CITY OF TRACY

CITYWIDE STORM DRAINAGE MASTER PLAN






November 2012

APPENDICES

Stantec

APPENDIX A

EXHIBIT 3A FROM THE 1994 STORM DRAINAGE MASTER PLAN

FABIAN AND BELL CANAL

OLD RIVER

OLD RIVER

PARADISE CUT

TOM PAINE SLOUGH

EL PESCADERO

GRAPHIC SCALE
0 1000 2000 3000 4000
SCALE: 1"=2000'

I-205 SPECIFIC PLAN WATERSHED

I-205

I-205

I-205

I-580

EASTSIDE CHANNEL WATERSHED

WESTSIDE CHANNEL WATERSHED

LAMMERS WATERSHED

BANTA WATERSHED

NOTE: LAMMERS (TRACY WEST AREA) SYSTEM CURRENTLY UNDER REVIEW

TRACY HILLS DEVELOPMENT

PROPOSED TERMINAL DISCHARGE FACILITY FOR TRACY HILLS

TRACY MUNICIPAL AIRPORT

DEFENSE DEPOT TRACY

LAWRENCE RADIATION LABORATORY

CORRAL HOLLOW CREEK

HWY 132

VERNALIS RD.

NOTE 1:
AN INTEGRATED DRAINAGE AGREEMENT HAS BEEN ENTERED INTO BETWEEN THE CITY AND WSID THAT ALLOWS THE 2-SQUARE MILE AREA WITHIN THE WESTSIDE CHANNEL WATERSHED SHOWN HEREON TO DRAIN TO AND UTILIZE WSID DRAINAGE FACILITIES, INCLUDING THE WSID MAIN DRAIN. IN ADDITION, THE INTEGRATED DRAINAGE AGREEMENT AUTHORIZES AN ADDITIONAL 30 ACRES (LOCATION BY CITY DISCRETION) OUTSIDE OF THE 2-SQUARE MILE AREA TO DRAIN TO AND UTILIZE WSID DRAINAGE FACILITIES.

MAJOR WATERSHEDS

- WESTSIDE CHANNEL WATERSHED
- EASTSIDE CHANNEL WATERSHED
- LAMMERS (TRACY WEST AREA) WATERSHED
- I-205 SPECIFIC PLAN WATERSHED
- 2-SQUARE MILE AREA COVERED UNDER INTEGRATED DRAINAGE AGREEMENT BETWEEN CITY AND WSID (SEE NOTE 1).

DETENTION BASIN DATA

BASIN	Q IN	Q OUT	V
DET 2A	153cfs	2cfs	80AF
DET 2B	84cfs	6cfs	37AF
DET 3A	104cfs	15cfs	59AF
DET 3B	103cfs	1cfs	116AF
DET 4	344cfs	23cfs	153AF
DET 5	259cfs	136cfs	33AF
DET 6	203cfs	56cfs	109AF
DET 7	1145cfs	138cfs	279AF
DET 8	536cfs	62cfs	117AF
DET 9	231cfs	151cfs	84AF
DET 10	521cfs	10cfs	406AF
DET 11			
SW(DB3MD)	86cfs	69cfs	32AF
DET NE	471cfs	16cfs	204AF
DET CP	61cfs	9cfs	12AF

LEGEND

- C1 (60) — DRAINAGE CHANNEL REACH AND TYPE
- 54" SD — STORM DRAIN REACH AND EQUIVALENT DIAMETER
- 152 cfs — FUTURE 100-YR DISCHARGE/ PEAK RUNOFF RATE
- DET5 — STORMWATER DETENTION FACILITY
- PS — PUMP STATION
- FLOW DIRECTION
- SPHERE OF INFLUENCE
- MAJOR WATERSHED BOUNDARY
- SUB-BASIN BOUNDARY
- D4D — SUB-BASIN NAME/NUMBER
- CPA2 — DRAINAGE MODEL CONCENTRATION POINT

CITY OF TRACY

SUPPLEMENT TO STORM DRAINAGE MASTER PLAN (SDMP)

EXHIBIT 3A

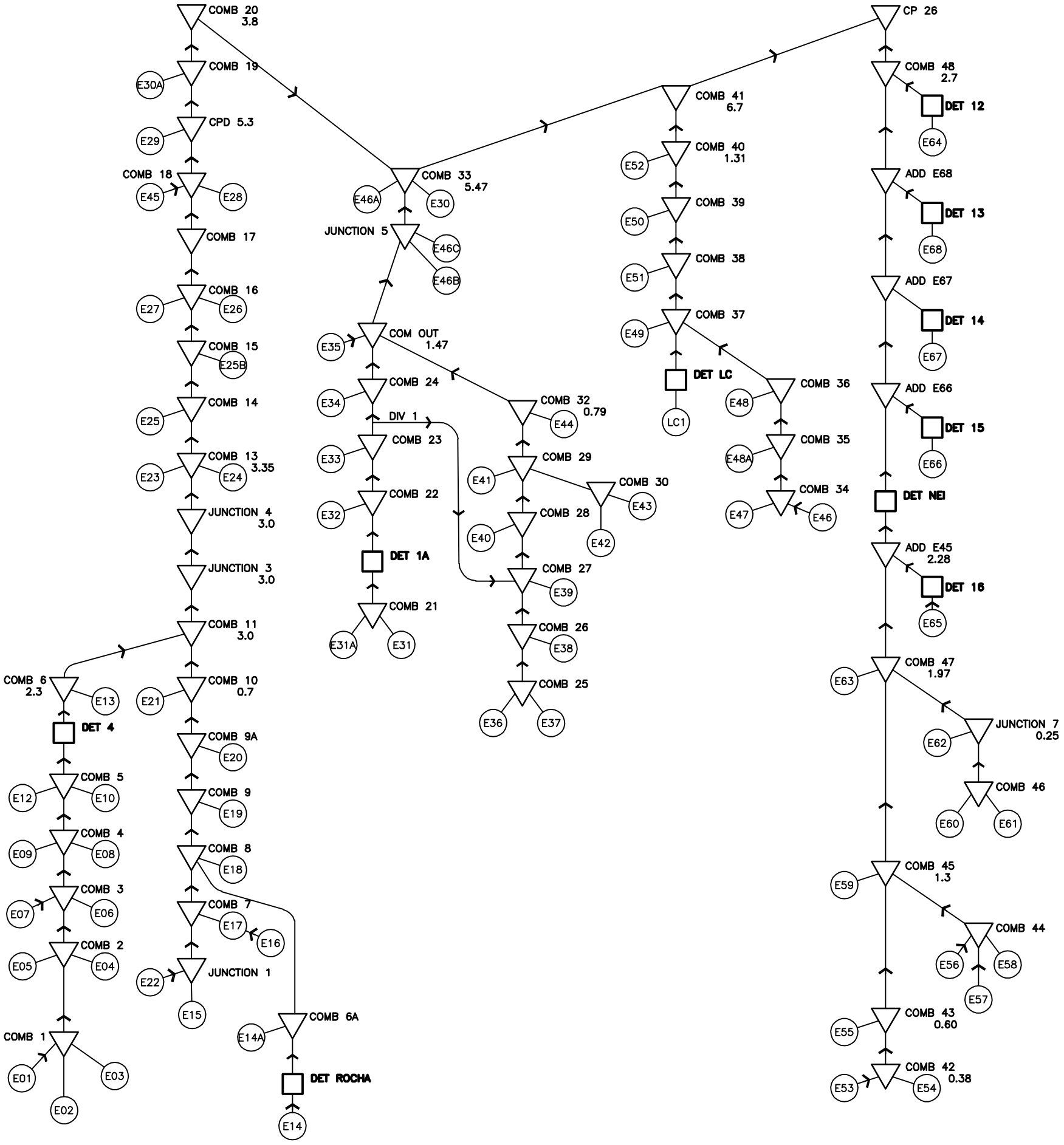
DRAINAGE INFRASTRUCTURE PLAN, WITH WATERSHED BOUNDARIES

DATE:	6/14/2003
SCALE:	AS SHOWN
SHEET:	1 OF 1
CBA JOB NO.	84010017

Stantec Consulting Inc.
2590 Venture Oaks Way
Sacramento California 95833 USA
Tel: (916) 569-2500 Fax: (916) 921-0274
www.stantec.com

APPENDIX B

HYDROLOGIC MODEL (HEC-HMS)



Eastside Channel Watershed

LEGEND

- SUB–BASIN
- ROUTING REACH
- CONCENTRATION POINT
- DETENTION BASIN
- X.XX AREA (SQUARE MILES)

Client/Project
CITY OF TRACY
CITYWIDE STORM DRAINAGE MASTER PLAN

APPENDIX B

Title
HEC-HMS MODEL SCHEMATIC FLOW DIAGRAM

MARCH 2012
184010207
NOT TO SCALE

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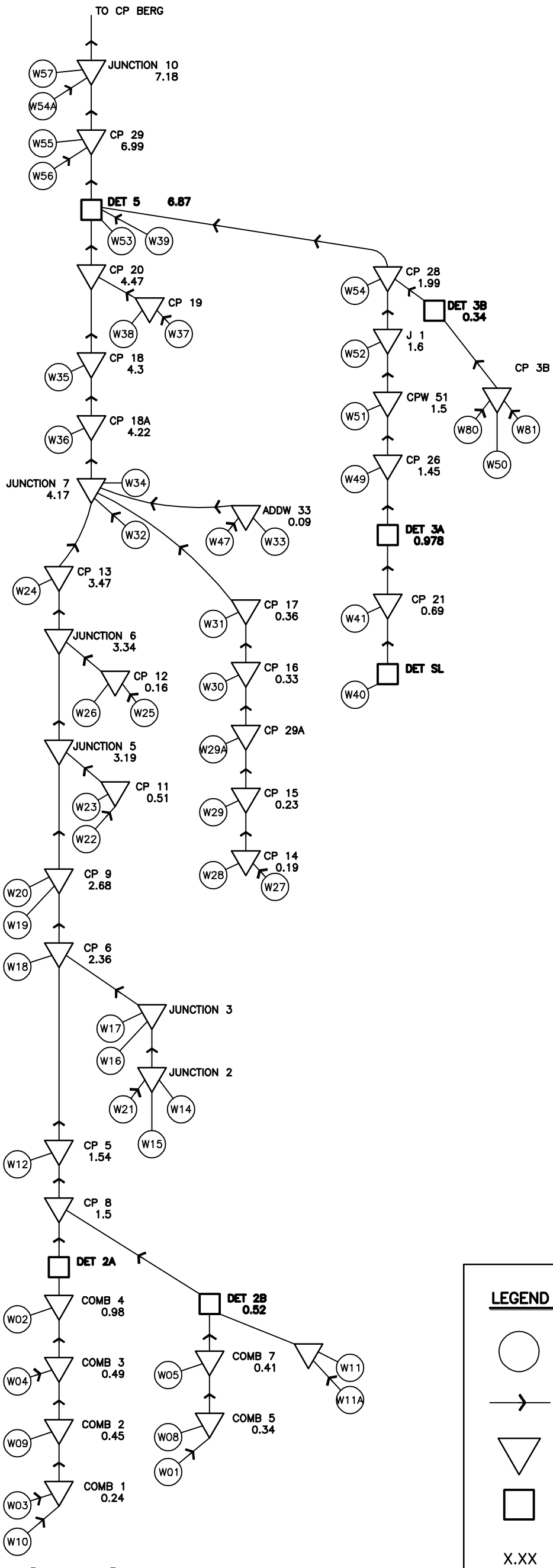

Westside Channel Watershed

LEGEND

- SUB–BASIN
- ROUTING REACH
- CONCENTRATION POINT
- DETENTION BASIN
- X.XX AREA (SQUARE MILES)

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TRACY

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CITY OF TRACY
CITYWIDE STORM DRAINAGE MASTER PLAN

APPENDIX B

Title **HEC-HMS MODEL SCHEMATIC FLOW DIAGRAM**

MARCH 2012
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NOT TO SCALE

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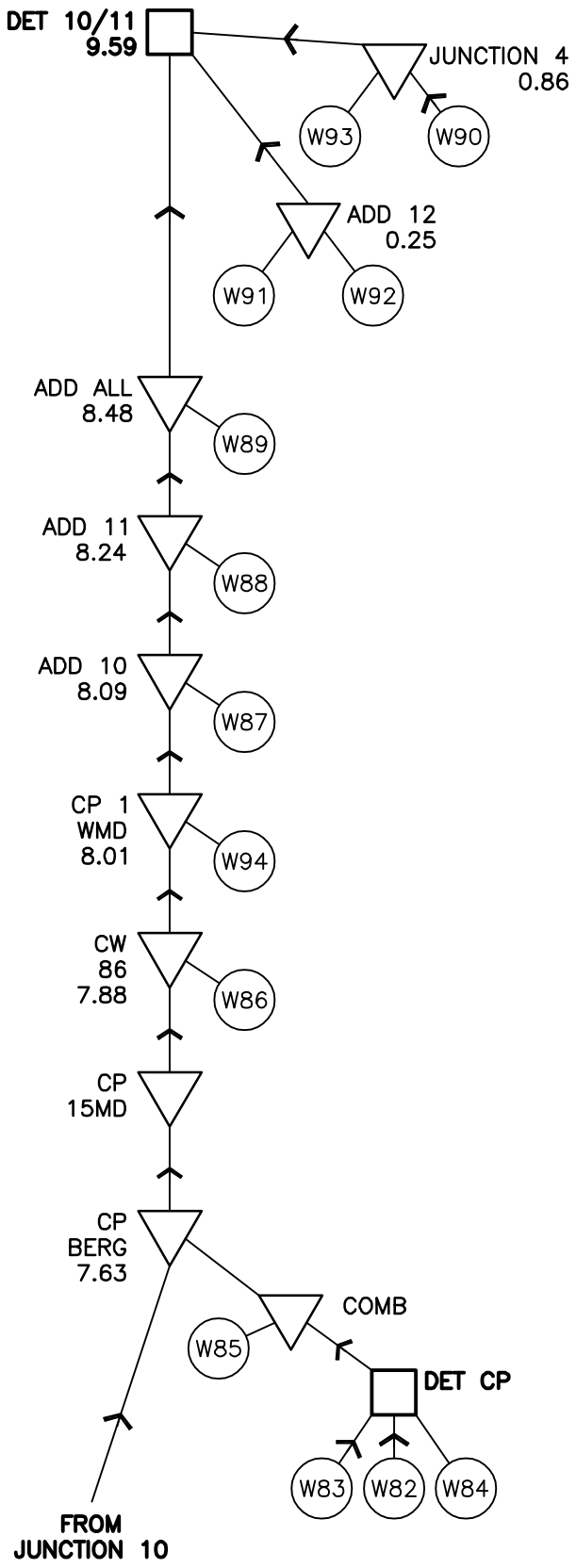

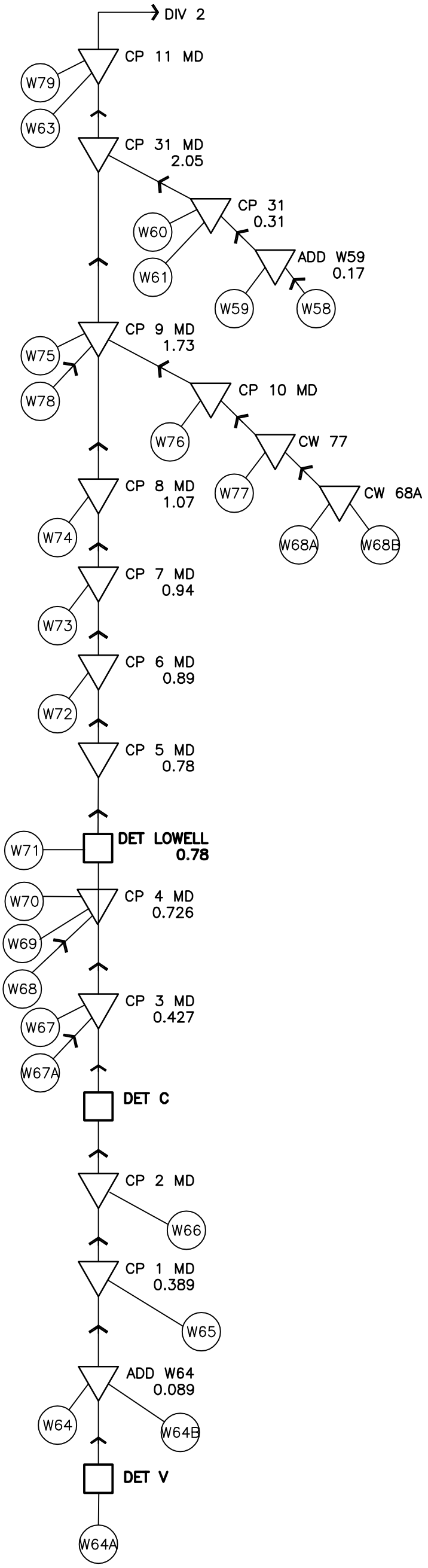

LEGEND

- SUB–BASIN
- ROUTING REACH
- CONCENTRATION POINT
- DETENTION BASIN
- X.XX AREA (SQUARE MILES)

Westside Channel Watershed (cont'd)

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TRACY

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CITY OF TRACY
CITYWIDE STORM DRAINAGE MASTER PLAN

APPENDIX B

Title
HEC-HMS MODEL SCHEMATIC FLOW DIAGRAM

MARCH 2012
184010207
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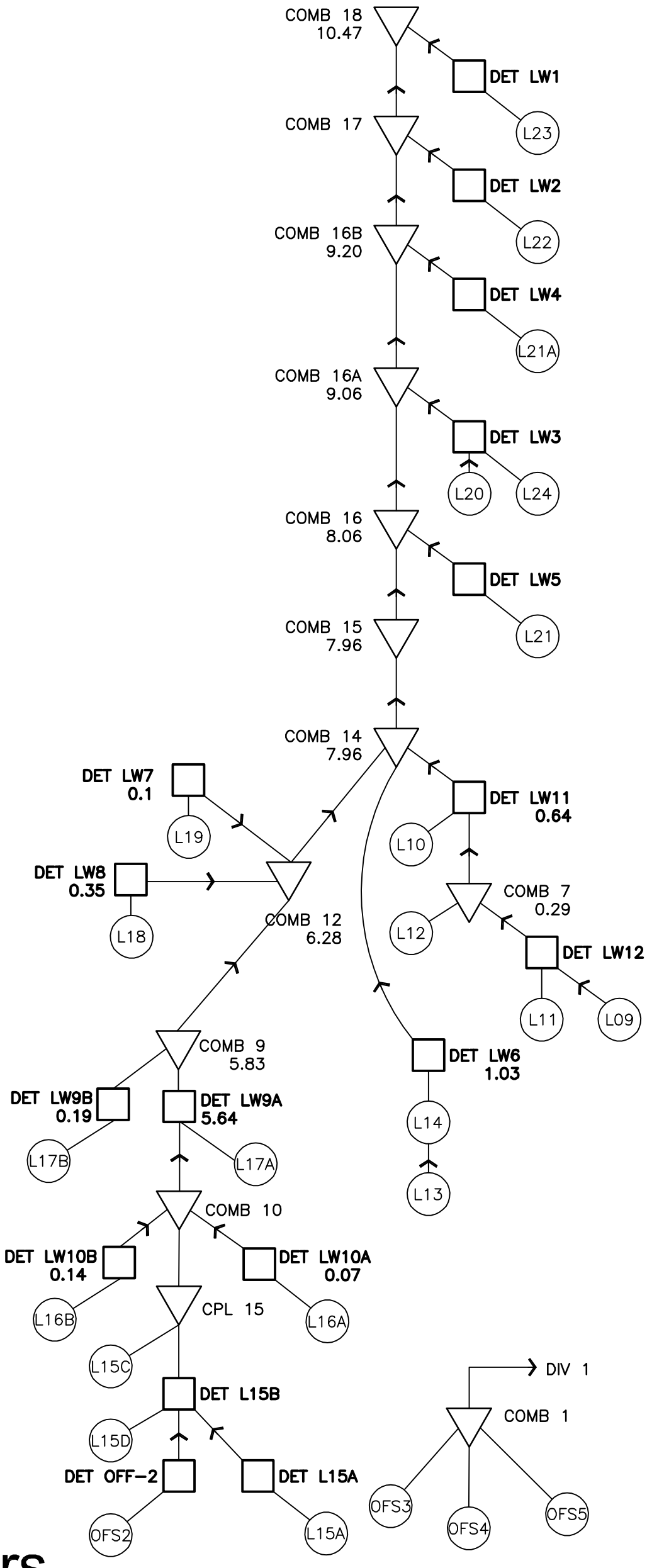

Lammers Watershed

LEGEND

- SUB–BASIN
- ROUTING REACH
- CONCENTRATION POINT
- DETENTION BASIN
- X.XX AREA (SQUARE MILES)

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TRACY

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CITY OF TRACY
CITYWIDE STORM DRAINAGE
MASTER PLAN

APPENDIX B

Title **HEC-HMS MODEL SCHEMATIC FLOW DIAGRAM**

MARCH 2012
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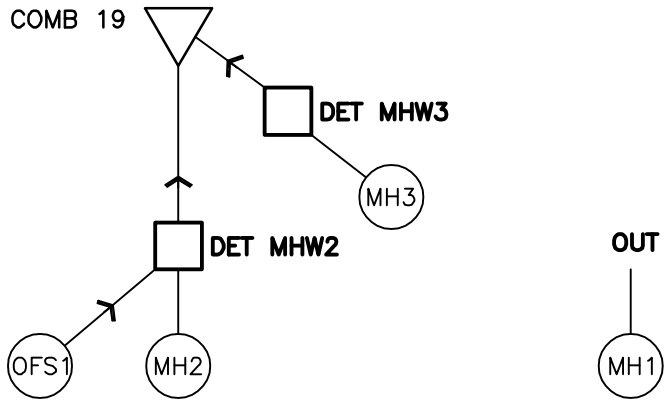

Mountain House Watershed

LEGEND

- SUB–BASIN
- ROUTING REACH
- CONCENTRATION POINT
- DETENTION BASIN

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TRACY

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CITY OF TRACY
CITYWIDE STORM DRAINAGE MASTER PLAN

APPENDIX B

Title **HEC-HMS MODEL SCHEMATIC FLOW DIAGRAM**

MARCH 2012
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NOT TO SCALE

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CITY OF TRACY
STORM DRAINAGE MASTER PLAN
INPUT PARAMETERS

Subbasin	Length	Slope, ft/ft	Slope %	Weighted CN	% Imp	Adusted CN	S value	Lagtime (hrs)	Lagtime (mins)
E01	4487.06	0.0030	0.30	74.0	3%	74.8	3.4	2.25	135.18
E02	5282.00	0.0030	0.30	74.2	25%	80.6	2.4	2.15	129.17
E03	2715.00	0.0030	0.30	74.0	25%	80.5	2.4	1.27	76.19
E04	4845.02	0.0030	0.30	74.2	25%	80.7	2.4	2.01	120.33
E05	4925.93	0.0030	0.30	74.0	26%	80.8	2.4	2.03	121.51
E06	4593.81	0.0030	0.30	75.7	13%	78.9	2.7	2.04	122.13
E07	2512.81	0.0030	0.30	74.4	17%	78.8	2.7	1.26	75.55
E08	5352.46	0.0030	0.30	78.4	13%	81.2	2.3	2.14	128.37
E09	3519.80	0.0030	0.30	77.3	13%	80.2	2.5	1.58	94.54
E10	2382.26	0.0030	0.30	78.9	13%	81.7	2.2	1.10	66.13
E12	4026.80	0.0030	0.30	80.0	21%	84.1	1.9	1.54	92.70
E13	2004.27	0.0030	0.30	80.0	13%	82.6	2.1	0.93	55.86
E14	2085.99	0.0030	0.30	74.0	22%	79.7	2.5	1.05	63.28
E14A	3225.89	0.0030	0.30	74.0	26%	80.9	2.4	1.44	86.40
E15	3193.82	0.0030	0.30	74.2	33%	82.7	2.1	1.35	80.83
E16	1401.25	0.0030	0.30	74.0	54%	88.1	1.4	0.58	34.51
E17	1844.10	0.0030	0.30	74.0	42%	84.9	1.8	0.81	48.39
E18	1323.12	0.0030	0.30	74.0	44%	85.6	1.7	0.60	36.18
E19	1754.51	0.0030	0.30	75.8	35%	84.2	1.9	0.79	47.56
E20	2956.20	0.0030	0.30	79.9	44%	88.8	1.3	1.54	92.40
E21	1365.50	0.0030	0.30	80.0	82%	96.3	0.4	1.25	75.00
E22	1202.92	0.0030	0.30	74.0	28%	81.3	2.3	0.65	38.77
E23	4117.28	0.0030	0.30	77.6	90%	97.8	0.2	0.87	51.90
E24	4882.88	0.0030	0.30	77.4	90%	97.7	0.2	0.99	59.56
E25	1511.06	0.0030	0.30	74.7	90%	97.5	0.3	0.39	23.69
E25B	1242.45	0.0030	0.30	79.6	90%	98.0	0.2	0.33	19.67
E26	1926.32	0.0030	0.30	80.0	57%	91.4	0.9	0.65	38.92
E27	3332.47	0.0030	0.30	80.0	90%	98.0	0.2	0.72	43.20
E28	3323.26	0.0030	0.30	80.0	90%	98.0	0.2	0.72	43.11
E29	1999.81	0.0030	0.30	80.0	74%	94.8	0.5	0.57	34.24
E30	2269.12	0.0030	0.30	80.0	90%	98.0	0.2	0.53	31.77
E30A	1049.76	0.0030	0.30	80.0	57%	91.4	0.9	0.40	23.95
E31	741.58	0.0030	0.30	76.2	35%	84.5	1.8	0.39	23.64

Subbasin	Length	Slope, ft/ft	Slope %	Weighted CN	% Imp	Adusted CN	S value	Lagtime (hrs)	Lagtime (mins)
E31A	2412.16	0.0030	0.30	71.7	37%	82.3	2.2	1.09	65.43
E32	1389.95	0.0030	0.30	79.7	34%	86.6	1.5	0.78	46.80
E33	4252.99	0.0030	0.30	80.0	73%	94.7	0.6	2.17	130.20
E34	5602.82	0.0030	0.30	80.0	58%	91.6	0.9	1.99	119.40
E35	1478.87	0.0030	0.30	79.3	90%	97.9	0.2	0.38	22.65
E36	1889.17	0.0030	0.30	80.0	52%	90.4	1.1	0.67	39.94
E37	1956.55	0.0030	0.30	80.0	47%	89.5	1.2	0.71	42.67
E38	2864.09	0.0030	0.30	80.0	50%	90.1	1.1	0.94	56.50
E39	1977.00	0.0030	0.30	80.0	41%	88.2	1.3	0.75	45.25
E40	3327.29	0.0030	0.30	80.0	34%	86.9	1.5	1.20	72.16
E41	2601.33	0.0030	0.30	80.0	34%	86.8	1.5	0.99	59.36
E42	4342.95	0.0030	0.30	80.0	45%	88.9	1.2	1.38	82.64
E43	4477.01	0.0030	0.30	80.0	47%	89.4	1.2	1.39	83.20
E44	2533.42	0.0030	0.30	80.0	36%	87.2	1.5	0.96	57.37
E45	1564.46	0.0030	0.30	80.0	90%	98.0	0.2	0.39	23.59
E46	1497.31	0.0030	0.30	80.0	48%	89.7	1.2	0.57	34.23
E46A	2443.88	0.0030	0.30	80.0	29%	85.7	1.7	0.98	58.82
E46B	2443.88	0.0030	0.30	80.0	25%	85.0	1.8	1.01	60.32
E46C	2296.26	0.0030	0.30	80.0	50%	90.0	1.1	0.79	47.47
E47	2000.77	0.0030	0.30	80.0	28%	85.5	1.7	0.84	50.47
E48	5281.52	0.0030	0.30	79.4	44%	88.4	1.3	1.64	98.45
E48A	3185.91	0.0030	0.30	80.0	42%	88.5	1.3	1.09	65.57
E49	1041.48	0.0030	0.30	80.0	90%	98.0	0.2	0.28	17.04
E50	3218.02	0.0030	0.30	80.0	90%	98.0	0.2	0.70	42.01
E51	1910.98	0.0030	0.30	80.0	90%	98.0	0.2	0.46	27.69
E52	2963.13	0.0030	0.30	80.0	71%	94.2	0.6	0.80	48.25
E53	4995.76	0.0030	0.30	80.0	13%	82.6	2.1	1.93	116.00
E54	4360.34	0.0030	0.30	80.0	74%	94.8	0.5	1.06	63.88
E55	3743.30	0.0030	0.30	80.0	38%	87.6	1.4	1.29	77.19
E56	4339.36	0.0030	0.30	79.7	90%	98.0	0.2	0.89	53.46
E57	1715.23	0.0030	0.30	74.1	57%	88.9	1.3	0.66	39.36
E58	2289.24	0.0030	0.30	74.5	57%	89.0	1.2	0.82	49.29
E59	5158.04	0.0030	0.30	79.0	74%	94.4	0.6	1.24	74.43
E60	3165.66	0.0030	0.30	78.2	57%	90.6	1.0	1.00	59.82
E61	1239.62	0.0030	0.30	80.0	57%	91.4	0.9	0.46	27.36
E62	2556.39	0.0030	0.30	80.0	82%	96.4	0.4	0.64	38.32
E63	3064.31	0.0030	0.30	80.0	82%	96.4	0.4	0.74	44.30

Subbasin	Length	Slope, ft/ft	Slope %	Weighted CN	% Imp	Adusted CN	S value	Lagtime (hrs)	Lagtime (mins)
E64	1176.72	0.0030	0.30	80.0	57%	91.4	0.9	0.44	26.24
E65	5179.40	0.0030	0.30	80.0	57%	91.4	0.9	1.43	85.87
E66	2377.93	0.0030	0.30	80.0	57%	91.4	0.9	0.77	46.07
E67	1027.21	0.0030	0.30	80.0	57%	91.4	0.9	0.39	23.54
E68	1620.35	0.0030	0.30	80.0	57%	91.4	0.9	0.56	33.89
L24	9458.68	0.0030	0.30	76.9	49%	88.2	1.3	2.64	158.63
L01	3539.97	0.0030	0.30	80.0	3%	80.6	2.4	1.57	93.91
L02	2647.27	0.0030	0.30	77.3	3%	78.0	2.8	1.34	80.59
L03	2456.68	0.0030	0.30	76.6	3%	77.3	2.9	1.29	77.61
L04	6877.34	0.0030	0.30	78.6	3%	79.2	2.6	2.78	166.81
L05	3779.47	0.0030	0.30	79.7	57%	91.3	1.0	1.12	67.15
L06	3873.89	0.0030	0.30	78.3	3%	78.9	2.7	1.77	106.34
L07	3597.98	0.0030	0.30	80.0	3%	80.6	2.4	1.59	95.13
L08	4820.90	0.0030	0.30	76.6	3%	77.3	2.9	2.22	133.06
L09	3373.86	0.0030	0.30	78.7	3%	79.3	2.6	1.57	94.12
L10	3749.23	0.0030	0.30	75.1	6%	76.7	3.0	1.85	110.88
L11	1596.93	0.0030	0.30	77.5	57%	90.3	1.1	0.58	35.04
L12	3061.25	0.0030	0.30	79.6	57%	91.2	1.0	0.95	56.82
L13	1353.29	0.0030	0.30	80.0	57%	91.4	0.9	0.49	29.35
L14	5321.00	0.0030	0.30	79.1	57%	91.0	1.0	1.49	89.29
L15a	2779.00	0.0030	0.30	79.5	90%	97.9	0.2	0.62	37.48
L15b	2227.92	0.0030	0.30	80.0	90%	98.0	0.2	0.52	31.31
L15c	1300.42	0.0030	0.30	80.0	90%	98.0	0.2	0.34	20.35
L15d	1811.32	0.0030	0.30	80.0	90%	98.0	0.2	0.44	26.53
L16A	1351.00	0.0030	0.30	80.0	57%	91.4	0.9	0.49	29.31
L16B	2304.60	0.0030	0.30	78.7	57%	90.8	1.0	0.77	46.01
L17A	3722.20	0.0030	0.30	80.0	57%	91.4	0.9	1.10	65.93
L17B	3060.32	0.0030	0.30	80.0	57%	91.4	0.9	0.94	56.37
L18	3026.94	0.0030	0.30	77.7	57%	90.4	1.1	0.97	58.26
L19	2945.62	0.0030	0.30	80.0	57%	91.4	0.9	0.91	54.67
L20	2302.04	0.0030	0.30	77.6	57%	90.4	1.1	0.78	46.92
L21	2549.20	0.0030	0.30	76.0	32%	83.6	2.0	1.09	65.56
L21A	3048.00	0.0030	0.30	77.7	38%	86.2	1.6	1.15	68.98
L22	4670.31	0.0030	0.30	76.3	54%	89.0	1.2	1.46	87.35
L23	7323.40	0.0030	0.30	78.9	51%	89.7	1.1	2.02	121.45
L24	9458.68	0.0030	0.30	76.9	57%	90.1	1.1	2.45	147.00
LC1	4448.40	0.0030	0.30	80.0	57%	91.4	0.9	1.27	76.03

Subbasin	Length	Slope, ft/ft	Slope %	Weighted CN	% Imp	Adusted CN	S value	Lagtime (hrs)	Lagtime (mins)
MH1	4267.28	0.0030	2.02	61.6	56%	83.3	2.0	0.64	38.47
MH2	5480.00	0.0030	0.30	72.1	90%	97.2	0.3	1.12	67.38
MH3	3170.00	0.0030	1.26	77.3	57%	90.2	1.1	0.50	29.71
OFF1	6534.00	0.0030	4.09	65.1	3%	66.2	5.1	1.04	62.51
OFF2	24587.00	0.0030	5.78	74.0	3%	74.7	3.4	2.00	120.28
OFF3	20827.00	0.0030	6.66	74.2	3%	74.9	3.3	1.62	97.47
OFF4	3404.00	0.0030	10.58	63.0	3%	64.1	5.6	0.41	24.37
OFF5	2348.00	0.0030	2.98	80.0	3%	80.6	2.4	0.36	21.45
W01	3003.73	0.0030	0.30	74.0	25%	80.5	2.4	1.38	82.60
W02	6951.27	0.0030	0.30	74.0	26%	80.8	2.4	2.67	160.11
W03	1639.00	0.0030	0.30	68.9	57%	86.6	1.5	0.69	41.31
W04	2050.53	0.0030	0.30	63.3	57%	84.2	1.9	0.90	53.83
W05	3031.71	0.0030	0.30	74.0	25%	80.5	2.4	1.39	83.22
W08	3795.51	0.0030	0.30	74.0	35%	83.0	2.1	1.53	91.92
W09	3617.94	0.0030	0.30	75.7	74%	93.7	0.7	0.97	58.09
W10	2283.17	0.0030	0.30	78.0	35%	85.6	1.7	0.93	55.96
W11	1465.09	0.0030	0.30	74.0	53%	87.8	1.4	0.60	36.20
W11A	1094.60	0.0030	0.30	73.9	90%	97.4	0.3	0.31	18.38
W12	2015.01	0.0030	0.30	73.6	33%	82.2	2.2	0.95	56.80
W14	3036.68	0.0030	0.30	62.3	25%	71.7	3.9	1.80	107.81
W15	3923.26	0.0030	0.30	61.0	31%	73.2	3.7	2.12	127.10
W16	3325.13	0.0030	0.30	61.0	30%	72.7	3.7	1.88	112.71
W17	3921.14	0.0030	0.30	61.0	25%	70.7	4.1	2.27	136.05
W18	2723.63	0.0030	0.30	61.8	32%	74.2	3.5	1.54	92.23
W19	5327.38	0.0030	0.30	64.0	24%	72.8	3.7	2.74	164.15
W20	3608.54	0.0030	0.30	73.1	29%	80.9	2.4	1.57	94.42
W21	5096.05	0.0030	0.30	61.0	31%	72.9	3.7	2.63	157.69
W22	3647.65	0.0030	0.30	61.2	21%	69.4	4.4	2.22	132.91
W23	3726.25	0.0030	0.30	62.6	22%	70.8	4.1	2.17	130.07
W24	2831.44	0.0030	0.30	63.1	35%	75.9	3.2	1.51	90.49
W25	3068.77	0.0030	0.30	74.0	25%	80.5	2.4	1.40	84.03
W26	2626.92	0.0030	0.30	74.0	25%	80.5	2.4	1.24	74.20
W27	3666.23	0.0030	0.30	74.1	30%	81.8	2.2	1.55	92.94
W28	2406.47	0.0030	0.30	74.0	25%	80.5	2.4	1.15	69.18
W29	1617.88	0.0030	0.30	74.0	25%	80.5	2.4	0.84	50.35
W29A	1222.24	0.0030	0.30	74.9	53%	88.2	1.3	0.51	30.80
W30	2905.66	0.0030	0.30	71.4	27%	79.2	2.6	1.40	83.75

Subbasin	Length	Slope, ft/ft	Slope %	Weighted CN	% Imp	Adusted CN	S value	Lagtime (hrs)	Lagtime (mins)
W31	1195.14	0.0030	0.30	65.0	32%	76.2	3.1	0.75	45.02
W32	1229.48	0.0030	0.30	72.5	25%	79.4	2.6	0.70	41.87
W33	1991.64	0.0030	0.30	72.6	25%	79.4	2.6	1.03	61.50
W34	2667.82	0.0030	0.30	63.8	25%	72.9	3.7	1.57	94.12
W35	2920.69	0.0030	0.30	64.0	40%	78.3	2.8	1.44	86.55
W36	1919.51	0.0030	0.30	61.3	25%	71.0	4.1	1.27	76.22
W37	1601.94	0.0030	0.30	61.0	25%	70.7	4.1	1.11	66.46
W38	3439.73	0.0030	0.30	70.2	25%	77.6	2.9	1.68	100.70
W39	4133.43	0.0030	0.30	70.2	33%	80.0	2.5	1.81	108.43
W40	3044.13	0.0030	0.30	72.6	57%	88.2	1.3	1.06	63.88
W41	3189.00	0.0030	0.30	61.0	27%	71.6	4.0	1.87	112.33
W41A	2575.00	0.0030	0.30	61.0	16%	67.2	4.9	1.78	106.56
W41B	973.50	0.0030	0.30	64.9	77%	91.8	0.9	0.37	22.20
W43	5604.71	0.0030	0.30	74.5	3%	75.3	3.3	2.65	159.15
W44	1431.75	0.0030	0.30	80.0	3%	80.6	2.4	0.76	45.52
W45	1506.20	0.0030	0.30	80.0	3%	80.6	2.4	0.79	47.40
W46	3035.28	0.0030	0.30	74.4	3%	75.1	3.3	1.63	97.91
W47	1130.16	0.0030	0.30	74.0	25%	80.5	2.4	0.63	37.82
W49	7711.03	0.0030	0.30	71.5	25%	78.5	2.7	3.12	186.93
W50	3688.16	0.0030	0.30	77.1	28%	83.5	2.0	1.47	88.25
W51	1846.87	0.0030	0.30	64.9	23%	73.1	3.7	1.16	69.69
W52	2367.85	0.0030	0.30	76.4	28%	83.0	2.0	1.05	62.91
W53	3080.60	0.0030	0.30	74.0	24%	80.1	2.5	1.42	85.27
W54	2381.72	0.0030	0.30	77.5	24%	82.9	2.1	1.06	63.47
W54A	2644.16	0.0030	0.30	74.1	25%	80.5	2.4	1.24	74.59
W55	2748.99	0.0030	0.30	74.3	25%	80.7	2.4	1.28	76.55
W56	2467.03	0.0030	0.30	75.5	90%	97.5	0.3	0.58	34.90
W57	3280.89	0.0030	0.30	76.2	30%	83.3	2.0	1.35	80.93
W58	2778.38	0.0030	0.30	75.8	32%	83.5	2.0	1.17	70.44
W59	1993.85	0.0030	0.30	74.1	25%	80.6	2.4	0.99	59.26
W60	2685.10	0.0030	0.30	78.9	42%	87.7	1.4	0.98	58.86
W61	3327.36	0.0030	0.30	79.8	36%	87.1	1.5	1.19	71.60

Subbasin	Length	Slope, ft/ft	Slope %	Weighted CN	% Imp	Adusted CN	S value	Lagtime (hrs)	Lagtime (mins)
W63	1605.59	0.0030	0.30	80.0	90%	98.0	0.2	0.40	24.09
W64	1626.53	0.0030	0.30	64.2	33%	76.2	3.1	0.96	57.62
W64A	1942.33	0.0030	0.30	80.0	57%	91.4	0.9	0.65	39.18
W64B	1237.62	0.0030	0.30	72.0	63%	89.7	1.1	0.49	29.33
W65	3301.82	0.0030	0.30	73.4	30%	81.3	2.3	1.45	86.85
W66	5312.00	0.0030	0.30	72.8	25%	79.6	2.6	2.23	133.86
W67	1077.93	0.0030	0.30	80.0	88%	97.6	0.2	0.30	17.98
W67A	1379.65	0.0030	0.30	80.0	44%	88.8	1.3	0.55	33.17
W68	3214.05	0.0030	0.30	80.0	35%	87.1	1.5	1.16	69.69
W68A	4126.66	0.0030	0.30	80.0	54%	90.8	1.0	1.22	73.47
W68B	4229.79	0.0030	0.30	80.0	37%	87.4	1.4	1.43	85.65
W69	2626.68	0.0030	0.30	80.0	31%	86.1	1.6	1.02	61.38
W70	3442.87	0.0030	0.30	80.0	41%	88.1	1.3	1.18	70.79
W71	3551.10	0.0030	0.30	80.0	32%	86.5	1.6	1.29	77.11
W72	2726.14	0.0030	0.30	79.1	24%	84.1	1.9	1.13	67.83
W73	2350.20	0.0030	0.30	74.4	25%	80.8	2.4	1.12	67.19
W74	4292.17	0.0030	0.30	79.0	54%	90.3	1.1	1.29	77.32
W75	3991.37	0.0030	0.30	79.9	29%	85.8	1.7	1.45	86.94
W76	3049.10	0.0030	0.30	79.6	26%	84.9	1.8	1.20	72.21
W77	2651.88	0.0030	0.30	80.0	56%	91.1	1.0	0.85	50.83
W78	4197.38	0.0030	0.30	78.3	40%	86.9	1.5	1.44	86.68
W79	2451.80	0.0030	0.30	80.0	74%	94.8	0.5	0.67	40.31
W80	2262.15	0.0030	0.30	80.0	23%	84.6	1.8	0.96	57.51
W81	1759.00	0.0030	0.30	76.0	19%	80.6	2.4	0.89	53.58
W82	2767.03	0.0030	0.30	76.1	23%	81.6	2.3	1.25	74.79
W83	1489.42	0.0030	0.30	80.0	37%	87.4	1.4	0.62	37.23
W84	2644.16	0.0030	0.30	77.0	22%	82.1	2.2	1.18	70.85
W85	3493.87	0.0030	0.30	80.0	24%	84.7	1.8	1.35	81.07
W86	6345.39	0.0030	0.30	80.0	35%	86.9	1.5	2.01	120.85
W87	1456.76	0.0030	0.30	80.0	57%	91.4	0.9	0.52	31.13
W88	3166.20	0.0030	0.30	80.0	56%	91.1	1.0	0.98	58.56
W89	3113.81	0.0030	0.30	80.0	57%	91.4	0.9	0.95	57.16
W90	4004.62	0.0030	0.30	80.0	52%	90.3	1.1	1.22	73.20
W91	2761.36	0.0030	0.30	80.0	57%	91.4	0.9	0.87	51.92
W92	2727.40	0.0030	0.30	79.7	6%	80.9	2.4	1.26	75.44
W93	4144.89	0.0030	0.30	79.4	76%	95.1	0.5	1.01	60.38
W94	1865.55	0.0030	0.30	80.0	90%	98.0	0.2	0.45	27.16

CITY OF TRACY
STORM DRAINAGE MASTER PLAN
PERCENT IMPERVIOUS CALCULATIONS

				Land Use Area (SF)												
				RVLD	RLD	RMD	RHD	C	Ofc	I	Downtwn	Village	PF	Park	OS	
% Impervious Existing Development				10%	25%	35%	65%	90%	90%	90%	90%	90%	60%	10%	3%	**Weighted %**
% Impervious Proposed Development				6%	16%	22%	41%	57%	57%	57%	57%	57%	38%	6%	2%	**Impervious**
Subbasin	**Developed**	**Area (Sq-ft)**	**Area (Sq-mi)**													
E01	E	5568703	0.1997												5568703	3%
E02	E	8527722	0.3059		8527722											25%
E03	E	2926044	0.1050		2926044											25%
E04	E	6260749	0.2246		5972716								110544.487	177488.86		25%
E05	E	7439140	0.2668		6937317								326671.49	175151.11		26%
E06	P	10180000	0.3652	4959492	3915431.6	848299.4	326269	130507.6								13%
E07	P	3854045	0.1382	1877614	1482342.77	321157.566	123522.141	49408.8563								17%
E08	P	5971219	0.2142	2909058	2296650.077	497581.641	191377.554	76551.0218								13%
E09	P	3042726	0.1091	1482355	1170293.185	253550.338	97519.3609	39007.7443								13%
E10	P	4286755	0.1538	2088421	1648771.781	357215.31	137390.504	54956.2015								13%
E12	E	3916395	0.1405	1907989	1506323.861	326353.199	125520.461	50208.1844								21%
E13	P	2689297	0.0965	1310172	1034357.576	224099.154	86191.9825	34476.793								13%
E14	P	4283600	0.1537		3270981		1012618.63									22%
E14A	E	4754935	0.1706		4286589	390530.76	77815.24									26%
E15	E	2517808	0.0903			2167527							73339.48	276942.01		33%
E16	E	939769	0.0337			217776.3							721993			54%
E17	E	1635410	0.0587			1240226		39988.109					355195.55			42%
E18	E	546907	0.0196			452692		94214.76								44%
E19	E	1543949	0.0554			1521569								22380.44		35%
E20	P	2014940	0.0723			725630					1289309.04					44%
E21	E	621178	0.0223				119529.54			427837			73811.72			82%
E22	E	664351	0.0238		469212	195138.525										28%
E23	E	5646478	0.2025							5646478						90%
E24	E	3698238	0.1327							3698238						90%
E25	E	1096170	0.0393							1096170						90%
E25B	E	851183	0.0305							851183						90%
E26	P	967511	0.0347							967511						57%
E27	E	3486672	0.1251							3486672						90%
E28	E	2655018	0.0952							2655018						90%
E29	P	2487456	0.0892					2487456								74%
E30	E	1602256	0.0575							1602256						90%
E30A	P	541615	0.0194					541615								57%
E31	E	2478745	0.0889			2478745										35%
E31A	E	1894429	0.0680			1714059							180369.98			37%
E32	E	922492	0.0331			860475		9991.54						52024.76		34%
E33	E	5529602	0.1983		276453.45	860098.09	236458.98	57651.42	40423		3552846		403511.31	102159.63		73%
E34	E	7445459	0.2671			393527.34		132851.82		3655590	174.07		1303014.18	32940.67		58%
E35	E	754028	0.0270					28178.32		725850						90%
E36	E	826360	0.0296			473246		177437.52					175677.15			52%
E37	E	2252791	0.0808			1742522		150205.94			360062.46					47%
E38	E	1636718	0.0587			1177734		98105.52	218558.42		142319.93					50%
E39	E	2557297	0.0917		214982.91	1305175	204994.89		20681.96		224130.47		254084.75	333246.27		41%
E40	E	4485108	0.1609		3358737.19	5538.57	578731						542101.34			34%
E41	E	1188109	0.0426		525974.53	555121	64635.13	42377.79								34%
E42	E	3746516	0.1344		790618.21	1954093	409761.14	267230.4	310541.37					14271.89		45%
E43	E	2258020	0.0810		377582.23	1000094	722603.99	157740.41								47%
E44	E	3015603	0.1082		2422095	75514.94	59267.68	458194.24		531.05						36%
E45	E	669063	0.0240							669063						90%

				Land Use Area (SF)												
				RVLD	RLD	RMD	RHD	C	Ofc	I	Downtwn	Village	PF	Park	OS	
% Impervious Existing Development				10%	25%	35%	65%	90%	90%	90%	90%	90%	60%	10%	3%	**Weighted %**
% Impervious Proposed Development				6%	16%	22%	41%	57%	57%	57%	57%	57%	38%	6%	2%	**Impervious**
Subbasin	**Developed**	**Area (Sq-ft)**	**Area (Sq-mi)**													
E46	E	1532182	0.0550		87836.69	737956	262534.7	74786.56					369067.17			48%
E46A	E	3632261	0.1303		3384491		127445.28	120324.55								29%
E46B	E	961029	0.0345		961029											25%
E46C	E	1361522	0.0488			987523				373999.53						50%
E47	E	1319730	0.0473		977883	341847.54										28%
E48	E	8375028	0.3004		5104165	951132.48		2298401.34						21329.1		44%
E48A	E	6644700	0.2383		1441964.34	2872813	710940.93	1038274.86						580707.4		42%
E49	E	258207	0.0093					258207								90%
E50	E	1769683	0.0635					234669.52		1535014						90%
E51	E	3575992	0.1283					167745.13		3408247						90%
E52	E	3440576	0.1234							1276951			2163625.29			71%
E53	P	7802426	0.2799	3801186	3000968.911	650176.12	250067.739	100027.095								13%
E54	E	2864729	0.1028							2864729						74%
E55	P	6083734	0.2182										6083734			38%
E56	E	7518722	0.2697							7518722						90%
E57	P	1210302	0.0434							1210302						57%
E58	P	2544193	0.0913							2544193						57%
E59	P	10610000	0.3806							10610000						74%
E60	P	2602583	0.0934							2602583						57%
E61	P	918070	0.0329							918070						57%
E62	P	3468726	0.1244							3468726						82%
E63	P	9311894	0.3340							9311894						82%
E64	P	2543066	0.0912					577463.5		1965602						57%
E65	P	8638182	0.3099							8638182						57%
E66	P	3666616	0.1315							3666616						57%
E67	P	4493578	0.1612							4493578						57%
E68	P	2761599	0.0991					235021.05		2526578						57%
L24	P	23570000	0.8455					512873.13	17651150			1864198.21			3541778.19	49%
L01	E	3572889	0.1282												3572889	3%
L02	E	5065618	0.1817												5065618	3%
L03	E	6068829	0.2177												6068829	3%
L04	E	10400000	0.3730												10400000	3%
L05	P	6501441	0.2332							6501441						57%
L06	E	9818967	0.3522												9818967	3%
L07	E	5151225	0.1848												5151225	3%
L08	E	10640000	0.3817												10640000	3%
L09	E	5451145	0.1955												5451145	3%
L10	P	9820746	0.3523							68153.55				9752592		6%
L11	P	3644642	0.1307							3644642						57%
L12	P	4498276	0.1614							4498276						57%
L13	P	1606996	0.0576							1606996						57%
L14	P	27234684	0.9769					1343487	2371051.63	23520145.8						57%
L15a	E	7247320	0.2600							7247320						90%
L15b	E	3854256	0.1383							3854256						90%
L15c	E	691362	0.0248							691362						90%
L15d	E	1774341	0.0636							1774341						90%
L16A/B	P	5703418	0.2046					281350	496539.551	4925528.62						57%
L17A/B	P	17277363	0.6197					852292	1504167.24	14920903.6						57%
L18	P	9768424	0.3504					481876	850438.973	8436108.45						57%
L19	P	2732931	0.0980					134815	237928.997	2360186.78						57%
L20	P	4053293	0.1454					199949	352879.702	3500464.5						57%

				Land Use Area (SF)												
				RVLD	RLD	RMD	RHD	C	Ofc	I	Downtwn	Village	PF	Park	OS	
% Impervious Existing Development				10%	25%	35%	65%	90%	90%	90%	90%	90%	60%	10%	3%	**Weighted %**
% Impervious Proposed Development				6%	16%	22%	41%	57%	57%	57%	57%	57%	38%	6%	2%	**Impervious**
Subbasin	**Developed**	**Area (Sq-ft)**	**Area (Sq-mi)**													
L21	P	3023662	0.1085		647015.3938	647015.394	1729631									32%
L21A	E	3748653	0.1345										3748653			38%
L22	P	8514416	0.3054				1840953	4372268	2301195							54%
L23	P	26920000	0.9656	1742400				1730686.8	1538208.8	20166304			871200		871200	51%
LC1	P	9741368	0.3494					9741368								57%
MH1	P	7489576	0.2687							7281921			207655.8			56%
MH2	E	17494960	0.6275							17494960						90%
MH3	P	10901603	0.3910					537776	949093.517	9414732.97						57%
OFF1	E	11260000	0.4039												11260000	3%
OFF2	E	125900000	4.5160												125900000	3%
OFF3	E	158700000	5.6926												158700000	3%
OFF4	E	6609771	0.2371												6609771	3%
OFF5	E	2491000	0.0894												2491000	3%
W01	E	6028660	0.2162		6028660											25%
W02	E	13870000	0.4975		12843609								626428.01	399963.13		26%
W03	P	676988	0.0243						676988							57%
W04	P	948081	0.0340					200776.7	621178	126126.23						57%
W05	E	1763905	0.0633		1763905											25%
W08	P	3590627	0.1288		1337912		1580964.1	661053.87						10697.43		35%
W09	P	5826623	0.2090							5826623						74%
W10	E	6030058	0.2163		4616394		243057.84		815337.06	1544.75				353724.97		35%
W11	P	2263692	0.0812				2263692									53%
W11A	E	890573	0.0319									890573				90%
W12	E	1008784	0.0362		239002	769781.82										33%
W14	E	3412186	0.1224		3412186											25%
W15	E	3450050	0.1238		2548440								697312.16	204298.58		31%
W16	E	3775355	0.1354		2565325	462953.9							514726.82	232348.44		30%
W17	E	3488911	0.1251		3448281									40630.14		25%
W18	E	1827129	0.0655		428330.76	1383932								14866.84		32%
W19	E	5233086	0.1877		4986388									246698.01		24%
W20	E	3602985	0.1292		2973370	284048.24	300558.78							45008.09		29%
W21	E	6922374	0.2483		5892888		283190.35	482803.07						263492.97		31%
W22	P	7017524	0.2517		3778670	2321179	917675									21%
W23	P	7171923	0.2573		7171923											22%
W24	E	3599922	0.1291		2339843	621512.61		477218.82						161347.73		35%
W25	E	2696123	0.0967		2696123											25%
W26	E	1679457	0.0602		1679457											25%
W27	E	3441060	0.1234		2260094	537231.66							408744.45	234990.31		30%
W28	E	1866401	0.0669		1866401											25%
W29	E	1195141	0.0429		1195141											25%
W29A	E	462749	0.0166			129898							332851.01			53%
W30	E	2194154	0.0787		2085879				86578.05					21696.85		27%
W31	E	953131	0.0342		281394.83	671737										32%
W32	E	2554272	0.0916		2554272											25%
W33	E	1475703	0.0529		1475703											25%
W34	E	4343411	0.1558		4343411											25%
W35	E	2206661	0.0792		1283877								922783.66			40%
W36	E	1280446	0.0459		1280446											25%
W37	E	2167875	0.0778		2147074									20801.16		25%
W38	E	2744412	0.0984		2699288									45123.34		25%
W39	E	6789283	0.2435		5099895			976874.98						712512.48		33%

				Land Use Area (SF)												
				RVLD	RLD	RMD	RHD	C	Ofc	I	Downtwn	Village	PF	Park	OS	
% Impervious Existing Development				10%	25%	35%	65%	90%	90%	90%	90%	90%	60%	10%	3%	**Weighted %**
% Impervious Proposed Development				6%	16%	22%	41%	57%	57%	57%	57%	57%	38%	6%	2%	**Impervious**
Subbasin	**Developed**	**Area (Sq-ft)**	**Area (Sq-mi)**													
W40	P	5227200	0.1875							5227200						57%
W41	P	13999090	0.5021		5374210	4051080	1350360	1524600					1698840			27%
W41A	P	6787057	0.2435		6787057											16%
W41B	E	1265959	0.0454		174240			1045440								77%
W43	E	29340000	1.0524												29340000	3%
W44	E	1420222	0.0509												1420222	3%
W45	E	1631138	0.0585												1631138	3%
W46	E	5053554	0.1813												5053554	3%
W47	E	1172130	0.0420		1172130											25%
W49	E	13110000	0.4703		12730006									379993.964		25%
W50	P	5502535	0.1974		3034098	2468437.39							827640			28%
W51	E	1521689	0.0546		1353628									168061.23		23%
W52	E	2792154	0.1002		2554187								237966.852			28%
W53	E	4386814	0.1574		3193299		58910.32						169125.09	965479.59		24%
W54	E	1490251	0.0535		1319559								21785.84	148906.248		24%
W54A	E	2368568	0.0850		2318169									50399.76		25%
W55	E	2321616	0.0833		2299425									22191.28		25%
W56	E	1114725	0.0400					1114725								90%
W57	E	2893656	0.1038		2357120								435748.01	100788.14		30%
W58	E	3332637	0.1195		783477	2431149								118010.7		32%
W59	E	1441511	0.0517		1302024	102743.53								36743.99		25%
W60	E	2053405	0.0737		1470430				540396.61					42579.17		42%
W61	E	2038002	0.0731		1513711			288783.87	88207.53					147299.64		36%
W63	E	738501	0.0265					738501								90%
W64	E	1414716	0.0507			1327757								86958.85		33%
W64A	P	1071792	0.0384							6146.94	1065645					57%
W64B	E	445885	0.0160								48096.77		397789			63%
W65	E	4049420	0.1453		1886515.99	2037712		5853.68					2626.55	116712.71		30%
W66	E	3878067	0.1391		3786315	91751.36										25%
W67	E	386802	0.0139			15362.71		371439								88%
W67A	E	655017	0.0235			548201		106815.25								44%
W68	E	4782067	0.1715		3083023	173037.73	52627.6	374401.72	179123.83				471583.85	448269.23		35%
W68A	E	1367453	0.0491			549321	42240.02	65849.67	330834.22				246993.17	132215.56		54%
W68B	E	2553500	0.0916		261573.44	1644376	21371.92	177367.61	93775.38				29601.87	325433.22		37%
W69	E	2469518	0.0886		2118615	79119.17	56569.86	176708.67						38505.18		31%
W70	E	1089384	0.0391		656918	163462.77	85887.91	183115.82								41%
W71	E	1570826	0.0563		1390763			180062.12								32%
W72	E	2992523	0.1073		2836836									155686.38		24%
W73	E	1365876	0.0490		1365876											25%
W74	E	3725154	0.1336		655818								3069336.02			54%
W75	E	3867365	0.1387		3329270	332131.58		205963.48								29%
W76	E	2467109	0.0885		2249315	217793.83										26%
W77	E	2911704	0.1044		24418.28	1156365	251110.49	533911.27					945898.73			56%
W78	E	5277259	0.1893		454871.44	3534659	334444.88	300793.47					390587.78	261902.39		40%
W79	P	1659227	0.0595					376671.54	1282555							74%
W80	P	2585617	0.0927		948146	1206622	430849									23%
W81	P	1329528	0.0477		604270.5674	725257.634										19%
W82	P	2559096	0.0918		1066375.391	1066375.39	426601.338									23%
W83	P	1082840	0.0388		258895.9856	258895.986	129447.993	435600								37%
W84	E	5706468	0.2047		4588968									1117500.86		22%
W85	P	2971125	0.1066		202800.01	2597645		170679.98								24%

				Land Use Area (SF)												
				RVLD	RLD	RMD	RHD	C	Ofc	I	Downtwn	Village	PF	Park	OS	
% Impervious Existing Development				10%	25%	35%	65%	90%	90%	90%	90%	90%	60%	10%	3%	**Weighted %**
% Impervious Proposed Development				6%	16%	22%	41%	57%	57%	57%	57%	57%	38%	6%	2%	**Impervious**
Subbasin	**Developed**	**Area (Sq-ft)**	**Area (Sq-mi)**													
W86	E	7127787	0.2557		4322.033	6625300	163068.4							335096.45		35%
W87	P	1997121	0.0716					1797409.28	199712.142							57%
W88	P	4381899	0.1572					328642.432	292272.669	3468711			292272.669			56%
W89	P	6531822	0.2343					6531822								57%
W90	E	6969194	0.2500		2024659.69	1410357	513897.03	2178168.27					428395.73	413715.87		52%
W91	P	2328343	0.0835					2328343								57%
W92	P	4616184	0.1656	4616184												6%
W93	E	17050000	0.6116	1439940.89				13246932					1514468.4		848658.57	76%
W94	E	3744732	0.1343					3744732								90%

Eastside Watershed - 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)

E02	0.3059	15.96	13Apr2010, 12:48	11.4
E01	0.1997	3.96	13Apr2010, 13:44	3.7
RR 01	0.1997	3.95	13Apr2010, 15:00	3.7
E03	0.105	7.18	13Apr2010, 11:48	3.9
RR 02	0.105	7.18	13Apr2010, 11:56	3.9
COMB 1	0.6106	22.33	13Apr2010, 12:28	19
RR 03	0.6106	22.33	13Apr2010, 12:36	19
E05	0.2668	14.7	13Apr2010, 12:40	10.1
RR 04	0.2668	14.7	13Apr2010, 12:40	10.1
E04	0.2246	12.17	13Apr2010, 12:36	8.4
COMB 2	1.102	49.19	13Apr2010, 12:36	37.6
RR 05	1.102	49.11	13Apr2010, 12:52	37.6
E06	0.3652	14.2	13Apr2010, 12:52	10.7
E07	0.1382	7.36	13Apr2010, 11:48	4.3
RR 06	0.1382	7.36	13Apr2010, 11:52	4.3
COMB 3	1.6054	68.84	13Apr2010, 12:48	52.5
RR 07	1.6054	68.69	13Apr2010, 13:12	52.5
E08	0.2142	9.77	13Apr2010, 13:00	7.2
E09	0.1091	5.41	13Apr2010, 12:16	3.5
COMB 4	1.9287	82.93	13Apr2010, 13:08	63.1
RR 08	1.9287	82.9	13Apr2010, 13:12	63.1
E10	0.1538	10.36	13Apr2010, 11:40	5.3
E12	0.1405	10.35	13Apr2010, 12:08	5.9
COMB 5	2.223	97.11	13Apr2010, 13:00	74.3
DET 4	2.223	17.49	14Apr2010, 03:00	54.2
E13	0.0965	7.7	13Apr2010, 11:28	3.5
COMB 6	2.3195	18.34	14Apr2010, 00:48	57.7
E14A	0.1706	18.14	13Apr2010, 11:52	8.9
COMB6A	0.1706	18.14	13Apr2010, 11:52	8.9
RR09A	0.1706	18.12	13Apr2010, 12:04	8.9
E15	0.0903	7.5	13Apr2010, 11:48	4
E22	0.0238	2.48	13Apr2010, 11:00	0.9
RR09B	0.0238	2.47	13Apr2010, 11:04	0.9
Junction-1	0.1141	9.09	13Apr2010, 11:36	4.9
RR10	0.1141	9.09	13Apr2010, 11:44	4.9
E17	0.0587	7.72	13Apr2010, 11:12	3
E16	0.0337	6.52	13Apr2010, 10:52	2.1
RR11A	0.0337	6.49	13Apr2010, 11:00	2.1
Junction-2	0.0924	14.1	13Apr2010, 11:04	5.1
RR 11B	0.0924	14.08	13Apr2010, 11:08	5.1
COMB 7	0.3771	36.43	13Apr2010, 11:36	19
RR 12	0.3771	36.42	13Apr2010, 11:40	19
E14	0.1537	18.38	13Apr2010, 11:28	7.6
DET ROCHA	0.1537	1	13Apr2010, 12:16	4.7
RR 09	0.1537	1	13Apr2010, 12:52	4.6

Eastside Watershed - 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
E18	0.0196	3.1	13Apr2010, 10:56	1
COMB 8	0.5504	38.73	13Apr2010, 11:36	24.6
RR 13	0.5504	38.72	13Apr2010, 11:40	24.6
E19	0.0554	6.61	13Apr2010, 11:12	2.6
COMB 9	0.6058	44.3	13Apr2010, 11:32	27.2
RR13A	0.6058	44.26	13Apr2010, 11:36	27.2
E20	0.0723	8.01	13Apr2010, 12:00	4.3
COMB 9A	0.6781	51.69	13Apr2010, 11:40	31.5
RR 14	0.6781	51.68	13Apr2010, 11:40	31.5
E21	0.0223	4.36	13Apr2010, 11:36	1.9
COMB10	0.7004	56.04	13Apr2010, 11:40	33.4
RR 15	0.7004	56.01	13Apr2010, 11:44	33.4
COMB11	3.0199	66.1	13Apr2010, 11:44	91.2
RR 16	3.0199	66.02	13Apr2010, 11:52	91
Junction-3	3.0199	66.02	13Apr2010, 11:52	91
RR 17	3.0199	65.7	13Apr2010, 12:04	90.8
Junction-4	3.0199	65.7	13Apr2010, 12:04	90.8
RR 18	3.0199	65.55	13Apr2010, 12:12	90.7
E23	0.2025	51.65	13Apr2010, 11:12	18.8
E24	0.1327	31.46	13Apr2010, 11:20	12.3
COMB13	3.3551	125.02	13Apr2010, 11:40	121.8
Reach-1	3.3551	124.57	13Apr2010, 11:44	121.7
E25	0.0393	34.33	13Apr2010, 10:40	113.7
COMB14	3.3944	148.82	13Apr2010, 11:44	235.4
RR 19	3.3944	148.56	13Apr2010, 11:48	235.4
E25B	0.0305	12	13Apr2010, 10:40	2.8
COMB15	3.4249	151.41	13Apr2010, 11:48	238.2
RR 20	3.4249	151.19	13Apr2010, 11:52	238.2
E27	0.1251	35.26	13Apr2010, 11:04	11.7
E26	0.0347	7.28	13Apr2010, 11:00	2.4
COMB16	3.5847	176.56	13Apr2010, 11:40	252.2
ROCPD5	3.5847	173.78	13Apr2010, 11:44	252.1
COMB17	3.5847	173.78	13Apr2010, 11:44	252.1
RR 21	3.5847	170.02	13Apr2010, 11:48	251.9
E28	0.0952	26.86	13Apr2010, 11:04	8.9
E45	0.024	8.89	13Apr2010, 10:40	2.2
Reach-4	0.024	8.68	13Apr2010, 11:04	2.2
COMB18	3.7039	192	13Apr2010, 11:28	263
RR 22	3.7039	182.16	13Apr2010, 11:52	262.6
E29	0.0892	24.1	13Apr2010, 10:52	7.3
CPD5.3	3.7931	193.12	13Apr2010, 11:44	269.8
RR 23	3.7931	193.04	13Apr2010, 11:44	269.8
E30A	0.0194	5.06	13Apr2010, 10:44	1.3
COMB19	3.8125	194.68	13Apr2010, 11:44	271.1
RR 24	3.8125	194.62	13Apr2010, 11:44	271.1
COMB20	3.8125	194.62	13Apr2010, 11:44	271.1

Eastside Watershed - 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
E37	0.0808	14.18	13Apr2010, 11:04	5
E36	0.0296	5.75	13Apr2010, 11:00	1.9
COMB25	0.1104	19.89	13Apr2010, 11:04	6.9
RR 29	0.1104	19.85	13Apr2010, 11:08	6.9
E38	0.0587	9.29	13Apr2010, 11:20	3.7
COMB26	0.1691	28.78	13Apr2010, 11:08	10.6
RR 30	0.1691	28.75	13Apr2010, 11:16	10.6
E39	0.0917	14.28	13Apr2010, 11:08	5.2
COMB27	0.2608	49.77	13Apr2010, 11:16	24.2
RR 31	0.2608	49.71	13Apr2010, 11:20	24.2
E40	0.1609	17.48	13Apr2010, 11:40	8.3
COMB28	0.4217	66.01	13Apr2010, 11:24	32.6
RR 32	0.4217	65.96	13Apr2010, 11:28	32.6
E42	0.1344	16.13	13Apr2010, 11:48	8
RR 33	0.1344	16.12	13Apr2010, 11:52	8
E43	0.081	9.96	13Apr2010, 11:48	5
COMB30	0.2154	26.09	13Apr2010, 11:52	13
RR 34	0.2154	26.08	13Apr2010, 11:52	13
E41	0.0426	5.14	13Apr2010, 11:24	2.2
COMB29	0.6797	95.09	13Apr2010, 11:32	47.8
RR 35	0.6797	94.97	13Apr2010, 11:52	47.8
E44	0.1082	13.74	13Apr2010, 11:24	5.8
COMB32	0.7879	106.35	13Apr2010, 11:52	53.6
RR 36	0.7879	106.34	13Apr2010, 11:52	53.6
E33	0.1983	25.9	13Apr2010, 12:36	16
E31	0.0889	14.75	13Apr2010, 10:44	4.3
E31A	0.068	6.58	13Apr2010, 11:28	3.1
COMB21	0.1569	18.61	13Apr2010, 10:48	7.3
DET1A	0.1569	2	13Apr2010, 00:00	7.3
RR 25	0.1569	2.29	13Apr2010, 00:12	7.4
E32	0.0331	4.46	13Apr2010, 11:12	1.7
RR 26	0.0331	4.46	13Apr2010, 11:16	1.7
COMB22	0.19	6.46	13Apr2010, 11:16	9.1
Reach-2	0.19	6.45	13Apr2010, 11:24	9.2
COMB23	0.3883	30.13	13Apr2010, 12:28	25.2
DIV 1	0.3883	20.09	13Apr2010, 12:28	16.8
RR 27	0.3883	20.08	13Apr2010, 12:44	16.8
E34	0.2671	30.97	13Apr2010, 12:28	18.6
COMB24	0.6554	50.88	13Apr2010, 12:32	35.4
E35	0.027	10.15	13Apr2010, 10:40	2.5
RR 28	0.027	10.09	13Apr2010, 10:44	2.5
COMOUT	1.4703	154.56	13Apr2010, 11:56	91.5
RR 37	1.4703	153.18	13Apr2010, 12:08	91.5
E46C	0.0488	8.45	13Apr2010, 11:08	3.1
E46B	0.0345	3.49	13Apr2010, 11:28	1.6
Junction-5	1.5536	160.53	13Apr2010, 12:04	96.2

Eastside Watershed - 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
RR 38	1.5536	159.43	13Apr2010, 12:12	96.2
E30	0.0575	18.78	13Apr2010, 10:52	5.4
E46A	0.0473	5.23	13Apr2010, 11:24	2.3
COMB33	5.4709	358.77	13Apr2010, 12:04	374.9
RR 39	5.4709	357.87	13Apr2010, 12:04	374.9
E48A	0.2383	31.04	13Apr2010, 11:32	13.7
E46	0.055	10.87	13Apr2010, 10:56	3.4
RR 40	0.055	10.86	13Apr2010, 11:00	3.4
E47	0.0473	5.56	13Apr2010, 11:16	2.2
COMB34	0.1023	16.06	13Apr2010, 11:04	5.7
RR 41	0.1023	16	13Apr2010, 11:08	5.7
COMB35	0.3406	45.56	13Apr2010, 11:20	19.4
RR 42	0.3406	45.55	13Apr2010, 11:24	19.4
E48	0.3004	31.72	13Apr2010, 12:08	17.6
COMB36	0.641	72.76	13Apr2010, 11:40	37
RR 43	0.641	72.76	13Apr2010, 11:40	37
LC1	0.3494	51.65	13Apr2010, 11:40	24
DETLC1	0.3494	1	13Apr2010, 11:52	4.7
RRLC1	0.3494	1	13Apr2010, 12:16	4.7
E49	0.0093	3.84	13Apr2010, 10:36	0.9
COMB37	0.9997	74.41	13Apr2010, 11:40	42.5
RR 44	0.9997	74.37	13Apr2010, 11:44	42.5
E51	0.1283	44.55	13Apr2010, 10:44	12
COMB38	1.128	92.12	13Apr2010, 11:28	54.5
RR 45	1.128	92.05	13Apr2010, 11:28	54.5
E50	0.0635	18.16	13Apr2010, 11:00	5.9
COMB39	1.1915	106.85	13Apr2010, 11:20	60.4
RR 46	1.1915	106.82	13Apr2010, 11:24	60.4
E52	0.1234	27.33	13Apr2010, 11:08	9.8
COMB40	1.3149	133.04	13Apr2010, 11:16	70.2
COMB41	6.7858	469.69	13Apr2010, 11:56	445
RR 47	6.7858	468.1	13Apr2010, 12:00	444.9
E53	0.2799	15.09	13Apr2010, 12:44	10.1
RR 48	0.2799	15.09	13Apr2010, 12:48	10.1
E54	0.1028	20.19	13Apr2010, 11:28	8.4
COMB42	0.3827	29.59	13Apr2010, 11:44	18.5
RR 49	0.3827	29.58	13Apr2010, 11:52	18.5
E55	0.2182	24.43	13Apr2010, 11:44	11.9
COMB43	0.6009	53.91	13Apr2010, 11:48	30.4
RR 50	0.6009	53.88	13Apr2010, 11:52	30.4
Junction-6	0.6009	53.88	13Apr2010, 11:52	30.4
RR 51	0.6009	53.87	13Apr2010, 11:56	30.4
E56	0.2697	68.05	13Apr2010, 11:12	25.2
RR 52	0.2697	67.98	13Apr2010, 11:16	25.2
E58	0.0913	15.68	13Apr2010, 11:12	5.9
E57	0.0434	8.3	13Apr2010, 11:00	2.8

Eastside Watershed - 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
RR E57	0.0434	8.3	13Apr2010, 11:04	2.8
COMB44	0.4044	91.23	13Apr2010, 11:16	33.8
RR 53	0.4044	91.09	13Apr2010, 11:16	33.8
E59	0.3806	68.1	13Apr2010, 11:36	30.7
COMB45	1.3859	202.6	13Apr2010, 11:32	94.9
RR 54	1.3859	201.26	13Apr2010, 11:40	94.9
E63	0.334	76.2	13Apr2010, 11:08	27.2
E60	0.0934	15.25	13Apr2010, 11:24	6.3
E61	0.0329	8.11	13Apr2010, 10:48	2.3
COMB46	0.1263	20.38	13Apr2010, 11:08	8.5
RR 55	0.1263	20.36	13Apr2010, 11:12	8.5
E62	0.1244	34.54	13Apr2010, 10:56	10.9
Junction-7	0.2507	54.24	13Apr2010, 11:00	19.4
RR 56	0.2507	54.17	13Apr2010, 11:04	19.4
COMB47	1.9706	306.79	13Apr2010, 11:28	141.5
RR 57	1.9706	306.5	13Apr2010, 11:28	141.5
E65	0.3099	42.81	13Apr2010, 11:52	21.3
DET 16	0.3099	0	13Apr2010, 00:00	0
Reach-3	0.3099	0	13Apr2010, 00:00	0
ADDE45	2.2805	306.5	13Apr2010, 11:28	141.5
DET NEI	2.2805	10	13Apr2010, 00:00	53.8
RR 58	2.2805	10.81	13Apr2010, 00:12	53.9
E66	0.1315	25.37	13Apr2010, 11:08	9
DET 15	0.1315	1	13Apr2010, 11:36	4.8
RRE66	0.1315	1	13Apr2010, 12:04	4.7
ADDE66	2.412	11	13Apr2010, 12:04	58.6
RR 59	2.412	11	13Apr2010, 12:20	58.6
E67	0.1612	42.25	13Apr2010, 10:44	11.1
DET 14	0.1612	1	13Apr2010, 11:08	4.8
ADDE67	2.5732	12	13Apr2010, 12:20	63.4
RR 60	2.5732	12	13Apr2010, 12:44	63.3
E68	0.0991	22.22	13Apr2010, 10:52	6.8
DET 13	0.0991	5.49	13Apr2010, 12:44	6.8
ADDE68	2.6723	17.49	13Apr2010, 12:44	70.1
RR 61	2.6723	17.49	13Apr2010, 12:56	70.1
E64	0.0912	22.93	13Apr2010, 10:44	6.3
DET 12	0.0912	5.12	13Apr2010, 12:28	6.3
COMB48	2.7635	22.6	13Apr2010, 12:48	76.4
CP26	9.5493	490.08	13Apr2010, 12:00	521.3

Project: tracy-eastside
Simulation Run: 10-yr Reservoir: DET NEI

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 12:46:17	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	306.499 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 11:28
Peak Outflow :	10.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 00:00
Total Inflow :	141.50370 (AC-FT)	Peak Storage :	119.91096 (AC-FT)
Total Outflow :	53.82920 (AC-FT)	Peak Elevation :	17.44 (FT)

Project: tracy-eastside

Simulation Run: 10-yr Reservoir: DET ROCHA

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 12:46:17	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	18.377 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 11:28
Peak Outflow :	1.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 12:16
Total Inflow :	7.62974 (AC-FT)	Peak Storage :	6.27597 (AC-FT)
Total Outflow :	4.66938 (AC-FT)	Peak Elevation :	86.98 (FT)

Project: tracy-eastside
Simulation Run: 10-yr Reservoir: DET1A

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 12:46:17	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	18.606 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 10:48
Peak Outflow :	2.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 00:00
Total Inflow :	7.33968 (AC-FT)	Peak Storage :	3.65362 (AC-FT)
Total Outflow :	7.34435 (AC-FT)	Peak Elevation :	58.14 (FT)

Project: tracy-eastside
Simulation Run: 10-yr Reservoir: DET 4

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 12:46:17	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	97.109 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 13:00
Peak Outflow :	17.485 (CFS)	Date/Time of Peak Outflow :	14Apr2010, 03:00
Total Inflow :	74.30691 (AC-FT)	Peak Storage :	54.62433 (AC-FT)
Total Outflow :	54.24073 (AC-FT)	Peak Elevation :	49.69 (FT)

Project: tracy-eastside
Simulation Run: 10-yr Reservoir: DET 12

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 12:46:17	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	22.927 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 10:44
Peak Outflow :	5.124 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 12:28
Total Inflow :	6.27478 (AC-FT)	Peak Storage :	2.37483 (AC-FT)
Total Outflow :	6.27437 (AC-FT)	Peak Elevation :	12.13 (FT)

Project: tracy-eastside
Simulation Run: 10-yr Reservoir: DET 13

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 12:46:17	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	22.216 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 10:52
Peak Outflow :	5.495 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 12:44
Total Inflow :	6.81832 (AC-FT)	Peak Storage :	2.58017 (AC-FT)
Total Outflow :	6.81784 (AC-FT)	Peak Elevation :	12.29 (FT)

Project: tracy-eastside
Simulation Run: 10-yr Reservoir: DET 14

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 12:46:17	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	42.254 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 10:44
Peak Outflow :	1.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 11:08
Total Inflow :	11.09095 (AC-FT)	Peak Storage :	9.71859 (AC-FT)
Total Outflow :	4.78562 (AC-FT)	Peak Elevation :	12.02 (FT)

Project: tracy-eastside
Simulation Run: 10-yr Reservoir: DET 15

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 12:46:17	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	25.366 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 11:08
Peak Outflow :	1.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 11:36
Total Inflow :	9.04752 (AC-FT)	Peak Storage :	7.65509 (AC-FT)
Total Outflow :	4.75247 (AC-FT)	Peak Elevation :	11.99 (FT)

Project: tracy-eastside
Simulation Run: 10-yr Reservoir: DET 16

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 12:46:17	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	42.808 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 11:52
Peak Outflow :	0.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 00:00
Total Inflow :	21.32186 (AC-FT)	Peak Storage :	21.32186 (AC-FT)
Total Outflow :	0.00000 (AC-FT)	Peak Elevation :	17.10 (FT)

Project: tracy-eastside
Simulation Run: 10-yr Reservoir: DETLC1

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 12:46:17	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	51.646 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 11:40
Peak Outflow :	1.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 11:52
Total Inflow :	24.03956 (AC-FT)	Peak Storage :	22.51578 (AC-FT)
Total Outflow :	4.74364 (AC-FT)	Peak Elevation :	5.52 (FT)

Eastside Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)

E02	0.3059	30.57	13Apr2010, 12:48	20.5
E01	0.1997	11.53	13Apr2010, 13:20	8.7
RR 01	0.1997	11.49	13Apr2010, 14:16	8.7
E03	0.105	14	13Apr2010, 11:48	7
RR 02	0.105	13.99	13Apr2010, 11:56	7
COMB 1	0.6106	47.35	13Apr2010, 13:08	36.2
RR 03	0.6106	47.34	13Apr2010, 13:16	36.2
E05	0.2668	27.92	13Apr2010, 12:40	18.1
RR 04	0.2668	27.92	13Apr2010, 12:40	18.1
E04	0.2246	23.37	13Apr2010, 12:40	15.1
COMB 2	1.102	97.2	13Apr2010, 12:56	69.4
RR 05	1.102	97.07	13Apr2010, 13:08	69.4
E06	0.3652	31.88	13Apr2010, 12:48	21.1
E07	0.1382	16	13Apr2010, 11:48	8.2
RR 06	0.1382	15.99	13Apr2010, 11:52	8.2
COMB 3	1.6054	139.35	13Apr2010, 12:56	98.6
RR 07	1.6054	139.13	13Apr2010, 13:16	98.6
E08	0.2142	21.09	13Apr2010, 12:52	13.8
E09	0.1091	12.06	13Apr2010, 12:12	6.7
COMB 4	1.9287	169.38	13Apr2010, 13:08	119.1
RR 08	1.9287	169.34	13Apr2010, 13:08	119.1
E10	0.1538	22.73	13Apr2010, 11:36	10.1
E12	0.1405	20.32	13Apr2010, 12:04	10.6
COMB 5	2.223	197.55	13Apr2010, 12:56	139.8
DET 4	2.223	24.98	13Apr2010, 17:28	9
E13	0.0965	16.6	13Apr2010, 11:24	6.6
COMB 6	2.3195	28.55	13Apr2010, 17:28	15.6
E14A	0.1706	30.13	13Apr2010, 11:52	14.6
COMB6A	0.1706	30.13	13Apr2010, 11:52	14.6
RR09A	0.1706	30.11	13Apr2010, 12:00	14.6
E15	0.0903	13.54	13Apr2010, 11:52	6.8
E22	0.0238	4.76	13Apr2010, 11:00	1.7
RR09B	0.0238	4.75	13Apr2010, 11:04	1.7
Junction-1	0.1141	16.53	13Apr2010, 11:40	8.5
RR10	0.1141	16.53	13Apr2010, 11:44	8.5
E17	0.0587	13.26	13Apr2010, 11:12	5
E16	0.0337	10.6	13Apr2010, 10:56	3.3
RR11A	0.0337	10.56	13Apr2010, 11:00	3.3
Junction-2	0.0924	23.53	13Apr2010, 11:04	8.3
RR 11B	0.0924	23.51	13Apr2010, 11:08	8.3
COMB 7	0.3771	62.24	13Apr2010, 11:36	31.4
RR 12	0.3771	62.22	13Apr2010, 11:40	31.4
E14	0.1537	30.97	13Apr2010, 11:28	12.7
DET ROCHA	0.1537	1	13Apr2010, 11:20	4.8
RR 09	0.1537	1	13Apr2010, 11:52	4.7

Eastside Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
E18	0.0196	5.27	13Apr2010, 10:56	1.7
COMB 8	0.5504	66.23	13Apr2010, 11:36	37.8
RR 13	0.5504	66.19	13Apr2010, 11:40	37.8
E19	0.0554	11.97	13Apr2010, 11:12	4.5
COMB 9	0.6058	76.37	13Apr2010, 11:32	42.2
RR13A	0.6058	76.35	13Apr2010, 11:32	42.2
E20	0.0723	13.6	13Apr2010, 12:00	6.9
COMB 9A	0.6781	88.83	13Apr2010, 11:36	49.2
RR 14	0.6781	88.79	13Apr2010, 11:40	49.2
E21	0.0223	6.56	13Apr2010, 11:36	2.9
COMB10	0.7004	95.35	13Apr2010, 11:40	52.1
RR 15	0.7004	95.33	13Apr2010, 11:44	52.1
COMB11	3.0199	115.51	13Apr2010, 11:40	67.7
RR 16	3.0199	115.34	13Apr2010, 11:48	67.6
Junction-3	3.0199	115.34	13Apr2010, 11:48	67.6
RR 17	3.0199	114.79	13Apr2010, 12:00	67.6
Junction-4	3.0199	114.79	13Apr2010, 12:00	67.6
RR 18	3.0199	114.46	13Apr2010, 12:04	67.6
E23	0.2025	76.48	13Apr2010, 11:12	27.7
E24	0.1327	46.57	13Apr2010, 11:20	18.2
COMB13	3.3551	206.66	13Apr2010, 11:40	113.5
Reach-1	3.3551	205.81	13Apr2010, 11:44	113.4
E25	0.0393	41.2	13Apr2010, 10:40	115.4
COMB14	3.3944	232.22	13Apr2010, 11:40	228.9
RR 19	3.3944	231.91	13Apr2010, 11:44	228.9
E25B	0.0305	17.78	13Apr2010, 10:40	4.2
COMB15	3.4249	236.39	13Apr2010, 11:44	233.1
RR 20	3.4249	236.06	13Apr2010, 11:48	233.1
E27	0.1251	52.25	13Apr2010, 11:04	17.2
E26	0.0347	11.78	13Apr2010, 11:00	3.7
COMB16	3.5847	274.5	13Apr2010, 11:40	254
ROCPD5	3.5847	269.3	13Apr2010, 11:44	253.9
COMB17	3.5847	269.3	13Apr2010, 11:44	253.9
RR 21	3.5847	262.36	13Apr2010, 11:48	253.8
E28	0.0952	39.8	13Apr2010, 11:04	13.1
E45	0.024	13.17	13Apr2010, 10:40	3.3
Reach-4	0.024	12.84	13Apr2010, 11:00	3.3
COMB18	3.7039	293.29	13Apr2010, 11:36	270.2
RR 22	3.7039	278.11	13Apr2010, 11:48	269.8
E29	0.0892	37.03	13Apr2010, 10:52	11
CPD5.3	3.7931	294.89	13Apr2010, 11:44	280.8
RR 23	3.7931	294.63	13Apr2010, 11:44	280.8
E30A	0.0194	8.19	13Apr2010, 10:44	2.1
COMB19	3.8125	297.27	13Apr2010, 11:44	282.9
RR 24	3.8125	297.04	13Apr2010, 11:44	282.9
COMB20	3.8125	297.04	13Apr2010, 11:44	282.9

Eastside Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
E37	0.0808	23.87	13Apr2010, 11:04	8
E36	0.0296	9.48	13Apr2010, 11:00	3.1
COMB25	0.1104	33.29	13Apr2010, 11:04	11.1
RR 29	0.1104	33.2	13Apr2010, 11:04	11.1
E38	0.0587	15.42	13Apr2010, 11:20	6
COMB26	0.1691	48.03	13Apr2010, 11:08	17
RR 30	0.1691	47.9	13Apr2010, 11:16	17
E39	0.0917	24.74	13Apr2010, 11:08	8.6
COMB27	0.2608	82.82	13Apr2010, 11:16	38.2
RR 31	0.2608	82.78	13Apr2010, 11:16	38.2
E40	0.1609	31.36	13Apr2010, 11:40	14
COMB28	0.4217	111.87	13Apr2010, 11:20	52.3
RR 32	0.4217	111.83	13Apr2010, 11:24	52.3
E42	0.1344	27.28	13Apr2010, 11:48	13.1
RR 33	0.1344	27.26	13Apr2010, 11:52	13.1
E43	0.081	16.7	13Apr2010, 11:48	8
COMB30	0.2154	43.95	13Apr2010, 11:52	21.1
RR 34	0.2154	43.95	13Apr2010, 11:52	21.1
E41	0.0426	9.24	13Apr2010, 11:24	3.7
COMB29	0.6797	161.04	13Apr2010, 11:32	77.1
RR 35	0.6797	160.88	13Apr2010, 11:48	77.1
E44	0.1082	24.41	13Apr2010, 11:20	9.6
COMB32	0.7879	181.76	13Apr2010, 11:48	86.7
RR 36	0.7879	181.74	13Apr2010, 11:48	86.7
E33	0.1983	39.73	13Apr2010, 12:36	24.3
E31	0.0889	26.95	13Apr2010, 10:44	7.2
E31A	0.068	11.41	13Apr2010, 11:32	5.2
COMB21	0.1569	33.03	13Apr2010, 10:48	12.4
DET1A	0.1569	2	13Apr2010, 00:00	10.7
RR 25	0.1569	2.49	13Apr2010, 01:12	10.8
E32	0.0331	8.05	13Apr2010, 11:08	2.9
RR 26	0.0331	8.04	13Apr2010, 11:16	2.9
COMB22	0.19	10.04	13Apr2010, 11:16	13.6
Reach-2	0.19	10.03	13Apr2010, 11:24	13.6
COMB23	0.3883	45.6	13Apr2010, 12:28	37.9
DIV 1	0.3883	30.4	13Apr2010, 12:28	25.3
RR 27	0.3883	30.38	13Apr2010, 12:40	25.3
E34	0.2671	49.61	13Apr2010, 12:28	29.1
COMB24	0.6554	79.8	13Apr2010, 12:32	54.4
E35	0.027	15.05	13Apr2010, 10:40	3.7
RR 28	0.027	14.95	13Apr2010, 10:44	3.7
COMOUT	1.4703	255.88	13Apr2010, 11:52	144.8
RR 37	1.4703	253.54	13Apr2010, 12:04	144.7
E46C	0.0488	14.05	13Apr2010, 11:08	5
E46B	0.0345	6.67	13Apr2010, 11:28	2.7
Junction-5	1.5536	267.09	13Apr2010, 12:00	152.4

Eastside Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
RR 38	1.5536	265.13	13Apr2010, 12:08	152.4
E30	0.0575	27.83	13Apr2010, 10:52	7.9
E46A	0.0473	9.74	13Apr2010, 11:24	3.9
COMB33	5.4709	573.92	13Apr2010, 11:56	447.1
RR 39	5.4709	572.36	13Apr2010, 12:00	447.1
E48A	0.2383	53.34	13Apr2010, 11:32	22.5
E46	0.055	18.24	13Apr2010, 10:56	5.5
RR 40	0.055	18.23	13Apr2010, 11:00	5.5
E47	0.0473	10.43	13Apr2010, 11:16	3.9
COMB34	0.1023	28	13Apr2010, 11:04	9.4
RR 41	0.1023	27.95	13Apr2010, 11:08	9.4
COMB35	0.3406	78.57	13Apr2010, 11:20	31.9
RR 42	0.3406	78.53	13Apr2010, 11:24	31.9
E48	0.3004	53.82	13Apr2010, 12:08	28.6
COMB36	0.641	124.24	13Apr2010, 11:36	60.5
RR 43	0.641	124.21	13Apr2010, 11:40	60.5
LC1	0.3494	83.3	13Apr2010, 11:40	37.7
DETLC1	0.3494	1	13Apr2010, 11:08	4.8
RRLC1	0.3494	1	13Apr2010, 11:36	4.8
E49	0.0093	5.69	13Apr2010, 10:36	1.3
COMB37	0.9997	126.57	13Apr2010, 11:40	66.6
RR 44	0.9997	126.55	13Apr2010, 11:44	66.6
E51	0.1283	66.02	13Apr2010, 10:44	17.7
COMB38	1.128	153.06	13Apr2010, 11:28	84.2
RR 45	1.128	152.96	13Apr2010, 11:32	84.2
E50	0.0635	26.92	13Apr2010, 11:00	8.7
COMB39	1.1915	174.44	13Apr2010, 11:20	93
RR 46	1.1915	174.42	13Apr2010, 11:24	92.9
E52	0.1234	42.3	13Apr2010, 11:08	14.9
COMB40	1.3149	214.41	13Apr2010, 11:20	107.8
COMB41	6.7858	759.24	13Apr2010, 11:52	554.9
RR 47	6.7858	756.35	13Apr2010, 11:56	554.8
E53	0.2799	31.87	13Apr2010, 12:36	19.2
RR 48	0.2799	31.87	13Apr2010, 12:40	19.2
E54	0.1028	30.99	13Apr2010, 11:28	12.7
COMB42	0.3827	53.13	13Apr2010, 11:52	31.8
RR 49	0.3827	53.1	13Apr2010, 11:56	31.8
E55	0.2182	42.81	13Apr2010, 11:44	19.8
COMB43	0.6009	95.35	13Apr2010, 11:52	51.7
RR 50	0.6009	95.33	13Apr2010, 11:56	51.7
Junction-6	0.6009	95.33	13Apr2010, 11:56	51.7
RR 51	0.6009	95.27	13Apr2010, 11:56	51.7
E56	0.2697	100.81	13Apr2010, 11:12	37.1
RR 52	0.2697	100.73	13Apr2010, 11:16	37.1
E58	0.0913	25.17	13Apr2010, 11:12	9.3
E57	0.0434	13.33	13Apr2010, 11:00	4.4

Eastside Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
RR E57	0.0434	13.31	13Apr2010, 11:04	4.4
COMB44	0.4044	138.09	13Apr2010, 11:16	50.7
RR 53	0.4044	137.98	13Apr2010, 11:16	50.7
E59	0.3806	104.54	13Apr2010, 11:36	46.4
COMB45	1.3859	319.47	13Apr2010, 11:32	148.8
RR 54	1.3859	317.43	13Apr2010, 11:40	148.8
E63	0.334	117.02	13Apr2010, 11:08	41.2
E60	0.0934	24.64	13Apr2010, 11:24	9.9
E61	0.0329	13.13	13Apr2010, 10:48	3.6
COMB46	0.1263	32.87	13Apr2010, 11:08	13.4
RR 55	0.1263	32.85	13Apr2010, 11:12	13.4
E62	0.1244	52.05	13Apr2010, 10:56	16.2
Junction-7	0.2507	83.86	13Apr2010, 11:00	29.6
RR 56	0.2507	83.73	13Apr2010, 11:04	29.6
COMB47	1.9706	480.5	13Apr2010, 11:28	219.6
RR 57	1.9706	480.19	13Apr2010, 11:28	219.6
E65	0.3099	68.99	13Apr2010, 11:52	33.5
DET 16	0.3099	0	13Apr2010, 00:00	0
Reach-3	0.3099	0	13Apr2010, 00:00	0
ADDE45	2.2805	480.19	13Apr2010, 11:28	219.6
DET NEI	2.2805	10	13Apr2010, 00:00	53.9
RR 58	2.2805	10.81	13Apr2010, 00:12	54
E66	0.1315	41.02	13Apr2010, 11:08	14.2
DET 15	0.1315	1	13Apr2010, 10:56	4.8
RRE66	0.1315	1	13Apr2010, 11:24	4.8
ADDE66	2.412	11	13Apr2010, 11:24	58.8
RR 59	2.412	11	13Apr2010, 11:40	58.8
E67	0.1612	68.41	13Apr2010, 10:44	17.4
DET 14	0.1612	1	13Apr2010, 10:36	4.9
ADDE67	2.5732	12	13Apr2010, 11:40	63.7
RR 60	2.5732	12	13Apr2010, 12:04	63.7
E68	0.0991	35.97	13Apr2010, 10:52	10.7
DET 13	0.0991	8.38	13Apr2010, 12:52	10.7
ADDE68	2.6723	20.38	13Apr2010, 12:52	74.4
RR 61	2.6723	20.38	13Apr2010, 13:04	74.3
E64	0.0912	37.14	13Apr2010, 10:44	9.8
DET 12	0.0912	7.81	13Apr2010, 12:36	9.8
COMB48	2.7635	28.17	13Apr2010, 12:52	84.2
CP26	9.5493	783.88	13Apr2010, 11:56	638.9

Project: tracy-eastside
Simulation Run: 100-yr Reservoir: DET NEI

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	100yr
Compute Time:	16Sep2010, 09:45:19	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	480.189 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 11:28
Peak Outflow :	10.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 00:00
Total Inflow :	219.59894 (AC-FT)	Peak Storage :	197.53056 (AC-FT)
Total Outflow :	53.93939 (AC-FT)	Peak Elevation :	20.32 (FT)

Project: tracy-eastside

Simulation Run: 100-yr Reservoir: DET ROCHA

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	100yr
Compute Time:	16Sep2010, 09:45:19	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	30.968 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 11:28
Peak Outflow :	1.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 11:20
Total Inflow :	12.67027 (AC-FT)	Peak Storage :	11.20819 (AC-FT)
Total Outflow :	4.75383 (AC-FT)	Peak Elevation :	88.39 (FT)

Project: tracy-eastside

Simulation Run: 100-yr Reservoir: DET1A

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	100yr
Compute Time:	16Sep2010, 09:45:19	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	33.032 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 10:48
Peak Outflow :	2.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 00:00
Total Inflow :	12.38342 (AC-FT)	Peak Storage :	8.40270 (AC-FT)
Total Outflow :	10.73278 (AC-FT)	Peak Elevation :	59.63 (FT)

Project: tracy-eastside
Simulation Run: 100-yr Reservoir: DET 4

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	100yr
Compute Time:	16Sep2010, 09:45:19	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	197.551 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 12:56
Peak Outflow :	24.978 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 17:28
Total Inflow :	139.82955 (AC-FT)	Peak Storage :	130.83903 (AC-FT)
Total Outflow :	8.99052 (AC-FT)	Peak Elevation :	52.99 (FT)

Project: tracy-eastside
Simulation Run: 100-yr Reservoir: DET 12

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	100yr
Compute Time:	16Sep2010, 09:45:19	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	37.136 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 10:44
Peak Outflow :	7.813 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 12:36
Total Inflow :	9.84716 (AC-FT)	Peak Storage :	3.81884 (AC-FT)
Total Outflow :	9.84647 (AC-FT)	Peak Elevation :	13.26 (FT)

Project: tracy-eastside
Simulation Run: 100-yr Reservoir: DET 13

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	100yr
Compute Time:	16Sep2010, 09:45:19	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	35.969 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 10:52
Peak Outflow :	8.383 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 12:52
Total Inflow :	10.70014 (AC-FT)	Peak Storage :	4.15383 (AC-FT)
Total Outflow :	10.69933 (AC-FT)	Peak Elevation :	13.49 (FT)

Project: tracy-eastside

Simulation Run: 100-yr Reservoir: DET 14

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	100yr
Compute Time:	16Sep2010, 09:45:19	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	68.409 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 10:44
Peak Outflow :	1.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 10:36
Total Inflow :	17.40528 (AC-FT)	Peak Storage :	15.94219 (AC-FT)
Total Outflow :	4.86699 (AC-FT)	Peak Elevation :	13.22 (FT)

Project: tracy-eastside
Simulation Run: 100-yr Reservoir: DET 15

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	100yr
Compute Time:	16Sep2010, 09:45:19	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	41.017 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 11:08
Peak Outflow :	1.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 10:56
Total Inflow :	14.19848 (AC-FT)	Peak Storage :	12.70565 (AC-FT)
Total Outflow :	4.83525 (AC-FT)	Peak Elevation :	13.21 (FT)

Project: tracy-eastside

Simulation Run: 100-yr Reservoir: DET 16

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	100yr
Compute Time:	16Sep2010, 09:45:19	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	68.987 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 11:52
Peak Outflow :	0.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 00:00
Total Inflow :	33.46089 (AC-FT)	Peak Storage :	33.46089 (AC-FT)
Total Outflow :	0.00000 (AC-FT)	Peak Elevation :	18.25 (FT)

Project: tracy-eastside
Simulation Run: 100-yr Reservoir: DETLC1

Start of Run:	13Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	15Apr2010, 18:36	Meteorologic Model:	100yr
Compute Time:	16Sep2010, 09:45:19	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	83.302 (CFS)	Date/Time of Peak Inflow :	13Apr2010, 11:40
Peak Outflow :	1.000 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 11:08
Total Inflow :	37.72584 (AC-FT)	Peak Storage :	36.08584 (AC-FT)
Total Outflow :	4.83178 (AC-FT)	Peak Elevation :	6.95 (FT)

Westside Watershed 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
W02	0.4975	22.82	12Apr2010, 13:24	18.3
RCP4	0.4975	22.82	12Apr2010, 13:28	18.3
W10	0.2163	24.66	12Apr2010, 11:20	10.5
RCP2	0.2163	24.64	12Apr2010, 11:28	10.5
W03	0.0243	4.28	12Apr2010, 11:00	1.5
RCP1	0.0243	4.26	12Apr2010, 11:08	1.5
COMB 1	0.2406	28.33	12Apr2010, 11:24	11.9
W09	0.209	40.87	12Apr2010, 11:20	16.2
COMB2	0.4496	69.11	12Apr2010, 11:20	28.1
W04	0.034	5.2	12Apr2010, 11:12	2
RCP3	0.034	5.19	12Apr2010, 11:24	2
COMB 3	0.4836	74.28	12Apr2010, 11:20	30.1
COMB 4	0.9811	84.39	12Apr2010, 11:24	48.4
DET2A	0.9811	2.85	13Apr2010, 04:00	10.4
CP1	0.9811	2.85	13Apr2010, 04:20	10.3
W01	0.2162	13.68	12Apr2010, 11:52	7.8
RCP5	0.2162	13.68	12Apr2010, 12:04	7.8
W08	0.1288	10.1	12Apr2010, 12:00	5.7
COMB 5	0.345	23.76	12Apr2010, 12:04	13.5
W05	0.0633	3.99	12Apr2010, 11:52	2.3
CP7	0.4083	27.72	12Apr2010, 12:00	15.7
W11	0.0812	14.74	12Apr2010, 10:56	4.8
W11A	0.0319	12.41	12Apr2010, 10:36	2.9
RR03	0.0319	12.34	12Apr2010, 10:40	2.9
Junction-1	0.1131	25.25	12Apr2010, 10:44	7.7
DET2B	0.5214	5	12Apr2010, 09:52	22.8
CP8	1.5025	7.85	13Apr2010, 04:20	33.2
RC1 1C	1.5025	7.85	13Apr2010, 04:52	32.9
W12	0.0362	3.44	12Apr2010, 11:20	1.5
CP5	1.5387	8.44	12Apr2010, 11:20	34.4
RCP6	1.5387	8.37	12Apr2010, 11:40	34.3
W21	0.2483	11.27	12Apr2010, 13:04	8
RPCP7	0.2483	11.27	12Apr2010, 13:12	8
W15	0.1238	6.38	12Apr2010, 12:32	4
W14	0.1224	5.59	12Apr2010, 12:12	3.3
Junction-2	0.4945	22.31	12Apr2010, 12:44	15.3
RCP8	0.4945	22.29	12Apr2010, 13:00	15.3
W16	0.1354	7.24	12Apr2010, 12:16	4.2
W17	0.1251	4.99	12Apr2010, 12:40	3.3
Junction-3	0.755	33.78	12Apr2010, 12:48	22.9
Reach-1	0.755	33.77	12Apr2010, 12:56	22.9
W18	0.0655	4.19	12Apr2010, 11:56	2.2
CP6	2.3592	43.93	12Apr2010, 12:44	59.4
RCP9	2.3592	43.9	12Apr2010, 13:00	59.2
W19	0.1877	6.47	12Apr2010, 13:12	5.1

Westside Watershed 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
W20	0.1292	8.35	12Apr2010, 12:04	5
CP9	2.6761	57.09	12Apr2010, 12:52	69.3
W23	0.2573	9.28	12Apr2010, 12:36	6.3
W22	0.2517	8.56	12Apr2010, 12:36	5.7
RPCP11	0.2517	8.55	12Apr2010, 12:44	5.7
CP11	0.509	17.81	12Apr2010, 12:40	12
RPCP9	0.509	17.8	12Apr2010, 12:48	12
Junction-5	3.1851	74.88	12Apr2010, 12:52	81.3
W25	0.0967	6.06	12Apr2010, 11:56	3.5
RCP12	0.0967	6.06	12Apr2010, 12:00	3.5
W26	0.0602	4.03	12Apr2010, 11:44	2.2
CP12	0.1569	10.02	12Apr2010, 11:52	5.6
Reach-2	0.1569	10.02	12Apr2010, 11:56	5.6
Junction-6	3.342	82.73	12Apr2010, 12:44	86.9
RCP13	3.342	82.68	12Apr2010, 12:52	86.8
W24	0.1291	9.13	12Apr2010, 11:52	4.8
CP13	3.4711	89.61	12Apr2010, 12:44	91.6
RCP17	3.4711	89.57	12Apr2010, 12:48	91.6
W27	0.1234	8.5	12Apr2010, 12:04	5
RCP14	0.1234	8.5	12Apr2010, 12:12	5
W28	0.0669	4.63	12Apr2010, 11:36	2.4
CP14	0.1903	12.66	12Apr2010, 12:00	7.4
RPCP15	0.1903	12.66	12Apr2010, 12:00	7.4
W29	0.0429	3.48	12Apr2010, 11:16	1.5
CP15	0.2332	15.16	12Apr2010, 11:52	8.9
RPCP16	0.2332	15.15	12Apr2010, 11:56	8.9
W29A	0.0166	3.27	12Apr2010, 10:48	1
C W29A	0.2498	16.42	12Apr2010, 11:48	9.9
RRW29A	0.2498	16.41	12Apr2010, 11:56	9.9
W30	0.0787	4.87	12Apr2010, 11:52	2.8
CP16	0.3285	21.27	12Apr2010, 11:56	12.7
RR W30	0.3285	21.26	12Apr2010, 11:56	12.7
W31	0.0342	3.22	12Apr2010, 11:04	1.2
CP17	0.3627	23.04	12Apr2010, 11:52	13.9
W34	0.1558	7.7	12Apr2010, 11:56	4.3
W33	0.0529	3.71	12Apr2010, 11:28	1.8
W47	0.042	3.89	12Apr2010, 11:00	1.5
RR W47	0.042	3.88	12Apr2010, 11:12	1.5
ADDW33	0.0949	7.42	12Apr2010, 11:16	3.3
RR W33	0.0949	7.4	12Apr2010, 11:44	3.3
W32	0.0916	7.69	12Apr2010, 11:04	3.2
RP17A	0.0916	7.67	12Apr2010, 11:12	3.2
Junction-7	4.1761	124.35	12Apr2010, 12:28	116.2
RCP18A	4.1761	124.24	12Apr2010, 12:36	116.1
W36	0.0459	2.55	12Apr2010, 11:36	1.2
CP18A	4.222	125.93	12Apr2010, 12:36	117.4

Westside Watershed 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
RCP18	4.222	125.86	12Apr2010, 12:40	117.3
W35	0.0792	6.57	12Apr2010, 11:48	3.3
CP18	4.3012	130.95	12Apr2010, 12:36	120.7
RCP19	4.3012	130.76	12Apr2010, 12:48	120.5
W38	0.0984	5.01	12Apr2010, 12:12	3.2
W37	0.0778	4.66	12Apr2010, 11:28	2.1
RPCP19	0.0778	4.66	12Apr2010, 11:32	2.1
CP19	0.1762	9.25	12Apr2010, 11:48	5.2
RCP20	0.1762	9.18	12Apr2010, 11:56	5.2
CP20	4.4774	138.21	12Apr2010, 12:44	125.8
Reach-6	4.4774	138.1	12Apr2010, 12:52	125.7
W41	0.502	24.2	12Apr2010, 12:16	14.3
W40	0.1875	26.93	12Apr2010, 11:24	11.6
DET SL	0.1875	1	12Apr2010, 12:48	4.5
RPCP21	0.1875	1	12Apr2010, 13:28	4.4
CP21	0.6895	24.92	12Apr2010, 12:16	18.7
RCP22	0.6895	24.9	12Apr2010, 12:32	18.7
W41A	0.243	7.16	12Apr2010, 12:08	4.3
W41B	0.045	14.03	12Apr2010, 10:40	3.5
CP22	0.9775	34.36	12Apr2010, 12:24	26.5
RRCP3A	0.9775	34.36	12Apr2010, 12:24	26.5
DET 3A	0.9775	2.05	13Apr2010, 04:04	8.1
RCP26	0.9775	2.05	13Apr2010, 04:24	8
W49	0.4703	17.84	12Apr2010, 13:52	15.7
CP26	1.4478	18.95	12Apr2010, 13:56	23.7
RCP27	1.4478	18.95	12Apr2010, 14:00	23.7
W51	0.0546	2.94	12Apr2010, 11:32	1.5
CPW51	1.5024	20	12Apr2010, 13:56	25.2
RR W51	1.5024	19.99	12Apr2010, 13:56	25.2
W52	0.1002	8.68	12Apr2010, 11:32	4.1
J1	1.6026	23.4	12Apr2010, 13:40	29.3
RRW52	1.6026	23.39	12Apr2010, 13:44	29.3
W50	0.1974	15.07	12Apr2010, 12:00	10.2
W80	0.0927	9.21	12Apr2010, 11:24	5.8
RR 06	0.0927	9.2	12Apr2010, 11:32	5.8
W81	0.0477	3.38	12Apr2010, 11:24	1.6
RR 08	0.0477	3.38	12Apr2010, 11:24	1.6
CP 3B	0.3378	26.65	12Apr2010, 11:44	17.6
DET 3B	0.3378	0.46	14Apr2010, 15:56	1.8
RCP28	0.3378	0.46	14Apr2010, 15:56	1.8
W54	0.0535	4.37	12Apr2010, 11:32	2.1
CP28	1.9939	25.5	12Apr2010, 13:28	33.2
RR W54	1.9939	25.5	12Apr2010, 13:32	33.2
W39	0.2435	15.38	12Apr2010, 12:16	9.6
RPCP20	0.2435	15.38	12Apr2010, 12:20	9.6
W53	0.1574	9.5	12Apr2010, 11:56	5.5

Westside Watershed 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DET5	6.8722	125.56	12Apr2010, 15:08	173.6
RWCR11	6.8722	125.54	12Apr2010, 15:16	173.4
W55	0.0833	5.54	12Apr2010, 11:48	3
W56	0.04	12.11	12Apr2010, 10:52	3.6
RPCP29	0.04	12.09	12Apr2010, 10:56	3.6
CP29	6.9955	129.17	12Apr2010, 15:08	180.1
RCP29	6.9955	129.16	12Apr2010, 15:12	180
W57	0.1038	8.22	12Apr2010, 11:52	4.4
W54A	0.085	5.69	12Apr2010, 11:44	3.1
CPBYRN	0.085	5.69	12Apr2010, 11:52	3.1
Junction-10	7.1843	134.34	12Apr2010, 14:56	187.5
RR 01	7.1843	134.34	12Apr2010, 15:04	187.4
W84	0.2047	14.61	12Apr2010, 11:40	7.6
W82	0.0918	6.27	12Apr2010, 11:48	3.4
RR 02	0.0918	6.27	12Apr2010, 11:56	3.4
W83	0.0388	6.03	12Apr2010, 11:00	2
Reach-3	0.0388	6.02	12Apr2010, 11:04	2
COBFD	0.3353	24.52	12Apr2010, 11:36	13
DET CP	0.3353	0	12Apr2010, 00:00	0
RR 04	0.3353	0	12Apr2010, 00:00	0
W85	0.1066	8.66	12Apr2010, 11:52	4.6
COMB	0.4419	8.66	12Apr2010, 11:52	4.6
CPBERG	7.6262	137.74	12Apr2010, 14:52	191.9
CP15MD	7.6262	137.74	12Apr2010, 15:00	191.8
W86	0.2557	21.11	12Apr2010, 12:36	16.3
CW86	7.8819	151.01	12Apr2010, 14:04	208.1
RP16MD	7.8819	151.01	12Apr2010, 14:08	208
W94	0.1343	46.06	12Apr2010, 10:44	12.3
CP1WMD	8.0162	158.88	12Apr2010, 12:20	220.3
W87	0.0716	16.22	12Apr2010, 10:52	4.8
ADD10	8.0878	163.44	12Apr2010, 12:16	225.1
RRW87	8.0878	163.4	12Apr2010, 12:20	225
W88	0.1572	25.69	12Apr2010, 11:20	10.4
ADD11	8.245	179.7	12Apr2010, 12:12	235.5
RRW88	8.245	179.66	12Apr2010, 12:16	235.4
W89	0.2343	39.3	12Apr2010, 11:20	15.7
ADDALL	8.4793	204.18	12Apr2010, 12:08	251.1
W93	0.6116	123.18	12Apr2010, 11:20	49.4
W90	0.25	34.36	12Apr2010, 11:40	15.8
RRW90	0.25	34.36	12Apr2010, 11:44	15.8
Junction-8	0.25	34.36	12Apr2010, 11:44	15.8
Reach-7	0.25	34.33	12Apr2010, 11:52	15.8
Junction-4	0.8616	152.73	12Apr2010, 11:28	65.2
W92	0.1656	8.53	12Apr2010, 11:56	4.8
W91	0.0835	14.72	12Apr2010, 11:12	5.6
ADD 12	0.2491	21.34	12Apr2010, 11:24	10.4

Westside Watershed 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DET 11	9.59	10	12Apr2010, 04:28	50.3
W65	0.1453	10.17	12Apr2010, 11:56	5.7
W64	0.0507	4.33	12Apr2010, 11:16	1.8
W64A	0.0384	7.82	12Apr2010, 11:00	2.6
DET V	0.0384	2	12Apr2010, 00:00	2.6
W64B	0.016	3.7	12Apr2010, 10:48	1.1
ADDW64	0.1051	9.21	12Apr2010, 11:00	5.5
RCP1MD	0.1051	9.2	12Apr2010, 11:04	5.5
CP1MD	0.2504	17.58	12Apr2010, 11:36	11.3
RCP2MD	0.2504	17.58	12Apr2010, 11:36	11.3
W66	0.1391	6.55	12Apr2010, 12:52	4.8
CP2MD	0.3895	22.33	12Apr2010, 11:48	16.1
DET C	0.3895	11.91	12Apr2010, 15:00	11.4
RCP3MD	0.3895	11.91	12Apr2010, 15:04	11.4
W67A	0.0235	4.32	12Apr2010, 10:52	1.4
RW67A	0.0235	4.31	12Apr2010, 10:56	1.4
W67	0.0139	5.43	12Apr2010, 10:36	1.2
CP3MD	0.4269	13.19	12Apr2010, 14:40	14
Reach-4	0.4269	13.19	12Apr2010, 14:48	14
W68	0.1715	18.67	12Apr2010, 11:36	8.7
RCP4MD	0.1715	18.66	12Apr2010, 11:40	8.7
W69	0.0886	9.61	12Apr2010, 11:28	4.3
W70	0.0391	4.66	12Apr2010, 11:36	2.2
CP4MD	0.7261	37.32	12Apr2010, 11:28	29.1
RCP5MD	0.7261	37.31	12Apr2010, 11:32	29.1
W71	0.0563	5.5	12Apr2010, 11:48	2.7
DET LOWELL	0.7824	22.74	12Apr2010, 16:08	31.8
CP5MD	0.7824	22.74	12Apr2010, 16:08	31.8
RCP6MD	0.7824	22.74	12Apr2010, 16:12	31.8
W72	0.1073	9.16	12Apr2010, 11:36	4.5
CP6MD	0.8897	25.46	12Apr2010, 15:20	36.3
RCP7D	0.8897	25.46	12Apr2010, 15:20	36.3
W73	0.049	3.5	12Apr2010, 11:36	1.8
CP7MD	0.9387	26.61	12Apr2010, 15:00	38.1
RCP8MD	0.9387	26.61	12Apr2010, 15:00	38.1
W74	0.1336	17.98	12Apr2010, 11:44	8.5
CP8MD	1.0723	40.91	12Apr2010, 11:56	46.6
RCP9MD	1.0723	40.89	12Apr2010, 12:00	46.6
W68B	0.0916	9.22	12Apr2010, 11:56	4.8
W68A	0.0491	6.92	12Apr2010, 11:40	3.2
CW68A	0.1407	15.98	12Apr2010, 11:48	8
RRW68A	0.1407	15.97	12Apr2010, 11:48	8
W77	0.1044	18.39	12Apr2010, 11:12	6.9
CW77	0.2451	32	12Apr2010, 11:24	14.9
RRW77	0.2451	31.97	12Apr2010, 11:28	14.9
W76	0.0885	7.83	12Apr2010, 11:44	3.9

Westside Watershed 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
CP10MD	0.3336	39.52	12Apr2010, 11:28	18.8
Reach-5	0.3336	39.49	12Apr2010, 11:36	18.8
W78	0.1893	18.93	12Apr2010, 11:56	10
RR W78	0.1893	18.93	12Apr2010, 12:04	10
W75	0.1387	11.94	12Apr2010, 12:00	6.4
CP9MD	1.7339	108.88	12Apr2010, 11:52	81.8
RCP31	1.7339	108.86	12Apr2010, 11:52	81.8
W58	0.1195	10.55	12Apr2010, 11:36	5.2
RWCR13	0.1195	10.43	12Apr2010, 12:08	5.2
W59	0.0517	3.88	12Apr2010, 11:28	1.9
ADDW59	0.1712	13.5	12Apr2010, 12:00	7.1
RR W59	0.1712	13.4	12Apr2010, 12:16	7.1
W60	0.0737	9.55	12Apr2010, 11:24	4
W61	0.0731	7.93	12Apr2010, 11:40	3.8
CP31	0.318	27.4	12Apr2010, 11:56	14.9
CP31MD	2.0519	136.21	12Apr2010, 11:52	96.7
RP11MD	2.0519	136.13	12Apr2010, 11:56	96.7
W63	0.0265	9.51	12Apr2010, 10:44	2.4
W79	0.0595	14.51	12Apr2010, 11:00	4.7
CP11MD	2.1379	146.03	12Apr2010, 11:52	103.8
RP1WMD	2.1379	146.02	12Apr2010, 11:56	103.8
DIV2	2.1379	4.6	12Apr2010, 11:56	0.5
W43	0.761	14.05	12Apr2010, 14:24	13.9
OUT2	0.761	14.05	12Apr2010, 14:24	13.9
W46	0.1813	3.97	12Apr2010, 12:44	3.3
OUT4	0.1813	3.97	12Apr2010, 12:44	3.3
W45	0.0585	3.54	12Apr2010, 11:20	1.6
OUT1	0.0585	3.54	12Apr2010, 11:20	1.6
W44	0.0509	3.14	12Apr2010, 11:16	1.4
OUT3	0.0509	3.14	12Apr2010, 11:16	1.4

Project: tracy_westside

Simulation Run: 10-yr 24-hr Reservoir: DET V

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 11:58:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	7.815 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:00
Peak Outflow :	2.000 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 00:00
Total Inflow :	2.57484 (AC-FT)	Peak Storage :	0.57479 (AC-FT)
Total Outflow :	2.62810 (AC-FT)	Peak Elevation :	53.17 (FT)

Project: tracy_westside

Simulation Run: 10-yr 24-hr Reservoir: DET LOWELL

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	10-yr
Compute Time:	08Aug2011, 14:57:38	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	42.6 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:32
Peak Outflow :	22.7 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 16:08
Total Inflow :	31.9 (AC-FT)	Peak Storage :	8.6 (AC-FT)
Total Outflow :	31.8 (AC-FT)	Peak Elevation :	28.9 (FT)

Project: tracy_westside

Simulation Run: 10-yr 24-hr Reservoir: DET2A

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 11:58:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	84.386 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:24
Peak Outflow :	2.855 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 04:00
Total Inflow :	48.40536 (AC-FT)	Peak Storage :	45.21435 (AC-FT)
Total Outflow :	10.39237 (AC-FT)	Peak Elevation :	97.64 (FT)

Project: tracy_westside

Simulation Run: 10-yr 24-hr Reservoir: DET2B

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 11:58:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	37.552 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:20
Peak Outflow :	5.000 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 09:52
Total Inflow :	23.44309 (AC-FT)	Peak Storage :	14.98318 (AC-FT)
Total Outflow :	22.84554 (AC-FT)	Peak Elevation :	85.07 (FT)

Project: tracy_westside

Simulation Run: 10-yr 24-hr Reservoir: DET SL

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 11:58:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	26.931 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:24
Peak Outflow :	1.000 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 12:48
Total Inflow :	11.59687 (AC-FT)	Peak Storage :	10.20744 (AC-FT)
Total Outflow :	4.47065 (AC-FT)	Peak Elevation :	111.64 (FT)

Project: tracy_westside

Simulation Run: 10-yr 24-hr Reservoir: DET 3A

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	10-yr
Compute Time:	02Dec2010, 17:05:14	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	34.357 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 12:24
Peak Outflow :	2.049 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 04:04
Total Inflow :	26.48 (AC-FT)	Peak Storage :	21.04 (AC-FT)
Total Outflow :	8.07 (AC-FT)	Peak Elevation :	99.05 (FT)

Project: tracy_westside

Simulation Run: 10-yr 24-hr Reservoir: DET 3B

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 11:58:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	26.651 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:44
Peak Outflow :	0.465 (CFS)	Date/Time of Peak Outflow :	14Apr2010, 15:56
Total Inflow :	17.57457 (AC-FT)	Peak Storage :	15.73698 (AC-FT)
Total Outflow :	1.83759 (AC-FT)	Peak Elevation :	38.46 (FT)

Project: tracy_westside

Simulation Run: 10-yr 24-hr Reservoir: DET5

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	10-yr
Compute Time:	02Dec2010, 17:05:14	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	185.214 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 12:44
Peak Outflow :	125.562 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 15:08
Total Inflow :	173.96 (AC-FT)	Peak Storage :	19.07 (AC-FT)
Total Outflow :	173.55 (AC-FT)	Peak Elevation :	38.15 (FT)

Project: tracy_westside

Simulation Run: 10-yr 24-hr Reservoir: DET 11

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	10-yr
Compute Time:	13Dec2011, 17:00:16	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	372.60 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:28
Peak Outflow :	10.00 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 04:28
Total Inflow :	326.70 (AC-FT)	Peak Storage :	276.55 (AC-FT)
Total Outflow :	50.29 (AC-FT)	Peak Elevation :	7.12 (FT)

Project: tracy_westside

Simulation Run: 10-yr 24-hr Reservoir: DET CP

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	10-yr
Compute Time:	01Nov2010, 11:58:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	24.520 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:36
Peak Outflow :	0.000 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 00:00
Total Inflow :	12.99011 (AC-FT)	Peak Storage :	12.99007 (AC-FT)
Total Outflow :	0.00000 (AC-FT)	Peak Elevation :	44.89 (FT)

Westside Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)

W02	0.4975	42.87	12Apr2010, 13:28	32.6
RCP4	0.4975	42.87	12Apr2010, 13:32	32.6
W10	0.2163	44.45	12Apr2010, 11:20	17.7
RCP2	0.2163	44.37	12Apr2010, 11:28	17.7
W03	0.0243	6.6	12Apr2010, 11:00	2.3
RCP1	0.0243	6.59	12Apr2010, 11:08	2.3
COMB 1	0.2406	50.22	12Apr2010, 11:24	20
W09	0.209	62.41	12Apr2010, 11:20	24.5
COMB2	0.4496	112.5	12Apr2010, 11:20	44.5
W04	0.034	7.7	12Apr2010, 11:16	3
RCP3	0.034	7.7	12Apr2010, 11:24	3
COMB 3	0.4836	120.16	12Apr2010, 11:20	47.5
COMB 4	0.9811	137.05	12Apr2010, 11:24	80.1
DET2A	0.9811	5.29	13Apr2010, 03:52	19.4
CP1	0.9811	5.29	13Apr2010, 04:12	19.3
W01	0.2162	26.51	12Apr2010, 11:56	14
RCP5	0.2162	26.5	12Apr2010, 12:04	14
W08	0.1288	17.85	12Apr2010, 12:04	9.7
COMB 5	0.345	44.35	12Apr2010, 12:04	23.6
W05	0.0633	7.73	12Apr2010, 11:56	4.1
CP7	0.4083	52	12Apr2010, 12:04	27.7
W11	0.0812	23.98	12Apr2010, 10:56	7.6
W11A	0.0319	18.33	12Apr2010, 10:36	4.2
RR03	0.0319	18.23	12Apr2010, 10:40	4.2
Junction-1	0.1131	39.12	12Apr2010, 10:48	11.9
DET2B	0.5214	5	12Apr2010, 07:56	24.5
CP8	1.5025	10.29	13Apr2010, 04:12	43.8
RC1 1C	1.5025	10.29	13Apr2010, 04:40	43.3
W12	0.0362	6.22	12Apr2010, 11:24	2.6
CP5	1.5387	11.22	12Apr2010, 11:24	45.9
RCP6	1.5387	11.09	12Apr2010, 11:40	45.6
W21	0.2483	17.32	12Apr2010, 13:12	13.4
RPCP7	0.2483	17.32	12Apr2010, 13:20	13.4
W15	0.1238	9.72	12Apr2010, 12:36	6.7
W14	0.1224	8.84	12Apr2010, 12:20	5.8
Junction-2	0.4945	34.61	12Apr2010, 12:48	25.8
RCP8	0.4945	34.58	12Apr2010, 13:08	25.8
W16	0.1354	11.01	12Apr2010, 12:20	7.1
W17	0.1251	7.77	12Apr2010, 12:48	5.8
Junction-3	0.755	52.39	12Apr2010, 12:56	38.7
Reach-1	0.755	52.38	12Apr2010, 13:00	38.7
W18	0.0655	6.38	12Apr2010, 12:00	3.7
CP6	2.3592	66.48	12Apr2010, 12:52	88
RCP9	2.3592	66.43	12Apr2010, 13:04	87.7
W19	0.1877	10.93	12Apr2010, 13:28	9

Westside Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
W20	0.1292	15.39	12Apr2010, 12:08	8.7
CP9	2.6761	89.39	12Apr2010, 12:56	105.4
W23	0.2573	15.17	12Apr2010, 12:48	11.3
W22	0.2517	13.6	12Apr2010, 12:48	10.3
RPCP11	0.2517	13.6	12Apr2010, 12:56	10.3
CP11	0.509	28.74	12Apr2010, 12:52	21.7
RPCP9	0.509	28.73	12Apr2010, 13:00	21.7
Junction-5	3.1851	118.12	12Apr2010, 12:56	127.1
W25	0.0967	11.75	12Apr2010, 11:56	6.2
RCP12	0.0967	11.74	12Apr2010, 12:00	6.2
W26	0.0602	7.83	12Apr2010, 11:44	3.9
CP12	0.1569	19.43	12Apr2010, 11:52	10.1
Reach-2	0.1569	19.42	12Apr2010, 11:56	10.1
Junction-6	3.342	132.81	12Apr2010, 12:44	137.2
RCP13	3.342	132.76	12Apr2010, 12:52	137.1
W24	0.1291	14.06	12Apr2010, 11:56	7.9
CP13	3.4711	143.96	12Apr2010, 12:44	145
RCP17	3.4711	143.88	12Apr2010, 12:48	144.9
W27	0.1234	15.63	12Apr2010, 12:04	8.6
RCP14	0.1234	15.63	12Apr2010, 12:12	8.6
W28	0.0669	9.06	12Apr2010, 11:40	4.3
CP14	0.1903	23.74	12Apr2010, 11:56	13
RPCP15	0.1903	23.74	12Apr2010, 12:00	13
W29	0.0429	6.84	12Apr2010, 11:16	2.8
CP15	0.2332	28.64	12Apr2010, 11:52	15.7
RPCP16	0.2332	28.62	12Apr2010, 11:56	15.7
W29A	0.0166	5.36	12Apr2010, 10:52	1.6
C W29A	0.2498	30.7	12Apr2010, 11:48	17.3
RRW29A	0.2498	30.7	12Apr2010, 11:56	17.3
W30	0.0787	9.04	12Apr2010, 11:56	4.9
CP16	0.3285	39.74	12Apr2010, 11:56	22.2
RR W30	0.3285	39.71	12Apr2010, 12:00	22.2
W31	0.0342	5.08	12Apr2010, 11:08	2
CP17	0.3627	42.82	12Apr2010, 11:52	24.2
W34	0.1558	12.52	12Apr2010, 12:04	7.7
W33	0.0529	7.18	12Apr2010, 11:28	3.3
W47	0.042	7.73	12Apr2010, 11:00	2.7
RR W47	0.042	7.7	12Apr2010, 11:08	2.7
ADDW33	0.0949	14.41	12Apr2010, 11:16	6
RR W33	0.0949	14.39	12Apr2010, 11:40	6
W32	0.0916	15.02	12Apr2010, 11:04	5.7
RP17A	0.0916	15.01	12Apr2010, 11:12	5.7
Junction-7	4.1761	208.42	12Apr2010, 12:24	188.4
RCP18A	4.1761	208.24	12Apr2010, 12:32	188.2
W36	0.0459	3.89	12Apr2010, 11:40	2.1
CP18A	4.222	211.2	12Apr2010, 12:32	190.4

Westside Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
RCP18	4.222	211.07	12Apr2010, 12:36	190.3
W35	0.0792	10.1	12Apr2010, 11:52	5.4
CP18	4.3012	219.45	12Apr2010, 12:32	195.7
RCP19	4.3012	219.17	12Apr2010, 12:44	195.4
W38	0.0984	9.35	12Apr2010, 12:16	5.7
W37	0.0778	7.04	12Apr2010, 11:32	3.6
RPCP19	0.0778	7.04	12Apr2010, 11:36	3.6
CP19	0.1762	15.57	12Apr2010, 11:56	9.3
RCP20	0.1762	15.48	12Apr2010, 12:04	9.3
CP20	4.4774	232.89	12Apr2010, 12:44	204.7
Reach-6	4.4774	232.69	12Apr2010, 12:48	204.6
W41	0.502	37.09	12Apr2010, 12:20	24.4
W40	0.1875	42.67	12Apr2010, 11:28	18.1
DET SL	0.1875	1	12Apr2010, 11:32	4.6
RPCP21	0.1875	1	14Apr2010, 15:56	4.5
CP21	0.6895	38.09	12Apr2010, 12:20	28.9
RCP22	0.6895	38.06	12Apr2010, 12:36	28.9
W41A	0.243	11.51	12Apr2010, 12:20	8.3
W41B	0.045	20.57	12Apr2010, 10:40	5.2
CP22	0.9775	53.2	12Apr2010, 12:28	42.4
RRCP3A	0.9775	53.2	12Apr2010, 12:28	42.4
DET 3A	0.9775	3	12Apr2010, 21:40	12.5
RCP26	0.9775	3	12Apr2010, 22:04	12.4
W49	0.4703	33.31	12Apr2010, 14:00	28.3
CP26	1.4478	35.03	12Apr2010, 14:04	40.7
RCP27	1.4478	35.02	12Apr2010, 14:08	40.7
W51	0.0546	4.92	12Apr2010, 11:40	2.6
CPW51	1.5024	37.14	12Apr2010, 14:00	43.3
RR W51	1.5024	37.14	12Apr2010, 14:04	43.3
W52	0.1002	16.53	12Apr2010, 11:32	7.2
J1	1.6026	43.14	12Apr2010, 13:48	50.5
RRW52	1.6026	43.14	12Apr2010, 13:52	50.5
W50	0.1974	28.09	12Apr2010, 12:00	16.4
W80	0.0927	17.66	12Apr2010, 11:24	8.8
RR 06	0.0927	17.61	12Apr2010, 11:32	8.8
W81	0.0477	7.19	12Apr2010, 11:20	3
RR 08	0.0477	7.18	12Apr2010, 11:24	3
CP 3B	0.3378	50.62	12Apr2010, 11:40	28.2
DET 3B	0.3378	0.75	13Apr2010, 06:12	3
RCP28	0.3378	0.75	13Apr2010, 06:24	3
W54	0.0535	8.62	12Apr2010, 11:32	3.8
CP28	1.9939	46.88	12Apr2010, 13:40	57.3
RR W54	1.9939	46.87	12Apr2010, 13:44	57.3
W39	0.2435	26.65	12Apr2010, 12:20	16.4
RPCP20	0.2435	26.64	12Apr2010, 12:24	16.4
W53	0.1574	18.59	12Apr2010, 12:00	10

Westside Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DET5	6.8722	196.49	12Apr2010, 15:44	287.5
RWCR11	6.8722	196.47	12Apr2010, 15:48	287.4
W55	0.0833	10.78	12Apr2010, 11:48	5.4
W56	0.04	17.9	12Apr2010, 10:52	5.3
RPCP29	0.04	17.88	12Apr2010, 10:56	5.3
CP29	6.9955	202.1	12Apr2010, 15:44	298.1
RCP29	6.9955	202.1	12Apr2010, 15:44	298
W57	0.1038	15.29	12Apr2010, 11:52	7.6
W54A	0.085	11.07	12Apr2010, 11:44	5.5
CPBYRN	0.085	11.06	12Apr2010, 11:52	5.5
Junction-10	7.1843	210.59	12Apr2010, 15:28	311.2
RR 01	7.1843	210.59	12Apr2010, 15:32	311
W84	0.2047	29.43	12Apr2010, 11:40	13.8
W82	0.0918	12.52	12Apr2010, 11:44	6.1
RR 02	0.0918	12.51	12Apr2010, 11:56	6.1
W83	0.0388	10.69	12Apr2010, 11:00	3.4
Reach-3	0.0388	10.68	12Apr2010, 11:04	3.4
COBFD	0.3353	48.25	12Apr2010, 11:40	23.3
DET CP	0.3353	8.54	12Apr2010, 14:44	8.4
RR 04	0.3353	8.54	12Apr2010, 14:56	8.4
W85	0.1066	16.67	12Apr2010, 11:52	8.1
COMB	0.4419	16.67	12Apr2010, 11:52	16.5
CPBERG	7.6262	224.63	12Apr2010, 15:20	327.5
CP15MD	7.6262	224.62	12Apr2010, 15:28	327.2
W86	0.2557	36.89	12Apr2010, 12:36	25.1
CW86	7.8819	244.54	12Apr2010, 14:56	352.4
RP16MD	7.8819	244.53	12Apr2010, 15:00	352.3
W94	0.1343	68.23	12Apr2010, 10:44	18.1
CP1WMD	8.0162	252.52	12Apr2010, 15:00	370.4
W87	0.0716	26.25	12Apr2010, 10:52	7.5
ADD10	8.0878	256.27	12Apr2010, 15:00	377.9
RRW87	8.0878	256.19	12Apr2010, 15:00	377.8
W88	0.1572	41.63	12Apr2010, 11:20	16.4
ADD11	8.245	265.44	12Apr2010, 15:00	394.2
RRW88	8.245	265.41	12Apr2010, 15:04	394.1
W89	0.2343	63.45	12Apr2010, 11:20	24.6
ADDALL	8.4793	321.16	12Apr2010, 11:32	418.7
W93	0.6116	187.93	12Apr2010, 11:20	74.4
W90	0.25	56.45	12Apr2010, 11:36	25.2
RRW90	0.25	56.42	12Apr2010, 11:44	25.2
Junction-8	0.25	56.42	12Apr2010, 11:44	25.2
Reach-7	0.25	56.39	12Apr2010, 11:52	25.2
Junction-4	0.8616	237.36	12Apr2010, 11:28	99.6
W92	0.1656	20.39	12Apr2010, 11:48	9.8
W91	0.0835	23.78	12Apr2010, 11:12	8.8
ADD 12	0.2491	41.16	12Apr2010, 11:28	18.5

Westside Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
DET 11	9.59	10	12Apr2010, 03:44	50.6
W65	0.1453	18.66	12Apr2010, 11:56	10
W64	0.0507	6.74	12Apr2010, 11:20	3
W64A	0.0384	12.64	12Apr2010, 11:00	4
DET V	0.0384	2	12Apr2010, 00:00	4
W64B	0.016	5.76	12Apr2010, 10:48	1.6
ADDW64	0.1051	13.07	12Apr2010, 11:00	8.7
RCP1MD	0.1051	13.06	12Apr2010, 11:04	8.8
CP1MD	0.2504	28.9	12Apr2010, 11:40	18.7
RCP2MD	0.2504	28.88	12Apr2010, 11:40	18.8
W66	0.1391	12.43	12Apr2010, 12:56	8.7
CP2MD	0.3895	38.13	12Apr2010, 12:00	27.4
DET C	0.3895	12.47	12Apr2010, 12:00	17.3
RCP3MD	0.3895	12.47	12Apr2010, 12:04	17.3
W67A	0.0235	7.39	12Apr2010, 10:52	2.2
RW67A	0.0235	7.36	12Apr2010, 10:56	2.2
W67	0.0139	8.08	12Apr2010, 10:36	1.8
CP3MD	0.4269	16.93	12Apr2010, 11:56	21.4
Reach-4	0.4269	16.92	12Apr2010, 12:04	21.4
W68	0.1715	33.35	12Apr2010, 11:36	14.7
RCP4MD	0.1715	33.34	12Apr2010, 11:40	14.7
W69	0.0886	17.63	12Apr2010, 11:28	7.3
W70	0.0391	8.05	12Apr2010, 11:36	3.6
CP4MD	0.7261	74.47	12Apr2010, 11:36	46.9
RCP5MD	0.7261	74.41	12Apr2010, 11:40	46.9
W71	0.0563	9.99	12Apr2010, 11:44	4.7
DET LOWELL	0.7824	33.4	12Apr2010, 15:16	51.5
CP5MD	0.7824	33.4	12Apr2010, 15:16	51.5
RCP6MD	0.7824	33.4	12Apr2010, 15:20	51.5
W72	0.1073	17.86	12Apr2010, 11:36	7.9
CP6MD	0.8897	41.41	12Apr2010, 12:00	59.4
RCP7D	0.8897	41.37	12Apr2010, 12:04	59.4
W73	0.049	6.84	12Apr2010, 11:36	3.2
CP7MD	0.9387	47.54	12Apr2010, 12:00	62.6
RCP8MD	0.9387	47.46	12Apr2010, 12:04	62.6
W74	0.1336	29.29	12Apr2010, 11:44	13.5
CP8MD	1.0723	75.62	12Apr2010, 11:56	76.1
RCP9MD	1.0723	75.55	12Apr2010, 11:56	76.1
W68B	0.0916	16.22	12Apr2010, 11:52	8
W68A	0.0491	11.28	12Apr2010, 11:36	5
CW68A	0.1407	27.26	12Apr2010, 11:48	13
RRW68A	0.1407	27.24	12Apr2010, 11:48	13
W77	0.1044	29.81	12Apr2010, 11:12	10.9
CW77	0.2451	53.1	12Apr2010, 11:24	23.9
RRW77	0.2451	53.05	12Apr2010, 11:28	23.9
W76	0.0885	14.91	12Apr2010, 11:40	6.8

Westside Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
CP10MD	0.3336	67.53	12Apr2010, 11:28	30.7
Reach-5	0.3336	67.5	12Apr2010, 11:32	30.7
W78	0.1893	32.85	12Apr2010, 11:56	16.5
RR W78	0.1893	32.83	12Apr2010, 12:04	16.5
W75	0.1387	22.11	12Apr2010, 11:56	11.1
CP9MD	1.7339	194.03	12Apr2010, 11:52	134.4
RCP31	1.7339	194.03	12Apr2010, 11:52	134.4
W58	0.1195	19.34	12Apr2010, 11:40	9
RWCR13	0.1195	19.1	12Apr2010, 12:04	9
W59	0.0517	7.61	12Apr2010, 11:28	3.3
ADDW59	0.1712	25.39	12Apr2010, 11:56	12.3
RR W59	0.1712	25.17	12Apr2010, 12:12	12.3
W60	0.0737	16.47	12Apr2010, 11:24	6.6
W61	0.0731	14.07	12Apr2010, 11:40	6.3
CP31	0.318	50.85	12Apr2010, 11:52	25.2
CP31MD	2.0519	244.88	12Apr2010, 11:52	159.7
RP11MD	2.0519	244.73	12Apr2010, 11:52	159.7
W63	0.0265	14.09	12Apr2010, 10:44	3.6
W79	0.0595	22.27	12Apr2010, 11:00	7.2
CP11MD	2.1379	259.99	12Apr2010, 11:48	170.4
RP1WMD	2.1379	259.88	12Apr2010, 11:56	170.4
DIV2	2.1379	114.88	12Apr2010, 11:56	15.8
W43	0.761	39.73	12Apr2010, 13:56	32.4
OUT2	0.761	39.73	12Apr2010, 13:56	32.4
W46	0.1813	12.12	12Apr2010, 12:28	7.7
OUT4	0.1813	12.12	12Apr2010, 12:28	7.7
W45	0.0585	8.97	12Apr2010, 11:16	3.3
OUT1	0.0585	8.97	12Apr2010, 11:16	3.3
W44	0.0509	7.97	12Apr2010, 11:12	2.9
OUT3	0.0509	7.97	12Apr2010, 11:12	2.9

Project: tracy_westside

Simulation Run: 100-yr 24-hr Reservoir: DET V

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	Met 1
Compute Time:	01Nov2010, 10:02:40	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	12.640 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:00
Peak Outflow :	2.000 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 00:00
Total Inflow :	4.03818 (AC-FT)	Peak Storage :	1.33163 (AC-FT)
Total Outflow :	4.04959 (AC-FT)	Peak Elevation :	53.96 (FT)

Project: tracy_westside

Simulation Run: 100-yr 24-hr Reservoir: DET LOWELL

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	Met 1
Compute Time:	08Aug2011, 15:37:59	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	84.4 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:40
Peak Outflow :	33.4 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 15:16
Total Inflow :	51.5 (AC-FT)	Peak Storage :	14.2 (AC-FT)
Total Outflow :	51.5 (AC-FT)	Peak Elevation :	31.0 (FT)

Project: tracy_westside

Simulation Run: 100-yr 24-hr Reservoir: DET2A

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	Met 1
Compute Time:	01Nov2010, 10:02:40	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	137.046 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:24
Peak Outflow :	5.285 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 03:52
Total Inflow :	80.10784 (AC-FT)	Peak Storage :	74.02771 (AC-FT)
Total Outflow :	19.44946 (AC-FT)	Peak Elevation :	103.71 (FT)

Project: tracy_westside

Simulation Run: 100-yr 24-hr Reservoir: DET2B

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	Met 1
Compute Time:	01Nov2010, 10:02:40	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	66.900 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:44
Peak Outflow :	5.000 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 07:56
Total Inflow :	39.56902 (AC-FT)	Peak Storage :	30.33367 (AC-FT)
Total Outflow :	24.45329 (AC-FT)	Peak Elevation :	93.45 (FT)

Project: tracy_westside

Simulation Run: 100-yr 24-hr Reservoir: DET SL

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	Met 1
Compute Time:	06Oct2010, 15:43:42	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	42.67 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:28
Peak Outflow :	1.00 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 11:32
Total Inflow :	18.14 (AC-FT)	Peak Storage :	16.64 (AC-FT)
Total Outflow :	4.56 (AC-FT)	Peak Elevation :	112.63 (FT)

Project: tracy_westside

Simulation Run: 100-yr 24-hr Reservoir: DET 3A

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	Met 1
Compute Time:	02Dec2010, 13:57:58	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	53.197 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 12:28
Peak Outflow :	3.000 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 21:40
Total Inflow :	42.41 (AC-FT)	Peak Storage :	35.58 (AC-FT)
Total Outflow :	12.53 (AC-FT)	Peak Elevation :	100.40 (FT)

Project: tracy_westside

Simulation Run: 100-yr 24-hr Reservoir: DET 3B

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	Met 1
Compute Time:	01Nov2010, 10:02:40	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	50.615 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:40
Peak Outflow :	0.746 (CFS)	Date/Time of Peak Outflow :	13Apr2010, 06:12
Total Inflow :	28.21 (AC-FT)	Peak Storage :	25.24 (AC-FT)
Total Outflow :	3.04 (AC-FT)	Peak Elevation :	38.75 (FT)

Project: tracy_westside

Simulation Run: 100-yr 24-hr Reservoir: DET5

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	Met 1
Compute Time:	02Dec2010, 13:57:58	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	318.964 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 12:44
Peak Outflow :	196.490 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 15:44
Total Inflow :	288.24 (AC-FT)	Peak Storage :	44.68 (AC-FT)
Total Outflow :	287.53 (AC-FT)	Peak Elevation :	39.76 (FT)

Project: tracy_westside

Simulation Run: 100-yr 24-hr Reservoir: DET 11

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	Met 1
Compute Time:	13Dec2011, 16:48:42	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	598.98 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:28
Peak Outflow :	10.00 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 03:44
Total Inflow :	536.82 (AC-FT)	Peak Storage :	486.18 (AC-FT)
Total Outflow :	50.65 (AC-FT)	Peak Elevation :	10.47 (FT)

Project: tracy_westside

Simulation Run: 100-yr 24-hr Reservoir: DET CP

Start of Run:	12Apr2010, 00:00	Basin Model:	Basin 1
End of Run:	14Apr2010, 15:56	Meteorologic Model:	Met 1
Compute Time:	01Nov2010, 10:02:40	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	48.252 (CFS)	Date/Time of Peak Inflow :	12Apr2010, 11:40
Peak Outflow :	8.538 (CFS)	Date/Time of Peak Outflow :	12Apr2010, 14:44
Total Inflow :	23.28460 (AC-FT)	Peak Storage :	13.46454 (AC-FT)
Total Outflow :	8.37882 (AC-FT)	Peak Elevation :	45.00 (FT)

Lammers Watershed - 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)

OFS2	4.516	115.59	01Jan2008, 11:44	79.24
DET-OFF2	4.516	2.34	02Jan2008, 02:56	9.4
L15a	0.26	76.93	01Jan2008, 10:56	23.71
DET L15a	0.26	8	01Jan2008, 08:36	23.71
L15b	0.138	44.42	01Jan2008, 10:48	12.6
L15d	0.064	22.2	01Jan2008, 10:44	5.84
DET L15b	4.978	62.15	01Jan2008, 11:04	51.54
L15c	0.025	9.55	01Jan2008, 10:40	2.28
CPL15	5.003	67.67	01Jan2008, 11:00	53.82
RR14	5.003	67.63	01Jan2008, 11:20	53.63
L16B	0.139	25.96	01Jan2008, 11:08	9.29
DET LW10B	0.139	0.67	01Jan2008, 11:44	3.18
L16A	0.066	15.41	01Jan2008, 10:48	4.43
DET LW10A	0.066	0.33	01Jan2008, 11:12	1.58
COMB10	5.208	68.53	01Jan2008, 11:20	58.39
RR 15	5.208	68.46	01Jan2008, 11:44	58.09
L17A	0.431	66.97	01Jan2008, 11:28	28.9
DET LW9A	5.639	9.48	01Jan2008, 12:40	44.48
L17B	0.189	31.93	01Jan2008, 11:20	12.67
DET LW9B	0.189	1.52	01Jan2008, 12:04	7.18
RR09	0.189	1.52	01Jan2008, 12:12	7.17
COMB9	5.828	11	01Jan2008, 12:40	51.64
RR 16	5.828	11	01Jan2008, 12:52	51.43
L18	0.351	56.15	01Jan2008, 11:20	22.89
DET LW8	0.351	1.5	01Jan2008, 11:52	7.11
RR 17	0.351	1.5	01Jan2008, 12:12	7.07
L19	0.098	16.83	01Jan2008, 11:16	6.57
DET LW7	0.098	0.5	01Jan2008, 11:52	2.37
COMB12	6.277	13	01Jan2008, 12:52	60.87
RR 18	6.277	13	01Jan2008, 13:08	60.61
L14	0.976	126.5	01Jan2008, 11:56	64.71
L13	0.0576	13.44	01Jan2008, 10:48	3.86
RR 13	0.0576	13.32	01Jan2008, 11:24	3.85
DET LW6	1.0336	4	01Jan2008, 13:04	18.64
L10	0.3523	9.47	01Jan2008, 12:52	7.6
L12	0.1614	26.97	01Jan2008, 11:20	10.77
L11	0.1307	26.9	01Jan2008, 10:56	8.5
L09	0.00002	0	01Jan2008, 12:28	0
RR 9	0.00002	0	01Jan2008, 16:04	0
DET LW12	0.13072	0.5	01Jan2008, 11:28	2.38
RR 10	0.13072	0.5	01Jan2008, 12:24	2.34
COMB7	0.29212	27.23	01Jan2008, 11:20	13.11
RR 11	0.29212	27.16	01Jan2008, 11:32	13.07
DET LW11	0.64442	2.5	01Jan2008, 14:00	11.52
RR 12	0.64442	2.5	01Jan2008, 14:20	11.44

Lammers Watershed - 10-yr Peak Flows

COMB14	7.95502	19.5	01Jan2008, 14:20	90.7
RR 19	7.95502	19.5	01Jan2008, 14:40	90.26
COMB15	7.95502	19.5	01Jan2008, 14:40	90.26
RR 20	7.95502	19.5	01Jan2008, 14:44	90.21
L21	0.1085	10.01	01Jan2008, 11:32	4.76
DET LW5	0.1085	0.5	01Jan2008, 13:12	2.33
COMB16	8.06352	20	01Jan2008, 14:44	92.54
RR 21	8.06352	20	01Jan2008, 14:52	92.41
L24	0.851	71.4	01Jan2008, 13:00	49.6
L20	0.146	26.1	01Jan2008, 11:08	9.51
Reach-1	0.146	26.1	01Jan2008, 11:12	9.51
DET LW3	0.997	4	01Jan2008, 13:52	18.47
Reach-2	0.997	4	01Jan2008, 13:56	18.44
COMB16A	9.06052	24	01Jan2008, 14:52	110.86
RR21A	9.06052	24	01Jan2008, 15:00	110.63
L21A	0.1345	14.44	01Jan2008, 11:36	6.78
DET LW4	0.1345	0.5	01Jan2008, 14:16	2.31
Reach-4	0.1345	0.5	01Jan2008, 14:20	2.31
COMB16B	9.19502	24.5	01Jan2008, 15:00	112.94
RR21B	9.19502	24.5	01Jan2008, 15:12	112.59
L22	0.3054	36.82	01Jan2008, 11:52	18.87
DET LW2	0.3054	2	01Jan2008, 12:40	9.38
COMB17	9.50042	26.5	01Jan2008, 15:12	121.97
RR 22	9.50042	26.5	01Jan2008, 15:32	121.23
L23	0.9656	96.48	01Jan2008, 12:32	59.49
DET LW1	0.9656	3	01Jan2008, 13:40	13.86
COMB18	10.46602	29.5	01Jan2008, 15:32	135.08
OFS3	5.6926	121.79	01Jan2008, 12:44	101.47
OFS4	0.2371	2.77	01Jan2008, 10:44	1.55
OFS5	0.0894	7.7	01Jan2008, 10:44	2.45
COMB1	6.0191	124.99	01Jan2008, 12:44	105.48
DIV1	6.0191	0	01Jan2008, 00:00	0
L05	0.2332	35.7	01Jan2008, 11:32	15.58
RR 5	0.2332	35.68	01Jan2008, 11:52	15.56
OUT1	0.2332	0	01Jan2008, 00:00	0
L04	0.00002	0	01Jan2008, 14:16	0
L03	0.00002	0	01Jan2008, 12:08	0
RR 3	0.00002	0	01Jan2008, 18:48	0
COMB3	0.00004	0	01Jan2008, 18:44	0
RR 4	0.00004	0	01Jan2008, 22:48	0
L06	0.00002	0	01Jan2008, 12:48	0
COMB4	0.00006	0	01Jan2008, 22:48	0
OUT2	0.00006	0	01Jan2008, 00:00	0
L02	0.00002	0	01Jan2008, 12:12	0
L01	0.00002	0	01Jan2008, 12:24	0
RR 1	0.00002	0	01Jan2008, 16:16	0
COMB2	0.00004	0	01Jan2008, 16:12	0

RR 2	0.00004	0	01Jan2008, 20:00	0
OUT5	0.00004	0	01Jan2008, 00:00	0
L07	0.00002	0	01Jan2008, 12:28	0
OUT3	0.00002	0	01Jan2008, 00:00	0
L08	0.00002	0	01Jan2008, 13:32	0
OUT4	0.00002	0	01Jan2008, 00:00	0

Project: lammers_watershed

Simulation Run: 10-yr 24-hr Reservoir: DET LW1

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	26Apr2010, 15:38:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	96.48 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 12:32
Peak Outflow :	3.00 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 13:40
Total Inflow :	59.5 (AC-FT)	Peak Storage :	54.9 (AC-FT)
Total Outflow :	13.9 (AC-FT)	Peak Elevation :	27.0 (FT)

Project: lammers_watershed

Simulation Run: 10-yr 24-hr Reservoir: DET LW2

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	26Apr2010, 15:38:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	36.82 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:52
Peak Outflow :	2.00 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 12:40
Total Inflow :	18.9 (AC-FT)	Peak Storage :	16.0 (AC-FT)
Total Outflow :	9.4 (AC-FT)	Peak Elevation :	31.9 (FT)

Project: lammers_watershed

Simulation Run: 10-yr 24-hr Reservoir: DET LW3

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	09Nov2010, 14:04:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	75.889 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 13:04
Peak Outflow :	4.000 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 14:08
Total Inflow :	58.77 (AC-FT)	Peak Storage :	52.43 (AC-FT)
Total Outflow :	18.41 (AC-FT)	Peak Elevation :	76.96 (FT)

Project: lammers_watershed

Simulation Run: 10-yr 24-hr Reservoir: DET LW4

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	09Nov2010, 14:04:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	14.437 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:36
Peak Outflow :	0.500 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 14:16
Total Inflow :	6.78 (AC-FT)	Peak Storage :	6.11 (AC-FT)
Total Outflow :	2.31 (AC-FT)	Peak Elevation :	51.53 (FT)

Project: lammers_watershed

Simulation Run: 10-yr 24-hr Reservoir: DET LW5

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	09Nov2010, 14:04:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	10.008 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:32
Peak Outflow :	0.500 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 13:12
Total Inflow :	4.76 (AC-FT)	Peak Storage :	4.08 (AC-FT)
Total Outflow :	2.33 (AC-FT)	Peak Elevation :	66.71 (FT)

Project: lammers_watershed
Simulation Run: 10-yr 24-hr Reservoir: DET LW6

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	14Mar2012, 15:31:23	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	135.98 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:48
Peak Outflow :	4.00 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:32
Total Inflow :	68.56 (AC-FT)	Peak Storage :	62.20 (AC-FT)
Total Outflow :	19.16 (AC-FT)	Peak Elevation :	103.33 (FT)

Project: lammers_watershed
Simulation Run: 10-yr 24-hr Reservoir: DET LW7

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	14Mar2012, 15:31:23	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	16.83 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:16
Peak Outflow :	0.50 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:52
Total Inflow :	6.57 (AC-FT)	Peak Storage :	5.86 (AC-FT)
Total Outflow :	2.37 (AC-FT)	Peak Elevation :	107.02 (FT)

Project: lammers_watershed
Simulation Run: 10-yr 24-hr Reservoir: DET LW8

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	14Mar2012, 15:31:23	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	56.15 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:20
Peak Outflow :	1.50 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:52
Total Inflow :	22.89 (AC-FT)	Peak Storage :	20.73 (AC-FT)
Total Outflow :	7.11 (AC-FT)	Peak Elevation :	107.10 (FT)

Project: lammers_watershed
Simulation Run: 10-yr 24-hr Reservoir: DET LW9A

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	14Mar2012, 15:31:23	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	133.86 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:40
Peak Outflow :	10.00 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 10:56
Total Inflow :	86.99 (AC-FT)	Peak Storage :	52.24 (AC-FT)
Total Outflow :	48.72 (AC-FT)	Peak Elevation :	129.04 (FT)

Project: lammers_watershed
Simulation Run: 10-yr 24-hr Reservoir: DET LW9B

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	14Mar2012, 15:31:23	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	31.93 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:20
Peak Outflow :	1.00 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 12:00
Total Inflow :	12.67 (AC-FT)	Peak Storage :	11.26 (AC-FT)
Total Outflow :	4.73 (AC-FT)	Peak Elevation :	126.97 (FT)

Project: lammers_watershed

Simulation Run: 10-yr 24-hr Reservoir: DET LW10A

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	14Mar2012, 15:31:23	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	15.41 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 10:48
Peak Outflow :	0.33 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:12
Total Inflow :	4.43 (AC-FT)	Peak Storage :	3.97 (AC-FT)
Total Outflow :	1.58 (AC-FT)	Peak Elevation :	187.05 (FT)

Project: lammers_watershed

Simulation Run: 10-yr 24-hr Reservoir: DET LW10B

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	14Mar2012, 15:31:23	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	25.96 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:08
Peak Outflow :	0.67 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:44
Total Inflow :	9.29 (AC-FT)	Peak Storage :	8.35 (AC-FT)
Total Outflow :	3.18 (AC-FT)	Peak Elevation :	186.99 (FT)

Project: lammers_watershed
Simulation Run: 10-yr 24-hr Reservoir: DET LW11

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	09Nov2010, 14:04:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	32.970 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:40
Peak Outflow :	2.500 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 14:00
Total Inflow :	20.67 (AC-FT)	Peak Storage :	15.56 (AC-FT)
Total Outflow :	11.52 (AC-FT)	Peak Elevation :	126.81 (FT)

Project: lammers_watershed

Simulation Run: 10-yr 24-hr Reservoir: DET LW12

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	09Nov2010, 14:04:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	26.902 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 10:56
Peak Outflow :	0.500 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:28
Total Inflow :	8.50 (AC-FT)	Peak Storage :	7.81 (AC-FT)
Total Outflow :	2.38 (AC-FT)	Peak Elevation :	186.99 (FT)

Project: lammers_watershed

Simulation Run: 10-yr 24-hr Reservoir: DET-OFF2

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	09Nov2010, 14:04:18	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	115.589 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:44
Peak Outflow :	2.337 (CFS)	Date/Time of Peak Outflow :	02Jan2008, 02:56
Total Inflow :	79.24 (AC-FT)	Peak Storage :	77.07 (AC-FT)
Total Outflow :	9.40 (AC-FT)	Peak Elevation :	229.20 (FT)

Lammers Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)

OFS2	4.516	386.76	01Jan2008, 11:32	186.96
DET-OFF2	4.516	4.94	02Jan2008, 02:52	20.35
L15a	0.26	113.93	01Jan2008, 10:56	34.93
DET L15a	0.26	8	01Jan2008, 05:52	34.93
L15b	0.138	65.79	01Jan2008, 10:48	18.56
L15d	0.064	32.88	01Jan2008, 10:44	8.61
DET L15b	4.978	86.58	01Jan2008, 11:08	82.44
L15c	0.025	14.14	01Jan2008, 10:40	3.36
CPL15	5.003	94.57	01Jan2008, 11:04	85.8
RR14	5.003	94.41	01Jan2008, 11:20	85.47
L16B	0.139	41.98	01Jan2008, 11:08	14.56
DET LW10B	0.139	0.67	01Jan2008, 11:00	3.23
L16A	0.066	24.95	01Jan2008, 10:48	6.94
DET LW10A	0.066	0.33	01Jan2008, 10:40	1.6
COMB10	5.208	95.41	01Jan2008, 11:20	90.31
RR 15	5.208	95.14	01Jan2008, 11:40	89.84
L17A	0.431	108.06	01Jan2008, 11:28	45.32
DET LW9A	5.639	10	01Jan2008, 09:40	49.76
L17B	0.189	51.56	01Jan2008, 11:20	19.88
DET LW9B	0.189	1	01Jan2008, 11:08	4.81
RR09	0.189	1	01Jan2008, 11:16	4.8
COMB9	5.828	11	01Jan2008, 11:16	54.56
RR 16	5.828	11	01Jan2008, 11:32	54.35
L18	0.351	90.57	01Jan2008, 11:20	35.91
DET LW8	0.351	1.5	01Jan2008, 11:08	7.24
RR 17	0.351	1.5	01Jan2008, 11:28	7.2
L19	0.098	27.18	01Jan2008, 11:16	10.31
DET LW7	0.098	0.5	01Jan2008, 11:04	2.41
COMB12	6.277	13	01Jan2008, 11:32	63.96
RR 18	6.277	13	01Jan2008, 11:48	63.7
L14	0.976	203.6	01Jan2008, 11:56	101.52
L13	0.0576	21.76	01Jan2008, 10:48	6.06
RR 13	0.0576	21.65	01Jan2008, 11:20	6.04
DET LW6	1.0336	4	01Jan2008, 10:48	19.55
L10	0.3523	25.3	01Jan2008, 12:40	16.6
L12	0.1614	43.56	01Jan2008, 11:20	16.89
L11	0.1307	43.54	01Jan2008, 10:56	13.34
L09	0.00002	0	01Jan2008, 12:16	0
RR 9	0.00002	0	01Jan2008, 15:08	0
DET LW12	0.13072	0.5	01Jan2008, 10:48	2.42
RR 10	0.13072	0.5	01Jan2008, 11:40	2.38
COMB7	0.29212	43.96	01Jan2008, 11:20	19.27
RR 11	0.29212	43.89	01Jan2008, 11:32	19.23
DET LW11	0.64442	2.5	01Jan2008, 12:00	11.75
RR 12	0.64442	2.5	01Jan2008, 12:20	11.67

Lammers Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
COMB14	7.95502	19.5	01Jan2008, 12:20	94.92
RR 19	7.95502	19.5	01Jan2008, 12:36	94.48
COMB15	7.95502	19.5	01Jan2008, 12:36	94.48
RR 20	7.95502	19.5	01Jan2008, 12:40	94.43
L21	0.1085	18.39	01Jan2008, 11:32	8.17
DET LW5	0.1085	0.5	01Jan2008, 11:36	2.37
COMB16	8.06352	20	01Jan2008, 12:40	96.81
RR 21	8.06352	20	01Jan2008, 12:48	96.68
L24	0.851	117.38	01Jan2008, 13:00	79.61
L20	0.146	42.17	01Jan2008, 11:08	14.92
Reach-1	0.146	42.12	01Jan2008, 11:12	14.92
DET LW3	0.997	4	01Jan2008, 12:20	18.84
Reach-2	0.997	4	01Jan2008, 12:28	18.82
COMB16A	9.06052	24	01Jan2008, 12:48	115.5
RR21A	9.06052	24	01Jan2008, 12:56	115.28
L21A	0.1345	25.44	01Jan2008, 11:36	11.32
DET LW4	0.1345	0.5	01Jan2008, 11:56	2.36
Reach-4	0.1345	0.5	01Jan2008, 12:04	2.35
COMB16B	9.19502	24.5	01Jan2008, 12:56	117.63
RR21B	9.19502	24.5	01Jan2008, 13:08	117.28
L22	0.3054	59.64	01Jan2008, 11:52	29.84
DET LW2	0.3054	2	01Jan2008, 11:40	9.55
COMB17	9.50042	26.5	01Jan2008, 13:08	126.83
RR 22	9.50042	26.5	01Jan2008, 13:28	126.09
L23	0.9656	158.26	01Jan2008, 12:32	94.86
DET LW1	0.9656	3	01Jan2008, 12:20	14.12
COMB18	10.46602	29.5	01Jan2008, 13:28	140.21
OFS3	5.6926	375.08	01Jan2008, 12:28	238.36
OFS4	0.2371	7.05	01Jan2008, 11:04	4.83
OFS5	0.0894	19.79	01Jan2008, 10:44	5.11
COMB1	6.0191	385.06	01Jan2008, 12:28	248.3
DIV1	6.0191	0	01Jan2008, 00:00	0
L05	0.2332	57.6	01Jan2008, 11:32	24.43
RR 5	0.2332	57.5	01Jan2008, 11:48	24.41
OUT1	0.2332	0	01Jan2008, 00:00	0
L04	0.00002	0	01Jan2008, 13:56	0
L03	0.00002	0	01Jan2008, 11:56	0
RR 3	0.00002	0	01Jan2008, 17:00	0
COMB3	0.00004	0	01Jan2008, 17:00	0
RR 4	0.00004	0	01Jan2008, 20:08	0
L06	0.00002	0	01Jan2008, 12:32	0
COMB4	0.00006	0	01Jan2008, 20:08	0
OUT2	0.00006	0	01Jan2008, 00:00	0
L02	0.00002	0	01Jan2008, 12:00	0
L01	0.00002	0	01Jan2008, 12:12	0
RR 1	0.00002	0	01Jan2008, 15:20	0

Lammers Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
COMB2	0.00004	0	01Jan2008, 15:16	0
RR 2	0.00004	0	01Jan2008, 18:24	0
OUT5	0.00004	0	01Jan2008, 00:00	0
L07	0.00002	0	01Jan2008, 12:16	0
OUT3	0.00002	0	01Jan2008, 00:00	0
L08	0.00002	0	01Jan2008, 13:12	0
OUT4	0.00002	0	01Jan2008, 00:00	0

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW1

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	29Oct2010, 09:37:46	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	158.259 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 12:32
Peak Outflow :	3.000 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 12:20
Total Inflow :	94.86 (AC-FT)	Peak Storage :	89.83 (AC-FT)
Total Outflow :	14.12 (AC-FT)	Peak Elevation :	28.23 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW2

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	29Oct2010, 09:37:46	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	59.640 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:52
Peak Outflow :	2.000 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:40
Total Inflow :	29.84 (AC-FT)	Peak Storage :	26.72 (AC-FT)
Total Outflow :	9.55 (AC-FT)	Peak Elevation :	33.18 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW3

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	29Oct2010, 09:37:46	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	124.147 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 13:04
Peak Outflow :	4.000 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 12:32
Total Inflow :	93.97 (AC-FT)	Peak Storage :	87.00 (AC-FT)
Total Outflow :	18.79 (AC-FT)	Peak Elevation :	78.21 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW4

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	29Oct2010, 09:37:46	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	25.440 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:36
Peak Outflow :	0.500 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:56
Total Inflow :	11.32 (AC-FT)	Peak Storage :	10.58 (AC-FT)
Total Outflow :	2.36 (AC-FT)	Peak Elevation :	52.58 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW5

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	29Oct2010, 09:37:46	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	18.386 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:32
Peak Outflow :	0.500 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:36
Total Inflow :	8.17 (AC-FT)	Peak Storage :	7.43 (AC-FT)
Total Outflow :	2.37 (AC-FT)	Peak Elevation :	68.00 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW6

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	21Feb2012, 13:23:16	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	217.65 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:52
Peak Outflow :	4.00 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 10:48
Total Inflow :	107.56 (AC-FT)	Peak Storage :	100.68 (AC-FT)
Total Outflow :	19.55 (AC-FT)	Peak Elevation :	105.27 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW7

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	17Feb2012, 15:45:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	27.18 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:16
Peak Outflow :	0.50 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:04
Total Inflow :	10.31 (AC-FT)	Peak Storage :	9.55 (AC-FT)
Total Outflow :	2.41 (AC-FT)	Peak Elevation :	108.18 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW8

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	17Feb2012, 15:45:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	90.57 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:20
Peak Outflow :	1.50 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:08
Total Inflow :	35.91 (AC-FT)	Peak Storage :	33.59 (AC-FT)
Total Outflow :	7.24 (AC-FT)	Peak Elevation :	108.34 (FT)

Project: lammers_watershed
Simulation Run: 100-yr 24-hr Reservoir: DET LW9A

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	17Feb2012, 15:45:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	201.53 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:36
Peak Outflow :	10.00 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 09:40
Total Inflow :	135.17 (AC-FT)	Peak Storage :	88.53 (AC-FT)
Total Outflow :	49.76 (AC-FT)	Peak Elevation :	131.61 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW9B

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	17Feb2012, 15:45:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	51.56 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:20
Peak Outflow :	1.00 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:08
Total Inflow :	19.88 (AC-FT)	Peak Storage :	18.36 (AC-FT)
Total Outflow :	4.81 (AC-FT)	Peak Elevation :	128.13 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW10A

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	17Feb2012, 15:45:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	24.95 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 10:48
Peak Outflow :	0.33 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 10:40
Total Inflow :	6.94 (AC-FT)	Peak Storage :	6.45 (AC-FT)
Total Outflow :	1.60 (AC-FT)	Peak Elevation :	188.20 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW10B

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	17Feb2012, 15:45:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	41.98 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:08
Peak Outflow :	0.67 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 11:00
Total Inflow :	14.56 (AC-FT)	Peak Storage :	13.56 (AC-FT)
Total Outflow :	3.23 (AC-FT)	Peak Elevation :	188.15 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET LW11

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	29Oct2010, 09:37:46	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	60.758 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:44
Peak Outflow :	2.500 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 12:00
Total Inflow :	35.82 (AC-FT)	Peak Storage :	30.38 (AC-FT)
Total Outflow :	11.75 (AC-FT)	Peak Elevation :	128.44 (FT)

Project: lammers_watershed
Simulation Run: 100-yr 24-hr Reservoir: DET LW12

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	29Oct2010, 09:37:46	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	43.542 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 10:56
Peak Outflow :	0.500 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 10:48
Total Inflow :	13.34 (AC-FT)	Peak Storage :	12.60 (AC-FT)
Total Outflow :	2.42 (AC-FT)	Peak Elevation :	188.12 (FT)

Project: lammers_watershed

Simulation Run: 100-yr 24-hr Reservoir: DET-OFF2

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	29Oct2010, 09:37:46	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	386.762 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:32
Peak Outflow :	4.944 (CFS)	Date/Time of Peak Outflow :	02Jan2008, 02:52
Total Inflow :	186.96 (AC-FT)	Peak Storage :	182.04 (AC-FT)
Total Outflow :	20.35 (AC-FT)	Peak Elevation :	233.90 (FT)

Mountain House Watershed - 10-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)

MH2	0.6275	134.94	01Jan2008, 11:28	56.47
OFS1	0.4039	3.02	01Jan2008, 11:24	3.25
Reach-3	0.4039	3.01	01Jan2008, 12:52	3.25
DET MHW2	1.0314	5.5	02Jan2008, 02:16	21.78
RR23	1.0314	5.5	02Jan2008, 02:36	21.61
MH3	0.4001	88.68	01Jan2008, 10:48	25.97
DET MHW3	0.4001	4.28	02Jan2008, 00:56	15.55
COMB19	1.4315	9.73	02Jan2008, 01:40	37.17
MH1	0.2687	47.96	01Jan2008, 10:56	15.17

Project: mountain_house_watershed
Simulation Run: 10-yr 24-hr Reservoir: DET MHW2

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	14Mar2012, 14:40:23	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	135.50 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:28
Peak Outflow :	5.50 (CFS)	Date/Time of Peak Outflow :	02Jan2008, 02:16
Total Inflow :	59.72 (AC-FT)	Peak Storage :	53.10 (AC-FT)
Total Outflow :	21.78 (AC-FT)	Peak Elevation :	186.28 (FT)

Project: mountain_house_watershed
Simulation Run: 10-yr 24-hr Reservoir: DET MHW3

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	10-yr
Compute Time:	14Mar2012, 14:40:23	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	88.68 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 10:48
Peak Outflow :	4.28 (CFS)	Date/Time of Peak Outflow :	02Jan2008, 00:56
Total Inflow :	25.97 (AC-FT)	Peak Storage :	21.09 (AC-FT)
Total Outflow :	15.55 (AC-FT)	Peak Elevation :	178.43 (FT)

Mountain House Watershed - 100-yr Peak Flows

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)

MH2	0.6275	198.71	01Jan2008, 11:28	83.1
OFS1	0.4039	12.69	01Jan2008, 11:56	9.56
Reach-3	0.4039	12.67	01Jan2008, 12:56	9.55
DET MHW2	1.0314	7	01Jan2008, 17:16	31.66
RR23	1.0314	7	01Jan2008, 17:40	31.43
MH3	0.4001	143.61	01Jan2008, 10:48	40.74
DET MHW3	0.4001	5	01Jan2008, 13:32	4.19
COMB19	1.4315	12	01Jan2008, 17:40	35.62
MH1	0.2687	70.22	01Jan2008, 10:56	23.28

Project: mountain_house_watershed
Simulation Run: 100-yr 24-hr Reservoir: DET MHW2

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	14Mar2012, 14:41:13	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow :	199.60 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 11:28
Peak Outflow :	7.00 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 17:16
Total Inflow :	92.65 (AC-FT)	Peak Storage :	83.19 (AC-FT)
Total Outflow :	31.66 (AC-FT)	Peak Elevation :	189.84 (FT)

Project: mountain_house_watershed
Simulation Run: 100-yr 24-hr Reservoir: DET MHW3

Start of Run:	01Jan2008, 00:00	Basin Model:	Basin 1
End of Run:	03Jan2008, 18:36	Meteorologic Model:	100-yr
Compute Time:	14Mar2012, 14:41:13	Control Specifications:	Control 1

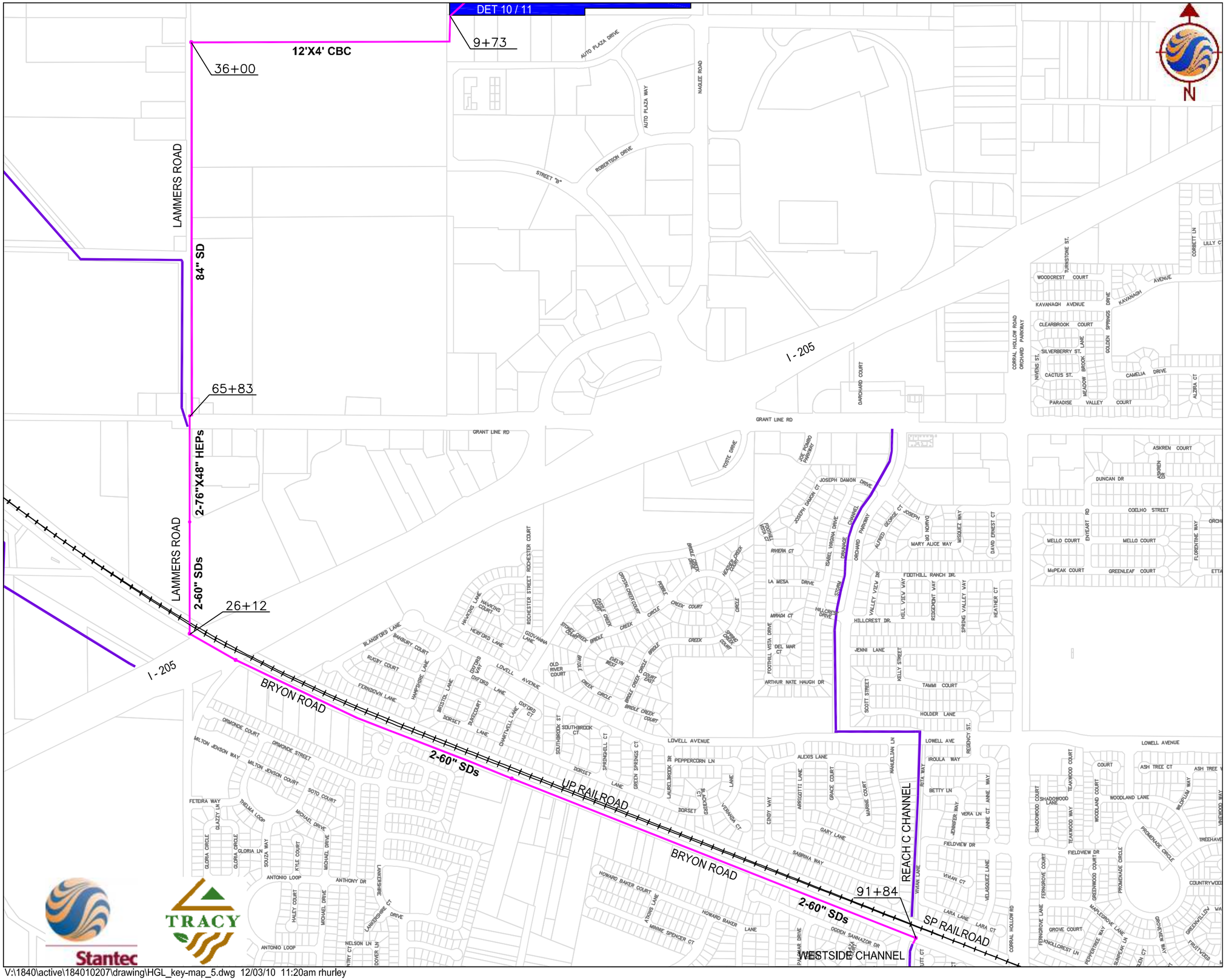
Volume Units: AC-FT

Computed Results

Peak Inflow :	143.61 (CFS)	Date/Time of Peak Inflow :	01Jan2008, 10:48
Peak Outflow :	5.00 (CFS)	Date/Time of Peak Outflow :	01Jan2008, 13:32
Total Inflow :	40.74 (AC-FT)	Peak Storage :	36.55 (AC-FT)
Total Outflow :	4.19 (AC-FT)	Peak Elevation :	179.99 (FT)

APPENDIX C

HYDRAULIC GRADE LINE CALCULATIONS



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TRACY

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Client/Project

CITY OF TRACY
CITYWIDE STORM DRAINAGE
MASTER PLAN

APPENDIX C

Title

HGL KEY MAP WESTSIDE CHANNEL OUTFALL SYSTEM

DECEMBER 2010
184010207
SCALE: 1" = 750'

City of Tracy
Citywide Storm Drainage Master Plan
Hydraulic Grade Line Calculations
Westside Channel Outfall System
100-year 24-hour Storm
2.6 feet has been added to all elevations to convert to NAVD 88

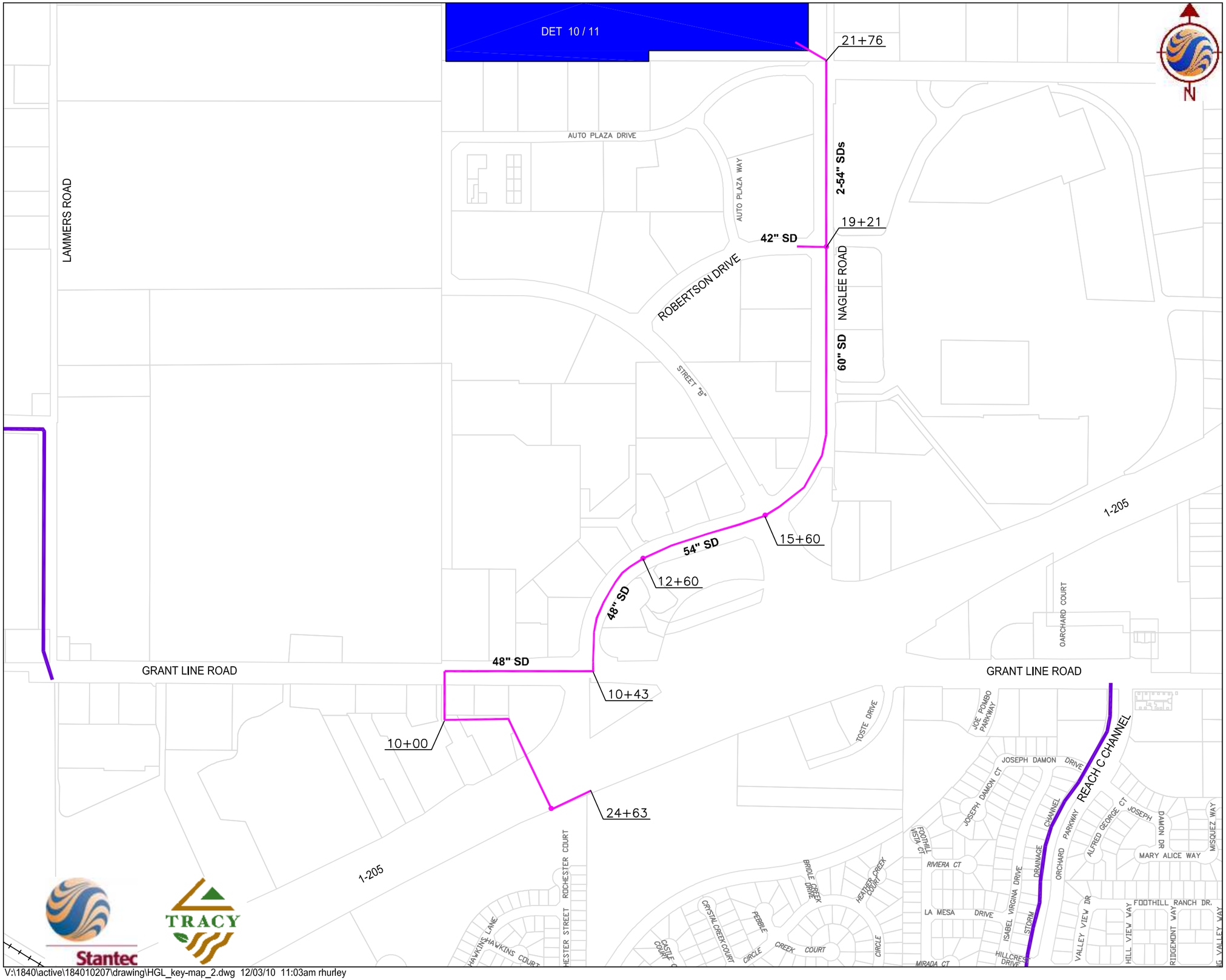
Manning's n= 0.013

Tailwater= 13.1 ft
from DET 10/11 HEC-HMS 100-yr WSE

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard*	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) $PI*(1)^2/4$	(5) PI*(1)	(6) (4)/(5)	(7) $(6)^{0.67}$	(8) (3)/(4)	(9))*n/1.49*(4)*(7	(10) (2)*(9)	(11)	(12) $(11)*(8)^2/2g$	(14) (10)+(12)+(13)	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
9+73	2.6																13.07	10.69		bolt
12'x4'		94	0.013	205	0.0005	265.3	48.19	24.61	1.96	1.57	6.30	0.0009	0.19							
11+78	2.7													0.30	0.185	0.379	13.4	10.62	-2.8	bolt
12'x4'		94	0.013	251	0.0005	265.3	48.19	24.61	1.96	1.57	6.30	0.0009	0.24							
14+29	2.83													0.30	0.185	0.422	13.9	11.60	-2.3	bolt
12'x4'		94	0.013	22	0.0005	265.3	48.19	24.61	1.96	1.57	6.30	0.0009	0.02							
14+51	2.84						`							0.30	0.185	0.206	14.1	11.40	-2.7	bolt
12'x4'		94	0.013	449	0.0005	265.3	48.19	24.61	1.96	1.57	6.30	0.0009	0.43							
19+00	3.06													0.05	0.031	0.456	14.5	11.90	-2.6	bolt
12'x4'		94	0.013	550	0.0005	265.3	48.19	24.61	1.96	1.57	6.30	0.0009	0.52							
24+50	3.34													0.05	0.031	0.551	15.1	12.80	-2.3	bolt
12'x4'		94	0.013	550	0.0005	265.3	48.19	24.61	1.96	1.57	6.30	0.0009	0.52							
30+00	3.61													0.05	0.031	0.551	15.6	12.20	-3.4	bolt
12'x4'		94	0.013	570	0.0005	265.3	48.19	24.61	1.96	1.57	6.30	0.0009	0.54							
35+70	3.90													0.05	0.031	0.570	16.2	13.80	-2.4	bolt
12'x4'		94	0.013	30	0.0007	265.3	48.19	24.61	1.96	1.57	6.30	0.0009	0.03							
Lammers Road																				
36+00	3.92													0.05	0.031	0.059	16.3	14.10	-2.2	bolt
		84	0.013	532	0.0005	265.3	38.48	21.99	1.75	1.45	7.55	0.0017	0.92							
41+32	4.18													0.05	0.044	0.962	17.2	13.60	-3.6	bolt
		84	0.013	594	0.0014	265.3	38.48	21.99	1.75	1.45	7.55	0.0017	1.02							
47+25	5.01													0.05	0.044	1.069	18.3	18.60	0.3	
		84	0.013	625	0.0015	265.3	38.48	21.99	1.75	1.45	7.55	0.0017	1.08							ADD11
53+50	5.96													0.05	0.044	1.122	19.4	21.10	1.7	
		84	0.013	400	0.0110	256.1	38.48	21.99	1.75	1.45	7.55	0.0016	0.64							
57+50	10.34													0.05	0.044	0.687	20.1	22.70	2.6	
		84	0.013	416	0.0014	256.1	38.48	21.99	1.75	1.45	7.55	0.0016	0.67							
61+66	10.93													0.05	0.044	0.713	20.8	24.30	3.5	
		84	0.013	416	0.0014	256.1	38.48	21.99	1.75	1.45	7.55	0.0016	0.67							
Grant Line Road																				
65+83	11.51													0.05	0.044	0.713	21.5	26.0	4.5	
		84	0.013	115	0.0698	256.1	38.48	21.99	1.75	1.45	7.55	0.0016	0.18							ADD10
10+54	19.54													0.05	0.044	0.229	21.8	26.60	4.8	
2-76"x48"		60	0.013	432	0.0005	122.2	19.63	15.71	1.25	1.16	7.43	0.0022	0.95							
14+87	19.75													0.05	0.043	0.994	22.8	28.90	6.1	
2-76"x48"		60	0.013	455	0.0005	122.2	19.63	15.71	1.25	1.16	7.43	0.0022	1.00							
I-205																				
19+55	19.96													0.05	0.043	1.045	23.8	30.30	6.5	

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard*	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) $PI*(1)^2/4$	(5) PI*(1)	(6) (4)/(5)	(7) $(6)^{0.67}$	(8) (3)/(4)	(9))*n/1.49*(4)*(7	(10) (2)*(9)	(11)	(12) $(11)*(8)^2/2g$	(14) (10)+(12)+(13)	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
2x60"		60	0.013	342	0.0019	122.2	19.63	15.71	1.25	1.16	7.43	0.0022	0.75							
22+80	20.62													0.05	0.043	0.796	25.0	31.80	6.8	
2x60"		60	0.013	332	0.0020	122.2	19.63	15.71	1.25	1.16	7.43	0.0022	0.73							
Byron Road																				
26+12	21.28													0.05	0.043	0.774	25.8	33.20	7.4	
2x60"		60	0.013	114	0.0015	122.2	19.63	15.71	1.25	1.16	7.43	0.0022	0.25							CW86
27+38	21.45													0.05	0.043	0.294	26.1	34.44	8.3	
2x60"		60	0.013	431	0.0015	112.3	19.63	15.71	1.25	1.16	7.43	0.0019	0.80							
31+90	22.10													0.05	0.043	0.843	26.9	36.21	9.3	
2x60"		60	0.013	590	0.0015	112.3	19.63	15.71	1.25	1.16	5.81	0.0019	1.10							
37+72	22.97													0.05	0.026	1.122	28.1	35.90	7.8	
2x60"		60	0.013	430	0.0015	112.3	19.63	15.71	1.25	1.16	5.81	0.0019	0.80							
42+02	23.61													0.05	0.026	0.825	28.9	37.00	8.1	
2x60"		60	0.013	421	0.0015	112.3	19.63	15.71	1.25	1.16	5.81	0.0019	0.78							
46+48	24.24													0.05	0.026	0.808	29.7	36.00	6.3	
2x60"		60	0.013	537	0.0015	112.3	19.63	15.71	1.25	1.16	5.81	0.0019	1.00							
51+68	25.04													0.05	0.026	1.024	30.7	37.60	6.9	
2x60"		60	0.013	587	0.0015	112.3	19.63	15.71	1.25	1.16	5.81	0.0019	1.09							BERG
57+30	25.92													0.05	0.026	1.117	31.8	39.10	7.3	
2x60"		60	0.013	553	0.0015	105.2	19.63	15.71	1.25	1.16	5.81	0.0016	0.90							
62+86	26.75													0.05	0.026	0.928	32.8	38.04	5.3	
2x60"		60	0.013	563	0.0015	105.2	19.63	15.71	1.25	1.16	5.81	0.0016	0.92							
68.48	27.59													0.05	0.026	0.945	33.7	39.73	6.0	
2x60"		60	0.013	563	0.0015	105.2	19.63	15.71	1.25	1.16	5.81	0.0016	0.92							
74+11	28.43													0.05	0.026	0.945	34.7	41.45	6.8	
2x60"		60	0.013	573	0.0016	105.2	19.63	15.71	1.25	1.16	5.81	0.0016	0.93							BYRN
80+19	29.33													0.05	0.026	0.961	35.6	41.35	5.7	
2x60"		60	0.013	585	0.0013	101.0	19.63	15.71	1.25	1.16	3.95	0.0015	0.88							
85+77	30.10													0.05	0.012	0.892	36.5	39.70	3.2	
2x60"		60	0.013	607	0.0016	101.0	19.63	15.71	1.25	1.16	3.95	0.0015	0.91							
91+84	31.07													0.05	0.012	0.925	37.4	39.80	2.4	Belconte

*In the lower reach conduits where negative freeboard is shown, the system is under pressure with bolt manhole covers.



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Client/Project

CITY OF TRACY
CITYWIDE STORM DRAINAGE
MASTER PLAN

APPENDIX C

Title

HGL KEY MAP
I-205 SPECIFIC PLAN AREA

DECEMBER 2010
184010207
SCALE: 1" = 500'

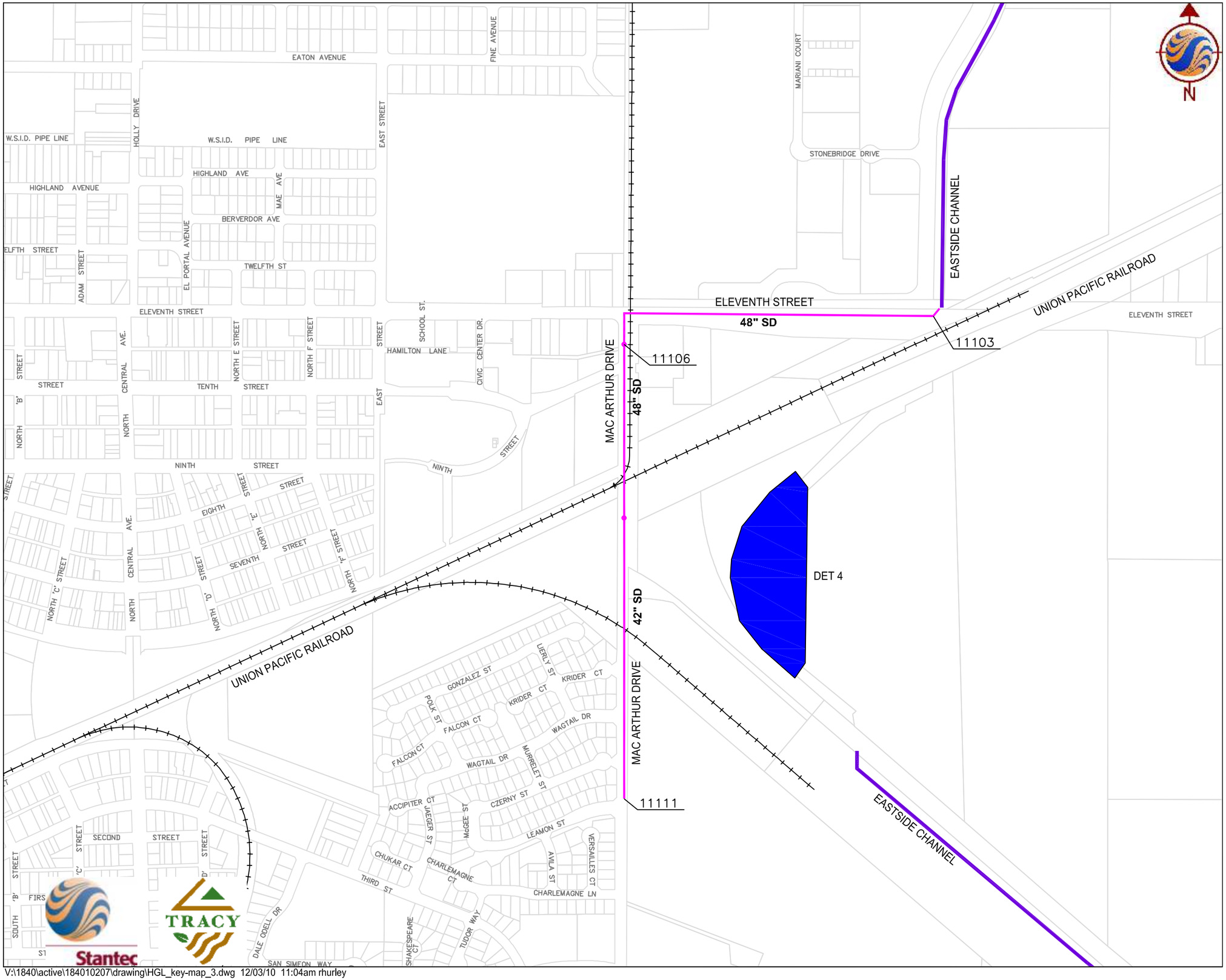
City of Tracy
Citywide Storm Drainage Master Plan
Hydraulic Grade Line Calculations
I-205 Specific Plan Area
10-year 24-hour Storm
3.1 feet has been added to all elevations to convert to NAVD 88

Tailwater= 13.57 ft
Manning's n= 0.013
from DET 10/11 HEC-HMS 100-year WSE

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) PI*(1)^2/4	(5) PI*(1)	(6) (4)/(5)	(7) (6)$^{0.67}$	(8) (3)/(4)	(9))*n/1.49*(4)*(7	(10) (2)*(9)	(11)	(12) (11)*(8)^2/2g	(14) (10)+(12)+(13)	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
Outlet	4.20																13.57	12.18	-1.4	Det 10/11
2-54"		54	0.013	17.6	0.0006	76.4	15.90	14.14	1.13	1.08	4.80	0.0015	0.03							
22+22	4.21													0.05	0.018	0.044	13.6	12.26	-1.4	W93 + W90
2-54"		54	0.013	147	0.0004	76.4	15.90	14.14	1.13	1.08	4.80	0.0015	0.22							
Auto Plaza Drive																				
21+76	4.27													0.05	0.018	0.239	13.9	13.12	-0.7	Q10=126
2-54"		54	0.013	289	0.0004	63.0	15.90	14.14	1.13	1.08	3.96	0.0010	0.30							
20+86	4.39													0.05	0.012	0.309	14.2	14.33	0.2	
2-54"		54	0.013	374	0.0004	63.0	15.90	14.14	1.13	1.08	3.96	0.0010	0.38							
19+71	4.54													0.05	0.012	0.396	14.6	15.73	1.2	
2-54"		54	0.013	160	0.0004	63.0	15.90	14.14	1.13	1.08	3.96	0.0010	0.16							
Robertson Drive																				
19+21	4.60													0.05	0.012	0.176	14.7	15.97	1.2	Q10=94
		60	0.013	111	0.0212	94.0	19.63	15.71	1.25	1.16	4.79	0.0013	0.14							
18.86	6.95													0.05	0.018	0.162	14.9	16.98	2.1	
		60	0.013	367	0.0038	94.0	19.63	15.71	1.25	1.16	4.79	0.0013	0.48							
Yee Driveway																				
17+72	8.36													0.05	0.018	0.496	15.4	18.80	3.4	
		60	0.013	419	0.0039	94.0	19.63	15.71	1.25	1.16	4.79	0.0013	0.55							
16+43	9.98													0.05	0.018	0.564	16.0	20.47	4.5	
		60	0.013	230	0.0038	94.0	19.63	15.71	1.25	1.16	4.79	0.0013	0.30							
Pavillion Parkway																				
15+60	10.85													0.05	0.018	0.317	16.3	22.23	6.0	Q10=62
		60	0.013	373	0.0027	62.0	19.63	15.71	1.25	1.16	3.16	0.0006	0.21							
14+54	11.85													0.05	0.008	0.219	16.5	22.65	6.2	
		60	0.013	23	0.0004	62.0	19.63	15.71	1.25	1.16	3.16	0.0006	0.01							
14+48	11.86													0.05	0.008	0.021	16.5	22.58	6.1	
		54	0.013	113	0.0022	62.0	15.90	14.14	1.13	1.08	3.90	0.0010	0.11							
14+16	12.11													0.05	0.012	0.124	16.6	22.44	5.8	
		54	0.013	523	0.0023	62.0	15.90	14.14	1.13	1.08	3.90	0.0010	0.52							
12+60	13.32													0.05	0.012	0.532	17.2	21.35	4.2	
		48	0.013	423	0.0023	50.0	12.57	12.57	1.00	1.00	3.98	0.0012	0.51							Q10=50
11+20	14.29													0.05	0.012	0.525	17.7	22.73	5.0	
		48	0.013	251	0.0032	50.0	12.57	12.57	1.00	1.00	3.98	0.0012	0.30							
Grant Line Road																				
10+43	15.09													0.05	0.012	0.316	18.0	24.50	6.5	
		48	0.013	574	0.0028	50.0	12.57	12.57	1.00	1.00	3.98	0.0012	0.70							
5+00	16.67													0.05	0.012	0.708	18.7	26.40	7.7	
		48	0.013	500	0.0021	50.0	12.57	12.57	1.00	1.00	3.98	0.0012	0.61							
1+00	17.70													0.05	0.012	0.618	19.3	27.10	7.8	

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) PI*(1)^2/4	(5) PI*(1)	(6) (4)/(5)	(7) (6)$^{0.67}$	(8) (3)/(4)	(9))*n/1.49*(4)*(7	(10) (2)*(9)	(11)	(12) (11)*(8)^2/2g	(14) (10)+(12)+(13)	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
Across Grant Line Road 3-36" Storm Drain																				
0+00	18.70																19.3	27.10	7.8	
3-36"		36	0.013	110	0.0068	11.5	7.07	9.42	0.75	0.83	1.62	0.0003	0.03							Q10=34.4
South of Grant Line Road																				
10+00	19.45													0.05	0.002	0.035	19.4	27.10	7.7	
		48	0.013	162	0.0010	34.4	12.57	12.57	1.00	1.00	2.74	0.0006	0.09							
11+62	19.61													0.05	0.006	0.099	19.5	28.30	8.8	
		48	0.013	327	0.0009	34.4	12.57	12.57	1.00	1.00	2.74	0.0006	0.19							
14+90	19.92													0.05	0.006	0.193	19.7	26.20	6.5	
		48	0.013	317	0.0008	34.4	12.57	12.57	1.00	1.00	2.74	0.0006	0.18							
18+06	20.18													0.05	0.006	0.188	19.9	26.30	6.4	
		48	0.013	315	0.0007	34.4	12.57	12.57	1.00	1.00	2.74	0.0006	0.18							
21+22	20.40													0.05	0.006	0.186	20.2	28.40	8.2	
		42	0.013	341	0.0012	34.4	9.62	11.00	0.88	0.91	3.58	0.0012	0.40							
24+63	20.81													0.05	0.010	0.409	20.6	27.30	6.7	W90

* For design purposes, where the freeboard shown is negative, assume the HGL is equivalent to the top of curb plus 0.5 feet



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Client/Project

CITY OF TRACY
CITYWIDE STORM DRAINAGE
MASTER PLAN

APPENDIX C

Title

HGL KEY MAP MACARTHUR / 11TH STREET

DECEMBER 2010
184010207
SCALE: 1" = 500'

City of Tracy
Citywide Storm Drainage Master Plan
Hydraulic Grade Line Calculations
MacArthur Drive to Eleventh Street Storm Drain
10-year 24-hour Storm

Tailwater= 46.36 ft
from crown of 48" pipe

Manning's n= 0.013

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) $PI*(1)^2/4$	(5) $PI*(1)$	(6) (4)/(5)	(7) $(6)^{0.67}$	(8) (3)/(4)	(9))*n/1.49*(4)*(7	(10) (2)*(9)	(11)	(12) (11)*(8)^2/2g	(14) (10)+(12)+(13)	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
Outfall	42.36																46.36	52.12		ES Channel
ES Channel		48	0.013	400	0.0012	67.3	12.57	12.57	1.00	1.00	6.27	0.0022	0.88							
11110	42.84													0.05	0.031	0.909	47.3	52.54	5.3	
		48	0.013	430	0.0014	57.1	12.57	12.57	1.00	1.00	4.81	0.0016	0.68							
11109	43.43													0.05	0.018	0.697	48.0	51.93	4.0	
		48	0.013	1340	0.0014	57.1	12.57	12.57	1.00	1.00	4.93	0.0016	2.12							Comb 10
11th Street																				
11103	45.37						`							0.05	0.019	2.136	50.1	51.42	1.3	
		48	0.013	685	0.0027	54.3	12.57	12.57	1.00	1.00	6.45	0.0014	0.98							
11108	47.20													0.05	0.032	1.011	51.1	55.20	4.1	Comb 9A
		48	0.013	820	0.0010	54.3	12.57	12.57	1.00	1.00	6.88	0.0014	1.17							
11107	47.99													0.05	0.037	1.208	52.3	57.69	5.4	
		48	0.013	330	0.0024	44.4	12.57	12.57	1.00	1.00	6.04	0.0010	0.32							
Railroad Crossing																				
11106	48.77													0.05	0.028	0.344	52.7	58.87	6.2	Comb 9
		48	0.013	260	0.0035	44.4	12.57	12.57	1.00	1.00	6.81	0.0010	0.25							
11105	49.67													0.05	0.036	0.284	53.0	59.97	7.0	
		42	0.013	285	0.0048	38.8	9.62	11.00	0.88	0.91	7.42	0.0015	0.42							
11104	51.03													0.05	0.043	0.467	53.4	61.33	7.9	
		42	0.013	220	0.0057	38.8	9.62	11.00	0.88	0.91	7.93	0.0015	0.33							
11111	52.28													0.05	0.049	0.376	54.1	62.43	8.4	Comb 8
Leamon St.																				

Stantec

TRACY

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Client/Project

CITY OF TRACY
CITYWIDE STORM DRAINAGE
MASTER PLAN

APPENDIX C

Title

HGL KEY MAP
LARCH RD, TRACY BLVD TO EASTSIDE CHANNEL

DECEMBER 2010
184010207
SCALE: 1" = 500'

City of Tracy
Citywide Storm Drainage Master Plan
Hydraulic Grade Line Calculations
Larch Road between Tracy Blvd and Eastside Channel
100-year 24-hour Storm
2.57 feet has been added to all elevations to convert to NAVD 88

Manning's n= 0.013

Tailwater= 8.38 ft
from top of crown of 72" pipe

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) $PI*(1)^2/4$	(5) $PI*(1)$	(6) (4)/(5)	(7) $(6)^{0.67}$	(8) (3)/(4)	(9))*n/1.49*(4)*(	(10) (2)*(9)	(11)	(12) $(11)*(8)^2/2g$	(14) 10)+(12)+(13	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
1+00	2.71																8.38	22.97	14.6	Pump Sta
		72	0.013	570	0.0009	214.4	28.27	18.85	1.50	1.31	8.25	0.0026	1.46							Comb 40
5+70	3.24													0.05	0.053	1.514	9.9	21.14	11.2	
		72	0.013	930	0.0012	174.4	28.27	18.85	1.50	1.31	7.68	0.0017	1.58							Comb 39
Holly Drive																				
16+00	4.32													0.05	0.046	1.623	11.5	21.37	9.9	
		72	0.013	860	0.0010	153.0	28.27	18.85	1.50	1.31	7.67	0.0013	1.12							
27+00	5.15						`							0.05	0.046	1.168	12.7	19.77	7.1	
		72	0.013	175	0.0007	153.0	28.27	18.85	1.50	1.31	7.28	0.0013	0.23							Comb 38
28+50	5.27													0.05	0.041	0.269	13.0	19.82	6.9	
		72	0.013	550	0.0010	126.6	28.27	18.85	1.50	1.31	6.88	0.0009	0.49							
41.+50	5.80													0.05	0.037	0.528	13.5	19.37	5.9	
		66	0.013	1050	0.0009	126.6	23.76	17.28	1.38	1.24	5.29	0.0014	1.49							
Tracy Blvd.																				
51+50	6.79													0.05	0.022	1.514	15.0	15.07	0.1	Comb 37

Stantec

TRACY

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Client/Project

CITY OF TRACY
CITYWIDE STORM DRAINAGE
MASTER PLAN

APPENDIX C

Title

HGL KEY MAP
GRANT LINE RD, PARKER AVE TO CITY OUTFALL

DECEMBER 2010
184010207
SCALE: 1" = 500'

City of Tracy
Citywide Storm Drainage Master Plan
Hydraulic Grade Line Calculations
Grant Line Road from Parker Avenue to City Outfall Channel
10-year 24-hour Storm
2.6 feet has been added to all elevations to convert to NAVD 88

Manning's n= 0.013

Tailwater= 21.57 ft
from City Outfall Channel HEC-RAS

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) Pl*(1)^2/4	(5) Pl*(1)	(6) (4)/(5)	(7) (6)$^{0.67}$	(8) (3)/(4)	(9))*n/1.49*(4)*(7	(10) (2)*(9)	(11)	(12) (11)*(8)^2/2g	(14) (10)+(12)+(13)	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
35+54 (out)	17.67																21.57	31.18	9.6	City Outfall
		54	0.013	48	0.0021	106.0	15.90	14.14	1.13	1.08	6.66	0.0029	0.14							
35+06	17.77													0.05	0.034	0.174	21.74	31.18	9.4	
2-36"		36	0.013	26	0.0012	53.0	7.07	9.42	0.75	0.83	7.50	0.0063	0.16							
34+79	17.80													0.05	0.044	0.208	21.95	31.17	9.2	
		54	0.013	70	0.0010	106.0	15.90	14.14	1.13	1.08	6.66	0.0029	0.20							
34+10	17.87						`							0.05	0.034	0.238	22.19	31.30	9.1	
		54	0.013	31	0.0010	106.0	15.90	14.14	1.13	1.08	6.66	0.0029	0.09							
33+90	17.90													0.05	0.034	0.125	22.31	31.50	9.2	
		54	0.013	203	0.0010	106.0	15.90	14.14	1.13	1.08	6.66	0.0029	0.59							
31+87	18.10													0.05	0.034	0.624	22.94	31.00	8.1	
		54	0.013	227	0.0010	106.0	15.90	14.14	1.13	1.08	6.66	0.0029	0.66							
East Street																				
29+59	18.33													0.05	0.034	0.694	23.63	30.97	7.3	Comb 32
		54	0.013	40	0.0010	95.0	15.90	14.14	1.13	1.08	5.97	0.0023	0.09							
29+20	18.37													0.05	0.028	0.121	23.75	30.90	7.1	
		54	0.013	223	0.0010	95.0	15.90	14.14	1.13	1.08	5.97	0.0023	0.52							
26+97	18.59													0.05	0.028	0.548	24.30	31.17	6.9	
		54	0.013	186	0.0010	95.0	15.90	14.14	1.13	1.08	5.97	0.0023	0.43							
25+11	18.78													0.05	0.028	0.462	24.76	31.64	6.9	
		54	0.013	78	0.0010	95.0	15.90	14.14	1.13	1.08	5.97	0.0023	0.18							
24+34	18.86													0.05	0.028	0.210	24.97	31.73	6.8	
		54	0.013	243	0.0010	95.0	15.90	14.14	1.13	1.08	5.97	0.0023	0.57							
21+91	19.10													0.05	0.028	0.595	25.57	31.20	5.6	
		54	0.013	87	0.0010	95.0	15.90	14.14	1.13	1.08	5.97	0.0023	0.20							
21+04	19.19													0.05	0.028	0.231	25.80	31.05	5.3	
		54	0.013	416	0.0010	95.0	15.90	14.14	1.13	1.08	5.97	0.0023	0.97							
Holly Drive																				
16+88	19.60													0.05	0.028	0.999	26.80	30.70	3.9	Comb 29
29x45		36	0.013	79	0.0010	47.5	7.40	9.42	0.79	0.85	6.42	0.0044	0.34							
16+09	19.68													0.05	0.032	0.376	27.17	30.50	3.3	
29x45		36	0.013	84	0.0010	26.1	7.40	9.42	0.79	0.85	3.53	0.0013	0.11							
15+25	19.76													0.05	0.010	0.120	27.29	30.12	2.8	
		36	0.013	300	0.0010	26.1	7.07	9.42	0.75	0.83	3.69	0.0015	0.46							
12+25	20.06													0.05	0.011	0.470	27.76	30.35	2.6	
		36	0.013	194	0.0010	26.1	7.07	9.42	0.75	0.83	3.69	0.0015	0.30							
Court Drive																				
10+31	20.25													0.05	0.011	0.308	28.07	30.30	2.2	Comb 30
2-24"		24	0.013	143	0.0010	8	3.14	6.28	0.50	0.63	2.55	0.0013	0.18							
8+88	20.39													0.05	0.005	0.184	28.25	30.56	2.3	
2-24"		24	0.013	42	0.0010	8	3.14	6.28	0.50	0.63	2.55	0.0013	0.05							

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) $Pl*(1)^2/4$	(5) Pl*(1)	(6) (4)/(5)	(7) $(6)^{0.67}$	(8) (3)/(4)	(9))*n/1.49*(4)*(7	(10) (2)*(9)	(11)	(12) $(11)*(8)^2/2g$	(14) (10)+(12)+(13)	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
8+61	20.43													0.05	0.005	0.058	28.31	30.66	2.3	
2-24"		24	0.013	435	0.0010	8	3.14	6.28	0.50	0.63	2.55	0.0013	0.54							
4+26	20.86													0.05	0.005	0.549	28.86	29.78	0.9	
2-24"		24	0.013	23	0.0013	8	3.14	6.28	0.50	0.63	2.55	0.0013	0.03							
Parker Avenue																				
4+10	20.89													0.05	0.005	0.034	28.90	29.80	0.9	E42

DET 10 / 11

LARCH ROAD

LARCH RD

AUTO PLAZA DRIVE

AUTO PLAZA WAY

HANSEN ROAD

ROBERTSON DRIVE

STREET "A"

LAMMERS ROAD

I - 205

CLOVER RD

ORCHARD

APPLE

APRICOT

CHERRY

PEACH

ORANGE

PONTE MIRA

LAVELLE SMITH DR

DRONERO WAY

LINCOLN BOULEVARD

SCARLET PLACE

JASMINE CT

KAVANAUGH AVE

WOODCREST COURT

KAVANAUGH AVENUE

CLEARBROOK COURT

CACTUS ST.

MERIBERRY ST.

PARADISE VALLEY COURT

CAMELIA DRIVE

GARDENIA CT

ANTONIA CT

CLIMEO COURT

BLAIR AVE

SUELLEN DR

CHRISTINA DR

PLANTATION COURT

GERALD COURT

BELLE COURT

GRANT LINE ROAD

9+56

39+22

69+24

78+20

96+23

104+39

111+00

72" SD

2-72" SD

72" SD

72" SD

48" SD

48" SD

47+32

48" SD

DET 4

CORRAL HOLLOW ROAD

REACH C CHANNEL

LINCOLN BLVD

ASHREN COURT

SWARTHOUT COURT

JOHNSON COURT

DUNCAN DR

COELHO STREET

MELLO COURT

McPEAK COURT

GREENLEAF COURT

ETTA WAY

ETTA COURT

HURLEY COURT

ORCHIDDRIVE

LYNCH DR

STANDRIDGE CT

STANDRIDGE RD

RUSHER STREET

VALLERAND RD

VALLERAND ROAD

WESTLEIGH COURT

MANOR COURT

MICHELLE AVE

NEWPORT COURT

RADCLIFF COURT

MARIAN COURT

LOWELL AVE

WAVERLEY COURT

CHESTER DRIVE

TRACY BLVD

30+58

0+50

66" SD

66" SD

LOWELL AVENUE

LOWELL AVE

42" SD

UNION PACIFIC RAILROAD

BRYON ROAD

WESTSIDE CHANNEL

ASH TREE CT

ASH TREE WAY

WOODLAND LANE

WOODLAND COURT

SHADOWOOD COURT

SHADOWOOD LANE

SHADOWOOD WAY

REHEN ROAD

GRIFFITH COURT

BELVEDERE COURT

LINDA PLACE

CARLTON WAY

MARTIN PLACE

BEVERLY PLACE

FIELDVIEW DR

TREEHAVEN LANE

PROMENADE CIRCLE

COUPE PLACE

COUNTRYWOOD LN

MARRIOTT DR

MARRIOTT COURT

BONDY LANE

VALERIE LANE

W EATON AVE

12th STREET

Stantec

TRACY

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Client/Project

CITY OF TRACY
CITYWIDE STORM DRAINAGE
MASTER PLAN

APPENDIX C

Title

HGL KEY MAP
GRANT LINE RD, WSID MAIN DRAIN TO TRACY BLVD

DECEMBER 2010
184010207
SCALE: 1" = 950'

City of Tracy
Citywide Storm Drainage Master Plan
Hydraulic Grade Line Calculations
Grant Line Road between WSID Main Drain and Tracy Blvd, Including Corral Hollow Road and Lowell Avenue

2-Square Mile Area Served by WSID Main Drain
10-year 24-hour Storm
All elevations are adjusted for NAVD 88 (For Grant Line Road 3.8', for Corral Hollow 3.0', and for Lowell Ave 2.7')

Tailwater= 19.3 ft
from Main Drain HEC-2 model for 175 cfs, FEMA tailwater

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)		(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) $PI*(1)^2/4$	(5) PI*(1)	(6) (4)/(5)	(7) $(6)^{0.67}$	(8) (3)/(4)	(9))*n/1.49*(4)*(7	(10) (2)*(9)	(11)	(12) (11)*(8)^2/2g	(14) (10)+(12)+(13)	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
Outfall	11.34																19.3	26.8	7.5	Main Drain
		72	0.016	160	0.0000	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.29							
Grant Line Road & Lammers Road																				
9+56	11.34													0.05	0.021	0.309	19.6	27.8	8.2	
		72	0.016	394	0.0000	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.71							
13+50	11.34													0.05	0.021	0.730	20.3	27.0	6.7	
		72	0.016	455	0.0000	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.82							
18+05	11.34						`							0.05	0.021	0.840	21.2	27.8	6.6	
		72	0.016	95	0.0007	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.17							
19+00	11.41													0.05	0.021	0.192	21.4	27.8	6.4	
		72	0.016	190	0.0008	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.34							
20+90	11.56													0.05	0.021	0.363	21.7	28.8	7.1	
		72	0.016	140	0.0009	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.25							
22+30	11.68													0.05	0.021	0.273	22.0	28.4	6.3	
		72	0.016	423	0.0008	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.76							
26+53	12.01													0.05	0.021	0.782	22.8	28.8	6.0	
		72	0.016	282	0.0007	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.51							
29+35	12.22													0.05	0.021	0.528	23.3	28.30	5.0	
		72	0.016	500	0.0008	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.90							
34+35	12.60													0.05	0.021	0.921	24.2	27.10	2.9	
		72	0.016	487	0.0008	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.88							
Grant Line Road & Naglee Road																				
39+22	12.98													0.05	0.021	0.897	25.1	25.65	0.5	
		72	0.016	400	0.0007	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.72							
43+22	13.26													0.05	0.021	0.741	25.9	25.80	-0.1	
		72	0.016	400	0.0007	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.72							
47+22	13.54													0.05	0.021	0.741	26.6	26.70	0.1	
		72	0.016	400	0.0007	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.72							
51+22	13.82													0.05	0.021	0.741	27.4	25.90	-1.5	
		72	0.016	400	0.0007	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.72							
55+22	14.10													0.05	0.021	0.741	28.1	26.65	-1.4	
		72	0.016	244	0.0019	**146.0**	28.27	18.85	1.50	1.31	5.16	0.0018	0.44							CP11MD
Carl's Jr.																				
57+66	14.56													0.05	0.021	0.460	28.6	26.60	-2.0	
2-72"		72	0.016	404	0.0009	**68.1**	28.27	18.85	1.50	1.31	2.41	0.0004	0.16							
61+70	14.91													0.05	0.005	0.163	28.7	27.02	-1.7	
2-72"		72	0.016	95	0.0006	**68.1**	28.27	18.85	1.50	1.31	2.41	0.0004	0.04							
62+65	14.97													0.05	0.005	0.042	28.8	27.60	-1.2	

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) $PI*(1)^2/4$	(5) $PI*(1)$	(6) (4)/(5)	(7) $(6)^{0.67}$	(8) (3)/(4)	(9) $)*n/1.49*(4)*(7$	(10) (2)*(9)	(11)	(12) $(11)*(8)^2/2g$	(14) (10)+(12)+(13)	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
2-72"		72	0.016	256	0.0002	**68.1**	28.27	18.85	1.50	1.31	2.41	0.0004	0.10							
65+21	15.01													0.05	0.005	0.105	28.9	26.67	-2.2	
2-72"		72	0.016	244	0.0003	**68.1**	28.27	18.85	1.50	1.31	2.41	0.0004	0.10							
67+65	15.08													0.05	0.005	0.100	29.0	27.40	-1.6	
		72	0.016	159	0.0002	**68.1**	28.27	18.85	1.50	1.31	2.41	0.0004	0.06							31MD
Grant Line Road & Orchard Parkway																				
69+24	15.11													0.05	0.005	0.067	29.0	27.42	-1.6	
		72	0.016	294	0.0003	**109**	28.27	18.85	1.50	1.31	3.86	0.0010	0.30							
72+18	15.20													0.05	0.012	0.307	29.3	27.34	-2.0	
		72	0.016	480	0.0003	**109**	28.27	18.85	1.50	1.31	3.86	0.0010	0.48							
77+00	15.34													0.05	0.012	0.493	29.8	27.40	-2.4	
		72	0.016	120	0.0001	**109**	28.27	18.85	1.50	1.31	3.86	0.0010	0.12							9MD
Grant Line Road & Corral Hollow Road																				
78+20	15.35													0.05	0.012	0.132	30.0	27.30	-2.7	
		72	0.016	257	0.0003	39.5	28.27	18.85	1.50	1.31	1.40	0.0001	0.03							
80+77	15.43													0.05	0.002	0.035	30.0	27.30	-2.7	
		72	0.016	253	0.0005	39.5	28.27	18.85	1.50	1.31	1.40	0.0001	0.03							
83+30	15.55													0.05	0.002	0.035	30.0	27.00	-3.0	
		72	0.016	211	0.0058	39.5	28.27	18.85	1.50	1.31	1.40	0.0001	0.03							
85+41	16.77													0.05	0.002	0.029	30.1	26.25	-3.8	
85+41	17.03																30.1	26.25	-3.8	
		48	0.013	187	0.0014	39.5	12.57	12.57	1.00	1.00	3.14	0.0008	0.14							
87+28	17.29													0.05	0.008	0.149	30.2	27.23	-3.0	
		48	0.013	151	0.0014	39.5	12.57	12.57	1.00	1.00	3.14	0.0008	0.11							
88+79	17.50													0.05	0.008	0.122	30.3	26.81	-3.5	
		48	0.013	338	0.0014	39.5	12.57	12.57	1.00	1.00	3.14	0.0008	0.26							10MD
92+17	17.97													0.05	0.008	0.263	30.6	27.16	-3.4	
		48	0.013	406	0.0013	32	12.57	12.57	1.00	1.00	2.55	0.0005	0.20							
Grant Line Road, About 100 Feet East of Travao Lane																				
96+23	18.5													0.05	0.005	0.207	30.8	27.58	-3.2	
		48	0.013	287	0.0015	32	12.57	12.57	1.00	1.00	2.55	0.0005	0.14							CW77
99+10	18.94													0.05	0.005	0.147	31.0	27.48	-3.5	
		48	0.013	350	0.0014	16	12.57	12.57	1.00	1.00	1.27	0.0001	0.04							
102+60	19.43													0.05	0.001	0.045	31.0	28.53	-2.5	CW68A
		48	0.013	179	0.0021	16	12.57	12.57	1.00	1.00	1.27	0.0001	0.02							
200 Feet West of Lincoln Blvd.																				
104+39	19.80													0.05	0.001	0.023	31.0	29.55	-1.5	
		48	0.013	200	0.0013	16	12.57	12.57	1.00	1.00	1.27	0.0001	0.02							
105+00	20.05													0.05	0.001	0.026	31.0	28.66	-2.4	
		48	0.013	300	0.0013	16	12.57	12.57	1.00	1.00	1.27	0.0001	0.04							
106+00	20.43													0.05	0.001	0.038	31.1	29.13	-2.0	
		48	0.013	386	0.0013	16	12.57	12.57	1.00	1.00	1.27	0.0001	0.05							

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) $PI*(1)^2/4$	(5) PI*(1)	(6) (4)/(5)	(7) $(6)^{0.67}$	(8) (3)/(4)	(9))*n/1.49*(4)*(7	(10) (2)*(9)	(11)	(12) $(11)*(8)^2/2g$	(14) (10)+(12)+(13)	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
107+00	20.91													0.05	0.001	0.049	31.1	28.9	-2.2	
		48	0.013	483	0.0013	16	12.57	12.57	1.00	1.00	1.27	0.0001	0.06							
108+00	21.52													0.05	0.001	0.061	31.2	29.02	-2.2	
		48	0.013	200	0.0013	16	12.57	12.57	1.00	1.00	1.27	0.0001	0.02							
109+00	21.77													0.05	0.001	0.026	31.2	28.73	-2.5	
		48	0.013	532	0.0013	16	12.57	12.57	1.00	1.00	1.27	0.0001	0.07							
110+00	22.45													0.05	0.001	0.067	31.3	27.67	-3.6	
		48	0.013	199	0.0013	16	12.57	12.57	1.00	1.00	1.27	0.0001	0.02							
111+00	22.70													0.05	0.001	0.026	31.3	28.22	-3.1	
Corral Hollow Road South of Grant Line Road																				
54+30	16.20																29.8	27.00	-2.8	
		48	0.013	432	0.0022	**40.9**	12.57	12.57	1.00	1.00	3.25	0.0008	0.35							
50+00	17.15													0.05	0.008	0.358	30.2	27.57	-2.6	
		48	0.013	269	0.0017	**40.9**	12.57	12.57	1.00	1.00	3.25	0.0008	0.22							
Corral Hollow Road and Alegre Drive																				
47+32	17.60													0.05	0.008	0.226	30.4	28.8	-1.6	8MD
		48	0.013	583	0.0015	**26.6**	12.57	12.57	1.00	1.00	2.12	0.0003	0.20							
41+50	18.46													0.05	0.003	0.203	30.6	30.77	0.1	
		48	0.013	400	0.0016	**26.6**	12.57	12.57	1.00	1.00	2.12	0.0003	0.14							
37+56	19.09													0.05	0.003	0.141	30.8	31.95	1.2	
		48	0.013	379	0.0016	**26.6**	12.57	12.57	1.00	1.00	2.12	0.0003	0.13							
33+70	19.69													0.05	0.003	0.133	30.9	32.56	1.7	
		48	0.013	312	0.0015	**26.6**	12.57	12.57	1.00	1.00	2.12	0.0003	0.11							
30+58	20.15													0.05	0.003	0.110	31.0	32.80	1.8	
		66	0.013	69	0.0051	**26.6**	23.76	17.28	1.38	1.24	1.12	0.0001	0.00							
29+89	20.50													0.05	0.001	0.005	31.0	33.70	2.7	
Intersection of Corral Hollow Road and Lowell Ave.																				
0+50	21.61																31.0	32.00	1.0	7MD
		66	0.013	44	0.0020	**25.5**	23.76	17.28	1.38	1.24	1.07	0.0001	0.00							
0+94	21.70													0.05	0.001	0.003	31.0	32.52	1.5	
		66	0.013	520	0.0019	**25.5**	23.76	17.28	1.38	1.24	1.07	0.0001	0.03							
6+14	22.69													0.05	0.001	0.031	31.0	33.97	2.9	6MD
		66	0.013	386	0.0019	**25.5**	23.76	17.28	1.38	1.24	1.07	0.0001	0.02							
10+00	23.41													0.05	0.001	0.023	31.1	32.82	1.8	
		66	0.013	350	0.0019	**25.5**	23.76	17.28	1.38	1.24	1.07	0.0001	0.02							
13+50	24.08													0.05	0.001	0.021	31.1	33.87	2.8	
		66	0.013	540	0.0020	**22.7**	23.76	17.28	1.38	1.24	0.96	0.0000	0.02							
Lowell Ave Across from High School																				
18+80	25.16													0.05	0.001	0.025	31.1	34.24	3.1	
		66	0.013	300	0.0019	**22.7**	23.76	17.28	1.38	1.24	0.96	0.0000	0.01							5MD
4+37	25.74													0.05	0.001	0.014	31.1	33.54	2.4	

Station	Invert	Dia	n	Length	Pipe Slope	Flow	Area	Wetted P	Hyd. Rad.	$R^{2/3}$	Velocity	S_f	H_f	K_{minor}	H_{minor}	H_{total}	HGL	Top of Curb	Freeboard	Note
	(ft)	(in)		(ft)	ft/ft	(cfs)	(ft2)	(ft)	(ft)		(ft/s)		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)	
		(1)		(2)		(3)	(4) $PI*(1)^2/4$	(5) PI*(1)	(6) (4)/(5)	(7) $(6)^{0.67}$	(8) (3)/(4)	(9))*n/1.49*(4)*(7	(10) (2)*(9)	(11)	(12) $(11)*(8)^2/2g$	(14) (10)+(12)+(13)	(15) TW+Σ(14)	(16)	(17) (16)-(15)	
		66	0.013	455	0.0016	37.3	23.76	17.28	1.38	1.24	1.57	0.0001	0.06							
Lowell Ave and Lincoln Blvd.																				
8+92	26.45													0.05	0.002	0.058	31.2	33.70	2.5	
		66	0.013	40	0.0010	37.3	23.76	17.28	1.38	1.24	1.57	0.0001	0.00							
9+32	26.49													0.05	0.002	0.007	31.2	33.70	2.5	
		42	0.013	10	0.0010	37.3	9.62	11.00	0.88	0.91	3.88	0.0014	0.01							
9+42	26.50													0.05	0.012	0.025	31.2	33.70	2.5	4MD

* For design purposes, where the freeboard shown is negative, assume the HGL is equivalent to the top of curb plus 0.5 feet

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1*****************************************                                    ************************************
 *  HEC-2 WATER SURFACE PROFILES            *                                *  U.S. ARMY CORPS OF ENGINEERS      *
 *                                          *                                *  HYDROLOGIC ENGINEERING CENTER     *
 *  Version   4.6.2;  May 1991              *                                *  609 SECOND STREET, SUITE D        *
 *                                          *                                *  DAVIS, CALIFORNIA 95616-4687      *
 *  RUN DATE    02DEC10    TIME   12:37:17  *                                *          (916) 756-1104            *
 *****************************************                                    ************************************

                                        X     X  XXXXXXX   XXXXX              XXXXX
                                        X     X  X        X     X            X     X
                                        X     X  X        X                        X
                                        XXXXXXX  XXXX     X          XXXXX    XXXXX
                                        X     X  X        X                  X
                                        X     X  X        X     X            X
                                        X     X  XXXXXXX   XXXXX            XXXXXXX
1
    02DEC10      12:37:17                                                                                  PAGE    1


                                                                                          THIS RUN EXECUTED 02DEC10    12:37:17
 ************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 ************************************


 T1     CITY OF TRACY
 T2     STORM DRAINAGE MASTER PLAN
 T3     EASTSIDE CHANNEL
 T4     HEC-2 FILE (ESIDECH1)   DECEMBER 2010
 T5     STANTEC PROJECT NO. 184010207
 T6     100-YEAR 24-HOUR STORM ANALYSIS


   ************** FILE ESIDECH1 IS COPIED FROM 6ESCHANL *********

   ****************** Feb 19, 2010 **********************
   ************** ELEVATIONS ARE ADJUSTED FOR NAVD 88 ***************
   *********  2.7 FEET IS ADDED TO ALL PLAN ELEVATIONS **************

       15
   652.21 EXAMPLE: X1652.21 = PLAN STATION 6+52.2 LINE A. (2= LINE B, 3= LINE C
   652.21 AND 4=LINE D)
   14001 CROSS SECTION GEOMETRY WAS OBTAINED FROM REIMER ASSOC. X-SECTION
   14001 SHEETS CAX-1 THROUGH CDX-5.
   19761 ARBOR AVE. CULVERT CROSSING
   36541 FREEWAY UNDERPASS
   36541 PORTION OF REACH A  AND ALL OF REACH B IS CONCRETE SIDE SLOPE
   22522 MACARTHUR DR. CROSSING W/LARGE SIZE CULVERT 6#24 FT. ARCH-PIPE
   19363 PESCADERO AVE. CROSSING W/LARGE SIZE CULVERT 6#24 FT. ARCH-PIPE
   10254 GRANT LINE RD. CROSSING (DUE TO LONG LENGTH AND 4-45 DEGREE BENDS
   10254 THE BOX CULVERTS WERE NOT INCLUDED IN THE HEC-2 MODEL. THE 100 YR.
   10254 WATER SURFACE ELEVS. THROUGH THE BOX CULVERTS WERE CALCULATED
   10254 BY HAND AND ADDED TO THE D/S W.S.E.)
   16394 RAILROAD CROSSING
   65004 11TH STREET
   2.7 FEET IS ADDED TO ALL ELEVATIONS TO GET TO NAVD 88


 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                 2                                                                   6.60

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      -1                 -1


 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

      38          1         26         42          8          4          3         43         23         24
1
    02DEC10      12:37:17                                                                                  PAGE    2


      53         54

 J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

     -10       -10


 QT        1        784
 NC      .05        .05      0.035         .1          .3
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  ****************** SUGAR CUT OUTFALL ****************************
X1   652.21         7       974     1021.5          0          0          0                  2.7
GR       8.0     965.5       3.0     974.0        2.0      981.5        0.0       1000       2.0     1018.5
GR       3.0    1021.5      10.0    1036.0


NC       .05        .05        .02
X1   658.21         6      981.5     1018.5          6          6          6                  2.7
GR      11.0     964.5        5.0     981.5        1.0      995.0        1.0       1005.0       5.0     1018.5
GR      11.0    1035.0


X1   673.21         6      981.5     1018.5         15         15         15                  2.7
GR   15.25      980.5      15.25      981.5       6.25      995.0       6.25       1005.0     15.25     1018.5
GR   15.25     1019.5


NC       .05        .05       .035
X1   748.21         6      981.5     1018.5         75         75         75                  2.7
GR      19.0     970.0       15.4     981.5        6.4      995.0        6.4       1005.0      15.4     1018.5
GR      18.0    1028.0


X1     8401         7      982.0     1018.0       91.8       91.8       91.8                  2.7
GR      15.5     965.0       15.0     982.0       6.58      995.0       6.58       1005.0      15.0     1018.0
GR      16.0    1030.0       17.5    1055.0


X1    14001         7      983.0     1018.0        560        560        560                  2.7
GR      16.4     976.0       16.3     983.0        7.7      995.0        7.7       1005.0      16.0     1018.0
GR      17.7    1023.0       18.0    1034.0


X1    19221         6        978      1020        522        522        522                  2.7
GR      17.2     940.0       17.0     978.0        8.7      995.0        8.7       1005.0      17.6     1020.0
GR      18.8    1034.0

1
    02DEC10      12:37:17                                                                                PAGE    3


NC       .05        .05       .016       0.3        0.5
X1    19621         4      977.0     1023.0         40         40         40                  2.7
GR      17.0     977.0        8.8     989.5        8.8     1011.0       17.0       1023.0


X1    19711        13      988.0     1012.0          9          9          9                  2.7
X3       10                                                                      17.7       17.7
GR      16.8     988.0        8.8     988.0        8.8      989.0        8.8       991.0        8.8      993.0
GR       8.8     996.0        8.8    1000.0        8.8     1004.0        8.8      1007.0        8.8     1009.0
GR       8.8    1011.0        8.8    1012.0       16.8     1012.0

  ************** ARBOR AVENUE CULVERT CROSSING **********************

X1    19761         0          0          0          5          5          5
BT       11      988.0       19.5       13.5      989.0       19.5       15.0       991.0       19.5       16.3
BT    993.0       19.5       16.7      996.0       19.5       17.3     1000.0        19.5       17.5     1004.0
BT     19.5       17.3     1007.0       19.5       16.7     1009.0       19.5        16.3     1011.0       19.5
BT     15.0     1012.0       19.5       13.5


X1    20231         0          0          0         47         47         47                  0.1
X2                                                                        1


X1    20281         0          0          0          5          5          5
X3       10                                                                      18.2       17.7


X1    20371         4      970.0     1021.0          9          9          9                  2.7
GR      18.0     970.0        8.9     988.5        8.9     1011.5       18.0       1021.0


QT        1       759
NC       .05        .05       .035       0.1        0.3
X1    20781        10      971.0     1025.0         41         41         41                  2.7
GR      19.3     964.0       18.8     971.0        9.0      991.0        9.0       1009.0       11.0     1011.0
GR      11.0    1013.0       17.0    1025.0       17.3     1030.0       18.0       1035.0       18.2     1040.0


X1    30001         8      969.0     1024.0        922        922        922                  2.7
GR      21.1     940.0       20.5     954.0       20.8      969.0        9.9        991.0        9.9     1009.0
GR      14.5    1014.0       20.0    1024.0       20.5     1030.0


NC       .02        .02       0.02
QT        1        574

  ********************** I-205 OVERPASS, NO IMPACT ON CHANNEL HYDRAULICS ********
X1    36541         4      991.0     1009.0        654        654        654                  2.7
GR      26.1     960.0       10.5     991.0       10.5     1009.0       20.3       1019.0
1
    02DEC10      12:37:17                                                                                PAGE    4
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```
NC    0.013      0.013      0.013

X1    37741          5      991.0     1009.0         110         122         130                  2.7
GR     26.0      977.0       22.8      980.0        10.6       991.0        10.6      1009.0       20.8      1020.0


NC                                       0.3         0.5
X1    38501          6      994.0     1006.0          76          76          76                  2.7
GR     23.3      940.0       21.6      983.0        10.7       994.0        10.7      1006.0       16.8      1012.0
GR     23.5     1026.0

X1    39271          6      994.0     1006.0          87          77          68                  2.7
GR     21.9      979.0       19.7      985.0        10.8       994.0        10.8      1006.0       19.7      1015.0
GR     26.3     1037.0

X1    41471          7      994.0     1006.0         220         220         220                  2.7
GR     24.4      967.0       17.2      988.0        11.0       994.0        11.0      1006.0       20.4      1018.0
GR     24.1     1036.0       24.3     1040.0

NC    0.013      0.013      0.013

QT        1        256
  ********** UPSTREAM OF CITY OUTFALL CHANNEL ******
X1    42641          4          0         26         150          90         117                  2.7
GR     19.2          0       11.2          8        11.2          18        19.2          26

X1    16002          4          0         26         636         636         636                  2.7
GR     19.8          0       11.8          8        11.8          18        19.8          26

X1    21982          4          0         26         598         598         598                  2.7
GR     20.4          0       12.4          8        12.4          18        20.4          26

NC                                       0.3         0.5
X1    22372          4      984.5     1015.5          39          39          39                  2.7
GR     20.5      984.5       12.4      992.5        12.4      1007.5        20.5      1015.5

X1    22472         13      992.0     1016.0          10          10          10                  2.7
X3       10                                                                 20.7        20.7
GR     21.5      992.0       12.4      992.0        12.4       993.0        12.4       995.0       12.4       997.0
GR     12.4     1000.0       12.4     1004.0        12.4      1008.0        12.4      1011.0       12.4      1013.0
GR     12.4     1015.0       12.4     1016.0        21.5      1016.0

  ********** MACARTHUR DRIVE CULVERT CROSSING ********** 
1
   02DEC10      12:37:17                                                                                                PAGE    5


X1    22522          0          0          0          5           5           5
BT       11      992.0       24.2       17.1      993.0        24.2        18.6       995.0        24.2        19.9
BT    997.0       24.2       20.3     1000.0        24.2        20.7      1004.0        24.2        21.1      1008.0
BT     24.2       20.7     1011.0       24.2        20.3      1013.0        24.2        19.9      1015.0        24.2
BT     18.6     1016.0       24.2       17.1

X1    23442          0          0          0         92          92          92                  0.1
X2                                                                             1

X1    23492          0          0          0          5           5           5
X3       10                                                                                  21.2        21.2

X1    23592          4          0         26        101          10          10                  2.7
GR     20.5          0       12.5          8        12.5          18        20.5          26

NC                                     0.1         0.3

X1    23992          4          0         26         40          40          40                  2.7
GR     20.6          0       12.6          8        12.6          18        20.6          26

X1    30002          4          0         26        601         601         601                  2.7
GR     21.2          0       13.2          8        13.2          18        21.2          26

X1    35552          4          0         26        555         555         555                  2.7
GR     21.3          0       13.3          8        13.3          18        21.3          26

  **********  SCHACK DESIGN CHANNEL AROUND FUTURE OUTLET MALL EXPANSION SITE ***

NC    0.027      0.027      0.027
  STA.10+00
X1     1000          4          0       27.4           1           1           1                  2.7
GR    22.01          0       13.3        8.7        13.3        18.7       22.01        27.4

  STA.11+50
```

```
X1     1150          4          0         40         150         150         150                    2.7
GR    22.12          0       13.4         12        13.4          28       22.12          40

  STA.13+00

X1     1300          4          0         55         150         150         150                    2.7
GR    22.22          0      13.51         17       13.51          38       22.22          55

  STA.18+00
1
    02DEC10      12:37:17                                                                                PAGE    6


X1     1800          4          0         55         500         500         500                    2.7
GR    22.57          0      13.86         17       13.86          38       22.57          55

  SRA.19+22

X1     1922          4          0         55          101         144         122                    2.7
GR    22.68          0      13.95         17       13.95          38       22.68          55

  STA.20+50

X1     2050          4          0         55          106         149         127                    2.7
GR    22.78          0      14.05         17       14.05          38       22.77          55

  STA.23+00

X1     2300          4          0         55          250         250         250                    2.7
GR    22.94          0      14.23         17       14.23          38       22.94          55

  STA.27+50

X1     2750          4          0         55          450         450         450                    2.7
GR    23.26          0      14.55         17       14.55          38       23.26          55

  STA.28+55

X1     2855          4          0         55           84         128         105                    2.7
GR    23.33          0      14.62         17       14.62          38       23.33          55

  STA.29+57

X1     2957          4          0         55           80         124         102                    2.7
GR    23.40          0      14.69         17       14.69          38       23.40          55

  STA.33+50

X1     3350          4          0         55          393         393         393                    2.7
GR    23.69          0      14.98         17       14.98          38       23.69          55

  STA.36+00

X1     3600          4          0         55          250         250         250                    2.7
GR    23.86          0      15.15         17       15.15          38       23.86          55

  STA.36+75

X1     3675          4          0         62          75          75          75                    2.7
GR    23.91          0       15.2         26        15.2          49       23.91          62

1
    02DEC10      12:37:17                                                                                PAGE    7


QT        1        275
NC     0.05       0.05      0.016        0.3         0.5
X1    19313         13         992       1008          42          42          42                    2.7
X3       10
GR    23.23        992      15.25        992       15.23         993       15.23         995       15.23        997
GR    15.23       1000      15.23       1004       15.23        1008       15.23        1011       15.23       1013
GR    15.23       1015      15.23       1016       23.23        1016

  ************************** PESCADERO AVENUE CULVERT CROSSING ****************

X1    19363                                            5           5           5
BT      -11        992      25.93      19.93         993       25.93       21.43         995       25.93       22.73
BT                 997      25.93      23.13        1000       25.93       23.73        1004       25.93       23.93
BT                1008      25.93      23.73        1011       25.93       23.43        1013       25.93       22.73
BT                1015      25.93      21.43        1016       25.93       19.93


X1    19913                                           55          55          55
X2                                                                               1


X1    19963                                            5           5           5
X3       10


X1    20113          4        979       1021          15          15          15                    2.7
GR    22.23        979      15.23        993       15.23        1007       22.23        1021
```

```
NC     0.05       0.05      0.035        0.1         0.3
X1    20443          6        982       1030          33          33          33                   2.7
GR    22.33        982      15.23        996       15.23        1004       18.43      1010.5      18.43        1014
GR    23.23       1030


X1    29003          7      978.0     1020.0         856         856         856                   2.7
GR     24.7      978.0       18.1      989.0        18.0       992.0        16.4       996.0        16.4      1004.0
GR     24.7     1020.0       26.0     1022.0


QT        1        232
X1    33003          4      978.0     1019.0         400         400         400                   2.7
GR     26.1      978.0       17.2      996.0        17.2      1004.0        24.4      1019.0


X1    39003          6      976.0     1024.0         600         600         600                   2.7
GR     28.5      965.0       28.6      976.0        18.5       996.0        18.5      1004.0        29.1      1024.0
GR     29.2     1034.0

1
    02DEC10      12:37:17                                                                                                PAGE    8


X1    44703          4        974       1026         570         570         570                   2.7
GR     30.9        974       19.7        996        19.7        1004        30.9        1026


X1    45003          4        971       1029          35          35          35                   2.7
GR     30.9        971       19.8      993.5        19.8      1006.5        30.9        1029

   ********************* GRANT LINE ROAD CULVERT CROSSING **********************
   ********************* HEAD LOSS THROUGH CULVERT CALCULATED BY HAND AND ADDED T

QT        1        207
X1    10254          4      971.5     1028.5         406         406         406                   2.7
X5        1      27.00
GR       33      971.5          22      993.5          22      1006.5          33      1028.5


X1    11554          7        977       1020         140         140         140                   2.7
GR     33.3        973          33        977        23.6         996        22.9        1000        23.6        1004
GR     31.8       1020        32.5       1033


X1    14454          7        975       1020         290         290         290                   2.7
GR     33.5        967        33.4        975          24         996        23.3        1000          24        1004
GR     32.2       1020          33       1033


NC      .05        .05         .02         .3          .5
X1    14794          4        973       1027          34          34          34                   2.7
GR       33        973        23.4        992        23.4        1008          33        1027


X1    14964          4        991       1009          17          17          17                   2.7
X3       10
GR     33.8        991        23.4      991.1        23.4      1008.5        33.8        1009

   ************************ RAILROAD CULVERT CROSSING ****************************

SB     1.25       1.56           3           0          18           2          80           0        26.3        26.1
X1    16394          0           0           0         143         143         143
X2        0          0           1        31.1        36.5
X3       10
BT        2        991        36.5        31.1        1009        36.5        31.1


NC      .05        .05        .035          .1          .3

X1    16564          4        973       1027          17          17          17                   2.7
GR       33        973        23.6        992        23.6        1008          33        1027

1
    02DEC10      12:37:17                                                                                                PAGE    9


X1    16904          5      977.5     1018.5          34          34          34                   2.7
GR     33.6      977.5       24.3        996        23.6        1000        24.3        1004        33.6      1018.5


X1    24044          5      977.2     1022.8         714         714         714                   2.7
GR     34.6      977.2       25.2        996        24.5        1000        25.2        1004        34.6      1022.8


X1    25504          5      977.2     1022.8         265         320         146                   2.7
GR     34.7      977.2       25.3        996        24.6        1000        25.3        1004        34.6      1022.8


X1    25524          5      977.2     1022.8           2           2           2                   2.7
GR     36.6      977.2       27.2        996        26.5        1000        27.2        1004        36.3      1022.8
```

```
QT         1       116
NC      0.05      0.05      0.05
X1     26604         7     964.4    1022.5       195       245       108                 2.7
GR        36     964.4      32.5     974.9      32.3     982.9      27.6       997      27.1      1000
GR      27.6      1003      35.4    1022.5

X1     33804         7       966    1020.8       680       720       750                 2.7
GR      47.2       966      33.5       977      33.3       985      29.3       997      28.8      1000
GR      29.3      1003      36.4    1020.8

X1     40004         7       969    1021.3       620       620       620                 2.7
GR      37.6       969      34.9       977      34.7       985      30.7       997      30.2      1000
GR      30.7      1003      38.2    1021.3

X1     41504         7     966.6    1023.3       150       150       150                 2.7
GR      38.2     966.6        36     973.2      35.8     981.2      31.2       995      30.3      1000
GR      31.2      1005      38.5    1023.3

X1     44504         7     966.3    1022.3       300       300       300                 2.7
GR      38.7     966.3      36.5     972.9      36.3     980.9      31.6       995      30.8      1000
GR      31.6      1005      38.5    1022.3

X1     46004         7     965.6    1023.3       150       150       150                 2.7
GR      39.3     965.6      36.4     974.3      36.2     982.3      32.2     994.3      31.2      1000
GR      32.2    1005.8      39.2    1023.3

1
    02DEC10      12:37:17                                                                        PAGE   10


X1     49004         7     966.8    1022.6       296       304       300                 2.7
GR      40.2     966.8      37.7     974.3      37.5     982.3      33.5     994.3      32.5      1000
GR      33.5    1005.8      40.2    1022.6

X1     52504         7       968    1022.1       350       350       350                 2.7
GR         41       968      38.9     974.3      38.7     982.3      34.7     994.3      33.7      1000
GR      34.7    1005.8      41.2    1022.1

X1     56004         7     968.9    1021.1       368       340       350                 2.7
GR      42.4     968.9      41.3     972.2      41.1     980.2      36.4     994.3      35.4      1000
GR      36.4    1005.8      42.5    1021.1

X1     64404         7     970.7    1020.6       840       840       840                 2.7
GR      45.2     970.7      43.9     974.6      43.7     982.6      39.8     994.3      38.8      1000
GR      39.8    1005.8      45.7    1020.6

X1     65004         7     970.7    1020.6        60        60        60                 2.7
GR      45.5     970.7      44.2     974.6        44     982.6      40.1     994.3      39.1      1000
GR      40.1    1005.8        46    1020.6

   **************************** 11TH STREET OVERPASS ***************************
1
    02DEC10      12:37:17                                                                        PAGE   11


                                                                    THIS RUN EXECUTED 02DEC10    12:37:17
 ************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 ************************************

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

 ASTSIDE CHANNEL

 SUMMARY PRINTOUT

       SECNO      CWSEL       VCH      ELMIN      DEPTH     TOPWID       EG          Q       XLBEL      RBEL       SSTA       ENDST

      652.210       6.60       6.41       2.70       3.90      50.89       7.24     784.00       5.70       5.70     972.47    1023.36

*     658.210       7.52       8.96       3.70       3.82      35.79       8.77     784.00       7.70       7.70     982.10    1017.90

*     673.210      13.49      10.28       8.95       4.54      23.62      15.13     784.00      17.95      17.95     988.19    1011.81

      748.210      14.70       7.61       9.10       5.60      26.79      15.60     784.00      18.10      18.10     986.60    1013.40
```

	8401.000	15.43	6.54	9.28	6.15	29.00	16.09	784.00	17.70	17.70	985.50	1014.50
	14001.000	17.44	5.45	10.40	7.04	30.85	17.90	784.00	19.00	18.70	985.18	1016.03
	19221.000	18.67	4.58	11.40	7.27	37.12	18.99	784.00	19.70	20.30	980.12	1017.24
*	19621.000	18.89	3.26	11.50	7.39	43.58	19.05	784.00	19.70	19.70	978.24	1021.81
*	19711.000	18.82	4.46	11.50	7.32	24.00	19.13	784.00	19.50	19.50	988.00	1012.00
*	19761.000	18.66	6.41	11.50	7.16	24.00	19.30	784.00	19.50	19.50	988.00	1012.00
	20231.000	18.73	6.41	11.60	7.13	24.00	19.37	784.00	19.60	19.60	988.00	1012.00
*	20281.000	19.19	4.30	11.60	7.59	24.00	19.48	784.00	19.60	19.60	988.00	1012.00
*	20371.000	19.40	2.87	11.60	7.80	47.00	19.53	784.00	20.70	20.70	972.64	1019.64
*	20781.000	19.40	2.96	11.70	7.70	49.15	19.54	759.00	21.50	19.70	975.27	1024.42
	30001.000	20.01	3.42	12.60	7.41	43.08	20.20	759.00	23.50	22.70	976.04	1019.12
*	36541.000	20.27	3.39	13.20	7.07	39.27	20.42	574.00	13.20	13.20	976.95	1016.22
	37741.000	20.25	3.86	13.30	6.95	31.76	20.45	574.00	13.30	13.30	984.74	1016.49

	SECNO	CWSEL	VCH	ELMIN	DEPTH	TOPWID	EG	Q	XLBEL	RBEL	SSTA	ENDST
*	38501.000	20.16	5.49	13.40	6.76	26.21	20.55	574.00	13.40	13.40	987.18	1013.38
	39271.000	20.17	5.59	13.50	6.67	25.50	20.57	574.00	13.50	13.50	987.25	1012.75
	41471.000	20.22	5.56	13.70	6.52	27.24	20.62	574.00	13.70	13.70	987.08	1014.32
	42641.000	20.65	2.26	13.90	6.75	23.50	20.73	256.00	21.90	21.90	1.25	24.75
	16002.000	20.69	2.56	14.50	6.19	22.37	20.79	256.00	22.50	22.50	1.81	24.19
	21982.000	20.73	2.91	15.10	5.63	21.26	20.87	256.00	23.10	23.10	2.37	23.63
*	22372.000	20.81	2.17	15.10	5.71	26.29	20.89	256.00	23.20	23.20	986.86	1013.14
	22472.000	20.84	1.86	15.10	5.74	24.00	20.89	256.00	24.20	24.20	992.00	1016.00
*	22522.000	20.83	2.13	15.10	5.73	24.00	20.90	256.00	24.20	24.20	992.00	1016.00
	23442.000	20.84	2.14	15.20	5.64	24.00	20.91	256.00	24.30	24.30	992.00	1016.00
*	23492.000	20.86	1.88	15.20	5.66	24.00	20.92	256.00	24.30	24.30	992.00	1016.00
*	23592.000	20.82	2.91	15.20	5.62	21.25	20.96	256.00	23.20	23.20	2.38	23.62
	23992.000	20.82	2.98	15.30	5.52	21.05	20.96	256.00	23.30	23.30	2.47	23.53
	30002.000	20.89	3.42	15.90	4.99	20.00	21.07	256.00	23.90	23.90	3.00	23.00
	35552.000	21.00	3.42	16.00	5.00	19.99	21.18	256.00	24.00	24.00	3.01	22.99
*	1000.000	21.00	3.41	16.00	5.00	19.99	21.18	256.00	24.71	24.71	3.70	23.70
*	1150.000	21.19	2.19	16.10	5.09	30.01	21.26	256.00	24.82	24.82	5.00	35.00
	1300.000	21.26	1.64	16.21	5.05	40.74	21.30	256.00	24.92	24.92	7.13	47.87
	1800.000	21.34	1.77	16.56	4.78	39.66	21.39	256.00	25.27	25.27	7.67	47.33
	1922.000	21.36	1.80	16.65	4.71	39.36	21.41	256.00	25.38	25.38	7.82	47.18
	2050.000	21.39	1.84	16.75	4.64	39.08	21.44	256.00	25.48	25.47	7.96	47.05
	2300.000	21.45	1.90	16.93	4.52	38.62	21.50	256.00	25.64	25.64	8.19	46.81
	2750.000	21.56	2.03	17.25	4.31	37.78	21.62	256.00	25.96	25.96	8.61	46.39
	2855.000	21.59	2.05	17.32	4.27	37.66	21.65	256.00	26.03	26.03	8.67	46.33
	2957.000	21.62	2.07	17.39	4.23	37.51	21.69	256.00	26.10	26.10	8.74	46.26
	3350.000	21.75	2.18	17.68	4.07	36.84	21.82	256.00	26.39	26.39	9.08	45.92

	SECNO	CWSEL	VCH	ELMIN	DEPTH	TOPWID	EG	Q	XLBEL	RBEL	SSTA	ENDST
	3600.000	21.84	2.24	17.85	3.99	36.53	21.91	256.00	26.56	26.56	9.23	45.77
	3675.000	21.88	2.02	17.90	3.98	40.78	21.94	256.00	26.61	26.61	14.15	54.93
	19313.000	21.83	3.77	17.93	3.90	24.00	22.02	275.00	25.93	17.93	992.00	1016.00

	19363.000	21.82	3.86	17.93	3.89	24.00	22.03	275.00	25.93	17.93	992.00	1016.00
	19913.000	21.85	3.85	17.93	3.92	24.00	22.05	275.00	25.93	17.93	992.00	1016.00
	19963.000	21.86	3.74	17.93	3.93	24.00	22.05	275.00	25.93	17.93	992.00	1016.00
	20113.000	21.92	3.14	17.93	3.99	29.95	22.07	275.00	24.93	24.93	985.03	1014.97
*	20443.000	21.85	4.23	17.93	3.92	28.15	22.13	275.00	25.03	25.93	988.26	1016.41
*	29003.000	23.72	3.09	19.10	4.62	28.78	23.87	275.00	27.40	27.40	984.13	1012.91
	33003.000	24.27	3.13	19.90	4.37	25.94	24.42	232.00	28.80	27.10	987.16	1013.11
	39003.000	25.28	3.58	21.20	4.08	23.78	25.48	232.00	31.30	31.80	987.92	1011.70
	44703.000	26.47	3.57	22.40	4.07	23.97	26.66	232.00	33.60	33.60	988.02	1011.98
*	45003.000	26.61	2.64	22.50	4.11	29.67	26.72	232.00	33.60	33.60	985.16	1014.84
*	10254.000	27.00	5.11	24.70	2.30	22.20	27.41	207.00	35.70	35.70	988.90	1011.10
*	11554.000	28.35	7.49	25.60	2.75	16.16	29.23	207.00	35.70	34.50	991.85	1008.01
*	14454.000	30.39	3.40	26.00	4.39	23.46	30.57	207.00	36.10	34.90	987.75	1011.21
*	14794.000	30.56	1.87	26.10	4.46	33.67	30.62	207.00	35.70	35.70	983.17	1016.83
*	14964.000	30.54	2.66	26.10	4.44	17.66	30.65	207.00	36.50	36.50	991.06	1008.71
	16394.000	30.57	2.64	26.10	4.47	17.66	30.67	207.00	36.50	36.50	991.06	1008.71
	16564.000	30.63	1.93	26.30	4.33	33.50	30.69	207.00	35.70	35.70	983.25	1016.75
*	16904.000	30.54	3.88	26.30	4.24	20.55	30.77	207.00	36.30	36.30	988.96	1009.52
	24044.000	31.98	3.01	27.20	4.78	24.32	32.12	207.00	37.30	37.30	987.84	1012.16
	25504.000	32.19	2.89	27.30	4.89	24.85	32.32	207.00	37.40	37.30	987.62	1012.47
*	25524.000	31.96	7.43	29.20	2.76	16.36	32.81	207.00	39.30	39.00	991.89	1008.25
*	26604.000	33.53	2.33	29.80	3.73	23.79	33.61	116.00	38.70	38.10	987.30	1011.09
	33804.000	35.31	2.26	31.50	3.81	24.20	35.39	116.00	49.90	39.10	987.08	1011.29

	SECNO	CWSEL	VCH	ELMIN	DEPTH	TOPWID	EG	Q	XLBEL	RBEL	SSTA	ENDST
	40004.000	36.71	2.27	32.90	3.81	24.01	36.79	116.00	40.30	40.90	987.07	1011.08
	41504.000	37.00	1.87	33.00	4.00	27.08	37.06	116.00	40.90	41.20	985.70	1012.77
	44504.000	37.42	1.87	33.50	3.92	27.19	37.48	116.00	41.40	41.20	985.64	1012.82
	46004.000	37.65	2.00	33.90	3.75	26.56	37.71	116.00	42.00	41.90	986.08	1012.65
*	49004.000	38.35	2.69	35.20	3.15	23.31	38.46	116.00	42.90	42.90	987.87	1011.18
	52504.000	39.62	2.59	36.40	3.22	23.71	39.72	116.00	43.70	43.90	987.65	1011.36
	56004.000	41.05	3.01	38.10	2.95	22.21	41.19	116.00	45.10	45.20	988.46	1010.68
	64404.000	44.68	2.64	41.50	3.18	23.53	44.79	116.00	47.90	48.40	987.75	1011.28
	65004.000	44.91	2.75	41.80	3.11	23.10	45.02	116.00	48.20	48.70	987.98	1011.08

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 658.210 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 658.210 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 658.210 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO= 673.210 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 673.210 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 673.210 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 19621.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 19711.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 19761.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 20281.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

```
 WARNING SECNO=  20371.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  20781.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  36541.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  38501.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  22372.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  22522.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  23492.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  23592.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   1000.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   1150.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  20443.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  29003.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  45003.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 NOTE    SECNO=  10254.000  PROFILE=  1  WSEL BASED ON X5 CARD
 WARNING SECNO=  10254.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO=  11554.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=  11554.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 WARNING SECNO=  14454.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  14794.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
1
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 WARNING SECNO=  14964.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  16904.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO=  25524.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=  25524.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
 CAUTION SECNO=  25524.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

 WARNING SECNO=  26604.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=  49004.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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1*****************************************                                    ************************************
 *  HEC-2 WATER SURFACE PROFILES           *                                   *  U.S. ARMY CORPS OF ENGINEERS      *
 *                                         *                                   *  HYDROLOGIC ENGINEERING CENTER     *
 *  Version   4.6.2;  May 1991             *                                   *  609 SECOND STREET, SUITE D        *
 *                                         *                                   *  DAVIS, CALIFORNIA 95616-4687      *
 *  RUN DATE    02DEC10    TIME   12:37:29  *                                   *          (916) 756-1104            *
 *****************************************                                    ************************************

                                        X     X  XXXXXXX   XXXXX              XXXXX
                                        X     X  X        X     X            X     X
                                        X     X  X        X                        X
                                        XXXXXXX  XXXX     X          XXXXX    XXXXX
                                        X     X  X        X                   X
                                        X     X  X        X     X             X
                                        X     X  XXXXXXX   XXXXX             XXXXXXX
1
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                                                                                                THIS RUN EXECUTED 02DEC10    12:37:29
 ************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 ************************************


 T1      CITY OF TRACY
 T2      STORM DRAINAGE MASTER PLAN
 T3      WESTSIDE CHANNEL SYSTEM (OPEN CHANNEL SEGMENTS)
 T4      HEC2 FILE (WSIDECH1)       DECEMBER 2010
 T5      STANTEC PROJECT NO. 184010207
 T6      100-YEAR 24-HOUR STORM ANALYSIS

      ****************************************************************
   ********************** FEB 26, 2010**********************
   *************** ELEVATIONS ARE ADJUSTED FOR NAVD 88 ***************
   ***************** 2.75 IS ADDED TO ALL ELEVATIONS *****************

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                 2                                                                   37.5

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      -1                 -1


 J5  LPRNT    NUMSEC                    ********REQUESTED SECTION NUMBERS********

     -10       -10

 QT        1        202
 NC     0.05       0.05       0.05        0.1         0.3
   !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
   *************** OCTOBER 30, 2009 ****************
   ************* CHANNEL REACH "C" BYRON ROAD TO DET 5 **********
   STA 60+50
 X1       50          7          0         59                                                    2.75
 GR    35.37          0      32.37         11       32.37          21       29.37          29       29.37        40.5
 GR    35.37         59      35.37         60

   STA 62+00

 X1      150          7          0         59         150         150         150                    2.75
 GR    36.17          0      33.17         11       33.17          21       30.17          29       30.17        40.5
 GR    36.17         59      36.17         60

   STA 64+00
1
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 X1      350          7          0         59         200         200         200                    2.75
 GR    36.93          0      33.93         11       33.93          21       36.93          29       30.93        40.5
 GR    36.93         59      36.93         60

   STA 65+50

 X1      500          7          0         59         150         150         150                    2.75
 GR    37.22          0      34.22         11       34.22          21       31.22          29       31.22        40.5
 GR    37.22         59      37.22         60

   STA 65+60
   ****************** REDDINGTON DRIVE CULVERT 2-7'x 3' BOX *****************
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```
X1      510          5          0         59          10          10          10                  2.75
GR    37.24          0      31.24         22       31.24          37       37.24          59       37.24          60


NC     0.05       0.05      0.013        0.3         0.5
  STA 65+71
X1      521          7         22         37          11          11          11                  2.75
X3       10
GR    37.26          0      37.26         22       31.26          22       31.26          37       37.26          37
GR    37.26         59      37.26         60

SC    2.013        0.5        3.0                    3.0         7.0         103         8.1       34.33       34.01

  STA 66+73.98
X1      624                                           103         103         103                  0.32
X2                           2      37.33       39.7
X3       10


NC     0.05       0.05       0.05        0.1         0.3
  STA 67+00
X1      650          7          0         59          26          26          26                  2.75
GR    37.63          0      34.63         11       34.63          21       31.63          29       31.63        40.5
GR    37.63         59      37.63         60

  STA 68+50

X1      800          7          0         59         150         150         150                  2.75
GR     38.8          0       35.8         11        35.8          21        32.8          29        32.8        40.5
GR     38.8         59       38.8         60

  STA 70+00

X1      950          7          0         59         150         150         150                  2.75
GR     39.7          0       36.7         11        36.7          21        33.7          29        33.7        40.5
GR     39.7         59       39.7         60

  STA 70+30
1
   02DEC10      12:37:29                                                                                    PAGE    3


X1      980          6          8         59          30          30          30                  2.75
GR    40.50          0      40.50          8        34.5          28        34.5        39.5       40.50          59
GR    40.50         60

  STA 70+33
  ************* OUTLET OF DET 5 ON NORTH SIDE OF 11TH STREET, 3- 48" RCP *******

NC                         0.013        0.3         0.5
X1      982          6         22         59           3           3           3                  2.75
GR     40.5          0       40.5         22        34.5          22       34.07          38       40.5          59
GR     40.5         60

SC    3.013        0.5        3.0                    4.0                     280         1.1       37.81       36.82

  STA 73+12
X1     1262                                          280         280         280                  0.99
X2                           2      41.81       42.99
X3       10

  ******** STARTING WSE = 39.8 (HMS MODEL)+ 2.6 = 42.4 **********

QT        1        240
NC     0.05       0.05       0.05        0.1         0.3
  STA 73+88 = STA 1+70 CHANNEL REACH "A" WITHIN DET 5
X1     1338         17        845         912          76          76          76                  2.75
X5        1       42.4
GR     42.0          0      35.34          12       35.34          26        39.0          40       37.59          48
GR     38.0        406      35.15         824        40.0         840        40.0         845        35.0         851
GR     35.0        881       35.0         906        40.0         912        40.0         917       35.69         933
GR     37.0       1274       42.0        1294

  STA 75+18 = STA 3+00 CHANNEL REACH "A" WITHIN DET 5


X1     1468         17        845         912         130         130         130                  2.75
GR     42.0          0      35.44          12       35.44          26        39.0          40        37.6          48
GR     38.0        406       36.0         824        40.0         840        40.0         845        35.5         851
GR     35.5        881       35.5         906        40.0         912        40.0         917        36.0         933
GR     37.0       1274       42.0        1294

  STA 80+18 = STA 8+00 CHANNEL REACH "A" WITHIN DET 5

X1     1968         10        160         234         500         500         500                  2.75
GR     42.0          0       40.0           8        39.0         160        36.5         170        36.5         200
GR     37.0        225       39.0         234        37.0         246       36.67         570        40.0         582

               CHANNEL REACH "A" STATION 9+76.05
        X-SECTION 976 IS THE BEGINNING OF THE WESTSIDE CHANNEL FROM DET 5

1
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X1      976          6          3       57.0         176         176         176                 2.75
  X5     1   39.9
GR     43.0          0       43.3          3       36.71        24.0       36.71        36.0        43.0        57.0
GR     43.0         60

               CHANNEL REACH "A" STATION 12+30.81

X1     1230          6          3         57      254.76      254.76      254.76                 2.75
GR     44.3          0       44.3          3       37.25          24       37.25        36.0        44.3        57.0
GR     44.3         60

               CHANNEL REACH "A" STATION 15+00

X1     1500          7          1         60         270         270         270                 2.75
GR     44.0          0       44.0          1       38.07        19.5        37.8          31        40.8          52
GR     40.8         58       45.0         60

               CHANNEL REACH "A" STATION 20.+00.00

X1     2000                                          500         500         500                 1.01

               CHANNEL REACH "A" STATION 21+10

X1     2110          6         26       37.5         114         114         114                 2.75
GR     46.0          0       46.0          1       40.20        19.5        40.2        31.0        46.0          52
GR     46.0         60

               CHANNEL REACH "B" STATION 9+00

X1      900          5          0         59          26          26          26                 2.75
GR     47.0          0      40.44         22       40.44          37        47.0          59        47.0          60


QT        1        233
        ********CORRAL HOLLOW ROAD CULVERT DOWNSTREAM SECTION   **********
                        2-CELL 7'*5' CBC
        CHANNEL REACH "B " STATION 9+10.50
NC     0.05       0.05      0.013        0.3         0.5
X1      910          6         22         37          10          10          10                 2.75
X3       10
GR     46.6          0       46.6         22       40.48          22       40.48          37        46.6          37
GR     46.6         60

SB      0.9       2.25        3.0                     15           1          70                43.62       43.23
        CHANNEL REACH "B" STATION 10+65.50

X1     1065                                          155         155         155                 0.39
X2                              1      48.62       49.74
X3       10
        CHANNEL REACH "B" STATION 11+05.50

1
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NC     0.05       0.05       0.05        0.1         0.3
X1     1105          5          0         59          40          40          40                 2.75
GR     47.0          0       41.0         22        41.0          37        47.0          59        47.0          60

        CHANNEL REACH "B" STATION 12+45.50

X1     1245          7         17         59         140         140         140                 2.75
GR     48.0          0       45.0          9        45.0          17       41.75          26        41.4        37.5
GR     48.0         59       48.0         60

        CHANNEL REACH "B" STATION 14+00.50

X1     1400          6          3         59         155         155         155                 2.75
GR     50.0          0       50.0          3       42.25          26        41.9        37.5        48.0          59
GR     48.0         60

        CHANNEL REACH "B" STATION 15+13.50

X1     1513          5          0         59         113         113         113                 2.75
GR     50.0          0       42.2         22        42.2          37        50.0          59        50.0          60

        CHANNEL REACH "B" STATION 15+30
                FOX HOLLOW WAY 14'10"*4'10" ARCH CMP
                DOWNSTREAM SECTION


NC                         0.024        0.3         0.5
X1     1530         11          0      14.83          17          17          17                 2.75
X3       10
GR     50.3          0      42.26          0       42.26           1       42.26           3       42.26           6
GR    42.26       7.42      42.26        9.8       42.26        11.8       42.26        13.8       42.26       14.83
GR     50.3      14.83


X1     1531                                            1           1           1
BT        9          0      53.05       47.04           1       53.05       48.54           3       53.05       49.14
BT        6      53.05      49.64        7.42       53.05       49.84         9.8       53.05       49.64        11.8
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BT    53.05      49.14       13.8      53.05       48.54       14.83       53.05       47.04


X1     1641                                        110         110         110                 0.33
X2                                                                          1

        CHANNEL REACH "B" STATION 1642.50

X1     1642                                          1           1           1
X3       10

1
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NC     0.05       0.05       0.05        0.1         0.3
X1     1655          5          0         59          13          13          13                 2.75
GR     50.7          0      42.60         22       42.60          37        50.7          59       50.7          60

        CHANNEL REACH "B" STATION 16+82.50

X1     1682          6          0         59          27          27          27                 2.75
GR     50.0          0       50.0          8        42.8          26        42.8        37.5       50.0          59
GR     50.0         60

        CHANNEL REACH "B" STATION 19+82.50

X1     1982          6          0         59         245         287         300                 2.75
GR    50.80          0      50.80          3       43.64          26       43.64        37.5       52.00          59
GR    52.00         60

        CHANNEL REACH "B" STATION 22+82.50

X1     2282          6          0         59         303         295         300                 2.75
GR     50.5          0       50.5          8       44.48          26       44.48        37.5       54.0          59
GR     54.0         60

        CHANNEL REACH "B" STATION 25+82.50

X1     2582          6          3         59         320         285         300                 2.75
GR    52.00          0      52.00          3       45.32          26       45.32        37.5       54.00          59
GR    54.00         60

        CHANNEL REACH "B" STATION 28+83.78

X1     2883          5          0         59         301         301         301                 2.75
GR     54.5          0       46.1         22        46.1          37        52.0          59       52.0          60


NC     0.05       0.05      0.024        0.3         0.5

        CHANNEL REACH "C" STATION 10+10.23
        CYPRESS DRIVE CULVERT DOWNSTREAM SECTION
        14'10"*4'10" ARCH CMP
X1     1010         11          0      14.83          40          40          40                 2.75
X3       10
GR     55.0          0      46.18          0       46.18           1       46.18           3       46.18           5
GR    46.18       7.42      46.18       9.84       46.18       11.84       46.18       13.84       46.18       14.83
GR     55.0      14.83

        CHANNEL REACH "C" STATION 10+20.23

X1     1011                                          1           1           1
BT        9          0      57.15      50.96           1       57.15       52.45           3       57.15       53.05
BT        5      57.15      53.55       7.42       57.15       53.76        9.84       57.15       53.55       11.84
BT    57.15      53.05      13.84      57.15       52.45       14.83       57.15       50.96

        CHANNEL REACH "C" STATION 11+33
1
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X1     1133                                        122         122         122                 0.40
X2                                                                          1

        CHANNEL REACH "C" STATION 11+33.88

X1     1134                                          1           1           1
X3       10

        CHANNEL REACH "C" STATION 11+48.88


NC     0.05       0.05       0.05        0.1         0.3
X1     1149          5          0         59          15          15          15                 2.75
GR     54.0          0       54.0          3       46.63          26       46.63        37.5       57.0          90



X1     1184          8          3       46.5          35          35          35                 2.75
GR     54.0          0       53.7          3       47.05          26        46.7        37.5       49.7        46.5
GR     49.7       54.5       57.0         89        57.0          90
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CHANNEL REACH "C" STATION 14+43.88

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X1     1443          8          3       46.5         259         259         259                  2.75
GR    54.90          0      54.90          3       47.78          26       47.43        37.5      50.43        46.5
GR    50.43       54.5      57.00         89       57.00          90
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CHANNEL REACH "C" STATION 17+39.24

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QT        1        219
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********** TENNIS LANE 1-5'x3' BOX & 1-14'8"*4'1" ARCH ARCH CULVERT ******

```
X1     1739          4          0         90         296         296         296                  2.75
GR     54.0          0      48.26         30       48.26       50.67          54          90
```

```
NC     0.05       0.05      0.024        0.3         0.5
X1     1779         17          0         90          40          40          40                  2.75
GR     54.0          0      48.55         30       48.55          35       48.39          36      48.39        36.5
GR    48.39       37.5      48.39       38.5       48.39        39.5       48.39        41.5      48.39       43.33
GR    48.39         45      48.39         47       48.39          48       48.39          49      48.39          50
GR    48.39      50.67       54.0         90
```

CHANNEL REACH "C" STATION 17+89.25

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```
X1     1780                                             1           1           1
BT      -17          0      56.75      56.75          30       56.75       54.30          35      56.75       54.30
BT               36      56.75      52.75        36.5       56.75       53.75        37.5      56.75       54.25
BT             38.5      56.75      54.65        39.5       56.75       54.75        41.5      56.75       54.95
BT            43.33      56.75      55.47          45       56.75       54.95          47      56.75       54.75
BT               48      56.75      54.65          49       56.75       54.25          50      56.75       53.75
BT            50.67      56.75      52.75          90       56.75       56.75
```

```
X1     1875                                            95          95          95                  0.24
X2                                                                                1
```

```
X1     1876                                             1           1           1
```

```
NC     0.05       0.05       0.05        0.1         0.3
X1     1886          5          0         59          10          10          10                  2.75
GR     54.7          0      48.66         30       48.66          51        56.0          59        56.0          60
```

CHANNEL REACH "C" STATION 19+16.05

```
X1     1916          6          0         59          30          30          30                  2.75
GR    54.77          0      54.77          8       49.04          29       48.77        40.5      54.77          59
GR    54.77         60
```

CHANNEL REACH "C" STATION 21+91.05

```
X1     2191                                            275         275         275                   .99
```

CHANNEL REACH "C" STATION 24+91.05

```
X1     2491          7          0         59         300         300         300                  2.75
GR    56.00          0      55.17         12       55.17          20       52.17          29      51.84        41.5
GR    56.00         59       56.0         60
```

CHANNEL REACH "C" STATION 26+91.05

```
X1     2691          6          0         59         200         200         200                  2.75
GR     59.9          0       59.9          8       52.87          29        52.6        40.5        60.0          59
GR     60.0         60
```

LOCATION OF 90 DEGREE CHANNEL BEND AT LATHROP PARKWAY AND SCHULTE ROAD
CHANNEL REACH "D" STATION 11+19.94

```
QT        1        211
X1     1119          6          0         59         295         165         225                  2.75
GR     60.0          0       60.0          8       53.87          29        53.6        40.5        60.0          59
GR     60.0         60
```

CHANNEL REACH "D" STATION 14+19.94

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STA 15+42

```
X1     1542          6          7         59         123         123         123                  2.75
GR     60.7          0       60.7          7       54.77          29       54.50        40.5        60.5          59
GR     60.5         60
```

STA 18+80

```
X1     1880          6          2         59         338         338         338                 2.75
GR     61.5          0       62.3          2       55.17          29       54.90        40.5       61.5          59
GR     61.5         60

  STA 22+00

X1     2200          8         10         59         320         320         320                 2.75
GR     62.3          0       62.3         10        58.2          12        58.2          18       55.47          20
GR     55.2       40.5       62.3         59        62.3          60


QT        1        208
  STA 23+62
  ************** UPTC RAILROAD CULVERT, 12'x6' BOX *************
X1     2362          6          0         60         162         162         162                 2.75
GR     62.5          0       62.5         10        61.4          24        55.4          24       55.4          36
GR     62.5         60


NC     0.05       0.05      0.013        0.3         0.5
  STA 23+73.86
X1     2374          6         24         36          12          12          12                 2.75
X3       10
GR     69.4          0       69.4         24        55.4          24        55.4          36       69.4          36
GR     69.4         60

SC    1.013        0.5          3                     6          12          68         8.1       58.35       58.15

  STA 24+39.82
X1     2440                                            68          68          68                  0.2
X2                                 2      69.35       72.15
X3       10


NC     0.05       0.05       0.05        0.1         0.3
  STA 24+52
X1     2452          6          0         60          12          12          12                 2.75
GR     64.1          0       64.1         10        61.0          24        55.6          24       55.6          36
GR     64.1         60
```



```
QT        1        144
  STA 26+00
X1     2600          8         10         59         148         148         148                 2.75
GR     64.7          0       64.7         10       59.02          12       59.02          18       56.56          20
GR    56.02       40.5       64.5         59        64.5          60

  STA 30+00


X1     3000          6          7         59         400         400         400                 2.75
GR     65.6          0       65.6          7       56.87          29        56.6        40.5       65.8          59
GR     65.8         60

  STA 33+00

X1     3300          6          7         59         300         300         300                 2.75
GR     66.3          0       66.3          7       58.97          29        58.7        40.5       66.6          59
GR     66.6         60

  STA 34+00

X1     3400          6          7         59         100         100         100                 2.75
GR     66.8          0       66.8          7       59.37          29        59.1        40.5       67.6          59
GR     67.6         60


QT        1        133
  ************** SCHULTE ROAD CULVERT AT SYCAMORE PARKWAY, 2-7'x5' BOX *********
  STA 34+69.49
X1     3470          5          0         59          70          70          70                 2.75
GR     66.7          0      59.34         21       59.34          38        67.1          59       67.1          60


NC     0.05       0.05      0.013        0.3         0.5
  STA 10+30.07  REACH "E"
X1     1030          6         21         38          30          30          30                 2.75
X3       10
GR     66.7          0       66.7         21       59.46          21       59.46          38       67.2          59
GR     67.2         60

SC    2.013        0.5          3                     5           7         115         8.1       62.54       62.21

  STA 11+45
X1     1145                                            115         115         115                 0.33
X2                                 2      67.54       69.45
X3       10
```

```
NC     0.05       0.05       0.05        0.1         0.3

  STA 13+00
X1     1300          6          8         59         155         155         155                  2.75
GR     68.0          0       68.0          8       61.07          29        60.8        40.5      70.0          59
GR     70.0         60

  STA 13+49.25
  ********** BENE VAGIENNE ROAD CULVERT, 13'x7" X 4'x7" ARCH CMP *******

X1     1349          4          0         60          49          49          49                  2.75
GR     68.0          0       61.1         23        61.1          37        68.0          60


NC     0.05       0.05      0.024        0.3         0.5
  STA 13+88
X1     1388         13         23         60          39          39          39                  2.75
X3       10
GR     69.7          0       69.7         23       61.39          23       61.39          24      61.39          26
GR    61.39         28      61.39      29.80       61.39        31.6       61.39        33.6      61.39        35.6
GR    61.39       36.6       69.7       36.6        69.7          60


X1     1389                                            1           1           1
BT       11          0      72.45      72.45          23       72.45       66.14          24      72.45       67.14
BT       26       72.45      68.14         28       72.45       68.55        29.8       72.45      68.72        31.6
BT    72.45       68.55       33.6      72.45       68.14        35.6       72.45       67.14       36.6       72.45
BT    66.14         60       72.45      72.45

  STA 14+91.75

X1     1492                                          103         103         103                  0.68
X2                                                                               1


X1     1493                                            1           1           1
X3       10


NC     0.05       0.05       0.05        0.1         0.3
  STA 15+01.75
X1     1502          4          0         60          10          10          10                  2.75
GR     68.0          0       62.1         23        62.1          37        68.0          60

  STA 17+00

X1     1700          7         12         59         202         202         202                  2.75
GR     70.0          0       67.0         12        67.0          20       63.67          29      63.4         40.5
GR     70.0         59       70.0         60

  STA 18+20
1
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X1     1820          9          9         59         120         120         120                  2.75
GR     70.0          0       67.3         12        67.3          20       64.57          29      64.3         45.5
GR     69.3       46.5       69.3       51.5        70.0        52.5        70.0          60

  STA 20+00

X1     2000          8          8       53.5         180         180         180                  2.75
GR     71.5          0       71.5          8       65.77          29        65.5        45.5      70.5         46.5
GR     70.5       52.5       74.0       53.5        74.0          60

  STA 21+18.90
  ********** AMBERWOOD WAY CULVERT, 12'x 4' BOX **********

X1     2119          4          0         60         119         119         119                  2.75
GR     72.0          0       66.2         24        66.2          36        74.0          60


NC     0.05       0.05      0.013        0.3         0.5
  STA 21+27
X1     2127          6         24         36           8           8           8                  2.75
X3       10
GR     72.0          0       72.0         24        66.2          24        66.2          36      74.0          36
GR     74.0         60

SC    1.013        0.5          3                   4.0        12.0          91         8.1      69.51       68.95

  STA 22+18
X1     2218                                           91          91          91                  0.56
X2                              2      73.51       74.65
X3       10


NC     0.05       0.05       0.05        0.1         0.3
  STA 22+27.78
X1     2228          4          0         60          10          10          10                  2.75
GR     72.0          0      66.76         24       66.76          36        74.2          60
```

```
  STA 24+00

X1     2400          6          8         59         172         172         172                2.75
GR     73.9          0       73.9          8       67.67          29        67.4        40.5        74.6          59
GR     74.6         60


  STA 26+00

X1     2600          6          8         59         200         200         200                2.75
GR     74.0          0       74.0          8       68.47          29        68.2        40.5        75.0          59
GR     75.0         60


  STA 30+00
1
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X1     3000          7          7         59         400         400         400                2.75
GR     76.0          0       73.7         12        73.7          20       70.97          29       70.70        40.5
GR     77.0         59       77.0         60


QT        1         79
  STA 30+44
  ************* MONUMENT DRIVE CULVERT, 8'x 4' BOX **************
X1     3044          4          0         60          44          44          44                2.75
GR     77.0          0      70.99         26       70.99          34        78.0          60


NC     0.05       0.05      0.013        0.3         0.5
  STA 30+54
X1     3054          6         26         34          10          10          10                2.75
X3       10
GR     77.0          0       77.0         26       71.00          26       71.00          34        78.0          34
GR     78.0         60

SC    1.013        0.5          3                    4.0         8.0          94         8.1       74.15       73.75

  STA 31+48
X1     3148                                            94          94          94                0.40
X2                            2      78.15       79.75
X3       10


NC     0.05       0.05       0.05        0.1         0.3
  STA 31+57.83
X1     3158          4          0         60          10          10          10                2.75
GR     77.0          0       71.5         26        71.5          34        78.0          60

  STA 35+00

X1     3500          7         20         59         342         342         342                2.75
GR    79.70          0       76.7         12        76.7          20       73.77          29        73.7        40.5
GR     80.0         59       80.0         60

  STA 39+00

X1     3900          6          8         59         400         400         400                2.75
GR     82.5          0       82.5          8       76.57          29        76.3        40.5        84.0          59
GR     84.0         60

  STA 39+52.40
  *************** ALLEGHENY WAY CULVERT, 7'x4' BOX **************

X1     3952          5          0         59          52          52          52                2.75
GR     83.0          0      76.55         26       76.55          33        84.0          59        84.0          60

1
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NC     0.05       0.05      0.013        0.3         0.5
  STA 39+62
X1     3962          6         26         33          10          10          10                2.75
X3       10
GR     83.0          0       84.0         26        76.7          26        76.7          33        84.0          33
GR     84.0         60

SC    1.013        0.5          3                    4.0         7.0         102         8.1       79.75       79.45

  STA 40+64
X1     4064                                           102         102         102                 0.3
X2                            2      83.75       85.75
X3       10


NC     0.05       0.05       0.05        0.1         0.3
  STA 40+73.58
X1     4074          5          0         59          10          10          10                2.75
GR     84.0          0      77.00         26       77.00          33        84.0          59        84.0          60
```

```
  STA 42+00

X1     4200          6          8         59         126         126         126                2.75
GR     84.0          0       84.0          8       77.99          29       77.72        40.5       85.00          59
GR    85.00         60

  STA 46+00

X1     4600          6          8         59         400         400         400                2.75
GR    86.20          0      86.20          8       80.27          29       80.00        40.5       88.00          59
GR    88.00         60

  STA 50+00

X1     5000          7         20         59         400         400         400                2.75
GR    88.60          0      85.60         12       85.60          20       83.15          29       82.88        40.5
GR    90.00         59      90.00         60

  51+98.10
  ********** CENTRAL AVE CULVERT, 7'x4' BOX **********

QT        1         66
X1     5198          5          0         59         198         198         198                2.75
GR     90.7          0      84.62         26       84.62          33        91.0          59        91.0          60


NC     0.05       0.05      0.013        0.3         0.5
  STA 92+08
X1     9208          6         26         33          10          10          10                2.75
X3       10
GR     90.7          0       90.7         26        84.7          26        84.7          33        91.0          33
GR     91.0         60
1
   02DEC10      12:37:29                                                                                    PAGE   15


SC    1.013        0.5          3                   4.0         7.0         102        8.1       87.65       87.45

  STA 53+18
X1     5318                                         110         110         110                 0.2
X2                            2      91.65       93.75
X3       10


NC     0.05       0.05       0.05        0.1         0.3
  STA 53+27.81
X1     5328          5          0         59          10          10          10                2.75
GR     92.0          0      84.93         26       84.93          33        94.0          59        94.0          60


QT        1         55
  STA 55+00
X1     5500          6          8         59         172         172         172                2.75
GR     93.4          0       93.3          8       86.77          29        86.5        40.5        94.6          59
GR     94.6         60

  STA 58+00

X1     5800          7         20         59         300         300         300                2.75
GR     95.3          0       92.2         12       92.2           20       89.47          29       89.2         40.5
GR     96.2         59       96.2         60

  STA 59+94.54
  ********** CHAPLIN WAY CULVERT, 60"x30" BOX **********

X1     5995          5          0         60         195         195         195                2.75
GR    96.70          0      90.88         27       90.88          32       97.00          59       97.80          60


NC     0.05       0.05      0.013        0.3         0.5
  STA 60+00
X1     6000          6         27         32          10          10          10                2.75
X3       10
GR    97.70          0      97.70         27       90.91          27       90.91          32       98.00          32
GR    98.00         60

SC    1.013        0.5          3                   2.5           5         104        8.1       94.00       93.66

  STA 61+04
X1     6104                                         104         104         104                 0.34
X2                            2      96.50       98.75
X3       10

1
   02DEC10      12:37:29                                                                                    PAGE   16


NC     0.05       0.05       0.05        0.1         0.3
  STA 61+13.64
X1     6114          5          0         60          10          10          10                2.75
GR    97.70          0      91.28         27       91.28          32       98.00          59       98.00          60
```

```
  STA 63+40

X1     6340          6          8         59         226         226         226                2.75
GR     99.4          0       99.7          8       93.67          29        93.4        40.5      100.0          59
GR    100.0         60


QT        1         52
  STA 64+89.04
  ************** VALPICO ROAD CULVERT, 60"x30" BOX *************
X1     6489          5          0         60         149         149         149                2.75
GR   100.00          0      94.74         27       94.74          32      100.00          59      100.00          60


NC     0.05       0.05      0.013        0.3         0.5
  STA 64+99
X1     6499          6         27         32          10          10          10                2.75
X3       10
GR   100.00          0     100.00         27       94.80          27       94.80          32      100.00          32
GR   100.00         60

SC    1.013        0.5          3                   2.5           5         132         8.1       98.23       97.55

  STA 66+31
X1     6631                                         132         132         132                0.68
X2                              2     100.73      103.49
X3       10


NC     0.05       0.05       0.05        0.1         0.3
  STA 66+40.72
X1     6641          5          0         60          10          10          10                2.75
GR   102.00          0      95.54         27       95.54          32      104.00          59      104.00          60

  STA 67+40

X1     6740          7         20         59          99          99          99                2.75
GR    102.0          0       99.4         12        99.4          20       96.67          29       96.4        40.5
GR    104.0         59      104.0         60

  STA 70+00

X1     7000          6          8         59         260         260         260                2.75
GR    104.6          0      104.6          8       99.07          29        98.8        40.5       105.0          59
GR    105.0         60

  STA 71+75
1
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X1     7175          6          8         59         175         175         175                2.75
GR   106.00          0     106.00          8      100.80          29      100.53        40.5      106.00          59
GR   106.00         60

  STA 75+00

X1     7500          6          8         59         325         325         325                2.75
GR   108.60          0     108.60          8      101.97          29      101.70        40.5      110.00          59
GR   110.00         60


QT        1         35
  STA 76+99.59
  ***************** CAMBRIDGE PLACE CULVERT, 72"x 44" CMPA *********
X1     7700          4          0         60         200         200         200                2.75
GR    110.9          0      103.6         27       103.6          33       110.0          60


NC     0.05       0.05      0.024        0.3         0.5
  STA 77+30.59
X1     7731         11         27         33          31          31          31                2.75
X3       10
GR    112.0          0      112.0         27       104.0          27       104.0          28       104.0          29
GR    104.0         30      104.0         31       104.0          32       104.0          33       112.0          33
GR    112.0         60


X1     7732                                           1           1           1
BT        9          0     114.75     114.75          27      114.75      108.25          28      114.75      109.35
BT       29     114.75     110.20         30      114.75      110.42          31      114.75      110.20          32
BT   114.75     109.35         33     114.75      108.25          60      114.75      114.75

  STA 78+35.33

X1     7835                                         103         103         103                  0.9
X2                                                                              1


X1     7836                                           1           1           1
X3       10


NC     0.05       0.05       0.05        0.1         0.3
```

```
  STA 78+55.23
X1     7855          4          0         60          19          19          19                    2.75
GR    112.0          0      105.2         27       105.2          33       112.0          60

  STA 80+25
  ********** CONCRETE CUT- OFF WALL **********
1
   02DEC10      12:37:29                                                                                  PAGE   18


X1     8025          7         20         59         175         175         175                    2.75
GR   113.00          0     110.00         12      110.00          20      107.58          29      107.31        40.5
GR   114.00         59     114.00         60

  STA 80+26

X1     8026          7         20         59           1           1           1                    2.75
GR   113.00          0     110.00         12      110.00          20      109.31          29      109.04        40.5
GR   114.00         59     114.00         60

  STA 82+40

X1     8240          7         20         59         214         214         214                    2.75
GR    116.0          0      113.0         12       113.0          20      110.87          29       110.6        40.5
GR    116.0         59      116.0         60

  STA 86+00

X1     8600          6          8         59         360         360         360                    2.75
GR    119.0          0      119.0          8      113.17          29      112.9        40.5       118.0          59
GR    118.0         60

  STA 87+80

X1     8780          6          8         59         180         180         180                    2.75
GR    120.0          0      120.0          8      114.17          29      113.9        40.5       120.0          59
GR    120.0         60

  ********** CENTRAL AVE CHANNEL **********


X1    -5328          5          0         59          10          10          10                    2.75
GR     92.0          0      84.93         26       84.93          33        94.0          59        94.0          60


QT        1         11
  STA 10+40
X1     1040          6          1         40          40          40          40                    2.75
GR     94.0          0       94.0          1        85.0        19.5       85.27          31        91.0          52
GR     91.0         60

  STA 13+00

X1     1300          6          1         40         260         260         260                    2.75
GR    93.00          0      93.00          1       85.36        19.5       85.63          31       91.20          52
GR    91.20         60

  STA 16+00
1
   02DEC10      12:37:29                                                                                  PAGE   19


X1     1600          6          1         40         300         300         300                    2.75
GR    95.00          0      95.00          1       85.78        19.5       86.13          31       92.00          52
GR    92.00         60

  STA 19+00

X1     1900          7          1         40         300         300         300                    2.75
GR    95.00          0      95.00          1       86.20        19.5       86.47          31       90.00          40
GR    90.00         48      92.00         60

  STA 22+00

X1     2200          7         20         59         300         300         300                    2.75
GR    96.00          0      96.00          1       86.62        19.5       86.97          31       92.00          40
GR    92.00         48      93.00         60

  STA 22+83.45

X1     2283          5          0         59          83          83          83                    2.75
GR     96.0          0       86.7         27        86.7          33        93.0          59        93.0          60

  ********** TRACY BLVD CULVERT 1-6'X4' CBC **********


NC     0.05       0.05      0.013        0.3         0.5
  STA 22+93.45
X1     2293          6         27         33          10          10          10                    2.75
X3       10
GR     96.0          0       96.0         27        86.7          27        86.7          33        96.0          59
GR     96.0         60
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SC    1.013       0.5          3                    4           6         235         8.1       87.34       86.71

  STA 25+18.45
X1     2518                                      235         235         235                   0.37
X2                               2      91.34      94.2
X3       10


NC     0.05       0.05       0.05        0.1         0.3
  STA 2528.45
X1     2528          5          0         59          10          10          10                   2.75
GR     94.1          0      87.34         27       87.34          33        93.3          59       93.3          60

  *************** CHANNEL EAST OF TRACY BLVD. ********************
  ******* X-SECTIONAL DATA BASED ON CURRENT FIELD SURVEY, 2.75' IS NOT ADDED ***

  STA 30+28
1
   02DEC10      12:37:29                                                                                  PAGE   20


X1     3028          4          0         45         500         500         500
GR    98.97          0      90.15         20       90.55          25       95.47          45

  *****************  CULVERT 1-15'X 5.0' ACMP *****************

  STA 30+98

X1     3098          4          0         45          70          70          70
GR    98.17          0      90.17         15       90.17          30       98.17          45


NC     0.05       0.05      0.023        0.3         0.5

  STA 31+00
X1     3100         11          0         45           2           2           2
GR    98.17          0      90.17         15       90.17          16       90.17          18       90.17          21
GR    90.17       22.5      90.17         24       90.17          27       90.17          29       90.17          30
GR    98.17         45

  STA 31+01

X1     3101                                            1           1           1
BT      -11          0      98.17      98.17          15       98.17       90.17          16       98.17       91.40
BT                  18      98.17      93.17          21       98.17       94.47        22.5       98.17       95.17
BT                  24      98.17      94.47          27       98.17       93.17          29       98.17       91.40
BT                  30      98.17      90.17          45       98.17       98.17

  STA 31+58

X1     3157                                           57          57          57                   0.47
X2                                                                                1


X1     3158                                            1           1           1
X3       10


NC     0.05       0.05       0.05        0.1         0.3

  STA 34+38
X1     3438          4          0         45         280         280         280
GR    98.38          0      90.50         20       91.20          25       94.19          45

  *****************  CULVERT 1-15'X 5.5' ACMP *****************

  STA 37.21

X1     3721          4          0         45         283         283         283
GR    97.41          0      89.91         15       89.91          30       97.41          45

1
   02DEC10      12:37:29                                                                                  PAGE   21


NC     0.05       0.05      0.023        0.3         0.5

  STA 37+23
X1     3723         11          0         45           2           2           2
GR    97.41          0      89.91         15       89.91          16       89.91          18       89.91          21
GR    89.91       22.5      89.91         24       89.91          27       89.91          29       89.91          30
GR    97.41         45

  STA 37+24

X1     3724                                            1           1           1
BT      -11          0      97.41      97.41          15       97.41       89.91          16       97.41       91.64
BT                  18      97.41      93.41          21       97.41       94.71        22.5       97.41       95.41
BT                  24      97.41      94.71          27       97.41       93.41          29       97.41       91.64
BT                  30      97.41      89.91          45       97.41       97.41

  STA 37+82
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X1     3782                                        58          58          58                   0.09
X2                                                                          1


X1     3783                                         1           1           1
X3       10


NC     0.05       0.05       0.05        0.1         0.3

  STA 39+13
X1     3913          4          0         50         130         130         130
GR    99.19          0      90.75         20       90.85          25       96.29          50

  STA 41+43

X1     4143          4          0         45         230         230         230
GR    99.32          0      90.18         20       90.13          25       96.06          45

  STA 42+33

X1     4233          4          0         45          90          90          90
GR    97.73          0      90.30         20       90.05          25       97.65          26

  STA 44+13

X1     4413          4          0         45         180         180         180
GR    97.45          0      90.40         25       90.33          32       97.59          33
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**************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
**************************************

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

WESTSIDE CHANNEL SYSTEM

SUMMARY PRINTOUT TABLE  150
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	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	50.000	.00	.00	.00	32.12	202.00	37.50	.00	37.52	3.56	1.18	171.72	107.05
*	150.000	150.00	.00	.00	32.92	202.00	37.56	.00	37.60	7.34	1.52	132.94	74.54
*	350.000	200.00	.00	.00	33.68	202.00	37.81	.00	38.00	83.54	3.49	57.92	22.10
*	500.000	150.00	.00	.00	33.97	202.00	38.30	.00	38.35	10.33	1.71	117.98	62.86
	510.000	10.00	.00	.00	33.99	202.00	38.32	.00	38.36	6.56	1.51	133.82	78.86
*	521.000	11.00	.00	.00	34.01	202.00	38.27	.00	38.42	2.02	3.16	63.85	142.05
	624.000	103.00	39.70	37.33	34.33	202.00	38.84	.00	38.98	1.72	2.99	67.61	154.11
*	650.000	26.00	.00	.00	34.38	202.00	38.96	.00	38.99	7.85	1.56	129.88	72.10
*	800.000	150.00	.00	.00	35.55	202.00	39.12	.00	39.21	27.91	2.42	83.60	38.24
	950.000	150.00	.00	.00	36.45	202.00	39.64	.00	39.78	51.07	2.97	68.02	28.27
	980.000	30.00	.00	.00	37.25	202.00	39.76	.00	40.02	90.76	4.07	49.61	21.20
*	982.000	3.00	.00	.00	36.82	202.00	39.87	.00	40.04	3.19	3.33	60.58	113.04
*	1262.000	280.00	42.99	41.81	37.81	202.00	41.72	.00	41.81	1.27	2.41	83.96	179.51
*	1338.000	76.00	.00	.00	37.75	240.00	42.40	.00	42.40	.01	.08	3557.33	2174.07
	1468.000	130.00	.00	.00	38.19	240.00	42.40	.00	42.40	.02	.09	3293.20	1902.56
*	1968.000	500.00	.00	.00	39.25	240.00	42.40	.00	42.40	.13	.20	1181.28	675.10
*	976.000	176.00	.00	.00	39.46	240.00	42.23	.00	42.49	82.75	4.12	58.19	26.38

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K

*	1230.000	254.76	.00	.00	40.00	240.00	43.59	.00	43.73	31.34	2.95	81.44	42.87
	1500.000	270.00	.00	.00	40.55	240.00	44.29	.00	44.36	18.14	2.14	112.07	56.36
	2000.000	500.00	.00	.00	41.56	240.00	45.24	.00	45.32	19.96	2.21	108.64	53.72
*	2110.000	114.00	.00	.00	42.95	240.00	45.45	.00	45.86	108.67	5.72	50.26	23.02
	900.000	26.00	.00	.00	43.19	240.00	45.88	.00	46.10	64.97	3.70	64.94	29.78
*	910.000	10.00	.00	.00	43.23	233.00	45.71	.00	46.32	12.97	6.24	37.31	64.69
	1065.000	155.00	49.74	48.62	43.62	233.00	45.91	.00	46.63	16.57	6.77	34.40	57.23
*	1105.000	40.00	.00	.00	43.75	233.00	46.63	.00	46.78	45.49	3.17	73.41	34.55
	1245.000	140.00	.00	.00	44.15	233.00	47.33	.00	47.55	62.54	3.76	61.98	29.46
	1400.000	155.00	.00	.00	44.65	233.00	48.15	.00	48.30	38.77	3.12	74.79	37.42
	1513.000	113.00	.00	.00	44.95	233.00	48.53	.00	48.64	22.74	2.59	90.00	48.87
	1530.000	17.00	.00	.00	45.01	233.00	48.46	.00	48.78	17.28	4.55	51.16	56.06
	1531.000	1.00	53.05	49.84	45.01	233.00	48.45	.00	48.79	19.57	4.68	49.81	52.67
	1641.000	110.00	53.05	50.17	45.34	233.00	48.67	.00	49.03	21.56	4.84	48.11	50.18
	1642.000	1.00	.00	.00	45.34	233.00	48.70	.00	49.04	18.65	4.68	49.83	53.95
	1655.000	13.00	.00	.00	45.35	233.00	48.99	.00	49.09	21.98	2.57	90.53	49.70
	1682.000	27.00	.00	.00	45.55	233.00	49.02	.00	49.18	37.57	3.18	73.34	38.01
	1982.000	300.00	.00	.00	46.39	233.00	50.05	.00	50.18	29.54	2.88	80.84	42.87
	2282.000	300.00	.00	.00	47.23	233.00	50.94	.00	51.08	30.19	2.96	78.82	42.40
	2582.000	300.00	.00	.00	48.07	233.00	51.81	.00	51.93	26.56	2.76	84.42	45.21
	2883.000	301.00	.00	.00	48.85	233.00	52.52	.00	52.61	19.20	2.38	97.72	53.18
	1010.000	40.00	.00	.00	48.93	233.00	52.48	.00	52.78	15.89	4.43	52.65	58.46
	1011.000	1.00	57.15	53.76	48.93	233.00	52.47	.00	52.80	18.34	4.56	51.13	54.40
	1133.000	122.00	57.15	54.16	49.33	233.00	52.69	.00	53.05	20.91	4.79	48.62	50.95
	1134.000	1.00	.00	.00	49.33	233.00	52.73	.00	53.06	18.04	4.62	50.40	54.86
	1149.000	15.00	.00	.00	49.38	233.00	53.02	.00	53.11	21.34	2.64	96.08	50.44

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	1184.000	35.00	.00	.00	49.45	233.00	53.08	.00	53.21	30.35	2.91	83.79	42.30
	1443.000	259.00	.00	.00	50.18	233.00	53.86	.00	53.99	29.39	2.90	84.39	42.98
*	1739.000	296.00	.00	.00	51.01	219.00	54.42	.00	54.45	9.36	1.56	140.27	71.58
*	1779.000	40.00	.00	.00	51.14	219.00	54.43	.00	54.48	2.58	1.66	132.18	136.27
*	1780.000	1.00	56.75	56.75	51.14	219.00	54.43	.00	54.48	7.19	1.92	114.27	81.65
	1875.000	95.00	56.75	56.99	51.38	219.00	54.49	.00	54.56	7.33	2.04	107.46	80.91
*	1876.000	1.00	.00	.00	51.38	219.00	54.51	.00	54.56	3.23	1.80	121.88	121.93
*	1886.000	10.00	.00	.00	51.41	219.00	54.49	.00	54.58	20.81	2.34	93.49	48.00
*	1916.000	30.00	.00	.00	51.52	219.00	54.51	.00	54.71	62.53	3.62	60.46	27.70
	2191.000	275.00	.00	.00	52.51	219.00	55.89	.00	56.03	37.70	3.01	72.71	35.67
	2491.000	300.00	.00	.00	54.59	219.00	57.37	.00	57.59	73.40	3.77	58.14	25.56
	2691.000	200.00	.00	.00	55.35	219.00	58.62	.00	58.81	50.84	3.49	62.80	30.71
	1119.000	225.00	.00	.00	56.35	211.00	59.67	.00	59.82	39.82	3.08	68.50	33.44
	1542.000	123.00	.00	.00	57.25	211.00	60.24	.00	60.43	59.19	3.51	60.10	27.43
*	1880.000	338.00	.00	.00	57.65	211.00	61.47	.00	61.57	21.47	2.44	86.55	45.54
*	2200.000	320.00	.00	.00	57.95	211.00	61.99	.00	62.04	10.78	1.87	112.61	64.27
*	2362.000	162.00	.00	.00	58.15	208.00	62.20	.00	62.31	24.59	2.73	76.29	41.94
*	2374.000	12.00	.00	.00	58.15	208.00	62.12	.00	62.42	4.57	4.37	47.63	97.29
	2440.000	68.00	72.15	69.35	58.35	208.00	62.08	.00	62.42	5.44	4.65	44.76	89.16

*	2452.000	12.00	.00	.00	58.35	208.00	62.31	.00	62.45	29.67	2.99	69.67	38.18
*	2600.000	148.00	.00	.00	58.77	144.00	62.64	.00	62.67	6.97	1.45	99.65	54.53
*	3000.000	400.00	.00	.00	59.35	144.00	63.02	.00	63.08	15.76	2.10	68.63	36.28
*	3300.000	300.00	.00	.00	61.45	144.00	63.83	.00	64.04	81.26	3.68	39.08	15.97
	3400.000	100.00	.00	.00	61.85	144.00	64.53	.00	64.68	51.70	3.15	45.64	20.03
*	3470.000	70.00	.00	.00	62.09	133.00	64.83	.00	64.89	17.10	1.97	67.45	32.17
*	1030.000	30.00	.00	.00	62.21	133.00	64.81	.00	64.94	2.18	2.90	53.41	90.10

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	1145.000	115.00	69.45	67.54	62.54	133.00	65.10	.00	65.23	2.28	2.95	52.51	87.99
*	1300.000	155.00	.00	.00	63.55	133.00	65.12	65.12	65.71	367.38	6.16	21.59	6.94
*	1349.000	49.00	.00	.00	63.85	133.00	66.11	.00	66.23	43.28	2.72	48.88	20.22
	1388.000	39.00	.00	.00	64.14	133.00	66.14	.00	66.51	34.51	4.87	27.30	22.64
	1389.000	1.00	72.45	72.45	64.14	133.00	66.14	.00	66.51	34.81	4.89	27.23	22.54
	1492.000	103.00	72.45	73.13	64.82	133.00	66.52	.00	67.03	57.12	5.75	23.14	17.60
	1493.000	1.00	.00	.00	64.82	133.00	66.53	.00	67.04	56.65	5.73	23.20	17.67
	1502.000	10.00	.00	.00	64.85	133.00	67.02	.00	67.13	47.49	2.74	48.57	19.30
*	1700.000	202.00	.00	.00	66.15	133.00	68.29	.00	68.53	102.36	3.89	34.21	13.15
	1820.000	120.00	.00	.00	67.05	133.00	69.30	.00	69.45	59.70	3.18	41.78	17.21
	2000.000	180.00	.00	.00	68.25	133.00	70.43	.00	70.59	66.77	3.28	40.60	16.28
	2119.000	119.00	.00	.00	68.95	133.00	71.18	.00	71.32	55.69	2.98	44.65	17.82
*	2127.000	8.00	.00	.00	68.95	133.00	71.05	.00	71.48	11.74	5.26	25.26	38.82
	2218.000	91.00	74.65	73.51	69.51	133.00	71.85	.00	72.19	8.48	4.72	28.18	45.66
*	2228.000	10.00	.00	.00	69.51	133.00	72.16	.00	72.24	26.53	2.24	59.26	25.82
	2400.000	172.00	.00	.00	70.15	133.00	72.72	.00	72.85	47.95	2.93	45.35	19.21
	2600.000	200.00	.00	.00	70.95	133.00	73.61	.00	73.72	39.40	2.69	49.46	21.19
	3000.000	400.00	.00	.00	73.45	133.00	75.71	.00	75.90	77.80	3.46	38.45	15.08
	3044.000	44.00	.00	.00	73.74	79.00	76.06	.00	76.12	26.04	1.97	40.17	15.48
*	3054.000	10.00	.00	.00	73.75	79.00	75.95	.00	76.26	9.68	4.49	17.59	25.40
	3148.000	94.00	79.75	78.15	74.15	79.00	76.34	.00	76.66	9.64	4.48	17.62	25.45
*	3158.000	10.00	.00	.00	74.25	79.00	76.65	.00	76.70	20.84	1.78	44.36	17.30
*	3500.000	342.00	.00	.00	76.45	79.00	77.95	.00	78.13	113.35	3.41	23.18	7.42
*	3900.000	400.00	.00	.00	79.05	79.00	80.99	.00	81.10	52.07	2.60	30.37	10.95
	3952.000	52.00	.00	.00	79.30	79.00	81.28	.00	81.40	62.67	2.77	28.56	9.98
*	3962.000	10.00	.00	.00	79.45	79.00	81.03	81.03	81.82	35.15	7.16	11.03	13.33

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	4064.000	102.00	85.75	83.75	79.75	79.00	82.14	.00	82.48	10.60	4.71	16.78	24.27
	4074.000	10.00	.00	.00	79.75	79.00	82.48	.00	82.53	16.16	1.68	46.91	19.65
	4200.000	126.00	.00	.00	80.47	79.00	82.73	.00	82.80	28.30	2.09	37.82	14.85
*	4600.000	400.00	.00	.00	82.75	79.00	84.48	.00	84.63	83.68	3.08	25.64	8.64
	5000.000	400.00	.00	.00	85.63	79.00	87.46	.00	87.58	65.33	2.79	28.26	9.77
*	5198.000	198.00	.00	.00	87.37	66.00	88.97	.00	89.11	95.75	3.01	21.89	6.74
*	9208.000	10.00	.00	.00	87.45	66.00	88.85	88.85	89.55	34.82	6.74	9.79	11.19
*	5318.000	110.00	93.75	91.65	87.65	66.00	89.75	.00	90.06	10.62	4.47	14.76	20.25

*	5328.000	10.00	.00	.00	87.68	66.00	90.05	.00	90.10	23.43	1.89	34.94	13.64
*	5500.000	172.00	.00	.00	89.25	55.00	90.67	.00	90.79	92.15	2.88	19.12	5.73
	5800.000	300.00	.00	.00	91.95	55.00	93.37	.00	93.50	88.08	2.80	19.62	5.86
	5995.000	195.00	.00	.00	93.63	55.00	95.19	.00	95.32	99.54	2.91	18.93	5.51
*	6000.000	10.00	.00	.00	93.66	55.00	95.21	95.21	95.99	41.06	7.11	7.74	8.58
*	6104.000	104.00	98.75	96.50	94.00	55.00	96.34	.00	96.68	13.03	4.69	11.74	15.24
	6114.000	10.00	.00	.00	94.03	55.00	96.70	.00	96.72	10.56	1.29	42.61	16.93
*	6340.000	226.00	.00	.00	96.15	55.00	97.20	.00	97.48	301.93	4.24	12.96	3.17
*	6489.000	149.00	.00	.00	97.49	52.00	99.16	.00	99.24	59.74	2.31	22.55	6.73
*	6499.000	10.00	.00	.00	97.55	52.00	99.04	99.04	99.80	40.69	6.97	7.46	8.15
*	6631.000	132.00	103.49	100.73	98.23	52.00	100.54	.00	100.85	12.09	4.49	11.58	14.96
	6641.000	10.00	.00	.00	98.29	52.00	100.86	.00	100.89	12.71	1.40	37.27	14.59
*	6740.000	99.00	.00	.00	99.15	52.00	101.02	.00	101.07	26.67	1.83	28.48	10.07
*	7000.000	260.00	.00	.00	101.55	52.00	102.54	.00	102.82	324.98	4.24	12.27	2.88
*	7175.000	175.00	.00	.00	103.28	52.00	104.77	.00	104.86	58.51	2.31	22.47	6.80
	7500.000	325.00	.00	.00	104.45	52.00	106.22	.00	106.28	34.10	2.01	25.90	8.90
*	7700.000	200.00	.00	.00	106.35	35.00	107.34	.00	107.54	236.06	3.58	9.77	2.28
*	7731.000	31.00	.00	.00	106.75	35.00	107.76	107.76	108.28	124.59	5.75	6.09	3.14

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
7732.000	1.00	114.75	110.42	106.75	35.00	107.99	.00	108.34	68.86	4.71	7.44	4.22
7835.000	103.00	114.75	111.32	107.65	35.00	108.77	.00	109.19	92.22	5.20	6.74	3.64
7836.000	1.00	.00	.00	107.65	35.00	108.79	.00	109.20	90.35	5.16	6.78	3.68
7855.000	19.00	.00	.00	107.95	35.00	109.30	.00	109.38	67.46	2.28	15.38	4.26
* 8025.000	175.00	.00	.00	110.06	35.00	111.03	.00	111.17	167.73	3.00	11.68	2.70
* 8026.000	1.00	.00	.00	111.79	35.00	112.51	112.51	112.74	489.15	3.85	9.08	1.58
* 8240.000	214.00	.00	.00	113.35	35.00	114.71	.00	114.76	38.23	1.76	19.85	5.66
* 8600.000	360.00	.00	.00	115.65	35.00	116.74	.00	116.83	94.84	2.43	14.39	3.59
* 8780.000	180.00	.00	.00	116.65	35.00	117.96	.00	118.01	47.85	1.95	17.99	5.06
-5328.000	10.00	.00	.00	87.68	35.00	90.05	.00	90.06	6.63	1.00	34.86	13.59
1040.000	40.00	.00	.00	87.75	11.00	90.07	.00	90.07	.48	.31	38.40	15.90
1300.000	260.00	.00	.00	88.11	11.00	90.09	.00	90.09	.87	.37	31.40	11.76
* 1600.000	300.00	.00	.00	88.53	11.00	90.13	.00	90.13	2.45	.54	21.50	7.03
* 1900.000	300.00	.00	.00	88.95	11.00	90.23	.00	90.24	5.67	.68	16.21	4.62
* 2200.000	300.00	.00	.00	89.37	11.00	90.47	.00	90.48	12.01	.92	12.26	3.17
2283.000	83.00	.00	.00	89.45	11.00	90.58	.00	90.59	15.00	.98	11.21	2.84
* 2293.000	10.00	.00	.00	89.45	11.00	90.57	.00	90.61	1.97	1.55	8.56	7.84
* 2518.000	235.00	94.20	91.34	89.82	11.00	90.50	.00	90.61	10.08	2.62	4.74	3.46
* 2528.000	10.00	.00	.00	90.09	11.00	90.51	90.51	90.69	534.74	3.35	3.28	.48
* 3028.000	500.00	.00	.00	90.15	11.00	91.84	.00	91.85	7.14	.78	14.17	4.12
* 3098.000	70.00	.00	.00	90.17	11.00	91.86	.00	91.87	.95	.36	30.64	11.30
* 3100.000	2.00	.00	.00	90.17	11.00	91.86	.00	91.87	.20	.36	30.80	24.75
* 3101.000	1.00	98.17	98.17	90.17	11.00	91.86	.00	91.87	.44	.48	23.01	16.56
* 3157.000	57.00	98.17	98.64	90.64	11.00	91.87	.00	91.87	1.06	.64	17.15	10.67
3158.000	1.00	.00	.00	90.64	11.00	91.87	.00	91.87	.61	.52	21.19	14.14
* 3438.000	280.00	.00	.00	90.50	11.00	91.91	.00	91.93	25.67	1.17	9.37	2.17

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	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	3721.000	283.00	.00	.00	89.91	11.00	91.97	.00	91.97	.46	.28	39.34	16.17
*	3723.000	2.00	.00	.00	89.91	11.00	91.97	.00	91.97	.10	.28	39.45	35.28
*	3724.000	1.00	97.41	97.41	89.91	11.00	91.97	.00	91.97	.23	.39	28.39	23.17
	3782.000	58.00	97.41	97.50	90.00	11.00	91.97	.00	91.97	.25	.40	27.28	21.88
*	3783.000	1.00	.00	.00	90.00	11.00	91.97	.00	91.97	.11	.29	37.33	32.55
*	3913.000	130.00	.00	.00	90.75	11.00	91.97	.00	91.98	16.96	1.04	10.56	2.67
*	4143.000	230.00	.00	.00	90.13	11.00	92.10	.00	92.11	2.53	.54	20.32	6.92
*	4233.000	90.00	.00	.00	90.05	11.00	92.13	.00	92.14	5.19	.76	14.56	4.83
	4413.000	180.00	.00	.00	90.33	11.00	92.20	.00	92.21	2.99	.58	18.82	6.36

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WESTSIDE CHANNEL SYSTEM

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	50.000	202.00	37.50	.00	.00	.00	54.82	.00
*	150.000	202.00	37.56	.00	.06	.00	49.81	150.00
*	350.000	202.00	37.81	.00	.24	.00	37.79	200.00
*	500.000	202.00	38.30	.00	.50	.00	47.74	150.00
	510.000	202.00	38.32	.00	.02	.00	46.77	10.00
*	521.000	202.00	38.27	.00	-.06	.00	15.00	11.00
	624.000	202.00	38.84	.00	.57	.00	15.00	103.00
*	650.000	202.00	38.96	.00	.12	.00	49.39	26.00
*	800.000	202.00	39.12	.00	.16	.00	42.60	150.00
	950.000	202.00	39.64	.00	.52	.00	40.06	150.00
	980.000	202.00	39.76	.00	.12	.00	28.03	30.00
*	982.000	202.00	39.87	.00	.11	.00	25.97	3.00
*	1262.000	202.00	41.72	.00	1.84	.00	28.76	280.00
*	1338.000	240.00	42.40	.00	.68	.00	1267.07	76.00
	1468.000	240.00	42.40	.00	.00	.00	1266.71	130.00
*	1968.000	240.00	42.40	.00	.00	.00	519.67	500.00
*	976.000	240.00	42.23	.00	-.18	.00	30.06	176.00
*	1230.000	240.00	43.59	.00	1.37	.00	33.38	254.76
	1500.000	240.00	44.29	.00	.70	.00	49.69	270.00
	2000.000	240.00	45.24	.00	.95	.00	49.44	500.00
*	2110.000	240.00	45.45	.00	.21	.00	28.58	114.00
	900.000	240.00	45.88	.00	.43	.00	33.11	26.00
*	910.000	233.00	45.71	.00	-.17	.00	15.00	10.00
	1065.000	233.00	45.91	.00	.20	.00	15.00	155.00

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	1105.000	233.00	46.63	.00	.71	.00	36.08	40.00
	1245.000	233.00	47.33	.00	.70	.00	29.67	140.00
	1400.000	233.00	48.15	.00	.83	.00	33.23	155.00
	1513.000	233.00	48.53	.00	.38	.00	35.22	113.00

	1530.000	233.00	48.46	.00	-.08	.00	14.83	17.00
	1531.000	233.00	48.45	.00	-.01	.00	14.83	1.00
	1641.000	233.00	48.67	.00	.21	.00	14.83	110.00
	1642.000	233.00	48.70	.00	.03	.00	14.83	1.00
	1655.000	233.00	48.99	.00	.29	.00	34.76	13.00
	1682.000	233.00	49.02	.00	.04	.00	30.61	27.00
	1982.000	233.00	50.05	.00	1.03	.00	32.67	300.00
	2282.000	233.00	50.94	.00	.89	.00	30.98	300.00
	2582.000	233.00	51.81	.00	.87	.00	33.64	300.00
	2883.000	233.00	52.52	.00	.71	.00	38.28	301.00
	1010.000	233.00	52.48	.00	-.04	.00	14.83	40.00
	1011.000	233.00	52.47	.00	-.01	.00	14.83	1.00
	1133.000	233.00	52.69	.00	.22	.00	14.83	122.00
	1134.000	233.00	52.73	.00	.03	.00	14.83	1.00
	1149.000	233.00	53.02	.00	.29	.00	41.29	15.00
	1184.000	233.00	53.08	.00	.07	.00	42.88	35.00
	1443.000	233.00	53.86	.00	.77	.00	42.81	259.00
*	1739.000	219.00	54.42	.00	.56	.00	61.77	296.00
*	1779.000	219.00	54.43	.00	.02	.00	61.00	40.00
*	1780.000	219.00	54.43	.00	-.01	.00	61.00	1.00
	1875.000	219.00	54.49	.00	.07	.00	58.60	95.00
*	1876.000	219.00	54.51	.00	.02	.00	58.84	1.00

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	1886.000	219.00	54.49	.00	-.02	.00	39.67	10.00
*	1916.000	219.00	54.51	.00	.02	.00	30.75	30.00
	2191.000	219.00	55.89	.00	1.38	.00	33.33	275.00
	2491.000	219.00	57.37	.00	1.48	.00	31.59	300.00
	2691.000	219.00	58.62	.00	1.25	.00	28.62	200.00
	1119.000	211.00	59.67	.00	1.06	.00	31.55	225.00
	1542.000	211.00	60.24	.00	.56	.00	30.76	123.00
*	1880.000	211.00	61.47	.00	1.24	.00	35.63	338.00
*	2200.000	211.00	61.99	.00	.51	.00	39.53	320.00
*	2362.000	208.00	62.20	.00	.21	.00	25.69	162.00
*	2374.000	208.00	62.12	.00	-.08	.00	12.00	12.00
	2440.000	208.00	62.08	.00	-.04	.00	12.00	68.00
*	2452.000	208.00	62.31	.00	.23	.00	23.18	12.00
*	2600.000	144.00	62.64	.00	.33	.00	37.25	148.00
*	3000.000	144.00	63.02	.00	.38	.00	27.43	400.00
*	3300.000	144.00	63.83	.00	.81	.00	23.39	300.00
	3400.000	144.00	64.53	.00	.70	.00	24.46	100.00
*	3470.000	133.00	64.83	.00	.30	.00	32.23	70.00
*	1030.000	133.00	64.81	.00	-.02	.00	24.06	30.00
	1145.000	133.00	65.10	.00	.29	.00	23.96	115.00
*	1300.000	133.00	65.12	.00	.02	.00	18.61	155.00
*	1349.000	133.00	66.11	.00	.99	.00	29.12	49.00

	1388.000	133.00	66.14	.00	.02	.00	13.60	39.00
	1389.000	133.00	66.14	.00	.00	.00	13.60	1.00
	1492.000	133.00	66.52	.00	.38	.00	13.60	103.00
	1493.000	133.00	66.53	.00	.01	.00	13.60	1.00

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	1502.000	133.00	67.02	.00	.48	.00	30.88	10.00
*	1700.000	133.00	68.29	.00	1.27	.00	22.55	202.00
	1820.000	133.00	69.30	.00	1.01	.00	23.47	120.00
	2000.000	133.00	70.43	.00	1.13	.00	23.89	180.00
	2119.000	133.00	71.18	.00	.76	.00	28.08	119.00
*	2127.000	133.00	71.05	.00	-.13	.00	12.00	8.00
	2218.000	133.00	71.85	.00	.80	.00	12.00	91.00
*	2228.000	133.00	72.16	.00	.31	.00	32.70	10.00
	2400.000	133.00	72.72	.00	.56	.00	25.84	172.00
	2600.000	133.00	73.61	.00	.89	.00	27.80	200.00
	3000.000	133.00	75.71	.00	2.10	.00	24.69	400.00
	3044.000	79.00	76.06	.00	.35	.00	26.64	44.00
*	3054.000	79.00	75.95	.00	-.11	.00	8.00	10.00
	3148.000	79.00	76.34	.00	.40	.00	8.00	94.00
*	3158.000	79.00	76.65	.00	.30	.00	28.95	10.00
*	3500.000	79.00	77.95	.00	1.30	.00	20.26	342.00
*	3900.000	79.00	80.99	.00	3.04	.00	22.12	400.00
	3952.000	79.00	81.28	.00	.29	.00	21.88	52.00
*	3962.000	79.00	81.03	.00	-.26	.00	7.00	10.00
*	4064.000	79.00	82.14	.00	1.11	.00	7.00	102.00
	4074.000	79.00	82.48	.00	.34	.00	27.31	10.00
	4200.000	79.00	82.73	.00	.25	.00	24.19	126.00
*	4600.000	79.00	84.48	.00	1.75	.00	20.69	400.00
	5000.000	79.00	87.46	.00	2.97	.00	21.97	400.00
*	5198.000	66.00	88.97	.00	1.51	.00	20.36	198.00
*	9208.000	66.00	88.85	.00	-.12	.00	7.00	10.00

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	5318.000	66.00	89.75	.00	.90	.00	7.00	110.00
*	5328.000	66.00	90.05	.00	.30	.00	22.50	10.00
*	5500.000	55.00	90.67	.00	.62	.00	18.42	172.00
	5800.000	55.00	93.37	.00	2.71	.00	19.04	300.00
	5995.000	55.00	95.19	.00	1.82	.00	19.17	195.00
*	6000.000	55.00	95.21	.00	.01	.00	5.00	10.00
*	6104.000	55.00	96.34	.00	1.13	.00	5.00	104.00
	6114.000	55.00	96.70	.00	.36	.00	26.94	10.00
*	6340.000	55.00	97.20	.00	.50	.00	17.10	226.00
*	6489.000	52.00	99.16	.00	1.96	.00	22.09	149.00
*	6499.000	52.00	99.04	.00	-.11	.00	5.00	10.00
*	6631.000	52.00	100.54	.00	1.50	.00	5.00	132.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	6641.000	52.00	100.86	.00	.32	.00	23.97	10.00
*	6740.000	52.00	101.02	.00	.16	.00	21.34	99.00
*	7000.000	52.00	102.54	.00	1.52	.00	17.18	260.00
*	7175.000	52.00	104.77	.00	2.23	.00	21.51	175.00
	7500.000	52.00	106.22	.00	1.45	.00	20.21	325.00
*	7700.000	35.00	107.34	.00	1.11	.00	13.81	200.00
*	7731.000	35.00	107.76	.00	.43	.00	6.00	31.00
	7732.000	35.00	107.99	.00	.23	.00	6.00	1.00
	7835.000	35.00	108.77	.00	.78	.00	6.00	103.00
	7836.000	35.00	108.79	.00	.02	.00	6.00	1.00
	7855.000	35.00	109.30	.00	.51	.00	16.74	19.00
*	8025.000	35.00	111.03	.00	1.73	.00	16.73	175.00
*	8026.000	35.00	112.51	.00	1.48	.00	20.11	1.00
*	8240.000	35.00	114.71	.00	2.20	.00	20.80	214.00

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	8600.000	35.00	116.74	.00	2.03	.00	18.42	360.00
*	8780.000	35.00	117.96	.00	1.21	.00	19.19	180.00
	-5328.000	35.00	90.05	.00	-27.91	.00	22.48	10.00
	1040.000	11.00	90.07	.00	.03	.00	23.79	40.00
	1300.000	11.00	90.09	.00	.02	.00	22.72	260.00
*	1600.000	11.00	90.13	.00	.04	.00	19.11	300.00
*	1900.000	11.00	90.23	.00	.10	.00	16.77	300.00
*	2200.000	11.00	90.47	.00	.24	.00	14.99	300.00
	2283.000	11.00	90.58	.00	.11	.00	13.91	83.00
*	2293.000	11.00	90.57	.00	-.01	.00	9.16	10.00
*	2518.000	11.00	90.50	.00	-.07	.00	7.91	235.00
*	2528.000	11.00	90.51	.00	.01	.00	9.53	10.00
*	3028.000	11.00	91.84	.00	1.33	.00	14.12	500.00
*	3098.000	11.00	91.86	.00	.02	.00	21.33	70.00
*	3100.000	11.00	91.86	.00	.00	.00	21.35	2.00
*	3101.000	11.00	91.86	.00	.00	.00	21.35	1.00
*	3157.000	11.00	91.87	.00	.00	.00	19.59	57.00
	3158.000	11.00	91.87	.00	.00	.00	19.59	1.00
*	3438.000	11.00	91.91	.00	.04	.00	13.23	280.00
*	3721.000	11.00	91.97	.00	.06	.00	23.23	283.00
*	3723.000	11.00	91.97	.00	.00	.00	23.25	2.00
*	3724.000	11.00	91.97	.00	.00	.00	23.24	1.00
	3782.000	11.00	91.97	.00	.00	.00	22.88	58.00
*	3783.000	11.00	91.97	.00	.00	.00	22.88	1.00
*	3913.000	11.00	91.97	.00	-.01	.00	13.07	130.00
*	4143.000	11.00	92.10	.00	.13	.00	15.85	230.00

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	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	4233.000	11.00	92.13	.00	.03	.00	10.20	90.00

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 150.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 350.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 500.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 521.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 650.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 800.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 982.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1262.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

NOTE SECNO= 1338.000 PROFILE= 1 WSEL BASED ON X5 CARD
WARNING SECNO= 1338.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1968.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 976.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1230.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2110.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 910.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1105.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1739.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1779.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1780.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1876.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1886.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1916.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1880.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2200.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2362.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2374.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2452.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2600.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3000.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3300.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3470.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1030.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO= 1300.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 1300.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 1300.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO= 1349.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 1700.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2127.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 2228.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3054.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3158.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 3500.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

```
 WARNING SECNO=   3900.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO=   3962.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=   3962.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 WARNING SECNO=   4064.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   4600.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   5198.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO=   9208.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=   9208.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 WARNING SECNO=   5318.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   5328.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   5500.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO=   6000.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=   6000.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
 CAUTION SECNO=   6000.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
1
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 WARNING SECNO=   6104.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   6340.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   6489.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO=   6499.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=   6499.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
 CAUTION SECNO=   6499.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

 WARNING SECNO=   6631.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   6740.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   7000.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   7175.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   7700.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO=   7731.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=   7731.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

 WARNING SECNO=   8025.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO=   8026.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=   8026.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
 CAUTION SECNO=   8026.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

 WARNING SECNO=   8240.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   8600.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   8780.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   1600.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   1900.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   2200.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   2293.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   2518.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 CAUTION SECNO=   2528.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
 CAUTION SECNO=   2528.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
 CAUTION SECNO=   2528.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

 WARNING SECNO=   3028.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   3098.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   3100.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
1
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 WARNING SECNO=   3101.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   3157.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   3438.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

 WARNING SECNO=   3721.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

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WARNING SECNO=   3723.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   3724.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   3783.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   3913.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   4143.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   4233.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

HEC-RAS Version 4.1.0 Jan 2010
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: City of Tracy - Outfall Channel
Project File : Outfall1.prj
Run Date and Time: 12/1/2010 12:38:52 PM

Project in English units

Project Description:
2.6 feet has been added to all elevations to get NAVD 88 . Starting WSE=20.22
ES CH 100-yr

PLAN DATA

Plan Title: City of Tracy - Outfall Channel
Plan File : v:\1840\active\184010207\analysis\ras\Outfall1.p01

Geometry Title: City of tracy - Outfall Channel
Geometry File : v:\1840\active\184010207\analysis\ras\Outfall1.g01

Flow Title : City of Tracy - Outfall Channel
Flow File : v:\1840\active\184010207\analysis\ras\Outfall1.f01

Plan Summary Information:
Number of: Cross Sections = 13 Multiple Openings = 0
Culverts = 2 Inline Structures = 0
Bridges = 1 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: City of Tracy - Outfall Channel
Flow File : v:\1840\active\184010207\analysis\ras\Outfall1.f01

Flow Data (cfs)

River	Reach	RS	10-Yr
City Outfall	City Outfall	4200	154.6
City Outfall	City Outfall	2562	160.5

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
City Outfall	City Outfall	10-Yr		Known WS = 20.22

GEOMETRY DATA

Geometry Title: City of tracy - Outfall Channel
Geometry File : v:\1840\active\184010207\analysis\ras\Outfall1.g01

CROSS SECTION

RIVER: City Outfall

REACH: City Outfall   RS: 4200

INPUT
Description: Grant Line Rd - 2.6 ft is added to all elev to get NAVD 88
Station Elevation Data   num=   6
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   30.63   13.5   21.63   17.5   17.63   27.5   17.63   31.5   21.63
    43.5   29.63

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .02   13.5   .013   31.5   .02

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
          13.5   31.5   500   500   500   .1   .3

CROSS SECTION

RIVER: City Outfall
REACH: City Outfall   RS: 3700

INPUT
Description:
Station Elevation Data   num=   6
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   30.03   13.5   21.03   17.5   17.03   27.5   17.03   31.5   21.03
    43.5   29.03

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .02   13.5   .013   31.5   .02

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
          13.5   31.5   992   992   992   .1   .3

CROSS SECTION

RIVER: City Outfall
REACH: City Outfall   RS: 2708

INPUT
Description:
Station Elevation Data   num=   6
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   28.84   13.5   19.84   17.5   15.84   27.5   15.84   31.5   19.84
    43.5   27.84

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .02   13.5   .013   31.5   .02

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
          13.5   31.5   20   20   20   .3   .5

CROSS SECTION

RIVER: City Outfall
REACH: City Outfall   RS: 2688

INPUT
Description: Above Colony Drive
Station Elevation Data   num=   6
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   28.82   13.5   19.82   17.5   15.82   27.5   15.82   31.5   19.82
    43.5   27.82

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .02   13.5   .013   31.5   .02

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
          13.5   31.5   78   78   78   .3   .5

CULVERT

RIVER: City Outfall
REACH: City Outfall   RS: 2650

INPUT
Description: Colony Drive
Distance from Upstream XS =   1
Deck/Roadway Width   =   76
Weir Coefficient   =   2.6
Upstream Deck/Roadway Coordinates
    num=   2
     Sta Hi Cord Lo Cord   Sta Hi Cord Lo Cord
       0   25.1   200   25.1

Upstream Bridge Cross Section Data
Station Elevation Data   num=   6
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev

```
       0   28.82    13.5   19.82    17.5   15.82    27.5   15.82    31.5   19.82
    43.5   27.82

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02    13.5    .013    31.5     .02

Bank Sta: Left   Right    Coeff Contr.   Expan.
          13.5    31.5             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    25.1             200    25.1

Downstream Bridge Cross Section Data
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   27.73      12   19.73      16   15.73      26   15.73      30   19.73
      38   27.73

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02      12    .013      30     .02

Bank Sta: Left   Right    Coeff Contr.   Expan.
           12      30             .3       .5

Upstream Embankment side slope              =     1.5 horiz. to 1.0 vertical
Downstream Embankment side slope            =     1.5 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =    25.1
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Colony Drive    Circular       5
FHWA Chart # 2 - Corrugated Metal Pipe Culvert
FHWA Scale # 2 - Mitered to conform to slope
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  1      76     .013     .013        0                    .5               1
Number of Barrels =  2
Upstream   Elevation =  15.82
Centerline Stations
    Sta.    Sta.
      19      25
Downstream Elevation =  15.73
Centerline Stations
    Sta.    Sta.
      18      24

CROSS SECTION


RIVER: City Outfall
REACH: City Outfall       RS: 2612

INPUT
Description:
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   27.73      12   19.73      16   15.73      26   15.73      30   19.73
      38   27.73

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02      12    .013      30     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           12      30               50      50      50             .3       .5

CROSS SECTION


RIVER: City Outfall
REACH: City Outfall       RS: 2562

INPUT
Description:
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   27.68      12   19.68      16   15.68      26   15.68      30   19.68
      38   27.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02      12    .013      30     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           12      30              112     112     112             .3       .5
```

CROSS SECTION

RIVER: City Outfall
REACH: City Outfall RS: 2450

INPUT
Description:
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	27.57	12	19.57	16	15.57	26	15.57	30	19.57
38	27.57								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	12	.013	30	.02

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
12 30 75 75 75 .3 .5

BRIDGE

RIVER: City Outfall
REACH: City Outfall RS: 2400

INPUT
Description:
Distance from Upstream XS = 50
Deck/Roadway Width = 2.75
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
5	23.17	20.42	35	23.12	20.37

Upstream Bridge Cross Section Data
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	27.57	12	19.57	16	15.57	26	15.57	30	19.57
38	27.57								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	12	.013	30	.02

Bank Sta: Left Right Coeff Contr. Expan.
12 30 .3 .5

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
5	23.17	20.42	35	23.12	20.37

Downstream Bridge Cross Section Data
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	27.5	12	19.5	16	15.5	26	15.5	30	19.5
38	27.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.02	12	.013	30	.02

Bank Sta: Left Right Coeff Contr. Expan.
12 30 .3 .5

Upstream Embankment side slope = 1.5 horiz. to 1.0 vertical
Downstream Embankment side slope = 1.5 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .95
Elevation at which weir flow begins = 23.17
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Energy Only

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: City Outfall

```
REACH: City Outfall       RS: 2375

INPUT
Description: upstream of bottleneck
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0    27.5      12    19.5      16    15.5      26    15.5      30    19.5
      38    27.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02      12    .013      30     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            12      30              257     257     257             .3       .5

CULVERT


RIVER: City Outfall
REACH: City Outfall       RS: 2247.5

INPUT
Description: Bottleneck
Distance from Upstream XS =       1
Deck/Roadway Width        =     255
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    29.1             200    29.1

Upstream Bridge Cross Section Data
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0    27.5      12    19.5      16    15.5      26    15.5      30    19.5
      38    27.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02      12    .013      30     .02

Bank Sta: Left   Right    Coeff Contr.   Expan.
            12      30             .3       .5

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0    32.6             200    32.6

Downstream Bridge Cross Section Data
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   31.14      18   19.14      22   15.14      32   15.14      36   19.14
      54   31.14

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02      18    .013      36     .02

Bank Sta: Left   Right    Coeff Contr.   Expan.
            18      36             .3       .5

Upstream Embankment side slope              =     1.5 horiz. to 1.0 vertical
Downstream Embankment side slope            =     1.5 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =    29.1
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Bottleneck      Circular       7
FHWA Chart # 2 - Corrugated Metal Pipe Culvert
FHWA Scale # 2 - Mitered to conform to slope
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  1     255     .013     .013        0                  .5               1
Upstream   Elevation =  15.5
           Centerline Station =  21
Downstream Elevation =  15.12
           Centerline Station =  27

CROSS SECTION


RIVER: City Outfall
REACH: City Outfall       RS: 2120

INPUT
Description:
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
```

```
       0   31.14      18   19.14      22   15.14      32   15.14      36   19.14
      54   31.14

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02      18    .013      36     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           18      36              70      70      70             .3       .5

CROSS SECTION


RIVER: City Outfall
REACH: City Outfall       RS: 2050

INPUT
Description:
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   31.07      18   19.07      22   15.07      32   15.07      36   19.07
      54   31.07

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02      18    .013      36     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           18      36             450     450     450             .3       .5

CROSS SECTION


RIVER: City Outfall
REACH: City Outfall       RS: 1600

INPUT
Description:
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   30.62      18   18.62      22   14.62      32   14.62      36   18.62
      54   30.62

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02      18    .013      36     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           18      36             500     500     500             .1       .3

CROSS SECTION


RIVER: City Outfall
REACH: City Outfall       RS: 1100

INPUT
Description:
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   30.12      18   18.12      22   14.12      32   14.12      36   18.12
      54   30.12

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02      18    .013      36     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           18      36              25      25      25             .1       .3

CROSS SECTION


RIVER: City Outfall
REACH: City Outfall       RS: 1075

INPUT
Description: City Outfall at East Side Channel
Station Elevation Data    num=       6
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0    30.1      18    18.1      22    14.1      32    14.1      36    18.1
      54    30.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .02      18    .013      36     .02

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           18      36               0       0       0             .1       .3


SUMMARY OF MANNING'S N VALUES

River:City Outfall
```

Reach	River Sta.	n1	n2	n3
City Outfall	4200	.02	.013	.02
City Outfall	3700	.02	.013	.02
City Outfall	2708	.02	.013	.02
City Outfall	2688	.02	.013	.02
City Outfall	2650	Culvert		
City Outfall	2612	.02	.013	.02
City Outfall	2562	.02	.013	.02
City Outfall	2450	.02	.013	.02
City Outfall	2400	Bridge		
City Outfall	2375	.02	.013	.02
City Outfall	2247.5	Culvert		
City Outfall	2120	.02	.013	.02
City Outfall	2050	.02	.013	.02
City Outfall	1600	.02	.013	.02
City Outfall	1100	.02	.013	.02
City Outfall	1075	.02	.013	.02

SUMMARY OF REACH LENGTHS

River: City Outfall

Reach	River Sta.	Left	Channel	Right
City Outfall	4200	500	500	500
City Outfall	3700	992	992	992
City Outfall	2708	20	20	20
City Outfall	2688	78	78	78
City Outfall	2650	Culvert		
City Outfall	2612	50	50	50
City Outfall	2562	112	112	112
City Outfall	2450	75	75	75
City Outfall	2400	Bridge		
City Outfall	2375	257	257	257
City Outfall	2247.5	Culvert		
City Outfall	2120	70	70	70
City Outfall	2050	450	450	450
City Outfall	1600	500	500	500
City Outfall	1100	25	25	25
City Outfall	1075	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: City Outfall

Reach	River Sta.	Contr.	Expan.
City Outfall	4200	.1	.3
City Outfall	3700	.1	.3
City Outfall	2708	.3	.5
City Outfall	2688	.3	.5
City Outfall	2650	Culvert	
City Outfall	2612	.3	.5
City Outfall	2562	.3	.5
City Outfall	2450	.3	.5
City Outfall	2400	Bridge	
City Outfall	2375	.3	.5
City Outfall	2247.5	Culvert	
City Outfall	2120	.3	.5
City Outfall	2050	.3	.5
City Outfall	1600	.1	.3
City Outfall	1100	.1	.3
City Outfall	1075	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
City Outfall	4200	10-Yr	154.60	17.63	21.57		21.69	0.000170	2.82	54.92	17.88	0.28
City Outfall	3700	10-Yr	154.60	17.03	21.53		21.62	0.000098	2.38	65.40	19.50	0.22
City Outfall	2708	10-Yr	154.60	15.84	21.50		21.55	0.000038	1.78	90.04	22.98	0.14
City Outfall	2688	10-Yr	154.60	15.82	21.50	17.64	21.55	0.000037	1.77	90.49	23.04	0.14
City Outfall	2650		Culvert									
City Outfall	2612	10-Yr	154.60	15.73	21.12		21.18	0.000046	1.90	83.46	21.48	0.16
City Outfall	2562	10-Yr	160.50	15.68	21.11		21.17	0.000048	1.95	84.40	21.59	0.16
City Outfall	2450	10-Yr	160.50	15.57	21.11	17.44	21.17	0.000045	1.90	86.71	21.85	0.16
City Outfall	2400		Bridge									

City Outfall	2375	10-Yr	160.50	15.50	21.09	17.37	21.14	0.000043	1.88	87.72	21.97
0.15											
City Outfall	2247.5		Culvert								
City Outfall	2120	10-Yr	160.50	15.14	20.25		20.32	0.000062	2.10	77.83	21.33
0.18											
City Outfall	2050	10-Yr	160.50	15.07	20.25		20.31	0.000059	2.07	79.27	21.53
0.18											
City Outfall	1600	10-Yr	160.50	14.62	20.23		20.28	0.000042	1.87	88.89	22.83
0.15											
City Outfall	1100	10-Yr	160.50	14.12	20.22		20.26	0.000030	1.68	100.43	24.30
0.13											
City Outfall	1075	10-Yr	160.50	14.10	20.22	15.97	20.26	0.000030	1.68	100.90	24.36
0.13											

Profile Output Table - Standard Table 2

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Vel Head (ft)	Frctn Loss (ft)	C & E Loss (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Top Width (ft)
City Outfall	4200	10-Yr	21.69	21.57	0.12	0.06	0.01		154.60		17.88
City Outfall	3700	10-Yr	21.62	21.53	0.09	0.06	0.01	0.05	154.50	0.05	19.50
City Outfall	2708	10-Yr	21.55	21.50	0.05	0.00	0.00	0.74	153.12	0.74	22.98
City Outfall	2688	10-Yr	21.55	21.50	0.05			0.76	153.08	0.76	23.04
City Outfall	2650		Culvert								
City Outfall	2612	10-Yr	21.18	21.12	0.06	0.00	0.00	0.51	153.78	0.31	21.48
City Outfall	2562	10-Yr	21.17	21.11	0.06	0.01	0.00	0.57	159.60	0.34	21.59
City Outfall	2450	10-Yr	21.17	21.11	0.06	0.00	0.01	0.66	159.45	0.39	21.85
City Outfall	2400		Bridge								
City Outfall	2375	10-Yr	21.14	21.09	0.05			0.70	159.38	0.42	21.97
City Outfall	2247.5		Culvert								
City Outfall	2120	10-Yr	20.32	20.25	0.07	0.00	0.00	0.32	159.85	0.32	21.33
City Outfall	2050	10-Yr	20.31	20.25	0.07	0.02	0.01	0.37	159.76	0.37	21.53
City Outfall	1600	10-Yr	20.28	20.23	0.05	0.02	0.00	0.72	159.06	0.72	22.83
City Outfall	1100	10-Yr	20.26	20.22	0.04	0.00	0.00	1.23	158.03	1.23	24.30
City Outfall	1075	10-Yr	20.26	20.22	0.04			1.26	157.99	1.26	24.36

HEC-RAS Version 4.1.0 Jan 2010
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: City ofTracy - Orchard PKW Reach C
Project File : Orchard1.prj
Run Date and Time: 12/1/2010 12:09:21 PM

Project in English units

Project Description:
For Reach C Channel, Top of bank elevation Up/s of GLR culvert is set as
Starting WSE

PLAN DATA

Plan Title: Orchard PKW Reach C Channel
Plan File : v:\1840\active\184010207\analysis\ras\Orchard1.p01

Geometry Title: Orchard PKW Reach C Channel
Geometry File : v:\1840\active\184010207\analysis\ras\Orchard1.g01

Flow Title : Orchard PKW Reach C Channel
Flow File : v:\1840\active\184010207\analysis\ras\Orchard1.f01

Plan Summary Information:
Number of: Cross Sections = 31 Multiple Openings = 0
Culverts = 5 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Orchard PKW Reach C Channel
Flow File : v:\1840\active\184010207\analysis\ras\Orchard1.f01

Flow Data (cfs)

River	Reach	RS	100-Year
Reach C	R-1	5750	19.3
Reach C	R-1	2719	42

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Reach C	R-1	100-Year		Known WS = 24.28

GEOMETRY DATA

Geometry Title: Orchard PKW Reach C Channel
Geometry File : v:\1840\active\184010207\analysis\ras\Orchard1.g01

CROSS SECTION

RIVER: Reach C

REACH: R-1 RS: 5750

INPUT
Description: Sta 57+50 downstream Byron Road 36" Culvert
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	36	1	36	18.5	30	30	30	47.5	36
60	36								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	250	250	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 5500

INPUT
Description: Sta 55+00
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	34.96	1	34.96	18.5	28.96	30	28.96	47.5	34.96
60	34.96								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	200	200	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 5300

INPUT
Description: Sta 53+00
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	34.56	1	34.56	18.5	28.56	30	28.56	47.5	34.56
60	34.56								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	300	300	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 5000

INPUT
Description: Sta 50+00
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	33.96	1	33.96	18.5	27.96	30	27.96	47.5	33.96
60	33.96								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	300	300	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 4700

INPUT
Description: Sta 47+00
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	33.36	1	33.36	18.5	27.36	30	27.36	47.5	33.36
60	33.36								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	200	200	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 4500

INPUT
Description: Sta 45+00
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	32.97	1	32.97	18.5	26.97	30	26.97	47.5	32.97
60	32.97								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

1	60	95	95	95	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 4395

INPUT
Description: Sta 43+95 Upstream of W. Lowell Ave 42" RCP
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	32.78	1	32.78	18.5	26.78	30	26.78	47.5	32.78
60	32.78								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

1	60	122	122	122	.1	.3

CULVERT

RIVER: Reach C
REACH: R-1 RS: 4350

INPUT
Description:
Distance from Upstream XS = 1
Deck/Roadway Width = 120
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	32.78		60	32.78	

Upstream Bridge Cross Section Data
Station Elevation Data num= 6

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	32.78	1	32.78	18.5	26.78	30	26.78	47.5	32.78
60	32.78								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left Right Coeff Contr. Expan.

1	60	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
0	32.53		60	32.53	

Downstream Bridge Cross Section Data
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	32.53	9	32.53	23.5	29.53	23.5	26.53	35	26.53
55	32.53	60	32.53						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	9	.05	60	.05

Bank Sta: Left Right Coeff Contr. Expan.

9	60	.1	.3

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins = 32.53
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name   Shape   Rise   Span
Culvert #1   Circular   3
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length   Top n Bottom n Depth Blocked Entrance Loss Coef   Exit Loss Coef
                1   120   .013   .013   0   .5   1
Upstream   Elevation = 26.78
           Centerline Station = 24.25
Downstream Elevation = 26.53
           Centerline Station = 29.25

CROSS SECTION

RIVER: Reach C
REACH: R-1   RS: 4273

INPUT
Description: Sta 42+73 Downstream of W. Lowell Ave 42" RCP
Station Elevation Data   num=   7
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   32.53   9   32.53   23.5   29.53   23.5   26.53   35   26.53
      55   32.53   60   32.53

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .05   9   .05   60   .05

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
             9   60   73   73   73   .1   .3

CROSS SECTION

RIVER: Reach C
REACH: R-1   RS: 4200

INPUT
Description: Sta 42+00
Station Elevation Data   num=   7
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   32.37   9   32.37   23.5   29.37   23.5   26.37   35   26.37
      55   32.37   60   32.37

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .05   9   .05   60   .05

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
             9   60   200   200   200   .1   .3

CROSS SECTION

RIVER: Reach C
REACH: R-1   RS: 4000

INPUT
Description: Sta 40+00
Station Elevation Data   num=   7
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   31.98   9   31.98   23.5   28.98   23.5   25.98   35   25.98
      55   31.98   60   31.98

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .05   9   .05   55   .05

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
             9   55   150   150   150   .1   .3

CROSS SECTION

RIVER: Reach C
REACH: R-1   RS: 3850

INPUT
Description: Sta 38+50
Station Elevation Data   num=   7
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   31.69   9   31.69   23.5   28.69   23.5   25.69   35   25.69
      55   31.66   60   31.69

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .05   9   .05   55   .05

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
             9   55   100   100   100   .1   .3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 3750

INPUT
Description: Sta 37+50 Uptream of W. Lowell Ave Culvert
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	31.49	1	31.49	19.5	25.49	31	25.49	41	28.49
51	28.49	60	31.49						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

1	60	146	146	146	.1	.3

CULVERT

RIVER: Reach C
REACH: R-1 RS: 3700

INPUT
Description: West Lowell Ave 1-42" RCP
Distance from Upstream XS = 1
Deck/Roadway Width = 144
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	31.49	60	31.49

Upstream Bridge Cross Section Data
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	31.49	1	31.49	19.5	25.49	31	25.49	41	28.49
51	28.49	60	31.49						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left Right Coeff Contr. Expan.

1	60	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	31.16	60	31.16

Downstream Bridge Cross Section Data
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	31.16	1	31.16	19.5	25.16	31	25.16	41	28.16
51	28.16	60	31.16						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left Right Coeff Contr. Expan.

1	60	.1	.3

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins = 31.16
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Circular	3.5	

FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG

Culvert	Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	1	144	.013	.013	0	.5	1

Upstream Elevation = 25.49
Centerline Station = 25.25
Downstream Elevation = 25.16
Centerline Station = 25.25

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 3604

INPUT
Description: Sta 36+04 downstream of W. Lowell Ave Culvert
Station Elevation Data   num=   7
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   31.16   1   31.16   19.5   25.16   31   25.16   41   28.16
      51   28.16   60   31.16

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .05   1   .05   60   .05

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
             1   60   104   104   104   .1   .3

CROSS SECTION

RIVER: Reach C
REACH: R-1   RS: 3500

INPUT
Description: Sta 35+00
Station Elevation Data   num=   7
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   30.99   1   30.99   19.5   24.99   31   24.99   41   27.99
      51   27.99   60   30.99

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .05   1   .05   60   .05

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
             1   60   200   200   200   .1   .3

CROSS SECTION

RIVER: Reach C
REACH: R-1   RS: 3300

INPUT
Description: Sta 33+00
Station Elevation Data   num=   7
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   30.6   1   30.6   19.5   24.6   31   24.6   41   27.6
      51   27.6   60   30.6

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .05   1   .05   60   .05

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
             1   60   300   300   300   .1   .3

CROSS SECTION

RIVER: Reach C
REACH: R-1   RS: 3000

INPUT
Description: Sta 30+00 Jenni Lane
Station Elevation Data   num=   7
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   30.01   1   30.01   19.5   24.01   31   24.01   41   27.01
      51   27.01   60   30.01

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .05   1   .05   60   .05

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
             1   60   150   150   150   .1   .3

CROSS SECTION

RIVER: Reach C
REACH: R-1   RS: 2850

INPUT
Description: Sta 28+50
Station Elevation Data   num=   7
     Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev   Sta   Elev
       0   29.71   1   29.71   19.5   23.71   31   23.71   41   26.71
      51   26.71   60   29.71

Manning's n Values   num=   3
     Sta   n Val   Sta   n Val   Sta   n Val
       0   .05   1   .05   60   .05

Bank Sta: Left   Right   Lengths: Left Channel   Right   Coeff Contr.   Expan.
             1   60   131   131   131   .1   .3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 2719

INPUT
Description: Sta 27+19 Upstream of Hillcrest Drive Culvert
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.45	1	29.45	19.5	23.45	31	23.45	41	26.45
51	26.45	60	29.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	92	92	.1	.3

CULVERT

RIVER: Reach C
REACH: R-1 RS: 2700

INPUT
Description: Hillcrest Drive 1-60" RCP
Distance from Upstream XS = 1
Deck/Roadway Width = 90
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	29.45	60	29.45

Upstream Bridge Cross Section Data
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.45	1	29.45	19.5	23.45	31	23.45	41	26.45
51	26.45	60	29.45						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
1	60	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	29.34	60	29.34

Downstream Bridge Cross Section Data
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.34	1	29.34	19.5	23.34	31	23.34	41	26.34
51	26.34	60	29.34						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
1	60	.1	.3

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins = 29.34
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name Shape Rise Span
Culvert #1 Circular 5
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
1	90	.013	.013	0	.5	1

Upstream Elevation = 23.45
Centerline Station = 25.25
Downstream Elevation = 23.34
Centerline Station = 25.25

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 2627

INPUT

Description: Sta 26+27 Downstream of Hillcrest Drive Culvert
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	29.34	1	29.34	19.5	23.34	31	23.34	41	26.34
51	26.34	60	29.34						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	114	114	114	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 2450

INPUT
Description: Sta 24+50
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	28.81	1	28.81	19.5	22.81	31	22.81	41	25.81
51	25.81	60	28.81						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	114	114	114	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 2306

INPUT
Description: Sta 23+06 Top of cut-off wall
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	28.37	1	28.37	19.5	22.37	31	22.37	41	25.37
51	25.37	60	28.37						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	1	1	1	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 2305

INPUT
Description: Sta 23+05 downstream of cut-off wall
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	26.99	1	26.99	19.5	20.99	31	20.99	41	23.99
51	23.99	60	26.99						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	105	105	105	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 2200

INPUT
Description: Sta 22+00
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	26.79	1	26.79	19.5	20.79	31	20.79	41	23.79
51	23.79	60	26.79						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	300	300	300	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 1900

INPUT
Description: Sta 19+00
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	26.19	1	26.19	19.5	20.19	31	20.19	41	23.19
51	23.19	60	26.19						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	200	200	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 1700

INPUT
Description: Sta 17+00
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	25.79	1	25.79	19.5	19.79	31	19.79	41	22.79
51	22.79	60	25.79						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	60	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	60	98	98	.1	.3

CROSS SECTION

RIVER: Reach C
REACH: R-1 RS: 1602

INPUT
Description: Upstream of Joseph Damon Drive 2-60" RCP Culvert
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	25.23	1	25.23	19.5	19.23	31	19.23	31	20.23
50	25.23	60	25.23						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	50	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	50	84	84	.1	.3

CULVERT

RIVER: Reach C
REACH: R-1 RS: 1550

INPUT
Description: Joseph Damon Drive 2-60" RCP
Distance from Upstream XS = 1
Deck/Roadway Width = 82
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	25.23	50	25.23

Upstream Bridge Cross Section Data
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	25.23	1	25.23	19.5	19.23	31	19.23	31	20.23
50	25.23	60	25.23						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	50	.05

Bank Sta: Left	Right	Coeff Contr.	Expan.
1	50	.1	.3

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	25.02	50	25.02

Downstream Bridge Cross Section Data
Station Elevation Data num= 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
       0   25.02       1   25.02    19.5   19.02      31   19.02      31   20.02
      50   25.02      60   25.02

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05       1     .05      50     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
            1      50             .1       .3

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =   25.02
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       5
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                  1      82     .013     .013        0                  .5               1
Number of Barrels =  2
Upstream   Elevation =  19.23
Centerline Stations
    Sta.    Sta.
      22    28.5
Downstream Elevation =  19.02
Centerline Stations
    Sta.    Sta.
      22    28.5

CROSS SECTION


RIVER: Reach C
REACH: R-1               RS: 1518

INPUT
Description: Downstream of Joseph Damon Drive 2-60" RCP Culvert
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   25.02       1   25.02    19.5   19.02      31   19.02      31   20.02
      50   25.02      60   25.02

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05       1     .05      50     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            1      50              118     118     118             .1       .3

CROSS SECTION


RIVER: Reach C
REACH: R-1               RS: 1400

INPUT
Description: Sta14+00
Station Elevation Data    num=       7
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   24.78       1   24.78    19.5   18.78      31   18.78      31   19.78
      50   24.78      60   24.78

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05       1     .05      50     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            1      50              115     115     115             .1       .3

CROSS SECTION


RIVER: Reach C
REACH: R-1               RS: 1285

INPUT
Description: Sta 12+85 Downstream of 48" culvert
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   24.51       1   24.51    19.5   21.51    19.5   18.51      31   18.51
      31   21.51      52   24.51      62   24.51

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05       1     .05      52     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
            1      52               67      67      67             .1       .3

CULVERT


RIVER: Reach C
REACH: R-1                RS: 1250

INPUT
Description: 48" RCP Just Up/s of GLR
Distance from Upstream XS =       1
Deck/Roadway Width        =      65
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   24.51               52   24.51

Upstream Bridge Cross Section Data
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   24.51       1   24.51    19.5   21.51    19.5   18.51      31   18.51
      31   21.51      52   24.51      62   24.51

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05       1     .05      52     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
            1      52             .1       .3

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
       0   24.38               52   24.38

Downstream Bridge Cross Section Data
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   24.38       1   24.38    19.5   21.38    19.5   18.38      31   18.38
      31   21.38      52   24.38      62   24.38

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05       1     .05      52     .05

Bank Sta: Left   Right    Coeff Contr.   Expan.
            1      52             .1       .3

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =   24.38
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  1

Culvert Name     Shape      Rise    Span
Culvert #1      Circular       4
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                 1      65     .013     .013        0                  .5               1
Upstream   Elevation =  18.51
           Centerline Station =  25.25
Downstream Elevation =  18.38
           Centerline Station =  25.25

CROSS SECTION


RIVER: Reach C
REACH: R-1                RS: 1218

INPUT
Description: Sta 12+18  (2.6 ft is added to all elev to get NAVD 88)
Station Elevation Data    num=       8
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   24.38       1   24.38    19.5   21.38    19.5   18.38      31   18.38
      31   21.38      52   24.38      62   24.38

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05       1     .05      52     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
            1      52               78      78      78             .1       .3

CROSS SECTION


RIVER: Reach C
```

REACH: R-1 RS: 1140

INPUT
Description: Sta 11+40 Up/s of GLR, Top of bank set as Known WSE
2.6 Feet is
added to all elevations to get to NAVD 88
Station Elevation Data num= 8

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	24.28	1	24.28	19.5	21.28	19.5	18.28	31	18.28
31	21.28	52	24.28	62	24.28				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	1	.05	52	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1	52	0	0	0	.1	.3

SUMMARY OF MANNING'S N VALUES

River:Reach C

Reach	River Sta.	n1	n2	n3
R-1	5750	.05	.05	.05
R-1	5500	.05	.05	.05
R-1	5300	.05	.05	.05
R-1	5000	.05	.05	.05
R-1	4700	.05	.05	.05
R-1	4500	.05	.05	.05
R-1	4395	.05	.05	.05
R-1	4350	Culvert		
R-1	4273	.05	.05	.05
R-1	4200	.05	.05	.05
R-1	4000	.05	.05	.05
R-1	3850	.05	.05	.05
R-1	3750	.05	.05	.05
R-1	3700	Culvert		
R-1	3604	.05	.05	.05
R-1	3500	.05	.05	.05
R-1	3300	.05	.05	.05
R-1	3000	.05	.05	.05
R-1	2850	.05	.05	.05
R-1	2719	.05	.05	.05
R-1	2700	Culvert		
R-1	2627	.05	.05	.05
R-1	2450	.05	.05	.05
R-1	2306	.05	.05	.05
R-1	2305	.05	.05	.05
R-1	2200	.05	.05	.05
R-1	1900	.05	.05	.05
R-1	1700	.05	.05	.05
R-1	1602	.05	.05	.05
R-1	1550	Culvert		
R-1	1518	.05	.05	.05
R-1	1400	.05	.05	.05
R-1	1285	.05	.05	.05
R-1	1250	Culvert		
R-1	1218	.05	.05	.05
R-1	1140	.05	.05	.05

SUMMARY OF REACH LENGTHS

River: Reach C

Reach	River Sta.	Left	Channel	Right
R-1	5750	250	250	250
R-1	5500	200	200	200
R-1	5300	300	300	300
R-1	5000	300	300	300
R-1	4700	200	200	200
R-1	4500	95	95	95
R-1	4395	122	122	122
R-1	4350	Culvert		
R-1	4273	73	73	73
R-1	4200	200	200	200
R-1	4000	150	150	150
R-1	3850	100	100	100
R-1	3750	146	146	146
R-1	3700	Culvert		
R-1	3604	104	104	104
R-1	3500	200	200	200
R-1	3300	300	300	300
R-1	3000	150	150	150
R-1	2850	131	131	131
R-1	2719	92	92	92
R-1	2700	Culvert		
R-1	2627	114	114	114
R-1	2450	114	114	114

R-1	2306		1	1	1
R-1	2305		105	105	105
R-1	2200		300	300	300
R-1	1900		200	200	200
R-1	1700		98	98	98
R-1	1602		84	84	84
R-1	1550	Culvert			
R-1	1518		118	118	118
R-1	1400		115	115	115
R-1	1285		67	67	67
R-1	1250	Culvert			
R-1	1218		78	78	78
R-1	1140		0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Reach C

Reach	River Sta.	Contr.	Expan.
R-1	5750	.1	.3
R-1	5500	.1	.3
R-1	5300	.1	.3
R-1	5000	.1	.3
R-1	4700	.1	.3
R-1	4500	.1	.3
R-1	4395	.1	.3
R-1	4350	Culvert	
R-1	4273	.1	.3
R-1	4200	.1	.3
R-1	4000	.1	.3
R-1	3850	.1	.3
R-1	3750	.1	.3
R-1	3700	Culvert	
R-1	3604	.1	.3
R-1	3500	.1	.3
R-1	3300	.1	.3
R-1	3000	.1	.3
R-1	2850	.1	.3
R-1	2719	.1	.3
R-1	2700	Culvert	
R-1	2627	.1	.3
R-1	2450	.1	.3
R-1	2306	.1	.3
R-1	2305	.1	.3
R-1	2200	.1	.3
R-1	1900	.1	.3
R-1	1700	.1	.3
R-1	1602	.1	.3
R-1	1550	Culvert	
R-1	1518	.1	.3
R-1	1400	.1	.3
R-1	1285	.1	.3
R-1	1250	Culvert	
R-1	1218	.1	.3
R-1	1140	.1	.3

Profile Output Table - Standard Table 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
R-1	5750	100-Year	19.30	30.00	30.81		30.85	0.005630	1.72	11.20	16.21	0.37
R-1	5500	100-Year	19.30	28.96	30.05		30.07	0.001970	1.21	15.97	17.85	0.23
R-1	5300	100-Year	19.30	28.56	29.66		29.68	0.001883	1.19	16.22	17.93	0.22
R-1	5000	100-Year	19.30	27.96	29.23		29.25	0.001129	1.00	19.33	18.92	0.17
R-1	4700	100-Year	19.30	27.36	29.05		29.05	0.000402	0.70	27.70	21.34	0.11
R-1	4500	100-Year	19.30	26.97	28.99		29.00	0.000204	0.55	35.20	23.30	0.08
R-1	4395	100-Year	19.30	26.78	28.98	27.21	28.98	0.000149	0.49	39.35	24.32	0.07
R-1	4350		Culvert									
R-1	4273	100-Year	19.30	26.53	27.86		27.87	0.001208	1.06	18.18	15.92	0.18
R-1	4200	100-Year	19.30	26.37	27.78		27.79	0.000983	0.99	19.50	16.19	0.16
R-1	4000	100-Year	19.30	25.98	27.64		27.65	0.000564	0.82	23.60	17.02	0.12
R-1	3850	100-Year	19.30	25.69	27.57		27.58	0.000362	0.70	27.55	17.80	0.10
R-1	3750	100-Year	19.30	25.49	27.55	25.91	27.55	0.000182	0.52	37.25	24.71	0.07
R-1	3700		Culvert									
R-1	3604	100-Year	19.30	25.16	26.50		26.51	0.000908	0.91	21.12	20.08	0.16

R-1	3500	100-Year	19.30	24.99	26.41		26.43	0.000720	0.84	22.90	20.64
0.14											
R-1	3300	100-Year	19.30	24.60	26.32		26.33	0.000359	0.66	29.25	22.53
0.10											
R-1	3000	100-Year	19.30	24.01	26.26		26.26	0.000129	0.46	42.15	25.95
0.06											
R-1	2850	100-Year	19.30	23.71	26.25		26.25	0.000081	0.39	49.82	27.78
0.05											
R-1	2719	100-Year	42.00	23.45	26.22	24.15	26.23	0.000272	0.74	56.40	29.26
0.09											
R-1	2700		Culvert								
R-1	2627	100-Year	42.00	23.34	24.89		24.93	0.002529	1.65	25.43	21.41
0.27											
R-1	2450	100-Year	42.00	22.81	24.71		24.73	0.001169	1.26	33.40	23.68
0.19											
R-1	2306	100-Year	42.00	22.37	24.62		24.64	0.000610	1.00	42.15	25.95
0.14											
R-1	2305	100-Year	42.00	20.99	24.63		24.63	0.000098	0.46	90.68	44.64
0.06											
R-1	2200	100-Year	42.00	20.79	24.62		24.62	0.000075	0.42	99.33	45.80
0.05											
R-1	1900	100-Year	42.00	20.19	24.61		24.61	0.000036	0.33	127.20	49.37
0.04											
R-1	1700	100-Year	42.00	19.79	24.60		24.60	0.000024	0.29	147.15	51.77
0.03											
R-1	1602	100-Year	42.00	19.23	24.60	19.95	24.60	0.000022	0.29	142.44	44.65
0.03											
R-1	1550		Culvert								
R-1	1518	100-Year	42.00	19.02	24.57		24.57	0.000019	0.28	150.56	45.89
0.03											
R-1	1400	100-Year	42.00	18.78	24.57		24.57	0.000016	0.26	161.68	47.53
0.02											
R-1	1285	100-Year	42.00	18.51	24.56	19.25	24.56	0.000039	0.32	131.52	62.00
0.04											
R-1	1250		Culvert								
R-1	1218	100-Year	42.00	18.38	24.28		24.29	0.000046	0.34	123.38	49.73
0.04											
R-1	1140	100-Year	42.00	18.28	24.28	19.02	24.28	0.000042	0.33	128.25	51.00
0.04											

Profile Output Table - Standard Table 2

Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Vel Head (ft)	Frctn Loss (ft)	C & E Loss (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Top Width (ft)
R-1	5750	100-Year	30.85	30.81	0.05	0.78	0.01		19.30		16.21
R-1	5500	100-Year	30.07	30.05	0.02	0.39	0.00		19.30		17.85
R-1	5300	100-Year	29.68	29.66	0.02	0.43	0.00		19.30		17.93
R-1	5000	100-Year	29.25	29.23	0.02	0.19	0.00		19.30		18.92
R-1	4700	100-Year	29.05	29.05	0.01	0.06	0.00		19.30		21.34
R-1	4500	100-Year	29.00	28.99	0.00	0.02	0.00		19.30		23.30
R-1	4395	100-Year	28.98	28.98	0.00				19.30		24.32
R-1	4350		Culvert								
R-1	4273	100-Year	27.87	27.86	0.02	0.08	0.00		19.30		15.92
R-1	4200	100-Year	27.79	27.78	0.02	0.15	0.00		19.30		16.19
R-1	4000	100-Year	27.65	27.64	0.01	0.07	0.00		19.30		17.02
R-1	3850	100-Year	27.58	27.57	0.01	0.02	0.00		19.30		17.80
R-1	3750	100-Year	27.55	27.55	0.00				19.30		24.71
R-1	3700		Culvert								
R-1	3604	100-Year	26.51	26.50	0.01	0.08	0.00		19.30		20.08
R-1	3500	100-Year	26.43	26.41	0.01	0.10	0.00		19.30		20.64
R-1	3300	100-Year	26.33	26.32	0.01	0.06	0.00		19.30		22.53
R-1	3000	100-Year	26.26	26.26	0.00	0.02	0.00		19.30		25.95
R-1	2850	100-Year	26.25	26.25	0.00	0.02	0.00		19.30		27.78
R-1	2719	100-Year	26.23	26.22	0.01				42.00		29.26
R-1	2700		Culvert								
R-1	2627	100-Year	24.93	24.89	0.04	0.19	0.01		42.00		21.41
R-1	2450	100-Year	24.73	24.71	0.02	0.09	0.00		42.00		23.68
R-1	2306	100-Year	24.64	24.62	0.02	0.00	0.00		42.00		25.95
R-1	2305	100-Year	24.63	24.63	0.00	0.01	0.00		42.00		44.64
R-1	2200	100-Year	24.62	24.62	0.00	0.02	0.00		42.00		45.80
R-1	1900	100-Year	24.61	24.61	0.00	0.01	0.00		42.00		49.37
R-1	1700	100-Year	24.60	24.60	0.00	0.00	0.00		42.00		51.77
R-1	1602	100-Year	24.60	24.60	0.00				42.00		44.65
R-1	1550		Culvert								
R-1	1518	100-Year	24.57	24.57	0.00	0.00	0.00		42.00		45.89
R-1	1400	100-Year	24.57	24.57	0.00	0.00	0.00		42.00		47.53
R-1	1285	100-Year	24.56	24.56	0.00			0.00	41.98	0.01	62.00
R-1	1250		Culvert								
R-1	1218	100-Year	24.29	24.28	0.00	0.00	0.00		42.00		49.73
R-1	1140	100-Year	24.28	24.28	0.00				42.00		51.00

APPENDIX D

2010 DRAINAGE AGREEMENT BETWEEN CITY OF TRACY AND WEST SIDE IRRIGATION DIST.

2010 DRAINAGE AGREEMENT
BETWEEN THE CITY OF TRACY
AND THE WEST SIDE IRRIGATION DISTRICT

2010 DRAINAGE AGREEMENT
BETWEEN THE CITY OF TRACY
AND THE WEST SIDE IRRIGATION DISTRICT

This 2010 Drainage Agreement ("2010 Agreement") is entered into this 21st day of ~~November~~ December, by and between the WEST SIDE IRRIGATION DISTRICT ("District"), a political subdivision of the State of California, and the CITY OF TRACY ("City"), a municipal corporation.

RECITALS

This 2010 Agreement is based on the following facts:

A. District operates a drainage system pursuant to Division 11 of the California Water Code; and

B. The City of Tracy is a general law City duly organized as a municipal corporation which operates a storm drain system; and

C. District and City are parties to a sequence of agreements beginning in 1972 which provide for the joint use of certain drainage systems:

(1) a Prior Agreement (date not known). See Section 11 below.

(2) an Agreement dated October 4, 1972, which provides for joint use of certain drainage systems ("Original 1972 Agreement");

(3) Amendment No. 1, entered into on September 8, 1999;

(4) Amendment No. 2, entered into on December 6, 1999;

(5) Amendment No. 3, entered into on December 12, 2001; and

(6) Integrated Amended 1972 Drainage Agreement, entered into in June, 2002, that consolidated terms from the Original 1972 Agreement and Amendments for ease of reference.

D. The parties have negotiated additional terms that they wish to incorporate into this 2010 Agreement. This 2010 Agreement supersedes the Original 1972 Agreement, Amendments 1, 2 and 3, and the Integrated Amended 1972 Drainage Agreement, all referenced in Recital Section C (2) through (6) above.

NOW THEREFORE, the parties agree as follows:

1. Definitions. In this 2010 Agreement unless the context otherwise requires:

a. "Connection Fees" means the initial fee that has already been paid by City to District for the Westside Channel Area ($800,000) and the fee being paid pursuant to this 2010 Agreement for the Lammers Area ($240,000) as a part of obtaining authorization for discharges to District facilities. See Sections 3, 5.a and 7.

b. "Drainage Fee" means the fees paid from City to the District regarding the Lammers Area, under Section 5.b of this 2010 Agreement.

c. "Eastside Channel" means the City owned and operated open channel that generally serves as the storm drainage outfall for the east half of the City, discharging into Old River via the Sugar Cut.

d. “Lammers Area” means the portions of the Lammers Watershed shown on Exhibit A, attached.

e. "Main Drain” means the District's owned and operated Main Drain Outfall System of which the primary function has been for the collection and conveyance of irrigation tailwater for eventual discharge into Old River at the Wicklund Road outfall, near Wicklund Road and Bethany Road northwest of the City. The Main Drain consists of underground storm drains located within the Westside Channel Area, an underground 72" storm drain extending west along Grant Line Road toward Lammers Road, an open ditch that extends northwesterly from the end of the 72" storm drain to the Wicklund Road outfall, and the Drainage Improvements constructed by the City under Section 4.

f. "0 & M Fees" means the fees paid by the City to the District for operation, maintenance and repair of the District's Main Drain, in the Westside Channel Area, as set forth in Section 3 of this 2010 Agreement.

g. “Option Fee” means the fee paid by City to the District regarding the Lammers Area, under potential circumstances described Section 5.d.

h. “Sub-Main Drain” means the District’s owned and operated Sub-Main Drain tributary to the Main Drain of which the primary function has been for the collection and conveyance of irrigation tailwater for eventual discharge to the Main Drain. The Sub-Main Drain consists of a 60” irrigation pipeline extending underneath Interstate 205 from Lammers Road just south of Byron Road, discharging to an open ditch that extends northwest and parallel to the south side of Byron Road and then north along the east side of San Jose Road, joining the Main Drain roughly 1,800 feet north of Byron Road.

i. "Westside Channel Area” means roughly a 2-square mile area occupying the northeastern most quadrant of the Westside Channel Watershed as defined in the City’s Storm Drainage Master Plan. The majority of the property to be served is west of Tracy Blvd., south of 1-205, east of ½ mile west of Corral Hollow Road and north of 11th Street. Another portion extends south of 11th Street for roughly ¾ mile on both sides of Tracy Blvd. The Westside Channel Area is depicted on Exhibit "A", attached.

2. Discharge Limits. Each party may discharge up to the following amounts of storm water runoff, in cubic feet per second (cfs), subject to the terms of this 2010 Agreement:

a. City may discharge:

(1) 20 cfs into the District’s Main Drain, as an irrevocable license to discharge originally established under the Original 1972 Agreement and continuing under this 2010 Agreement; and
(2) an additional 125 cfs into the District’s Main Drain; and
(3) up to 30 cfs from the Lammers Area to District’s Sub-Main Drain, subject to Section 5, as long as the maximum City discharge to the Main Drain from all sources (below the Sub-Main Drain), does not exceed 145 cfs.

b. District may discharge:

(1) 20 cfs into the City’s Eastside Channel, as an irrevocable license to discharge originally established under the Original 1972 Agreement, and continuing under this 2010 Agreement; and
(2) an additional 15 cfs into City’s Eastside Channel.

c. Point of Discharge. Regarding the Westside Channel drainage rights granted pursuant to the Original 1972 Agreement, the City may discharge its water into the facilities of the District at any point(s) west of Tracy Boulevard, and the District shall discharge its water at the eastern end of the extension of the 48" drain line of the Southern Pacific Company, located on Grant Line Road east of the Southern Pacific Spur. In this regard, District has constructed an extension of the 48" line of the Southern Pacific Company, 545 feet to the east of its eastern end, and has dedicated the line to the City. District has entered into a number of agreements permitting residential developers to discharge into portions of its Main Drain system. Except as specifically set forth in this 2010 Agreement, District agrees that it will not enter into additional such agreements with developers within the Westside Channel Area or Lammers Area without the written consent of the City.

3. Westside Channel Area, Main Drain: Connection Fee and O&M Fees.

City has paid to the District a one-time Connection Fee of $800,000, in 1999. In addition, the City shall make the following payments to the District as its agreed upon contribution towards operation and maintenance (O&M) of the District's drainage facilities serving the Westside Channel Area. City has the right, but not the obligation, to periodically inspect the downstream channel system to assure that maintenance is adequate. So long as the channel downstream of the Main Drain is maintained by District, City shall have no authority to direct how the District uses the O&M Fees.

a. O&M Fees through 2020. City paid District $200,000 before December 31, 1999, constituting payment in advance of O&M Fees through December 31, 2009. City paid District $300,000 before December 31, 2009, constituting payment in advance of O&M Fees through December 31, 2020.

b. O&M Fees after 2020. On or before December 31, 2020, and on or before each December 31 thereafter, City shall make annual payments to District in advance for routine O&M Fees for the following calendar year. The initial annual payment shall be in the amount of $35,000 and this amount shall be increased by a rate of $1,000 every two years. The parties further agree that these sums are the best estimate of the actual, routine O&M fees that will be expended by the District.

c. Extraordinary O&M after 2020. The parties acknowledge that after 2020 District may be required to undertake extraordinary maintenance expenditures with regard to the District's Drainage Facilities, due to the occurrence of circumstances which are not foreseeable. City agrees that it shall be responsible for paying the costs associated with any required extraordinary maintenance. District shall advise City of its intention to perform any extraordinary O&M. Within 30 days of the end of the calendar year for which such extraordinary maintenance was undertaken, District shall provide City with an invoice and supporting documentation for amounts actually spent by District for extraordinary maintenance of the Main Drain and related facilities during the preceding year, and City shall reimburse District for any such amounts within 30 days of the invoice.

d. Payments for Upgrades. City shall be responsible for paying the costs associated with any required upgrades to the District's Main Drain and Related Facilities necessary to comply with any local, state or federal mandated requirements on municipal and industrial dischargers.

4. Westside Channel Area Drainage Improvements. The City was required to and did (at its own expense) construct the following Drainage Improvements associated with discharge to the District's Main Drain. District has accepted these improvements and City warranted the improvements against defects in materials or workmanship for a period of one year from the date the improvements were completed and accepted by District.

a. Drainage Structure Crossings: City enlarged the following drainage structure crossings of

the Main Drain: (1) at the Grant Line Road/Lammers Road intersection; (2) at a farm access road located roughly 1000 feet west of Lammers Road; (3) at San Jose Road; and (4) at Reeve Road. In each instance, the existing drainage structures were replaced with a new 72" reinforced concrete pipe.

b. Additional Drainage Structure Crossing: The City constructed an additional Farm Road Culvert Crossing northwest of Reeve Road, as shown on PP-5 of the Design Package for Drainage Improvements along the WSID Main Drain, Project 84010017 dated 10/22/01.

c. Intake Canal: City replaced an existing 60” pipe with a 72” reinforced concrete pipe at the outlet of the Main Drain into the Intake Canal. The City also installed stabilization material at the inlet and outlet of the existing drainage structure entering the District’s Intake Canal, and provided similar stabilization on the opposite west bank of the Intake Canal for a length of less than 100 feet.

d. Old River Pump Station: The City constructed and installed a pump station at Old River, as shown in PS-1-11 of the Design Package for Drainage Improvements along the WSID Main Drain, Project 84010017 dated 10/22/01.

e. Byron Road: During the construction of the City's Outfall Project, the City replaced District's existing structure extending between Byron Road and Lowell Avenue (a distance of roughly 1,000 feet along an alignment roughly 800 feet west of Corral Hollow Road) with a 36" RCP.

f. Lammers Road Interflow Structure: During the construction of the City’s Outfall Project, the City installed a pipe connection between the City’s Outfall Project’s 84” SD pipeline and the District’s Main Drain at a location where the two facilities align adjacent to each other along Lammers Road approximately 1,300 feet north of Grant Line Road. This pipe connection will essentially operate as an interflow structure for the City and/or the District to use to divert flow from one system to the other in the event of an emergency or to facilitate maintenance. The interflow structure may be regulated by a manually operated sluice gate, with secured use only allowed by City and District personnel. The sluice gate shall remain shut during all times when interflow releases are not needed for emergency or maintenance purposes. City and District shall inform each other, and a representative of each party shall be present when they are proposing to open the sluice gate; unless the other party representative is not present upon two hours prior telephonic notice. City and District shall be held responsible for any adverse downstream impacts caused by their respective opening and use of the sluice gate governing the interflow structure.

g. Byron Road/Belconte Drive Interflow Structure: During the construction of the City’s Outfall Project, the City installed a 36” pipe connection between the City’s Outfall Project junction structure at the Byron Road/Belconte Drive intersection and the City’s open channel segment to the north that drains to District facilities at Grant Line Road and ultimately discharges into the District’s Main Drain. The purpose of this interflow structure will be to allow the City to divert a portion of flow from the City’s Outfall Project to the District’s Main Drain in the event of an emergency, provided that all such flow shall be within the parameters allowed by Section 2(a) of this 2010 Agreement. The interflow structure may be regulated by a manually operated sluice gate, with secured use allowed only by City personnel. The sluice gate shall remain shut at all

times when interflow releases are not needed for emergency purposes. City shall immediately inform District, and a representative of each party shall be present when the City is proposing to open the sluice gate; unless the other party representative is not present upon reasonable prior telephonic notice. This interflow structure shall be owned and operated by the City, and City shall be held responsible for any adverse downstream impacts caused by their respective opening and use of the sluice gate governing the interflow structure.

h. District Open Ditch Adjacent to Plasencia Field: The City allowed the filling in of the District's existing, narrow open ditch extending along the west edge of Plasencia Field and placement of an underground pipe within and parallel to the west edge of Plasencia Field to accommodate the District's operational spill and drainage flow.

5. Lammers Area Provisions. The City's discharge of storm water into the District's Sub-Main Drain authorized by this 2010 Agreement is further subject to the terms of this Section 5.

a. Connection. Before the City makes a physical connection to discharge into the District's Sub-Main Drain, City shall:

(1) construct (at its own expense) a new 42" SD culvert crossing of Von Sosten Road at the District's Sub-Main Drain. The District shall have the right to review, and shall approve the construction plans for the new culvert crossing in writing prior to City's initiation of construction. The parties agree to coordinate construction activities to avoid undue interruption to District or City operations. City warrants the construction of the new culvert crossing against defects in materials or workmanship for a period of one year from and after the date of completion and acceptance by District. During this period, the City shall replace any defective component of the construction at its own expense; and

(2) pay the District a one-time Connection Fee of $240,000.

b. Drainage Fees. Drainage fees are the fees the City pays the District regarding the Lammers Area. The City shall prepay Drainage Fees to authorize discharges for the following blocks of time:

(1) Years 1 through 10 – $480,000 due before connection and initial discharge;
(2) Years 11 through 20 – $600,000 due before the beginning of Year 11; and
(3) Years 21 through 30 – $720,000 due before the beginning of Year 21.

The trigger dates for required Drainage Fee payments shall be the date that the City's physical discharge "connection" is made to the District's Sub-Main Drain and its subsequent applicable anniversary dates.

c. Term; Extension Option. The term of the City's Lammers Area discharge rights granted pursuant to this 2010 Agreement shall be 30 years. The City has the option to negotiate a second 30-year term with the District for Lammers Area discharge rights prior to the end of the initial 30-year period. The parties agree to come to reasonable terms as part of the negotiation process.

d. Interim Drainage Agreements/Option Fee. If the District is approached by a private party requesting a discharge allocation to the District's Sub-Main Drain that will reduce the discharge allocation available to the City prior to City payment of the Lammers Area Connection Fee and the initial Lammers Area Drainage Fee, the District shall extend to the City the Right of First Refusal to preserve its discharge allocation. In order to exercise its Right of First refusal, the City

shall pay, within 30 days of written notice by District of the City Right of First Refusal, an initial Option Fee of $35,000 and shall pay Option Fees in that same amount annually until such time as the City formally exercises its discharge rights by payment of the Connection Fee and initial Drainage Fee.

If the City elects not to exercise its Right of First Refusal by payment of the Option Fee, the District shall have the right to negotiate interim drainage agreements with private parties before the City acquires its drainage rights (by paying the initial Connection Fee and Drainage Fee described in this Section). However, the interim drainage agreements shall not interfere with the City's installation of improvements and shall terminate on the date that the City's physical "connection" is made to the District's Sub-Main Drain. To facilitate this section, City shall provide District with written notice of its intent to install improvements at least 12 months prior to beginning installation of improvements.

e. Disconnection. If at any time the City does not satisfy the Drainage Fee or Extension Option provisions of this Section, and in the absence of other provisions or circumstances that facilitate a continuing right to discharge, the City shall disconnect its storm drainage facilities and cease further discharge to the District's Sub-Main Drain until subsequent authorization for resumption of discharge is formally given by the District.

6. Routine Maintenance. Except as specifically provided in this 2010 Agreement to the contrary, both the City and District shall maintain their respective facilities at all times so that the other may discharge the quantities of drain water specified in Section 2 into the facilities of the other in perpetuity. Each of the parties agrees to maintain its respective drainage facilities at its own cost and expense.

7. Connection Costs. Except as specifically provided in this 2010 Agreement to the contrary, each of the parties shall bear the expense of connecting to the other's drainage facility (and shall bear the expense of installing and maintaining any metering devices). The other party shall approve the connections (and meters) before they are completed and/or installed.

8. Meters. The parties each contemplate that the other will maintain drainage pursuant to this 2010 Agreement within the cfs limitations specified in Section 2. However, if either party expresses concerns that the other is meeting or exceeding the cfs limitations, it may demand a meeting with the other party, and request assurances in that respect. If the requesting party continues to express concerns that the other is meeting or exceeding the cfs limitations after the meet and confer process, it shall have the right to demand that the other party install meters, at the other party's sole cost, upon three months' prior written notice.

9. Water Quality.

a. Each of the parties will insure at all times that the drainage water to be discharged into the facilities of the other meets the water quality standards and waste discharge requirements prescribed by the State of California, the United States Government, any department or agency of either of them and any other governmental agency or authority which has or shall have jurisdiction or prescribe and enforce water quality standards and waste discharge requirements. The discharge of each party shall meet the requirements imposed upon the receiving party.

b. The parties agree that urban and agricultural discharge constituents are generally different and governed by different regulatory requirements. The parties agree that neither party shall discharge water into the other's system at any time or in any amount, that will create a risk of harm to property of any kind or character from flooding or otherwise. The parties further agree that neither party shall discharge water into the other's system that is deleterious to plant or animal life.

10. Restrictions on Relocation. After the construction and installation of connections to the respective drainage facilities, the entity owning the drainage facility shall not relocate or otherwise change the facility without concurrently changing the location of the connections (and meter, if any) at the cost and expense of the entity relocating the facility, including but not limited to the acquisition and dedication of any and all easements and rights of way necessary for the relocation and improvement.

11. Prior Agreement. City and District acknowledge that prior to entering into the Original 1972 Agreement they entered into a drainage agreement on an acreage basis whereby City is permitted to drain a certain number of acres into the District's drainage facility for a specified price per acre. It is mutually agreed that: the former drainage agreement shall remain in full force and effect; there are approximately 30 acres that can be drained under the former drainage agreement; and the drainage of all of the acres covered by the former drainage agreement does not affect the quantity of drainage provided for in this 2010 Agreement.

12. Disputes. If a dispute occurs between the parties as to any right, alleged right, obligation or alleged obligation under this 2010 Agreement, the parties shall make a good faith effort to resolve the dispute. Notice of such dispute shall be given in writing to the other and shall include a description of the disputed issue or issues, a description of the possible solutions or resolutions to the dispute and the course of action or solution advocated by the party declaring the dispute. The party receiving the notice of dispute described shall respond in writing within 30 days. The response shall contain that party's response to the issues raised and the responding party's proposed resolution to the dispute. The parties shall then meet within 30 days and attempt to resolve the dispute.

13. Attorneys Fees. If legal action is necessary to enforce any of the provisions of this 2010 Agreement, the losing party agrees to pay the prevailing party (as a part of the damages) reasonable attorney fees and court costs established by a court of competent jurisdiction.

14. Right of First Refusal. Upon dissolution of the District or the District's discontinuation of providing drainage through the Main Drain and Sub-Main Drain, the City is hereby granted the Right of First Refusal to acquire the Main Drain and Sub-Main Drain.

15. Hold Harmless. Each party shall indemnify, defend, and hold harmless the other (including its elected officials, officers, agents, and employees) from and against any and all claims, demands, damages, liabilities, costs and expenses (including court costs and attorney's fees) resulting from or arising out of the performance of this 2010 Agreement except for the negligent acts of the other party.

16. Modifications. This 2010 Agreement supersedes all prior negotiations and agreements of the parties, including, but not limited to the Original 1972 Agreement and Amendments, and contains the entire agreement of the parties on the matters covered here. This 2010 Agreement may not be modified orally, or in any other manner, other than by an agreement in writing signed by the parties.

17. Binding on Successors. This 2010 Agreement shall inure to the benefit and bind the successors and assigns of the parties.

IN WITNESS WHEREOF the parties agree to the full performance of the terms set forth in this 2010 Agreement.

***** SIGNATURES CONTAINED ON NEXT PAGE*****

THE WEST SIDE IRRIGATION DISTRICT
A Political Subdivision of the State of California

By: _____
Jack Alvarez, President

ATTEST:
By: _____
Barbara Kleinert, Secretary

By: _____
Attorney for District
Approved as to Form

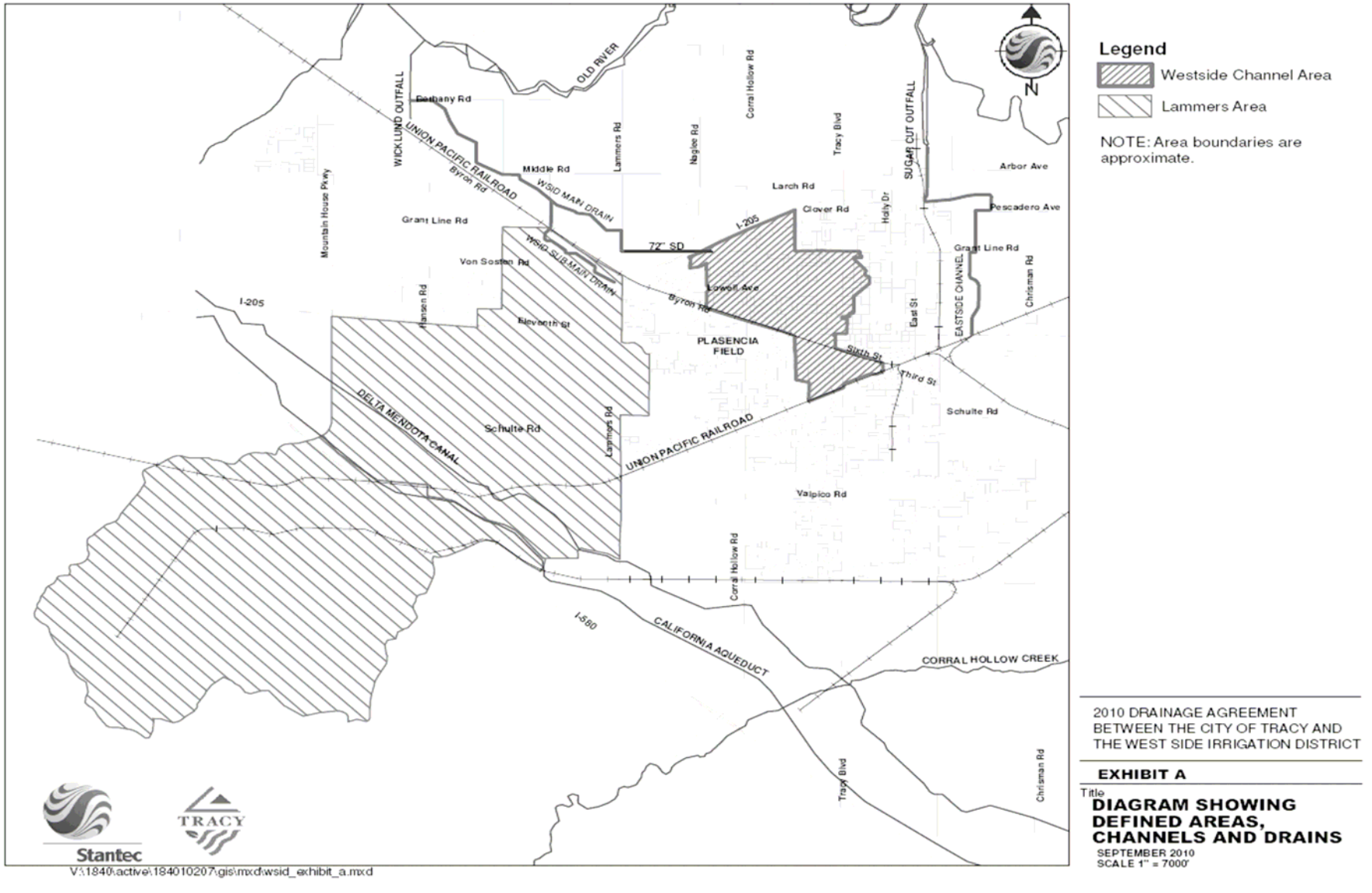
THE CITY OF TRACY
A Municipal Corporation

By: _____
Mayor

ATTEST:
By: _____
City Clerk

By: _____
City Attorney
Approved as to Form

Exhibit A: Diagram Showing Defined Areas, Channels and Drains



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