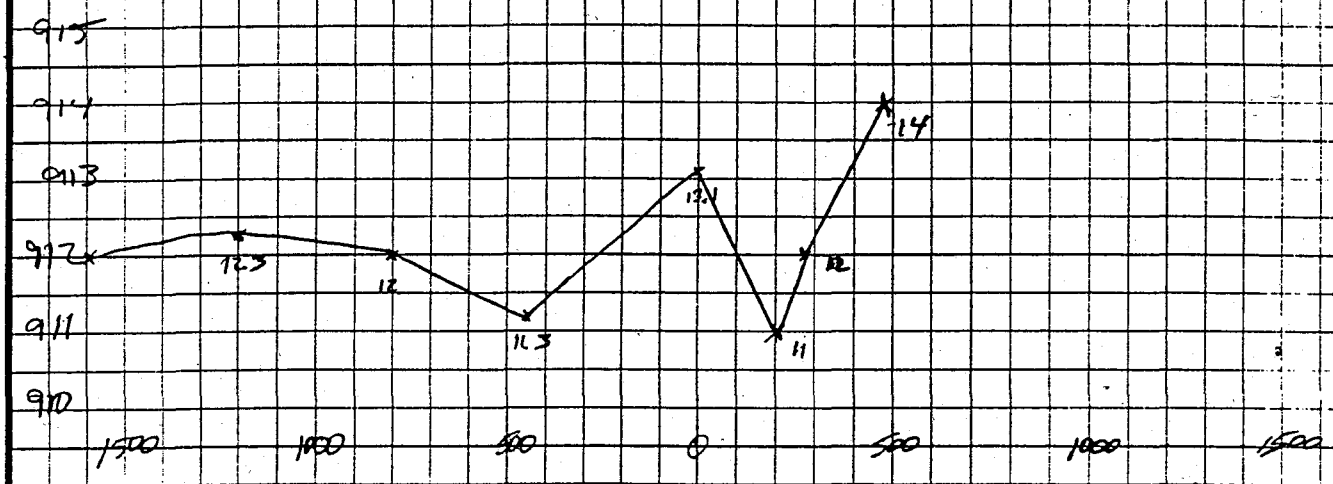
Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 1-31-91

DIVERSION TABLES

SUBBASIN 364

INTERSECTION OF REEMS ROAD AND BUCKEYE CANAL

CP 364 TO CP363 CP 364 TO GILA RIVER



REEMS ROAD (NORTH) REMAINDER

BUCKEYE CANAL (EAST) DIVERSION

Weir Flow $Q = CLH^{3/2}$

at 911.3 H=0 L=0 Q=0

at 912 H=.7 L=450/2 Q=343

at 912.5 H=1.2 L=2100/2 Q=3589

L=50 H=.3 Q=21

L=125/2 H=1.0 Q=163

L=250/2 H=1.5 Q=597

DT	DIGILA			
DI	0	21	506	4186
DQ	0	21	163	597

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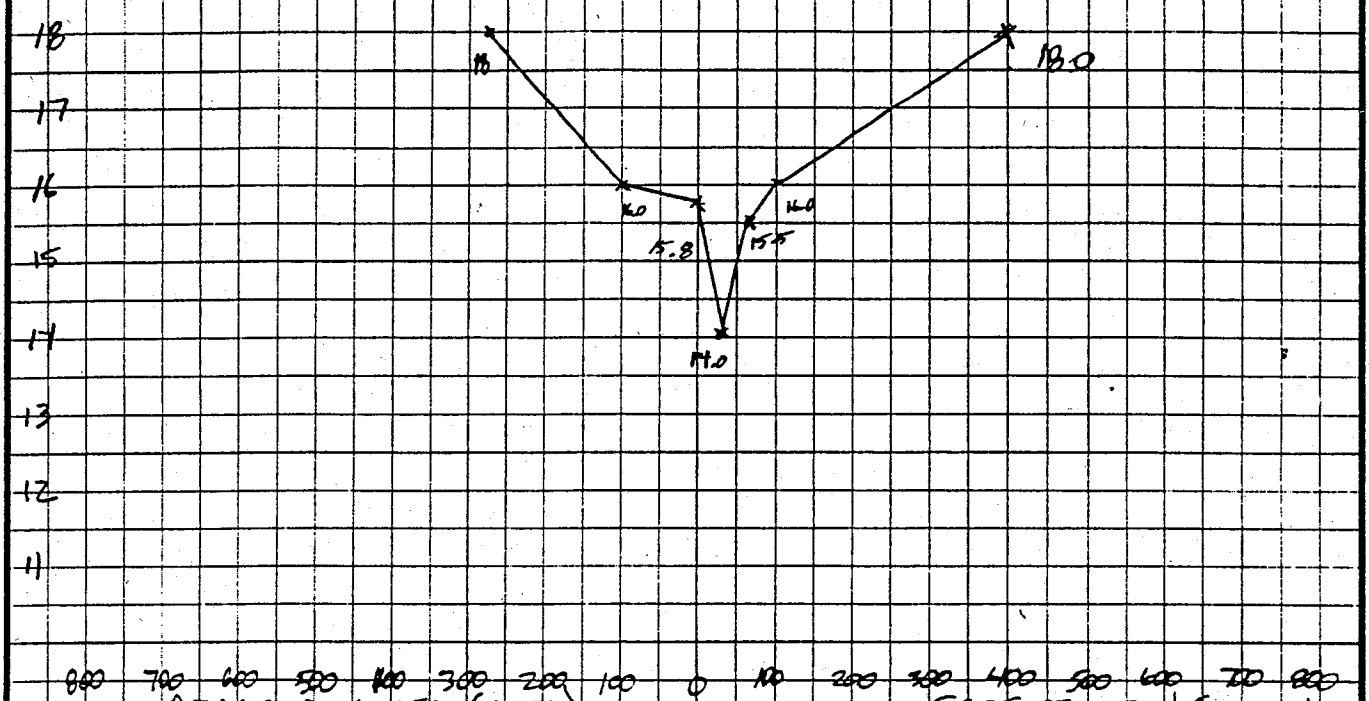
COMPUTATION DATA SHEET

Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 1-31-91

SUBBASIN 364A DIVERSION TABLES

REEMS ROAD SOUTH OF SOUTHERN PACIFIC R.R.

CP 364A TO CP 363 CP 364A TO CP 364



at 916 C=2.6 L=100/2 H=.2
Q = 12 cfs

at 917 L=150/2 H=1.2
Q = 325

at 918 C=2.6 L=275/2 H=2.2
Q = 1166 cfs

DT	DI 363			
DI	0	112	925	3216
DQ	0	12	325	1166

TRAPEZOIDAL CHANNEL ANALYSIS
NORMAL DEPTH COMPUTATION

Flow Rate (cubic feet per second)	80
Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	2
Channel Side Slope - Right Side (horizontal/vertical)	2
Channel Bottom Width (feet)	6

*** RESULTS ***

NORMAL DEPTH (FEET)	1.80
Flow Velocity (feet per second)	4.65
Froude Number	0.717
Velocity Head (feet)	0.34
Energy Head (feet)	2.13
Cross-Sectional Area of Flow (square feet)	17.22
Top Width of Flow (feet)	13.18

(Enter): Repeat, (R)eport, or (Esc): End

TRAPEZOIDAL CHANNEL ANALYSIS
NORMAL DEPTH COMPUTATION

Flow Rate (cubic feet per second)	100
Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	2
Channel Side Slope - Right Side (horizontal/vertical)	2
Channel Bottom Width (feet)	6

*** RESULTS ***

NORMAL DEPTH (FEET)	2.02
Flow Velocity (feet per second)	4.94
Froude Number	0.727
Velocity Head (feet)	0.38
Energy Head (feet)	2.40
Cross-Sectional Area of Flow (square feet)	20.22
Top Width of Flow (feet)	14.06

(Enter): Repeat, (R)eport, or (Esc): End

TRAPEZOIDAL CHANNEL ANALYSIS
NORMAL DEPTH COMPUTATION

Flow Rate (cubic feet per second)	500
Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	.01
Channel Bottom Width (feet)	100

*** RESULTS ***

NORMAL DEPTH (FEET)	1.00
Flow Velocity (feet per second)	3.34
Froude Number	0.679
Velocity Head (feet)	0.17
Energy Head (feet)	1.17
Cross-Sectional Area of Flow (square feet)	149.85
Top Width of Flow (feet)	199.93

(Enter): Repeat, (R)eport, or (Esc): End

TRAPEZOIDAL CHANNEL ANALYSIS
NORMAL DEPTH COMPUTATION

Flow Rate (cubic feet per second)	1950
Channel Bottom Slope (feet per foot)	.0067
Manning's Roughness Coefficient (n-value)	.03
Channel Side Slope - Left Side (horizontal/vertical)	100
Channel Side Slope - Right Side (horizontal/vertical)	0
Channel Bottom Width (feet)	100

*** RESULTS ***

NORMAL DEPTH (FEET)	2.00
Flow Velocity (feet per second)	4.89
Froude Number	0.747
Velocity Head (feet)	0.37
Energy Head (feet)	2.37
Cross-Sectional Area of Flow (square feet)	398.92
Top Width of Flow (feet)	299.64

(Enter): Repeat, (R)eport, or (Esc): End

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COMPUTATION DATA SHEET

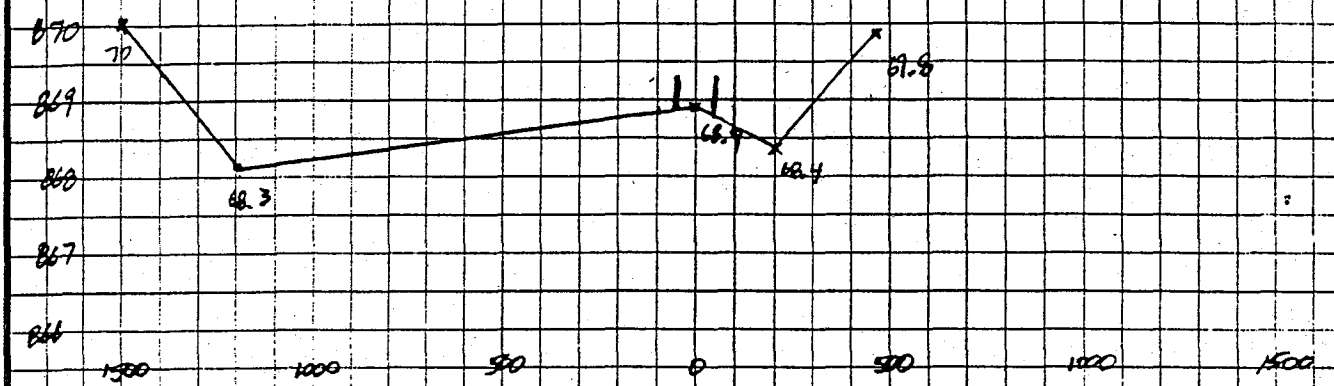
Subject WHITE TANKS / AGUA FRIA ADMS Prepared by JSE Date 1-31-91

DIVERSION TABLES

SUBBASIN 372

INTERSECTION OF AIRPORT ROAD AND BASELINE ROAD

CP 372 TO CP 371 CP372 TO CP379 CP 372 TO CP382



AIRPORT ROAD (NORTH) DIVERSION DIVERSION BASELINE ROAD (EAST) REMAINDER

WEIR FLOW $Q = CLH^{3/2}$

C = 2.6

H = .6 L = 1300/2 Q = 785 Q = 0 H = .5 L = 300/2 Q = 138

H = 1.1 L = 1400/2 Q = 2100 H = .5 L = 100 Q = 92 H = 1.0 L = 300/2 Q = 494

DT	DI 371		
DI	0	923	2686
DQ	0	785	2100

DT	DI 379		
DI	0	138	586
DQ	0	0	92